MONITORING REPORT FOR 2022

STREAMSIDE TAILINGS OPERABLE UNIT

SILVER BOW CREEK/BUTTE AREA NPL SITE

prepared for

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RESPEC

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SILVER BOW CREEK/BUTTE AREA NPL SITE

by

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EXECUTIVE SUMMARY

The performance monitoring program evaluates the progress of remedial actions in the Streamside Tailings Operable Unit (SSTOU) of Silver Bow Creek. Environmental media monitored in 2022 included surface water, instream sediment, groundwater, vadose zone water, macroinvertebrates, and periphyton. This report summarizes results of data collected for each of these environmental media and evaluates progress toward attainment of performance goals as of 2022.[1]

For more than a century, from the 1870s through the 1980s, Silver Bow Creek received direct and indirect waste rock, slag (smelting byproduct), mill tailings, contaminated groundwater [Chadwick et al., 1986; Luoma et al. 2005], and raw municipal sewage inputs. An estimated two million cubic meters of tailings were deposited directly into the stream [Luoma et al., 2005]. Prior to remediation, streamside tailings deposits were distributed along the entire length of the stream [Brook and Moore, 1989], and localized deposit depths exceeded 5 meters (m). Much of the floodplain was devoid of vegetation due to the toxicity of floodplain tailings [Luoma et al., 2005]. Throughout the mining period (c., 1870 to 1982), the stream was utilized primarily as a sewer for the removal of industrial wastes.

In November 1995, Montana Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA) issued a Record of Decision (ROD) for Silver Bow Creek [DEQ and EPA, 1995] that identified the final site remedy and the agencies' rationale for selecting that remedy. The major remedial actions that resulted from the ROD included excavation of tailings and related impacted soils from the floodplain of Silver Bow Creek, and the subsequent reconstruction of the stream channel and floodplain.

The portion of Silver Bow Creek, and the adjacent floodplain, which underwent remediation under the consent decree settlement [Montana v. AR, 1998] is designated as the SSTOU. The SSTOU is divided into four subareas based upon geologic and topographic features that control soil, hydrogeologic, geomorphic, surface water, ecological, demographic, and land use characteristics of the SSTOU [DEQ and EPA, 1995]. Each remedial subarea was further divided into five remedial reaches, each approximately one mile in length, for a total of 20 remedial reaches within the SSTOU. Reaches are identified longitudinally from upstream to downstream by the letters A-T.

[1] The Record of Decision (ROD) identifies remediation goals and performance standards for surface water and groundwater. The performance monitoring program for the SSTOU evaluates a broader range of parameters than these ROD-required performance standards. The performance monitoring program identifies performance goals for the other parameters as a means of effectively discussing and evaluating the effectiveness of the remedy and restoration actions taken in the SSTOU. Use of the term "performance goal" or similar terms in this or other monitoring plans or reports is not intended to make each goal a ROD-required remediation goal or performance standard.

Remedial actions included excavation of tailings and contaminated soils from the Silver Bow Creek floodplain, removal of those soils to a local repository or to the Opportunity Ponds, replacement of excavated tailings with clean fill material, native plant seeding, willow and shrub plantings, and channel reconstruction [EPA, 2011]. Restoration actions involve various habitat improvements that included the addition of organic matter to the borrow soils and additional plant revegetation and aquatic habitat components [NRDP, 2005]. As of 2022, major remedial activity was complete in all Subareas of the SSTOU. Additional repairs and removal of remnant tailings in Subareas 1 and 2 occurred from 2016 through 2018.

Performance goals referenced in this report for surface water contaminants of concern (COC) were those specified by the SSTOU ROD. Specifically, the performance goal is for all samples collected in the SSTOU to "meet the more restrictive aquatic life or human health standards for surface water identified in DEQ Circular WQB-7, through application of I-classification requirements" [DEQ and EPA, 1995]. The SSTOU ROD also specified that surface water monitoring should be conducted quarterly and identified a suite of water chemistry parameters to be monitored, including six metal contaminants of concern (COCs): arsenic, cadmium, copper, lead, mercury, and zinc. In 2022, eight sites were included in the monitoring network, those specified by the SSTOU ROD.

Surface water monitoring results over the 2010-2022 time period demonstrate clear evidence that remedial actions have resulted in reduced COC concentrations. Rates of performance goal exceedances have declined over time and have been particularly low in these most recent years. In the SSTOU surface water sites from 2010-2022, annual exceedance rates declined by 77 percent (from 95 to 22 percent) for copper, by 60 percent (from 60 percent to 0 percent) for cadmium, by 43 percent (from 43 percent to 0 percent) for lead, by 30 percent (from 30 percent to 0 percent) for arsenic, and by 25 percent (from 25 percent to 0 percent) for zinc. These results represent both long-term reductions in COC concentrations as well as recent changes in water chemistry.

The addition of treated discharge from the Butte Mine Flooding Operable Unit has become apparent in the chemistry of Silver Bow Creek since the first quarter of 2020. Concentrations of multiple common ions (calcium, sodium, sulfate, and potassium) have been elevated (by up to seven times the historic baseline) at all sites in the SSTOU during those periods. Elevated calcium levels have resulted in high (400-700 mg/L) water hardness compared to prior monitoring periods when hardness was typically 200 mg/L, or less. The water quality standards that have been adopted as performance goals for cadmium, copper, lead, and zinc are hardness-based and become more lenient as hardness increases. As a result, and in combination with overall low COC concentrations, surface water performance goal exceedances after Q1 2020 have been quite low for these COCs.

In addition to the recent change in chemistry of Silver Bow Creek due to the addition of treated water from the Butte Mine Flooding Operable Unit, upgrades to the Butte wastewater treatment plant (WWTP) occurred in 2016 and a substantial decrease in nutrient concentrations has been

observed at sites below the WWTP since then. The upgrades have had the most dramatic effect on ammonia concentrations. Since 2016, nearly all samples have had ammonia concentrations at or below the ammonia detection limit. In contrast, prior to 2016, ammonia concentrations in the stream were routinely a hundred times higher than the detection limit. Total nitrogen, nitrate plus nitrite nitrogen, and (to a lesser extent) total phosphorus, concentrations have also decreased sharply since 2016. However, despite the reduced nutrient loading from the WWTP, total nitrogen and total phosphorus concentrations remained elevated in 2022 compared to DEQ's historic numeric standards [DEQ, 2014].

Performance goals were not identified for instream sediment COCs in the SSTOU ROD [DEQ and EPA, 1995]. The 1998 Explanation of Significant Differences [DEQ and EPA, 1998] adopted criteria for sediment removal which provided for removal of the contaminated streambed material and replacement with clean material throughout the operable unit. In lieu of specific numeric performance goals for instream sediment, this monitoring program has identified consensus-based sediment quality guidelines including the "threshold effect concentrations" (TECs) and "probable effect concentrations" (PECs) from MacDonald et al. [2000]. In addition to comparing sediment COC concentrations to those reference values, sediment monitoring in the SSTOU is conducted to determine the extent to which the streambed may be re-contaminated from upstream or other sources. As with surface water, the SSTOU ROD also specified that instream sediment monitoring be conducted quarterly at each surface water sampling site for each COC. Sediment samples were analyzed for COC concentrations in three size fractions (<0.063 mm, 0.063-1 mm, and 1-2 mm) and for the weighted mean concentration among those size fractions.

Weighted mean sediment COC concentrations in the SSTOU exceeded the TEC (and often PEC) reference values in 100 percent of the samples for arsenic, copper and zinc, in 96 percent of the samples for cadmium, in 65 percent of the samples for lead, and for 42 percent of the samples for mercury. In past monitoring years, the highest concentrations for copper and most other COCs in sediment occurred upstream from the SSTOU in the Lower Area One sites in the vicinity of the Slag Canyon in Butte. Those sites were not monitored in 2022 but the upstream-most site monitored in 2021 had the highest concentrations by far, especially for arsenic, lead, mercury, and zinc. Sediment COC concentrations tended to reach the lowest levels in lower Subarea 2 and Subarea 3 and increased modestly at downstream sites in Subarea 4.

As with surface water, the SSTOU ROD defined the performance goals for groundwater quality as having COC concentrations which, "Attain compliance with applicable Circular WQB-7 standards, federal Maximum Contaminant Levels (MCLs) and federal nonzero Maximum Contaminant Level Goals (MCLGs) for all SSTOU groundwater." Moreover, "The groundwater levels to be attained consist of the more stringent of the MCL, any nonzero MCLG, or the WQB-7 human health standard for each parameter." Groundwater was monitored in 36 wells located in 11 well clusters, including 25 monitoring wells and 11 background wells. Ten well clusters were located in the Silver Bow Creek floodplain and one cluster was located near the Mine Waste Relocation Repository (MWRR). Wells located in the MWRR were monitored in Q2 and Q3 whereas the rest of the wells were monitored in Q3.

In the floodplain well clusters in 2022, several COCs exceeded the performance goals in at least one monitoring well. Arsenic was the only COC which exceeded performance goals in any background wells, exceeding in two floodplain background wells. Of the samples collected from the 20 monitoring wells located in the 10 floodplain clusters, 35 percent exceeded the cadmium performance goal, 30 percent exceeded the zinc performance goal, 15 percent exceeded the copper performance goal, 10 percent exceeded the arsenic performance goal, and 5 percent exceeded the lead performance goal. In the MWRR cluster, 2 of 10 monitoring well samples (20 percent) exceeded the arsenic performance goal, but the background well also exceeded the performance goal during both quarters.

Vadose zone water quality is monitored in the vicinity of the MWRR to assess mobility of COCs from the repository into the underlying groundwater supply and potentially surface water in the SSTOU. As with groundwater monitoring in the MWRR, vadose zone water was monitored in Q2 and Q3 utilizing eight soil lysimeters (seven monitoring lysimeters and one background lysimeter). Monitoring at these same lysimeters has occurred each year since 2010. Performance goals were not established in the SSTOU ROD for vadose zone water. Instead, COC concentrations and other parameters (other metals, common ions, and physical parameters) are monitored to assess if any COC concentrations appear to be increasing which would potentially indicate leaching of COCs from the repository.

Based on the 13-year time series at each lysimeter, COC concentrations generally do not appear to be increasing with a few exceptions. It appears that arsenic concentrations in one lysimeter and copper concentrations in another may be increasing over time. However, extrapolating those trends to latter time periods may not be appropriate. Concentrations in both lysimeters will be monitored in future years to look for continued increasing trends.

Biological (macroinvertebrate and periphyton) samples were collected at each surface water sampling site during the third quarter of 2022. As with other environmental media which did not have ROD-specified performance goals, reference values are used to evaluate macroinvertebrate and periphyton biointegrity. For aquatic biota, bioindex reference values have been selected to evaluate changes over time in those assemblages. Two bioassessment indices (among others), the Montana Valley and Foothill Prairies (MVFP) bioassessment index and the Montana Observed:Expected (O:E) model, were used to evaluate macroinvertebrate biointegrity in the SSTOU. All SSTOU sites were classified by the MVFP as "moderately" impaired except one site which was classified as "severely" impaired and all sites were classified by the O:E model as "impaired".

Periphyton samples were evaluated for an array of metrics and bioindices to evaluate overall condition and impairments from specific stressors. All sites were assessed as in "good" overall biointegrity condition except one which was classified as "excellent" condition based on the overall biological integrity score. Performance of certain individual metrics did suggest there was some chance of impairment with the probability of nutrient impairment ranging from 29-61 percent among sites and the probability of impairment from sediment ranging from 30-82 percent.

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1.0 SURFACE WATER

1.1 INTRODUCTION

This chapter of the Streamside Tailings Operable Unit (SSTOU) annual monitoring report describes results of surface water monitoring activities conducted in 2022. Annual surface water monitoring is conducted to assess the effectiveness of remedial actions implemented within the SSTOU of the Silver Bow Creek/Butte Area National Priorities List site (Figure 1-1). Data were collected to describe the effects of remedial actions on surface water quality and to gage progress toward attainment of performance goals.

In addition to ongoing long-term surface water monitoring, a synoptic sampling program was initiated in Subarea 1 (Figure 1-1) of the SSTOU in 2022. This synoptic sampling program is intended to identify any specific location (or locations) of metal contaminant sources in Subarea 1 in response to Environmental Protection Agency (EPA) recommendations [EPA, 2016]. In 2020, DEQ conducted an evaluation of long-term monitoring data to assess surface water and groundwater interactions in the SSTOU and determined that Subarea 1 appears to be a source of metal contamination to the SSTOU [RESPEC, 2020]. EPA provided technical comments on that assessment [Leibli, 2021], and based on those comments, DEQ initiated this additional synoptic sampling program.

1.2 PERFORMANCE GOALS

The SSTOU Record of Decision (ROD) specified that the final remediation goal for contaminant of concern (COC) concentrations in surface waters was to "meet the more restrictive of aquatic life or human health standards for surface water identified in DEQ Circular WQB-7, through application of I-classification requirements" [DEQ and EPA, 1995]. Since the issuance of the ROD, Circular WQB-7 [MDHES, 1994] has been replaced by Circular DEQ-7 [DEQ, 2019a], and standards for some COCs have been revised. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP) provide for use of the new, more stringent standards where compliance with the new standard is necessary to ensure protectiveness of human health and the environment. Although there has not yet been a formal decision to adopt the new, more stringent standards for the SSTOU, this report uses the more stringent of either the ROD's Circular WQB-7 [MDHES, 1994] or the current Circular DEQ-7 [DEQ, 2019a] standards for evaluating compliance for the COCs.

The most restrictive surface water standard for each COC (arsenic, cadmium, copper, lead, mercury, and zinc) is either the chronic aquatic life standard (ALS) or the human health surface water standard (HHSWS) from either Circular WQB-7 [MDHES, 1994] or Circular DEQ-7 [DEQ, 2019a]. In both versions, the chronic ALS is hardness-based for cadmium, copper, lead, and zinc. Thus, the chronic ALS varies in relation to water hardness for those metals, in all cases becoming less restrictive as water hardness increases. The most restrictive surface water standard for each

COC is depicted Table 1-1. This report uses the current Circular DEQ-7 [DEQ, 2019a] standards as reference values for metals which are not COCs (Table 1-2).

The most current DEQ Circular-7 surface water standards for each metal are identified in Table 1-1. Additionally, the SSTOU ROD specifies that the remedial action objective should "support the growth and propagation of fishes and associated aquatic life…including a self-sustaining population of trout species" provided that upstream contaminant sources are eliminated.

Silver Bow Creek is classified as an "I" stream under the MCA 75-5-301 and associated administrative rules. Designated beneficial uses for I-class streams are "drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply". I-classified streams include the following criteria for physical properties of water:

- Dissolved oxygen concentration must not be reduced below the applicable standards given in Circular DEQ-7 (i.e., 1-day minimum = 3 mg/L) [DEQ and EPA, 1995; DEQ, 2019a].
- Hydrogen ion concentration (pH) must be maintained within the range of 6.5 to 9.5.
- Except as permitted in MCA 75-5-318, no increase in naturally occurring turbidity is allowed which will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife.
- No increase in naturally occurring temperature is allowed which will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife.
- No increases are allowed above naturally occurring concentrations of sediment or suspended sediment (except as permitted in MCA 75-5-318), and settleable solids, oils, or floating solids, which will or are likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife.

The SSTOU ROD did not specify nutrient (i.e., nitrogen and phosphorus) standards for surface waters in the SSTOU and the state's prior numeric nutrient standards [DEQ, 2014] were rescinded in 2021. Therefore, there were no applicable numeric nutrient standards for Silver Bow Creek or the SSTOU in 2022. This report uses numeric standards specific to the upper Clark Fork River (from the Warm Springs Creek confluence to the Blackfoot River confluence), specified in ARM 17.30.631, as benchmarks for evaluation of nutrient levels in the SSTOU. These standards, applicable only during the summer (June 21 to September 21), are as follows:

- Total phosphorus = 0.02 mg/L,
- Total nitrogen = 0.3 mg/L.

Additionally, Circular DEQ-7 [DEQ, 2019a] specifies the following ALS for total ammonia which are applicable year-round[2]:

- Total ammonia acute ALS = 13.3 mg/L,
- Total ammonia chronic ALS = 3.97 mg/L.

In addition to the primary COCs, non-COCs and nutrients, measured surface water parameters included common cations and anions, total suspended sediment and field parameters including streamflow, water temperature, pH, conductivity, and turbidity. These additional data support the interpretation of water quality monitoring results and are needed to assess impairments to beneficial uses.

The goal for non-COC metal concentrations in surface water is for analytes to be at, or near, background for three consecutive years [PBS&J, 2010]. Sampling at background sites in the SSTOU was conducted from 2010 through 2019 and discontinued after 2019.

[2] The total ammonia acute ALS is inversely related to pH and water temperature (i.e., as pH and temperature increases the acute ALS decreases) and is also dependent on whether or not early life stage salmonids are present. The given standard assumes pH of 7.5, temperature of 16 C, and early life stage salmonids are present. Typically, pH in the SSTOU is at least 7.5 and salmonids are known to be present in the SSTOU [RESPEC, 2022]. The chronic ALS for ammonia is not influenced by the presence or absence of early life stage salmonids.

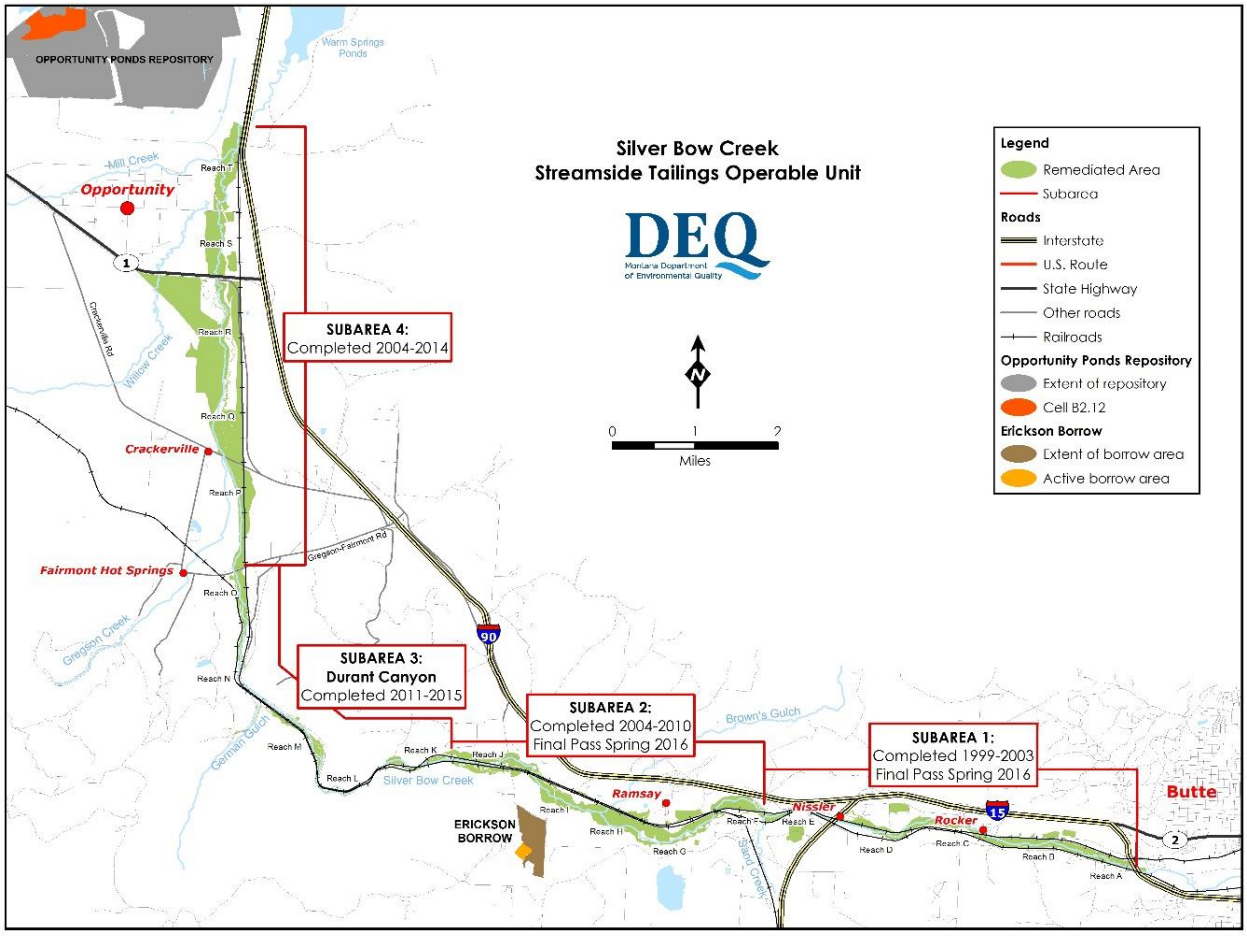


Figure 1-1. Remedial subareas of the Streamside Tailings Operable Unit.

Table 1-1. Comparison of the Montana surface water standards in July 1994 (effective at the time of issuance of the Streamside Tailings Operable Unit Record of Decision) and June 2019 for each contaminant of concern.

Contaminant of concern[3]	Chronic aquatic life standard (mg/L)		Human health surface water standard (mg/L)	
	MDHES [1994]	DEQ [2019a]	MDHES [1994]	DEQ [2019a]
Arsenic	0.190	0.150	0.018	0.010
Cadmium	0.00113	0.00079	0.00500	0.00500
Copper	0.012	0.009	1.000	1.300
Lead[4]	0.0032	0.0032	0.0150	0.0150
Mercury	0.000012	0.000910	0.000140	0.000050
Zinc	0.10599	0.11982	5.00000	2.00000

Gray cells identify the most restrictive standard.

Table 1-2. Montana surface water standards for metals that are not contaminants of concern in the Streamside Tailings Operable Unit [DEQ, 2019a].

Metal[5,6]	Aquatic life standard (mg/L)		Human health surface water standard (mg/L)
	Acute	Chronic	
Aluminum	0.750	0.087	-
Antimony	-	-	0.0056
Barium	-	-	1
Beryllium	-	-	0.004
Boron	-	-	-
Chromium	1.803	0.086	0.1
Cobalt	-	-	-
Iron	-	1.00	-
Manganese	-	-	-
Molybdenum	-	-	-
Nickel	0.469	0.052	0.100
Selenium	0.020	0.005	0.050
Silver	0.0041	-	0.1000

[3] The aquatic life standards for cadmium, copper, lead, and zinc vary in relation to water hardness. The values displayed in this table correspond to a water hardness of 100 mg/L as $CaCO_3$.

[4] The chronic aquatic life standard is most restrictive for lead until hardness exceeds 338 mg/L as $CaCO_3$. At hardness more than 338 mg/L as $CaCO_3$, the human health surface water standard becomes more restrictive. Lead standards were the same in MDHES [1994] and DEQ [2019a].

[5] The aquatic life standards for chromium, nickel and silver vary in relation to water hardness. The values displayed in this table correspond to a water hardness of 100 mg/L as $CaCO_3$.

[6] The aquatic life standards in this table are based on total recoverable concentrations for all metals in this table except aluminum which is based on dissolved concentrations.

Metal[5,6]	Aquatic life standard (mg/L)		Human health surface water standard (mg/L)
	Acute	Chronic	
Uranium	-	-	0.03
Vanadium	-	-	-

Gray cells identify the most restrictive standard.

1.3 METHODS

The purpose of the surface water monitoring program is to collect data describing the temporal and spatial variation of metal and nutrient concentrations, and other physical properties of surface water in the SSTOU. These data provide a long-term record of environmental conditions in the SSTOU. As of 2022, 23 years of SSTOU surface water data (2000-2022) have been collected under this monitoring program. This long-term record provides a dataset to evaluate the effect of remediation on environmental conditions in the SSTOU over time.

An overview of surface water monitoring methods is provided here, and more detail can be found in the project sampling and analysis plan (SAP) [RESPEC, 2022]. Changes to the surface water monitoring program have occurred over time and a record of these changes is provided in the SAP [RESPEC, 2022]. The program attempts to adhere to monitoring requirements specified in the SSTOU ROD (Table 1-3). To comply with these requirements, surface water sampling sites were added to the monitoring network in 2013 (Sites SS-13 and SS-16B) and 2014 (Site SS-19) (Figure 1-2; Table 1-4). All of the sites that are required by the SSTOU ROD (Table 1-3) have been included in the surface water monitoring program since 2014.

Table 1-3. Minimum post-remedy monitoring requirements for surface water monitoring as Specified in the Record of Decision for the Streamside Tailings Operable Unit [DEQ and EPA, 1995].

Locations	Analytical Parameters	Analytes
SS-07, SS-10, SS-13, SS-14, SS-15, SS-16, SS-17, SS-19	Metals (total recoverable and dissolved)	Arsenic, cadmium, copper, lead, mercury, zinc
	Common ions	Calcium, magnesium, sodium, potassium, chloride, sulfate
	Nutrients	Nitrate plus nitrite nitrogen, phosphorus
	Physical properties	Temperature, acidity (pH), oxidation-reduction potential (Eh), conductance, dissolved oxygen concentration

1.3.1 Monitoring Locations

Surface water samples were collected at eight long-term monitoring sites (Figure 1-2; Table 1-4). Monitoring at these eight sites satisfied the minimum post-remedy monitoring requirements stipulated by the SSTOU ROD (Table 1-3).

During the active remediation portion of the SSTOU cleanup, additional monitoring sites were added to the long-term monitoring network to provide more detailed data to evaluate possible contaminant sources. However, as of 2022, major remedial actions in the SSTOU are complete. Therefore, the monitoring network has been reduced since 2019 to refocus the program on evaluation of long-term trends within the SSTOU while also meeting all ROD-specified monitoring requirements.

Beginning in Q2 2022, a synoptic sampling program was initiated in Subarea 1. Synoptic sites sampled in 2022 are identified in Table 1-5. Synoptic sample sites were spaced at 0.5-mile increments beginning at long-term monitoring Site SS-07 (at the upstream end of Subarea 1) and progressing downstream to Site SS-10A (at the downstream end of Subarea 1). In Q4 2022, four additional sites were added between Sites SS-07-3.0 and SS-07-3.5 (at 0.1-mile spacing) to provide more detailed data in this reach after examining results from Q2 and Q3 2022.

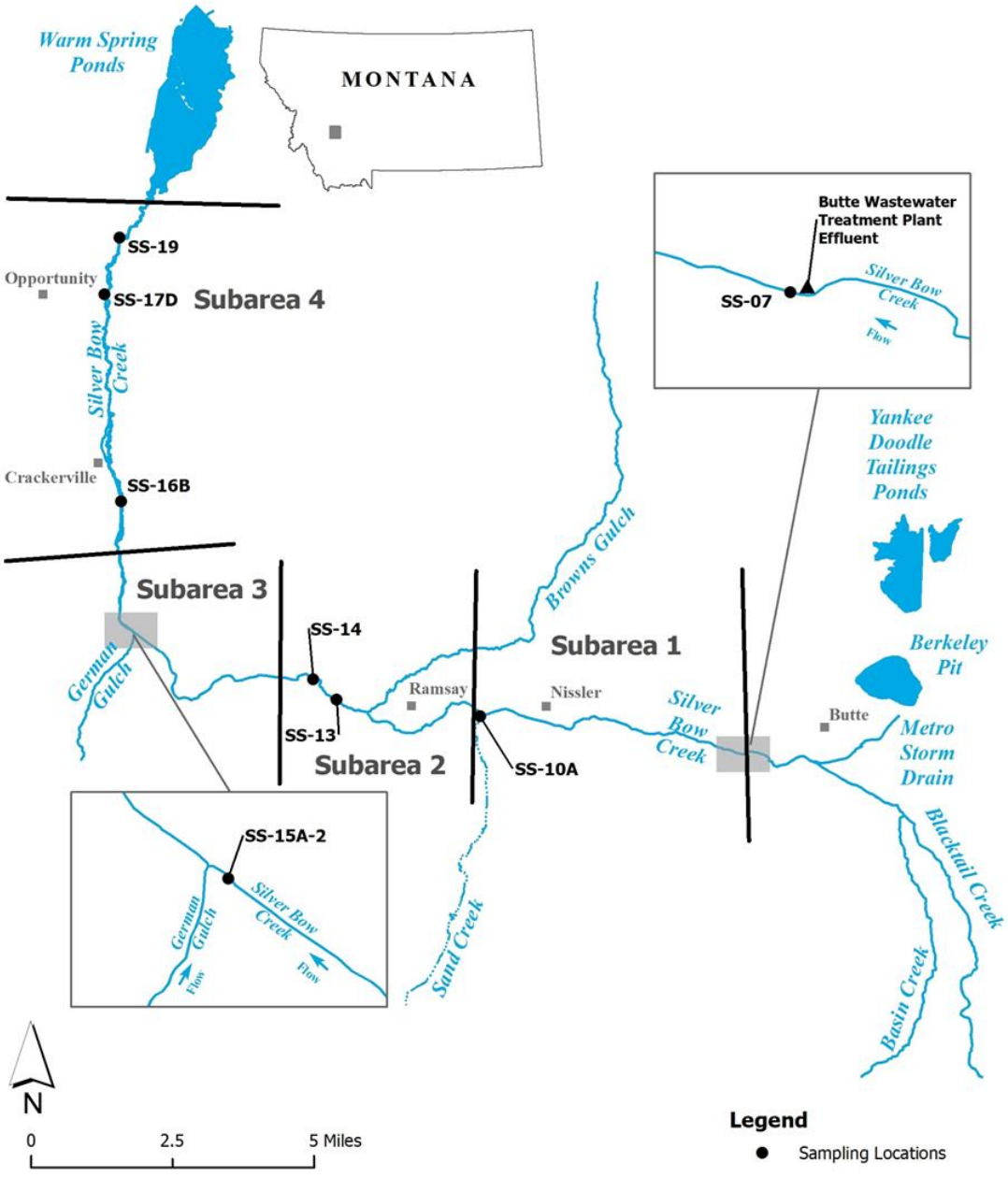


Figure 1-2. Surface water and sediment sampling locations in Streamside Tailings Operable Unit.

Table 1-4. Surface water sampling locations in the Streamside Tailings Operable Unit.

Site ID	Site Location	Location (GPS coordinates, NAD 83)	
		Latitude	Longitude
SS-07[7]	Silver Bow Creek below Butte WWTP	45.99679	-112.56470
SS-10A	Silver Bow Creek above Sand Creek	46.00375	-112.66084
SS-13	Silver Bow Creek in Reach L	46.00647	-112.71394
SS-14	Silver Bow Creek at Miles Crossing	46.01142	-112.72270
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	46.02170	-112.78969
SS-16B	Silver Bow Creek in Reach P near Fairmont	46.05494	-112.79611
SS-17D[8]	Silver Bow Creek below Stewart Street at Opportunity	46.10787	-112.80553
SS-19	Silver Bow Creek at Frontage Road	46.12247	-112.80077

Table 1-5. Synoptic sampling locations for monitoring of surface water and groundwater interaction in Subarea 1 of the Streamside Tailings Operable Unit.

Synoptic Site ID	Long-term Monitoring Site	Location (GPS coordinates; NAD 83)	
		Latitude	Longitude
SS-07-0.0	SS-07	45.99648	-112.56316
SS-07-0.5	-	46.99860	-112.57447
SS-07-1.0	-	46.00017	-112.58304
SS-07-1.5	-	46.00185	-112.59238
SS-07-2.0	-	46.00198	-112.60226
SS-07-2.5	-	46.00357	-112.61056
SS-07-3.0	-	46.00416	-112.61982
SS-07-3.1	-	46.00373	-112.62154
SS-07-3.2	-	46.00351	-112.62337
SS-07-3.3	-	46.00279	-112.62507
SS-07-3.4	-	46.00225	-112.62631
SS-07-3.5	-	46.00103	-112.62755
SS-07-4.0	-	46.00303	-112.63658
SS-07-4.5	-	46.00435	-112.64649
SS-07-5.0	-	46.00470	-112.65595
SS-07-5.2	SS-10A	46.00383	-112.66060

[7] Co-located with USGS Gage 12323250.

[8] Co-located with USGS Gage 12323600.

1.3.2 Monitoring Schedule

Monitoring events were scheduled quarterly to describe seasonal variation in water chemistry within the SSTOU. One monitoring event occurred during each calendar quarter. Quarterly monitoring events occurred near the end of each quarter. First quarter (Q1) monitoring occurred on March 16, 2022, prior to spring snowmelt runoff. Second quarter (Q2) monitoring occurred on June 8, 2022, near the peak of the spring snowmelt runoff period. Third quarter (Q3) monitoring occurred on September 2, 2022, during low streamflow conditions. Fourth quarter (Q4) monitoring occurred on December 8, 2022, during late fall.

Synoptic samples were collected during each quarterly sample period beginning in Q2. Synoptic samples were collected progressively from the upstream-most site to the downstream-most site. Samples were collected over a three-to-four-hour period beginning immediately after the quarterly long-term monitoring event, or the following day.

1.3.3 Monitoring Parameters

Streamflows at each surface water sampling site were either measured (six sites) or determined from co-located USGS streamflow gages (two sites) at the time sampling occurred. All USGS streamflow data included in this report may be "provisional" because at the time this report was completed, "approved" USGS data may not have been available. At sites without co-located USGS gage stations, streamflows were measured manually. Laboratory analysis of analyte concentrations was completed by Energy Laboratories (Helena, Montana).

Water samples from long-term monitoring were analyzed for metal concentrations, nutrient concentrations, and other chemical and physical properties (Table 1-6). Synoptic samples were analyzed exclusively for total recoverable copper concentrations.

Table 1-6. Sampling parameters and analytes for surface water monitoring of the Streamside Tailings Operable Unit.

Parameter	Analytes
Concentrations of metal contaminants of concern (total recoverable and dissolved)	Arsenic, cadmium, copper, lead, mercury, zinc
Concentrations of other metals (total recoverable and dissolved)	Aluminum, antimony, barium, beryllium, boron, cobalt, chromium, iron, manganese, molybdenum, nickel, selenium, silver, uranium, vanadium
Nutrient concentrations	Nitrogen (total nitrogen, nitrate plus nitrite, ammonia), phosphorus (total)
Common ion concentrations	Sulfate, total alkalinity, bicarbonate alkalinity, calcium, magnesium, sodium, potassium, chloride, and sulfate
Other physical properties	Total suspended sediment concentration, water hardness, water temperature, pH, specific conductivity, dissolved oxygen (DO), turbidity

1.3.4 Sample Collection and Analysis

Sample collection, analysis, and quality assurance procedures are described in the program sampling and analysis plan [RESPEC, 2022] and quality assurance project plan [RESPEC, 2014]. Methods generally followed standard operating procedures (SOPs) developed for the Clark Fork River [AR, 1992]. Field sampling procedures were in accordance with DEQ [2019b] and followed "clean hands/dirty hands" procedures as described in USGS [2006].[9] Composited surface water samples were collected using width- and depth-integration according to methods described in USGS [2006]. Field parameters (water temperature, pH, dissolved oxygen concentration, and conductivity) were measured during each monitoring event with a field multimeter (YSI Professional Plus or YSI 556). Turbidity was measured with a field turbidity meter (Hach Model 2100P Portable Turbidimeter). Streamflows were measured using a portable electromagnetic streamflow meter (Marsh-McBirney Flo-Mate 2000) or an acoustic doppler current profiler (Teledyne StreamPro ADCP). Calibration methods for field meters, data recording and handling methods, and quality assurance and quality control procedures are described in the program sampling and analysis plan [RESPEC, 2022]. Samples were analyzed by Energy Laboratories (Helena, Montana). Laboratory analysis procedures for each analyte are presented in Table 1-7.

Synoptic samples were collected by the "grab sample" DEQ [2019b] method to minimize sampling time between sample sites and best approximate synoptic (i.e., snapshot) contaminant concentrations in the Subarea 1 reach.

Table 1-7. Analytes, analytical methods, and reporting limits for surface water samples in the Streamside Tailings Operable Unit.

Analyte	Requested Method	Requested Reporting Limit (mg/L)[10]	Holding Time (days)	Bottle	Preservative
Water Samples - Physical Properties and Inorganics					
Solids, Total Suspended (at 105 C)	A 2540 D	1	7	1 L HDPE	4 ± 2 C
Alkalinity, Total (as CaCO3)	A 2320 B	4	14	500 mL HDPE	
Alkalinity, Bicarbonate (as HCO3)	A 2320 B	4	14		
Chloride	EPA 300.0	1	28		
Sulfate	EPA 300.0	1	28		
Hardness (as CaCO3)	A 2340 B	1	180		
Water Samples – Nutrients					

[9] We deviated from the USGS [2006] protocols to minimize sample contamination [described in Section 4.0.2 of USGS, 2006] in two regards. First, we did not collect samples sequentially in the order of least to greatest potential for contamination. Second, samples were processed outside sampling vehicles, rather than within an enclosed space. Also note that we did not follow all "clean hands/dirty hands" protocols of Method 1669 [USEPA, 1996] or the low-level (i.e., part-per-trillion) protocols of the USGS [Lewis and Brigham, 2004].

[10] Requested reporting limits are either those required by DEQ [2019a] or the lowest reporting limit previously provided by the analytical laboratory, whichever is lower.

Analyte	Requested Method	Requested Reporting Limit (mg/L)[10]	Holding Time (days)	Bottle	Preservative
Nitrogen, Ammonia (as N)	EPA 350.1	0.05	28	250 mL HDPE	H2SO4 to pH <2, 4 ± 2 C
Nitrogen, Nitrate-Nitrite (as N)	EPA 353.2	0.02			
Nitrogen, Total	A 4500 N-C	0.05	30		
Phosphorus, Total	EPA 365.1	0.003	28		
Water Samples - Dissolved Metals (0.45 µm filtered)					
Aluminum	EPA 200.8	0.009	180	250 mL HDPE	HNO3 to pH <2
Antimony	EPA 200.8	0.0005			
Arsenic	EPA 200.8	0.001			
Barium	EPA 200.8	0.003			
Beryllium	EPA 200.8	0.0008			
Boron	EPA 200.8	0.1			
Cadmium	EPA 200.8	0.00003			
Calcium	EPA 200.8	1			
Chromium	EPA 200.8	0.01			
Cobalt	EPA 200.8	0.01			
Copper	EPA 200.8	0.001			
Iron	EPA 200.8	0.02			
Lead	EPA 200.8	0.0003			
Magnesium	EPA 200.8	1			
Manganese	EPA 200.8	0.001			
Molybdenum	EPA 200.8	0.005			
Nickel	EPA 200.8	0.002			
Potassium	EPA 200.8	1			
Selenium	EPA 200.8	0.001			
Silver	EPA 200.8	0.0002			
Sodium	EPA 200.8	1			
Uranium	EPA 200.8	0.0002			
Vanadium	EPA 200.8	0.1			
Zinc	EPA 200.8	0.008			
Mercury	EPA 245.1	0.000005	28		
Water Samples - Total Recoverable Metals					
Total Recoverable Metals Digestion	EPA 200.2	-	-	-	-
Aluminum	EPA 200.8	0.009	180	250 mL HDPE	HNO3 to pH <2
Antimony	EPA 200.8	0.0005			
Arsenic	EPA 200.8	0.001			
Barium	EPA 200.8	0.003			
Beryllium	EPA 200.8	0.0008			

Analyte	Requested Method	Requested Reporting Limit (mg/L)[10]	Holding Time (days)	Bottle	Preservative
Boron	EPA 200.8	0.1			
Cadmium	EPA 200.8	0.00003			
Calcium	EPA 200.8	1			
Chromium	EPA 200.8	0.01			
Cobalt	EPA 200.8	0.01			
Copper	EPA 200.8	0.001			
Iron	EPA 200.8	0.02			
Lead	EPA 200.8	0.0003			
Magnesium	EPA 200.8	1			
Manganese	EPA 200.8	0.001			
Molybdenum	EPA 200.8	0.005			
Nickel	EPA 200.8	0.002			
Potassium	EPA 200.8	1			
Selenium	EPA 200.8	0.001			
Silver	EPA 200.8	0.0002			
Sodium	EPA 200.8	1			
Uranium	EPA 200.8	0.0002			
Vanadium	EPA 200.8	0.1			
Zinc	EPA 200.8	0.008			
Mercury	EPA 245.1	0.000005	28		

1.3.5 Data Analysis

This report primarily presents a summary of surface water data collected in the SSTOU monitoring program in 2022. For certain constituents (e.g., common ions, nutrient concentrations, and total recoverable COC concentrations), longer-term results are presented to place the most recent results in context with prior results.

Data analysis includes description of spatial trends (among sample sites during the same sample period) and temporal (quarterly and annual) trends for constituent concentrations. Data in the spatial graphs are presented longitudinally (i.e., from upstream to downstream) with symbols representing each quarterly sample event. For constituents of primary interest (e.g., total recoverable COC, nutrient, and common ion concentrations), longer-term (since 2010) temporal graphs are included to provide context for the recent results and to evaluate variability in concentrations through time. For constituents of lesser interest (e.g., field parameters), summary statistics are presented for the four sample periods of 2022.

For COCs with performance goal targets, or for constituents which have state-specified standards, sample concentrations are compared to those standards to evaluate exceedances.

Evaluation of some ALS standards requires an assumption that the measured analyte concentrations are consistent over time. For example, the chronic ALS is typically based on 96-hour mean concentrations and the acute ALSs are typically based on 1-hour mean concentrations [DEQ, 2019a]. However, in this monitoring program, analyte concentrations are measured at a specific point in time and mean concentrations over time are unknown. Therefore, all assessments of ALS exceedances assume that the measured concentration was representative of the mean concentration over the necessary time period.

Surface water samples were analyzed for a variety of other metals besides the COCs. The SSTOU ROD specifies that monitoring should assess if non-COC metals have concentrations exceeding performance goals [DEQ and EPA, 1995]. We have interpreted the performance goals for non-COC analytes to be the most restrictive of the most current Circular DEQ-7 standards [DEQ, 2019a].

1.3.6 Data Validation

Data quality objectives were established in the SSTOU quality assurance project plan (QAPP) for data representativeness, comparability, completeness, sensitivity, precision, bias, and accuracy [RESPEC, 2014]. Methods for field and laboratory quality assurance and quality control procedures are described in detail in the QAPP. A completed quality assurance and quality control checklist, summary tables of field duplicate and field blank results, and assessments of data quality objectives are included in Appendix A.

1.4 RESULTS

1.4.1 Streamflow

In comparison to the long-term median for the period of record, streamflows in 2022 in Silver Bow Creek below Blacktail Creek at Butte were generally high throughout the year, particularly during the fall (Figure 1-3). In contrast, at Opportunity, streamflows were well below the long-term median for most of the year (Figure 1-4). Streamflows in Silver Bow Creek at Opportunity were similar to the long-term median through March but then declined sharply in April and remained well below the median throughout the year with the exception of the primary spring runoff period (Figure 1-3). For a prolonged period, from July through September, streamflows at Opportunity were quite low compared to the long-term median and reached levels as low as 4 ft^3/s (Figure 1-4). Elevated streamflows in the upper portion of Silver Bow Creek are likely due to the augmentation of streamflow from treated discharge from the Butte Mine Flooding Operable Unit. As of September 30, 2019, treated water from the Butte Mine Flooding Operable Unit began discharging into Silver Bow Creek at a rate of approximately 6-9 ft^3/s [Hilmo, 2020]. Low flows downstream at Opportunity are presumably due to irrigation. Longitudinal (i.e., from upstream to downstream) streamflow patterns in Silver Bow Creek are depicted in Figure 1-5.

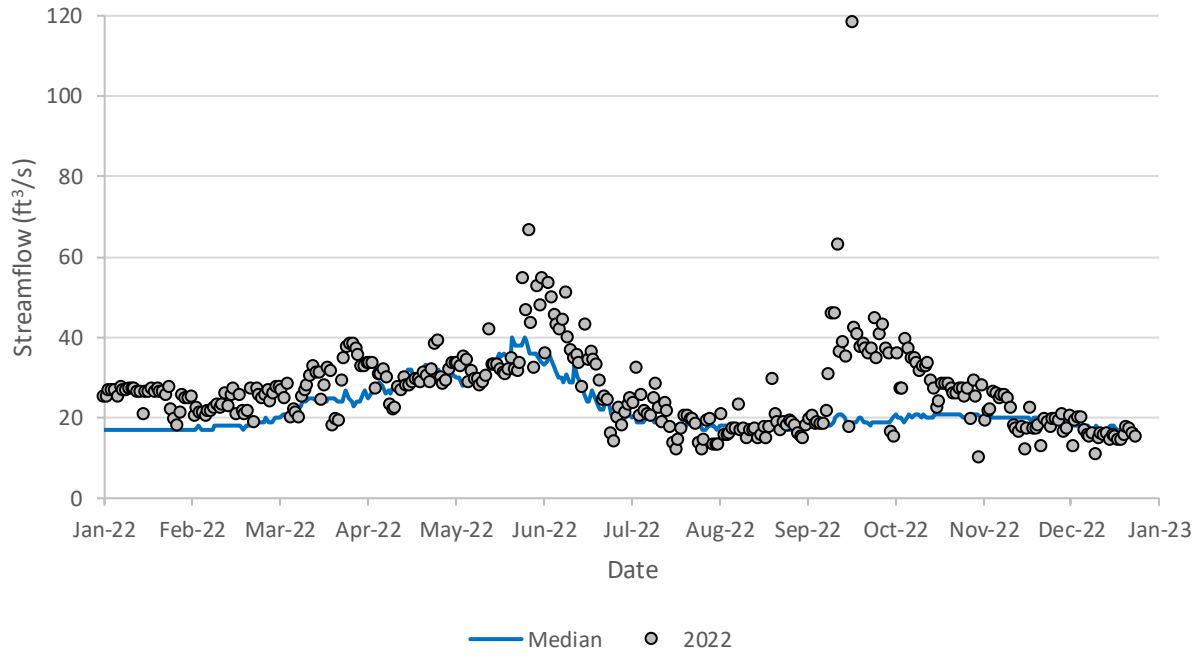


Figure 1-3. Annual hydrograph for Silver Bow Creek below Blacktail Creek at Butte, 2022 [USGS, 2023].

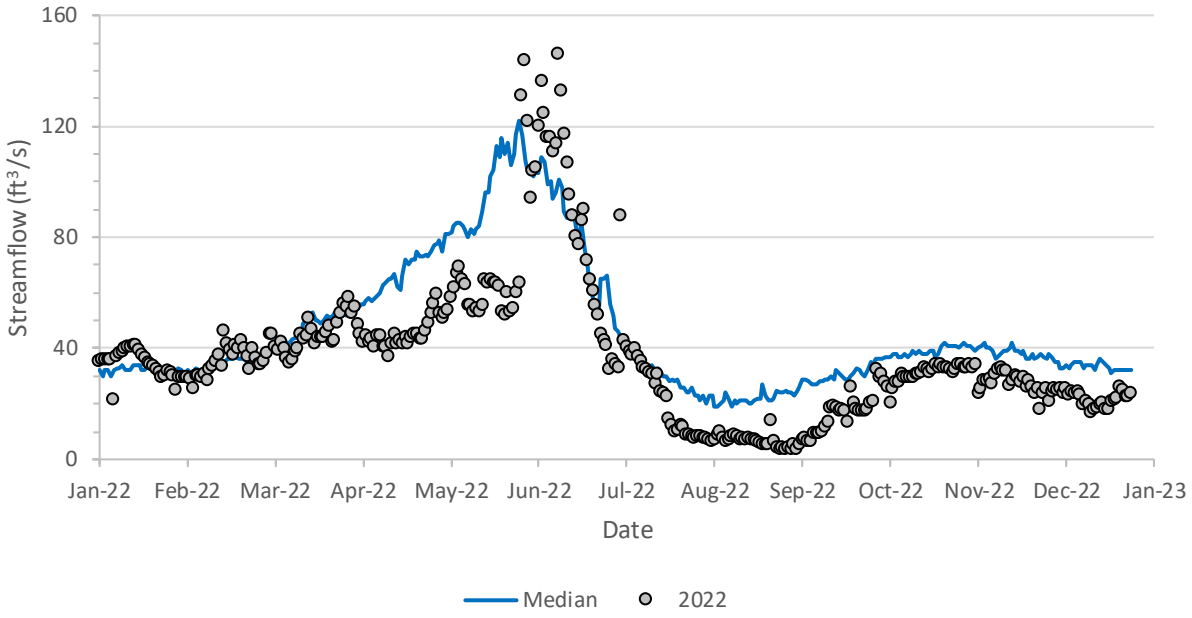


Figure 1-4. Annual hydrograph for Silver Bow Creek at Opportunity, 2022 [USGS, 2023]

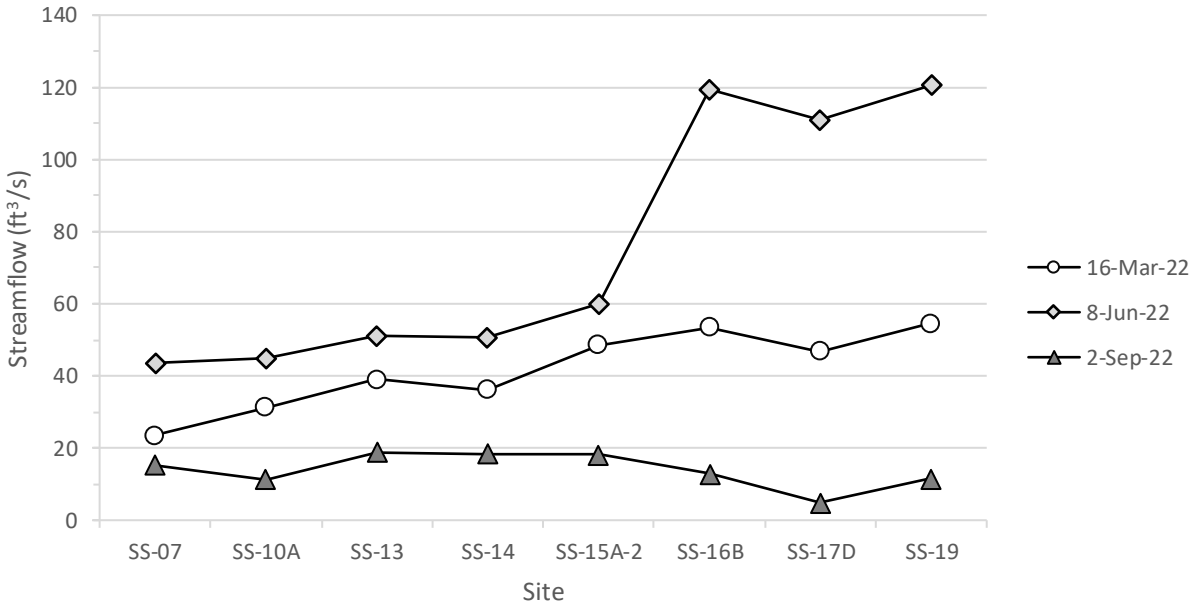


Figure 1-5. Longitudinal streamflows at Streamside Tailings Operable Unit sample sites during each 2022 monitoring period.[11] December data are missing due to ice.

[11] All streamflow measurements from Sites SS-07 and SS-17D are data from U.S. Geological Survey, which may be provisional [USGS, 2023].

1.4.2 Field Parameters

Dissolved oxygen concentrations in the SSTOU in 2022 were above (i.e., in compliance with) the applicable standards (i.e., 1-day minimum = 3 milligrams per liter [mg/L]) [DEQ and EPA, 1995; DEQ, 2019a] at all sites during all monitoring periods (Table 1-8). The minimum dissolved oxygen concentration measured in 2022 was 8.3 mg/L (Table 1-8; Figure 1-6).

Surface water pH was within the range designated for beneficial uses of I-class streams (7.5-9.5) at all sites during all monitoring periods of 2022 (Table 1-8; Figure 1-7).

Conductivity ranged from 549-1,482 µS/cm in the SSTOU in 2022 (Table 1-8). Seasonal mean conductivity was high and ranged from 619-1,176 µS/cm (Table 1-8). Conductivity was relatively consistent among sites in 2022 (Figure 1-8). Conductivity has increased markedly since 2019 in the SSTOU (Figure 1-9).

Water temperature varied seasonally with the coolest temperatures observed in March and December and the warmest temperatures observed in June and September (Table 1-8). Temperature ranged from 0.0-20.2 ºC (Table 1-8). During all sample periods, temperature tended to decline with distance downstream from the Butte Wastewater Treatment Plant discharge at Site SS-07 (Figure 1-10).

Turbidity was low (less than 20 Nephelometric Turbidity Units [NTU]) throughout the SSTOU in 2022 (Table 1-8; Figure 1-11). Mean turbidity was lowest in September and highest in March (Table 1-8).

Table 1-8. Summary statistics for field parameter measurements from the Streamside Tailings Operable Unit during each sampling event in 2022.

Parameter	Unit	Sample Date	Minimum	Maximum	Mean
Dissolved Oxygen	mg/L	16-Mar-22	8.9	12.8	11.5
		8-Jun-22	10.2	11.3	10.8
		22-Sep-22	8.3	15.6	11.9
		8-Dec-22	10.4	13.2	12.1
pH	standard units	16-Mar-22	7.3	7.8	7.6
		8-Jun-22	7.7	8.3	8.1
		22-Sep-22	8.0	9.4	8.7
		8-Dec-22	7.4	8.1	7.8
Conductivity	µS/cm	16-Mar-22	1,013	1,482	1,176
		8-Jun-22	694	1,403	1,123
		22-Sep-22	549	682	619
		8-Dec-22	881	1,060	956
Temperature	C	16-Mar-22	1.7	8.1	3.9
		8-Jun-22	8.4	12.7	10.5
		22-Sep-22	13.2	20.2	17.3
		8-Dec-22	0.0	5.3	1.5
Turbidity	NTU	16-Mar-22	2.3	15.2	9.5
		8-Jun-22	3.7	7.8	5.5
		22-Sep-22	0.8	3.1	1.7
		8-Dec-22	1.2	14.4	4.0

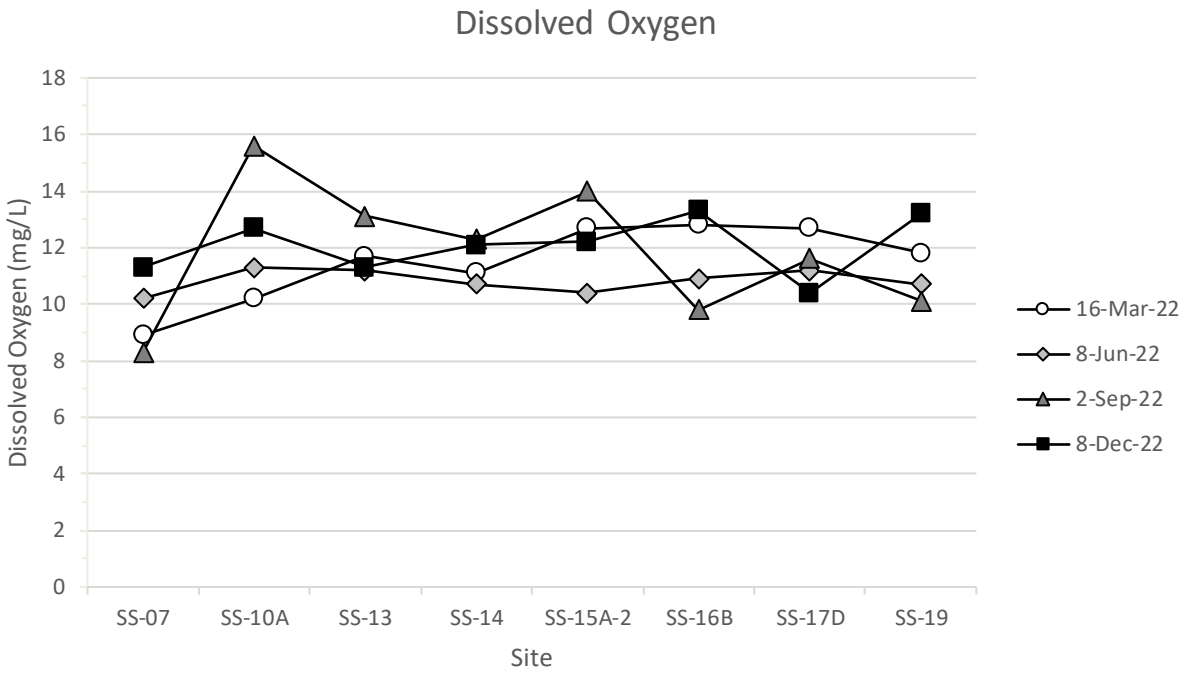


Figure 1-6. Dissolved oxygen concentrations at Streamside Tailings Operable Unit sample sites, 2022.

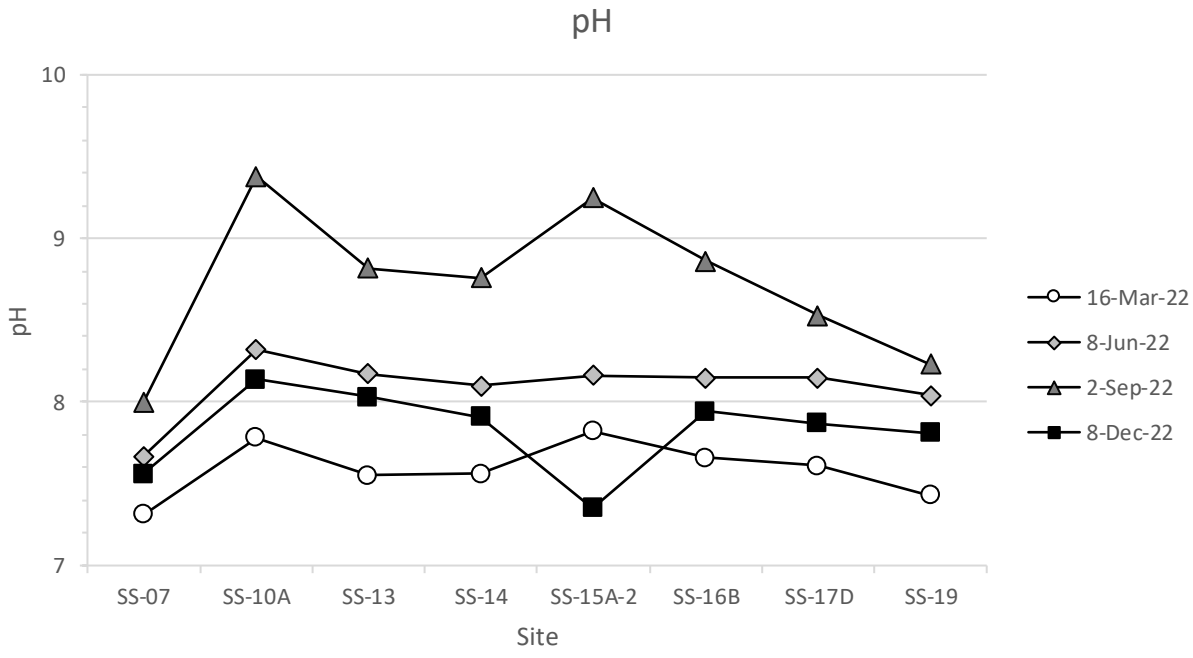


Figure 1-7. Surface water pH at Streamside Tailings Operable Unit sample sites, 2022.

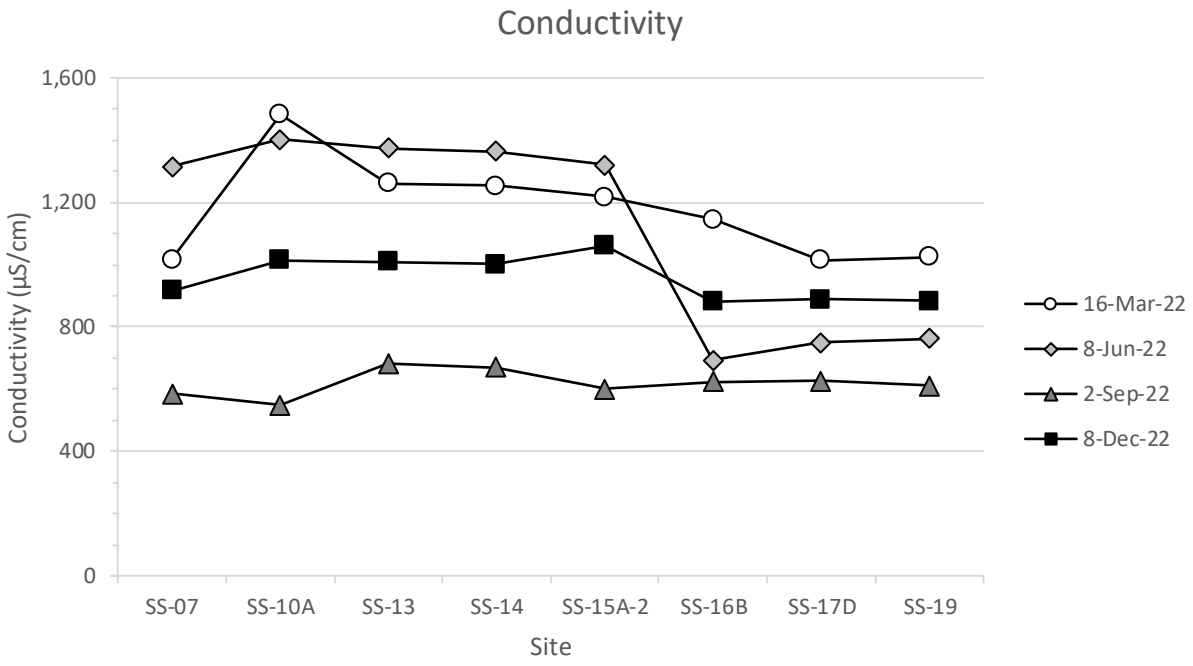


Figure 1-8. Conductivity at surface water sample sites in the Streamside Tailings Operable Unit, 2022.

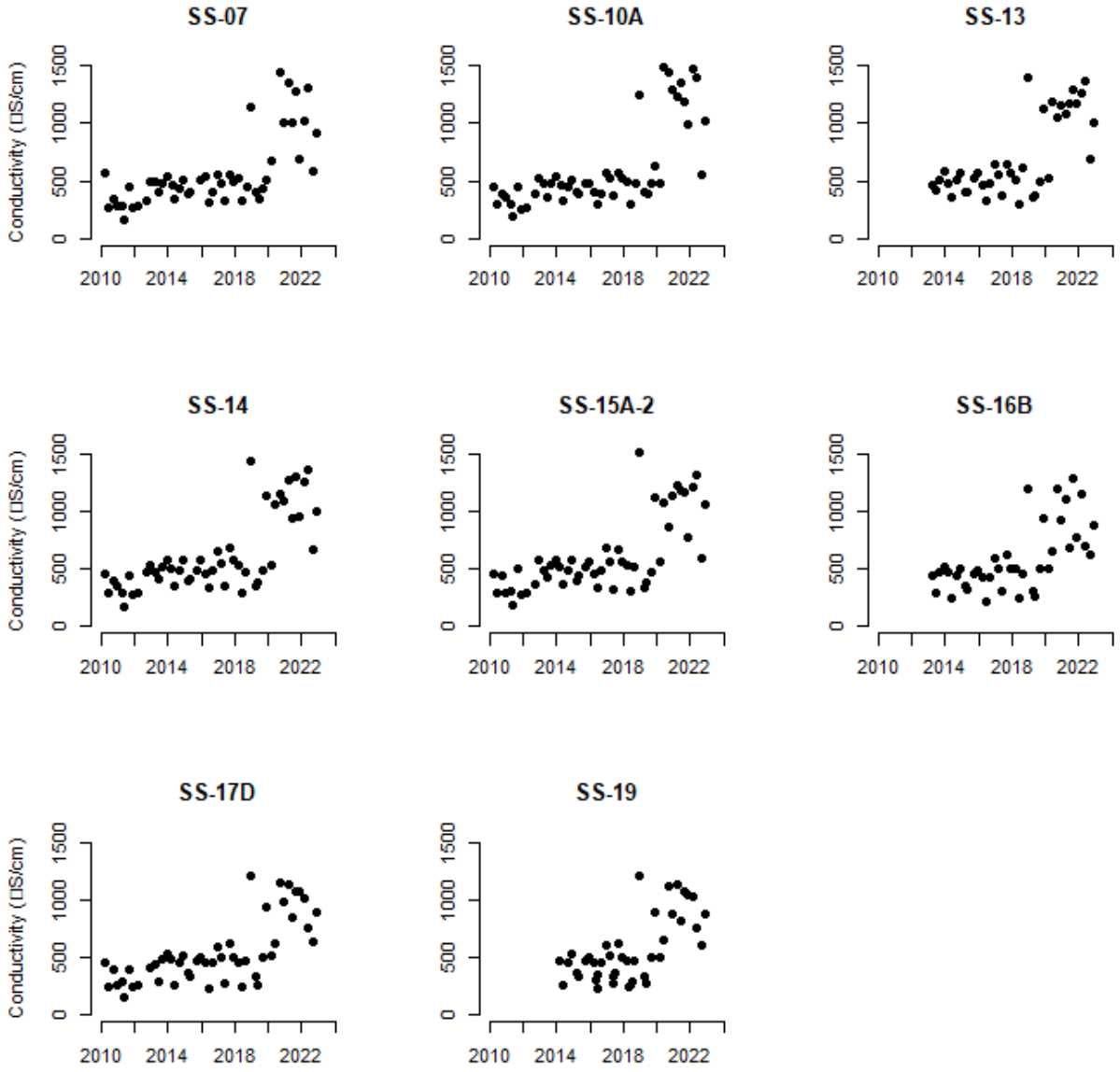


Figure 1-9. Conductivity at surface water sample sites in the Streamside Tailings Operable Unit, 2010-2022.[12]

[12] The scatterplot for Site SS-15A-2 includes data from Site SS-15A from 2010-2017. Site SS-15A was discontinued and replaced by Site SS-15A-2 relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

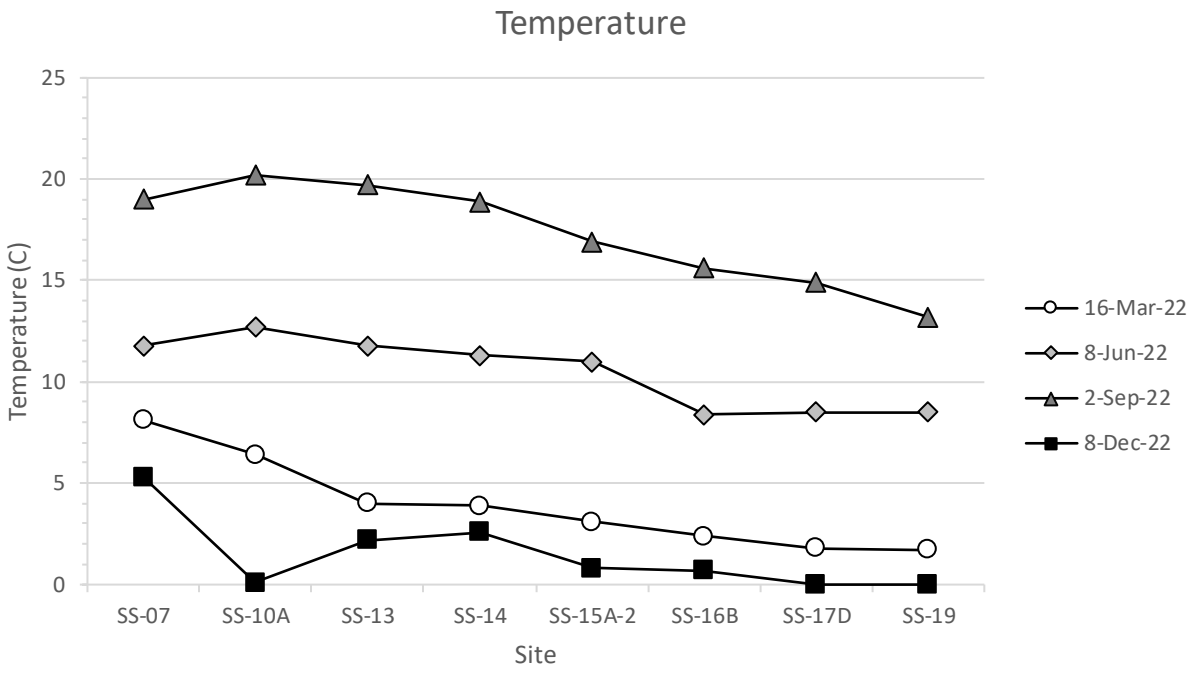


Figure 1-10. Water temperature at Streamside Tailings Operable Unit sample sites, 2022.

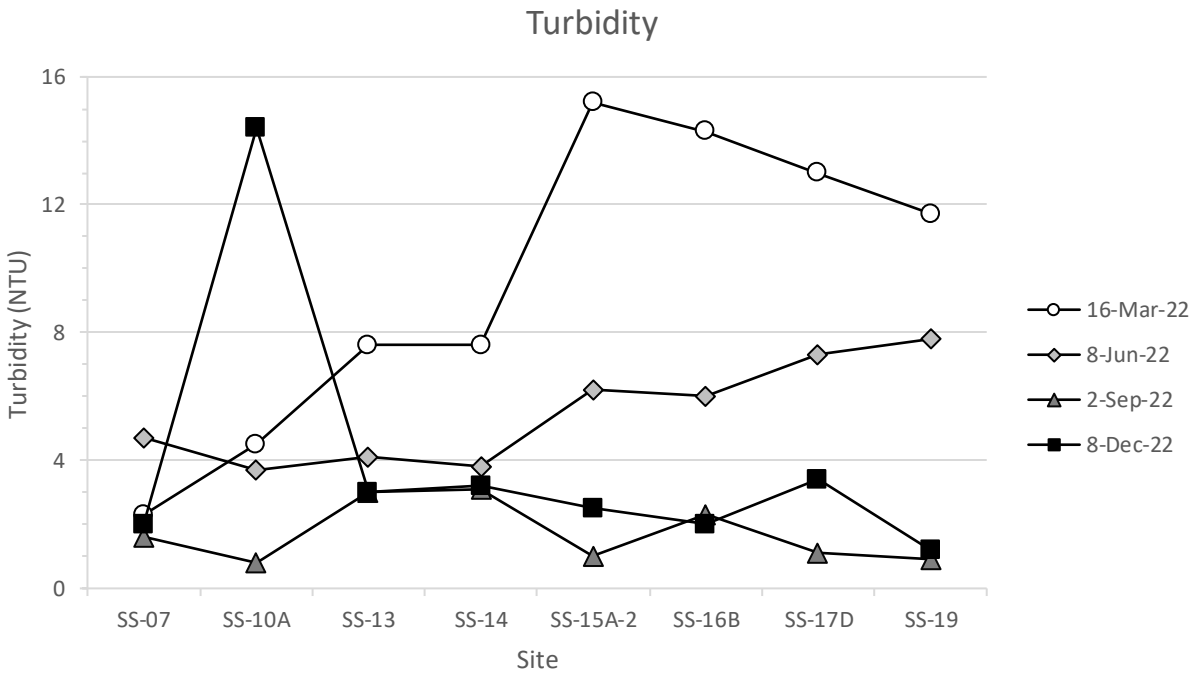


Figure 1-11. Turbidity at Streamside Tailings Operable Unit sample sites, 2022.

1.4.3 Total Suspended Sediment

Seasonal and spatial patterns for total suspended sediment concentrations were generally similar to turbidity patterns (Figure 1-11; Figure 1-12). As with turbidity, Q1 total suspended sediment concentrations were elevated compared to other seasons (Figure 1-12). Two site samples had abnormally high concentrations compared to other samples during that sample period: Site SS-10A in Q4 and Site SS-15A-2 in Q3 (Figure 1-12).

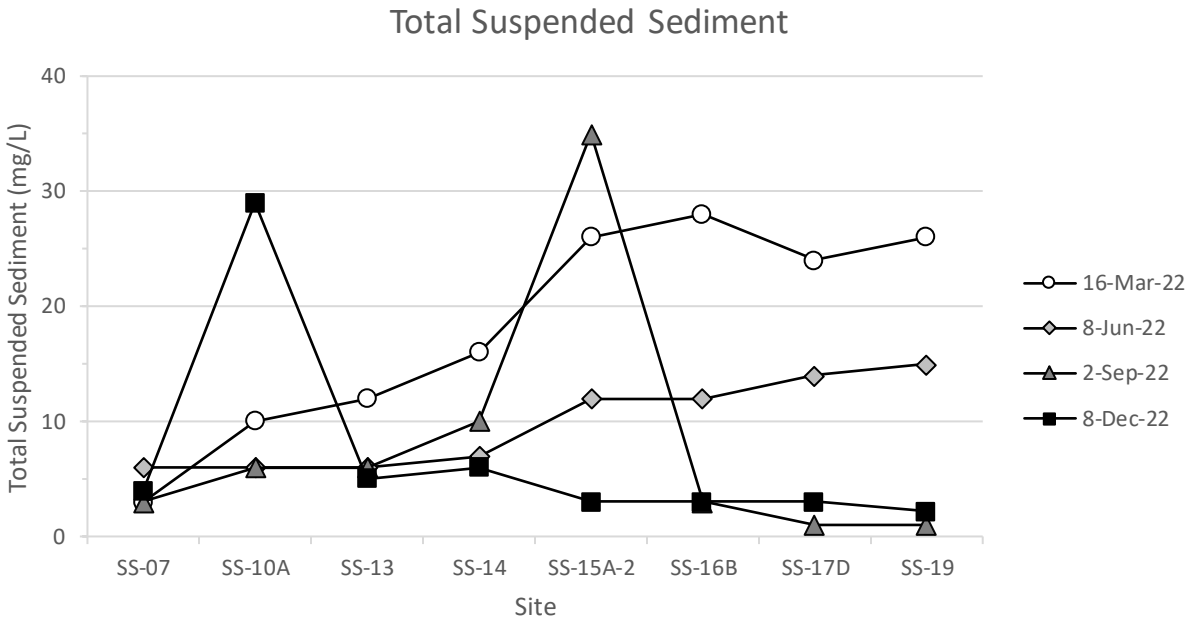


Figure 1-12. Total suspended sediment concentrations at Streamside Tailings Operable Unit sample sites, 2022.

1.4.4 Common Ions

Several common ions (calcium, sodium, sulfate, and potassium) had concentrations in 2022 which were considerably higher than in sample periods prior to Q2 2020. These increased concentrations are due to the ongoing input of treated water from the Butte Mine Flooding Operable Unit (including the Berkely Pit) [Hilmo, 2020]. Water from the operable unit is treated in the Horseshoe Bend Water Treatment facility and began discharging to Silver Bow Creek upstream from the SSTOU between Q1 and Q2 2020.

1.4.5 Hardness

Water hardness was elevated at all sites during all sample periods of 2022 and ranged from 178-685 mg/L (Figure 1-13). Hardness varied substantially (by up to 305 mg/L) among sites during sample periods (Figure 1-13). Since Q1 2020, hardness has increased substantially at all sites although hardness levels were relatively low in September 2022 (Figure 1-14).

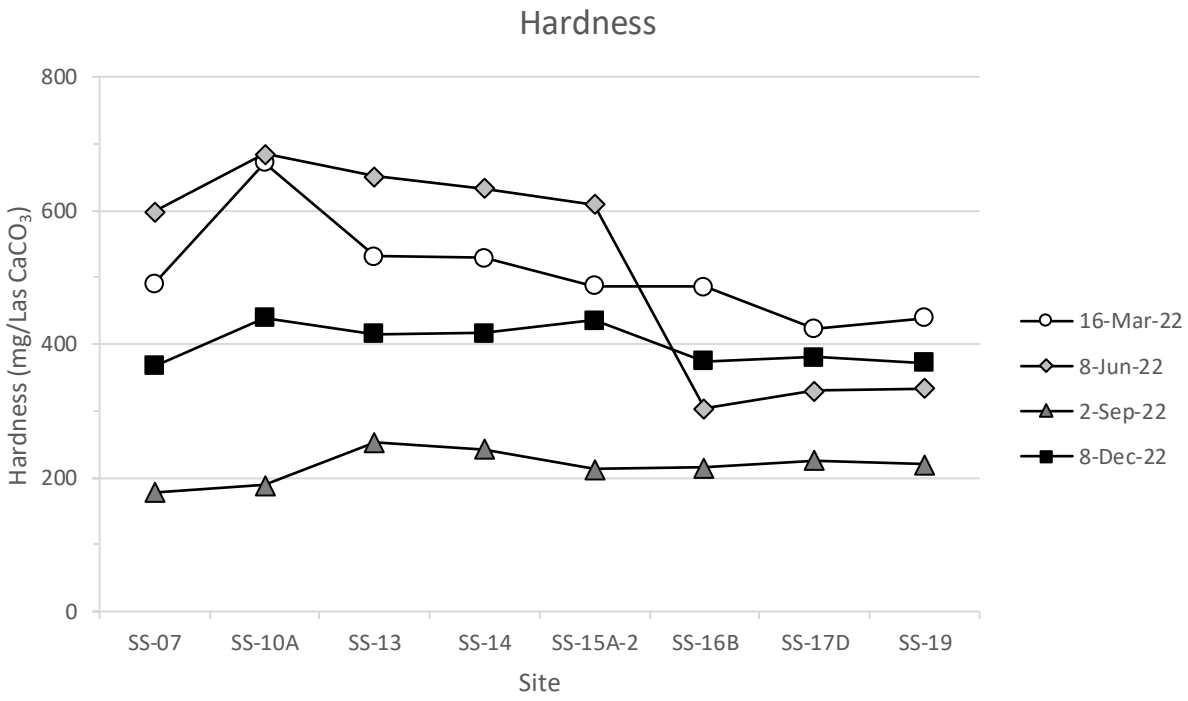


Figure 1-13. Water hardness at Streamside Tailings Operable Unit sample sites, 2022.

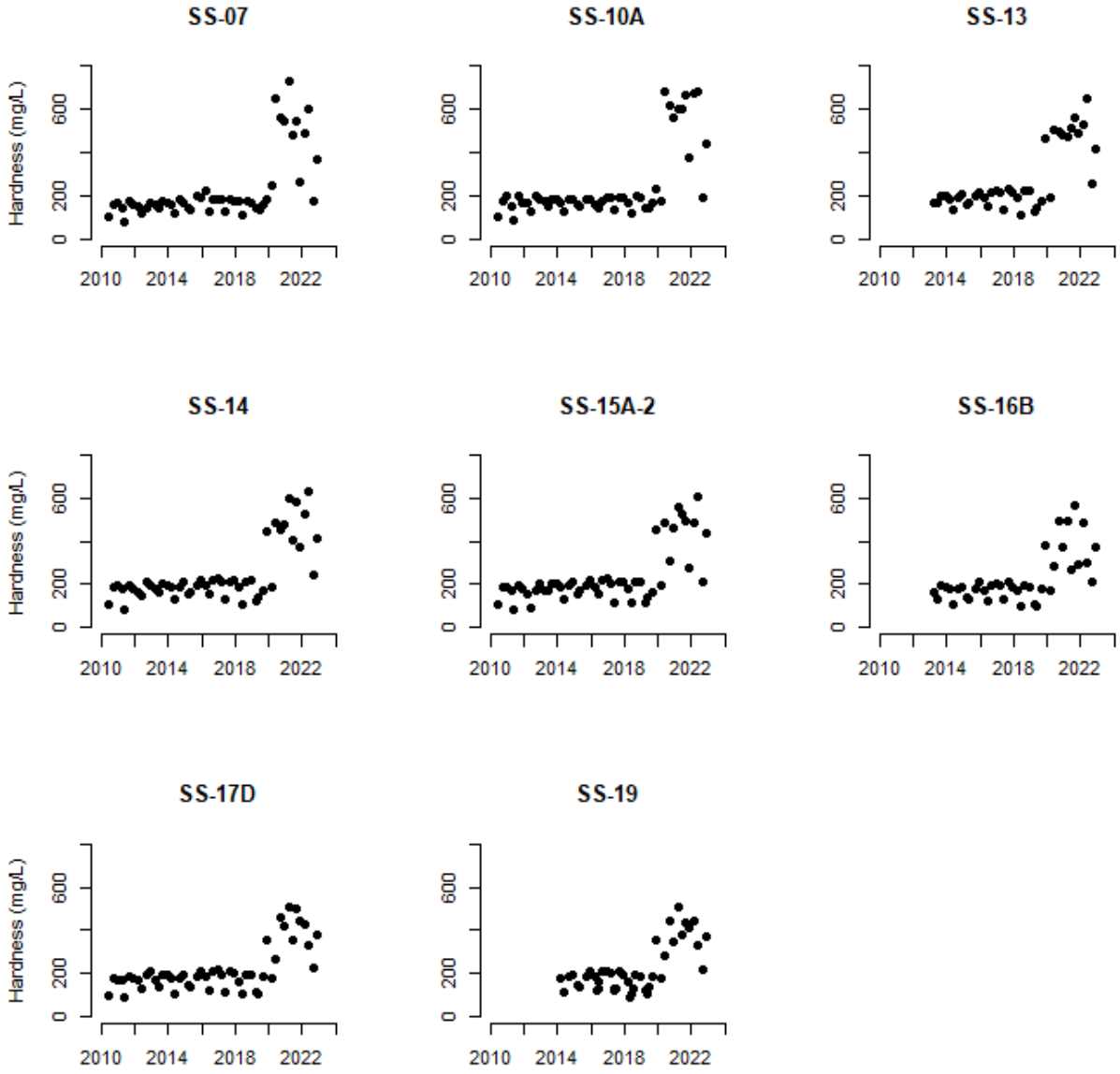


Figure 1-14. Water hardness at Streamside Tailings Operable Unit sample sites, 2010-2022.[13]

[13] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.5.1 Alkalinity

Alkalinity was similar among sample periods in 2022 and ranged from 71-140 mg/L (Figure 1-15).

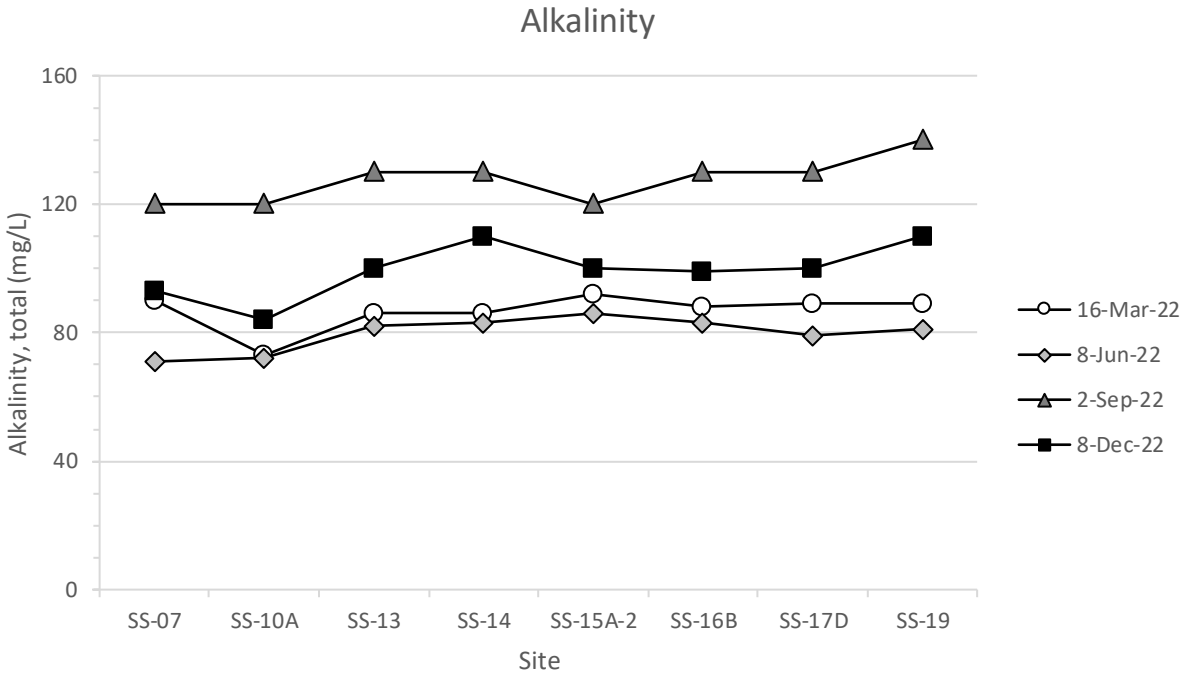


Figure 1-15. Total alkalinity at Streamside Tailings Operable Unit sample sites, 2022.

1.4.5.2 Bicarbonate

Bicarbonate concentration was similar among sample periods in 2022 and ranged from 86-170 mg/L (Figure 1-16).

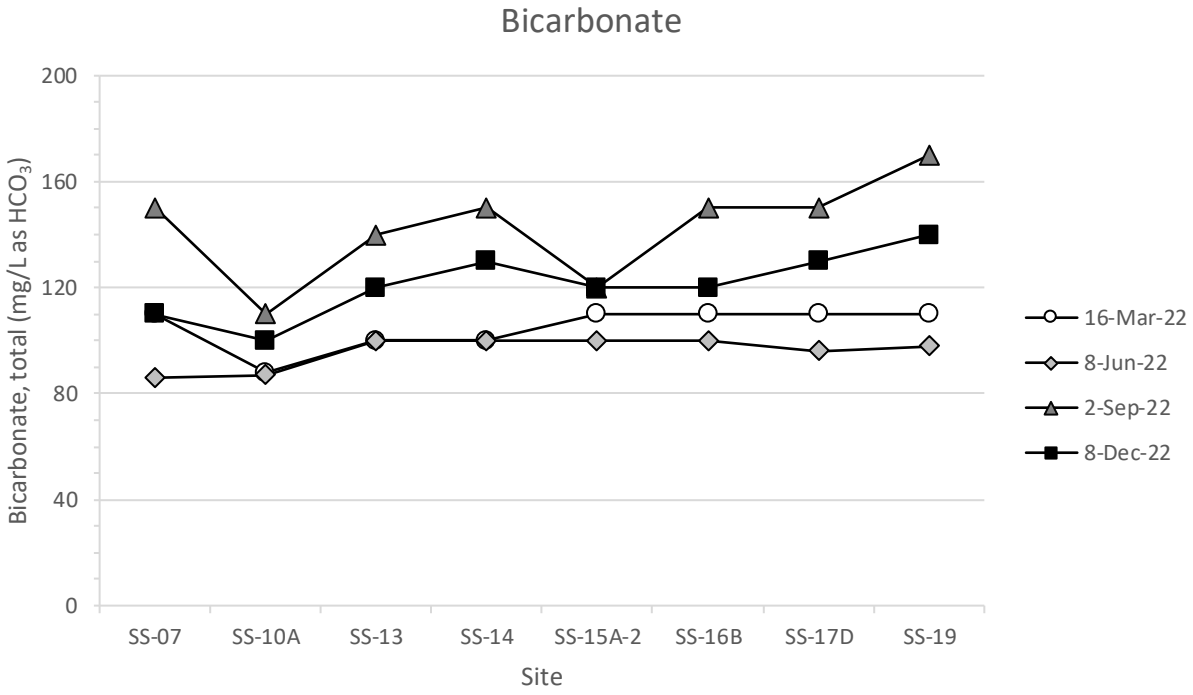


Figure 1-16. Bicarbonate concentration at Streamside Tailings Operable Unit sample sites, 2022.

1.4.5.3 Calcium

Calcium, a primary constituent of water hardness, concentrations ranged from 48-253 mg/L in 2022 (Figure 1-17). Since Q1 2020, concentrations have increased substantially at all sites, with the exception of the September 2022 sample period (Figure 1-18).

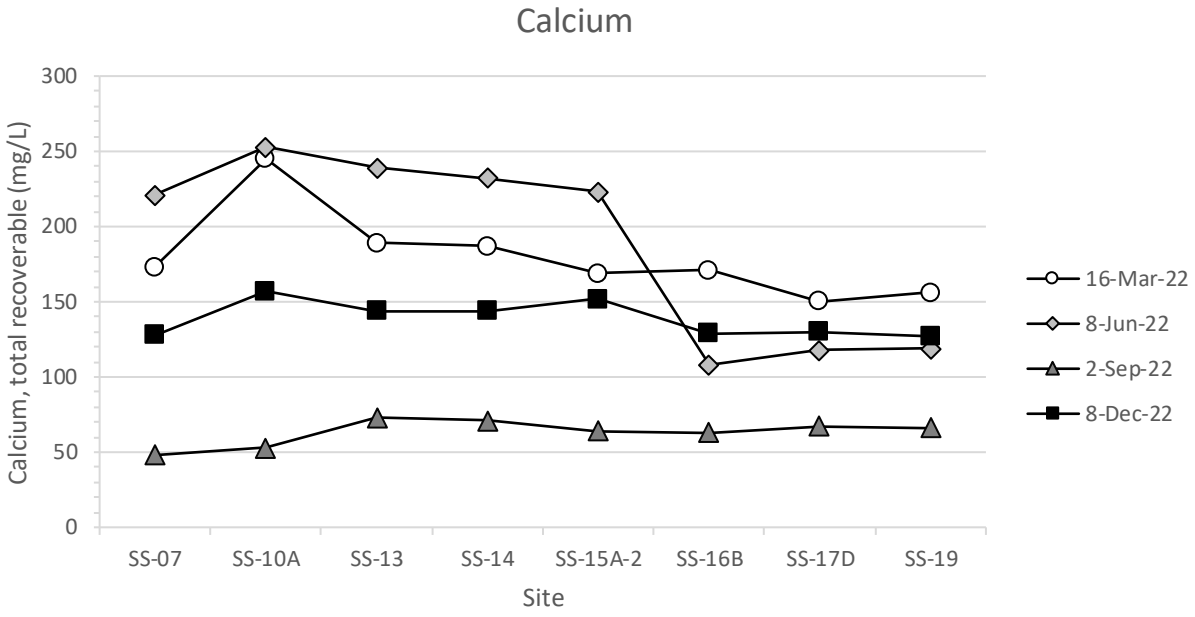


Figure 1-17. Calcium concentrations at Streamside Tailings Operable Unit sample sites, 2022.

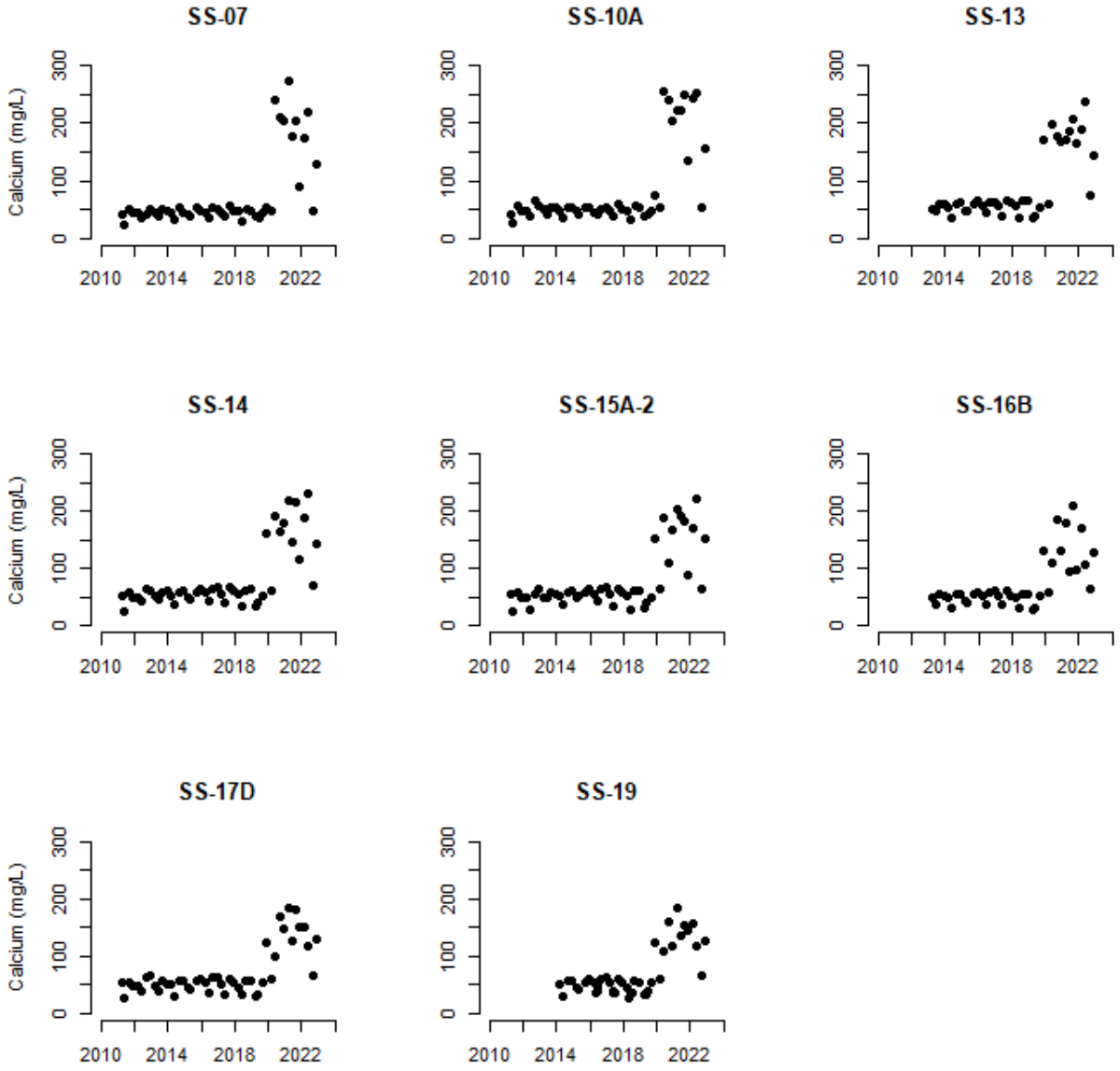


Figure 1-18. Calcium (total recoverable) concentrations at Streamside Tailings Operable Unit sample sites, 2010-2022.[14]

[14] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.5.4 Magnesium

Magnesium, a primary constituent of water hardness, concentrations were relatively steady in 2022 and ranged from 8-17 mg/L (Figure 1-19). Concentrations in 2022 were generally at the upper end of the range of variation from prior years at most sites (Figure 1-20).

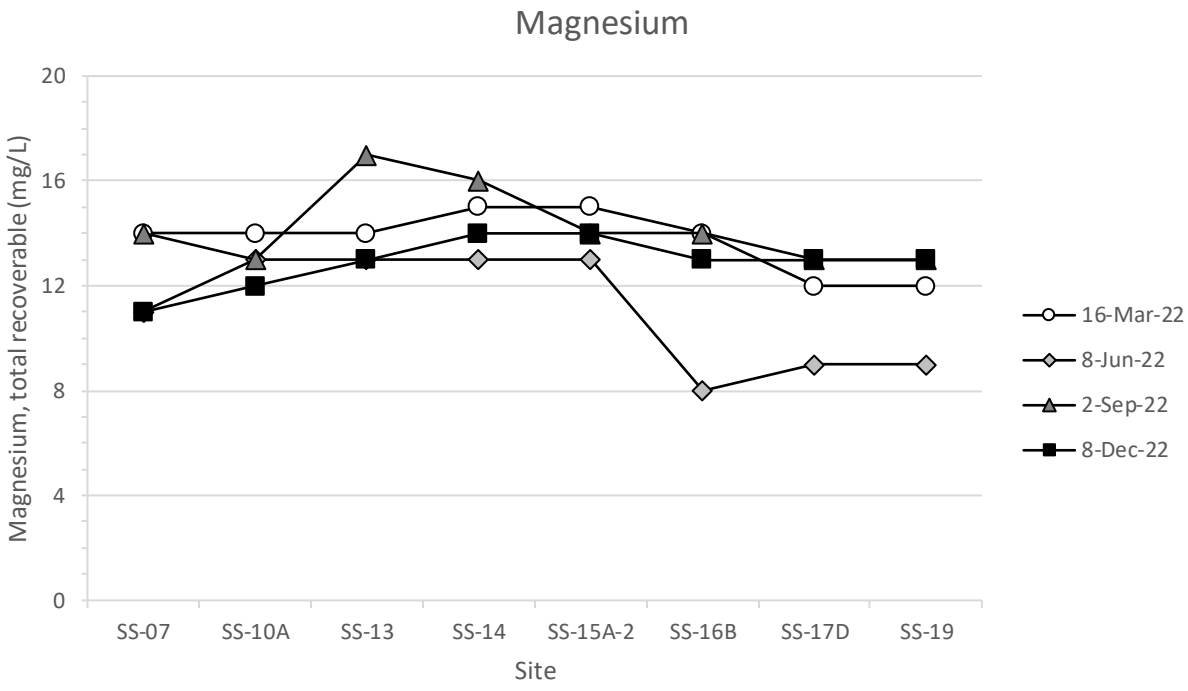


Figure 1-19. Magnesium concentrations at Streamside Tailings Operable Unit sample sites, 2022.

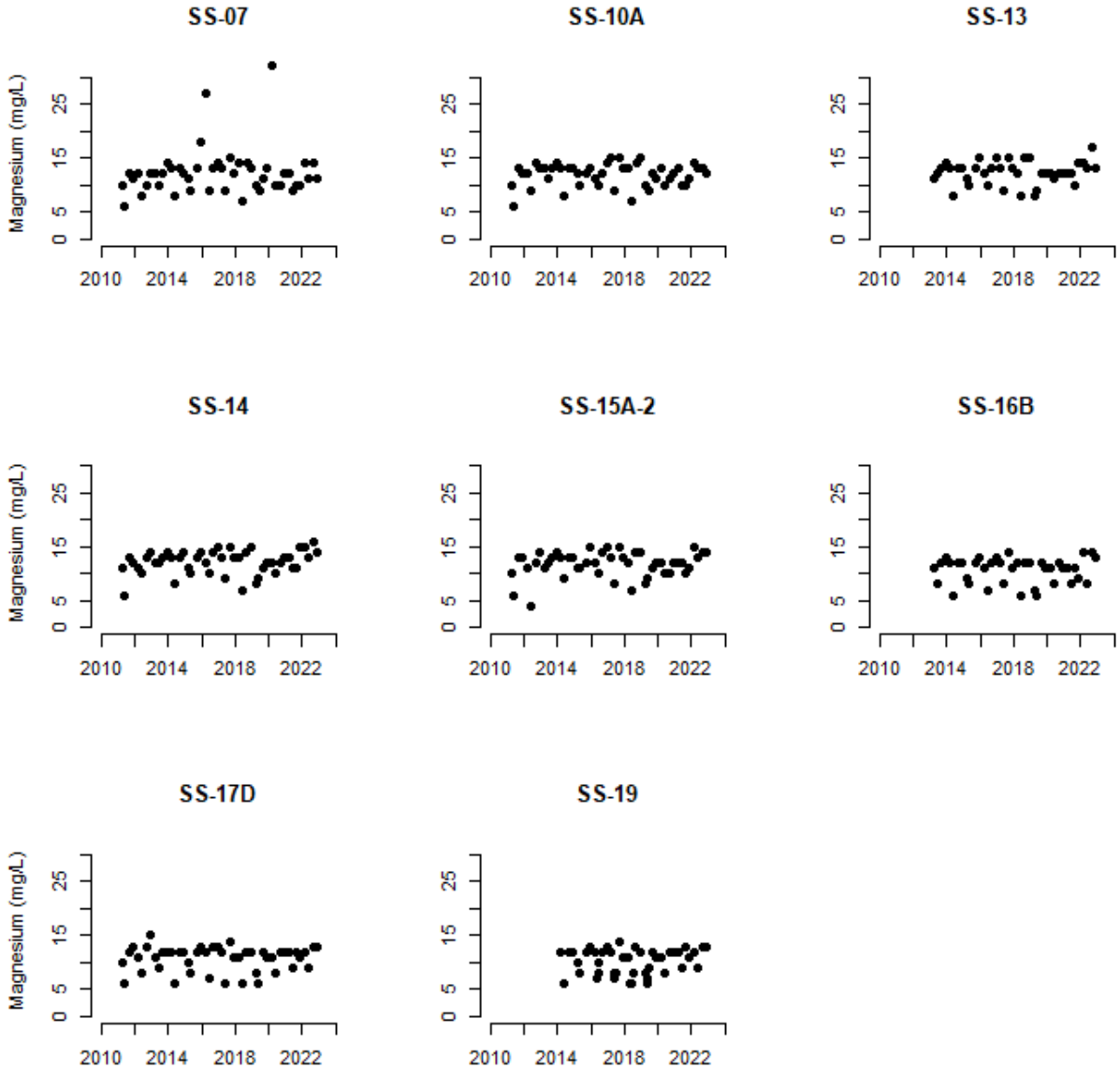


Figure 1-20. Magnesium (total recoverable) concentrations at Streamside Tailings Operable Unit sample sites, 2010-2022.[15]

[15] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.5.5 Sodium

Sodium concentrations ranged from 25-55 mg/L (Figure 1-21). Concentrations dipped substantially at the German Gulch confluence (between Sites SS-15A-2 and SS-16B) during the runoff period in June (Figure 1-21). Since Q1 2020, concentrations have been relatively high compared to prior results at all sites (Figure 1-22).

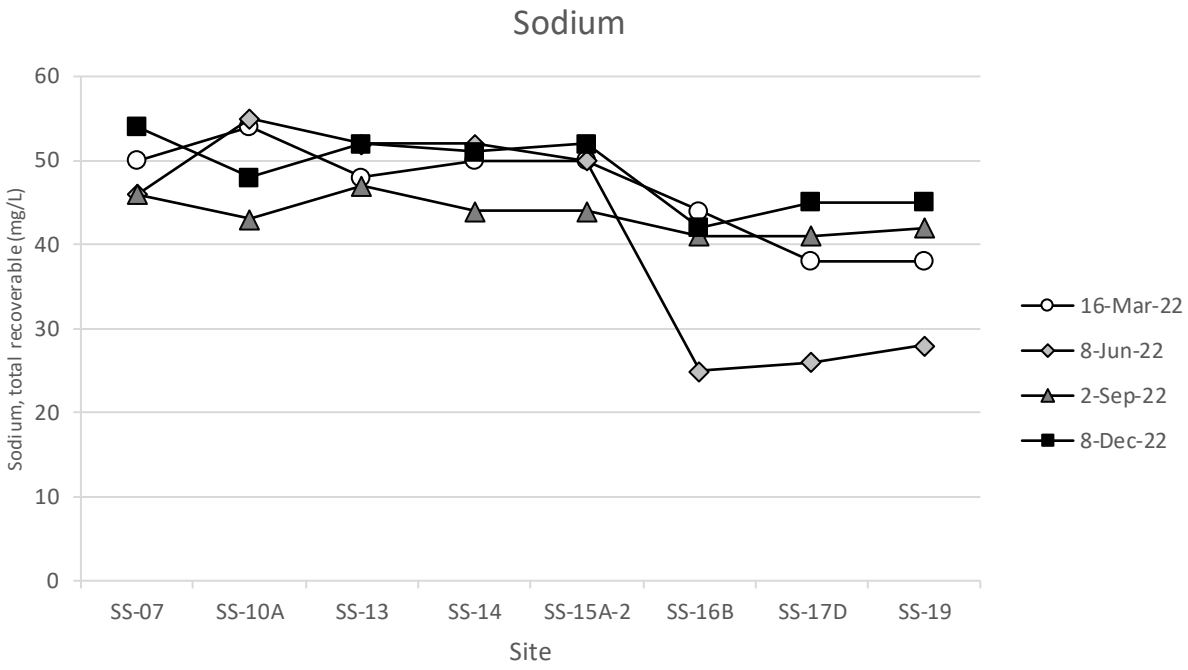


Figure 1-21. Sodium concentrations at Streamside Tailings Operable Unit sample sites, 2022.

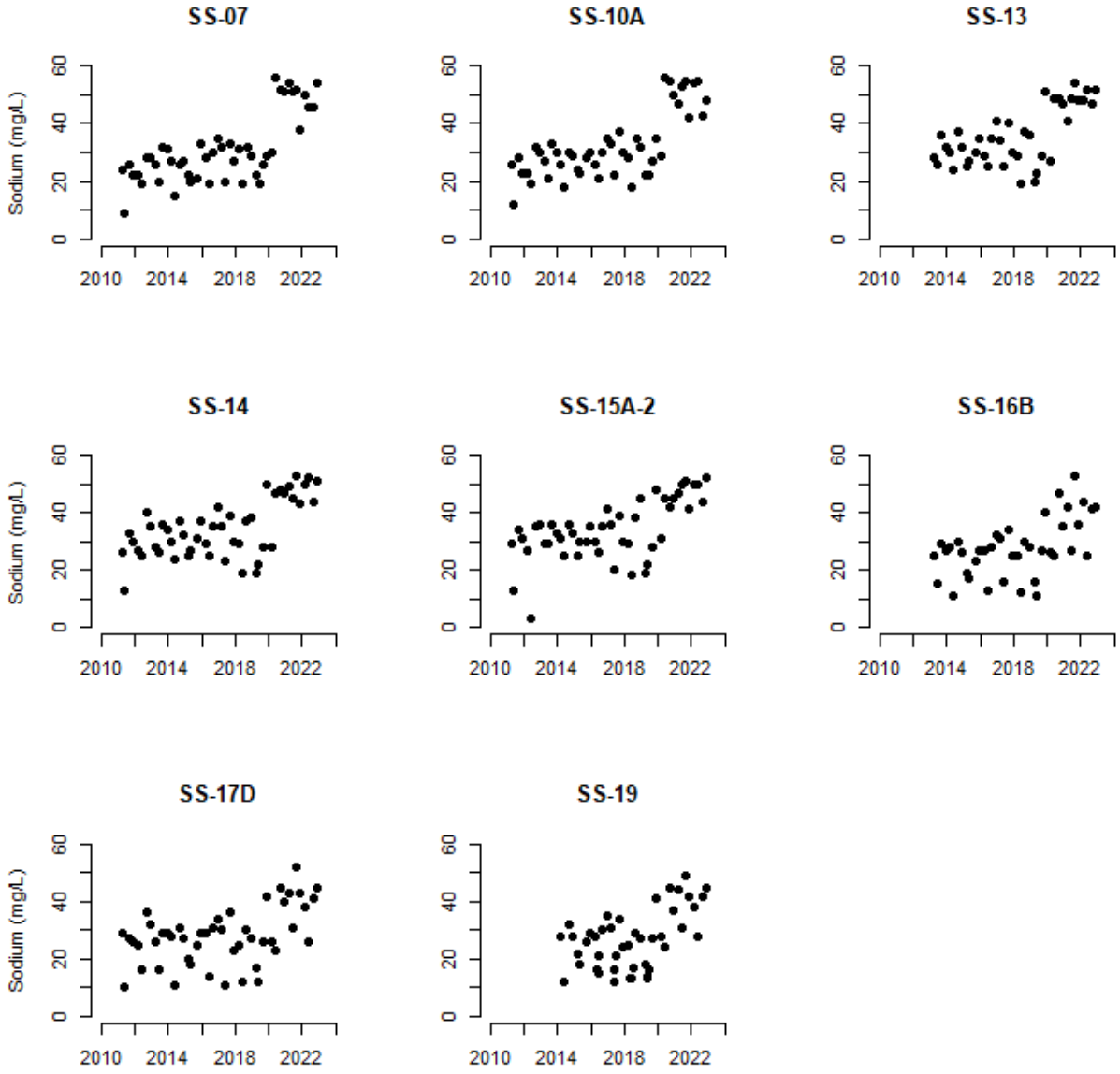


Figure 1-22. Sodium concentrations at Streamside Tailings Operable Unit sample sites, 2010-2022.[16]

[16] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.5.6 Chloride

Chloride concentrations had similar spatial patterns among 2022 sample periods but demonstrated seasonal variation (Figure 1-23). Chloride concentration range was from 15-71 mg/L (Figure 1-23). Concentrations observed in 2022 were generally high in 2022 compared to the prior range of variation previously observed at each site (Figure 1-24).

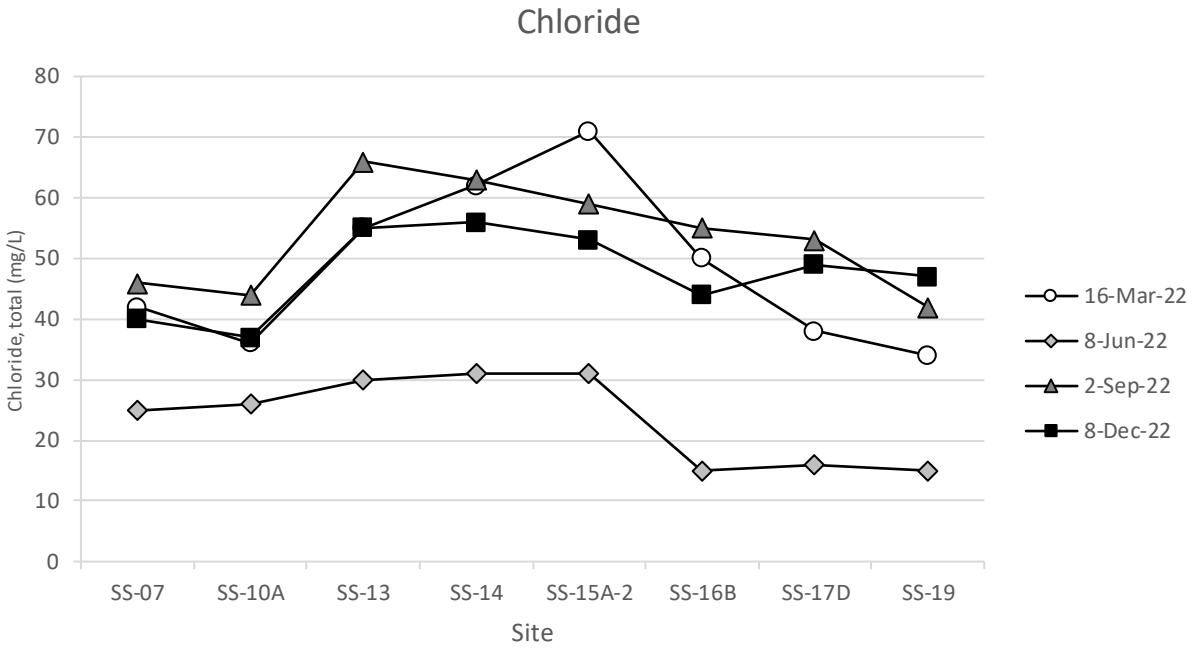


Figure 1-23. Chloride concentrations at Streamside Tailings Operable Unit sample sites, 2022.

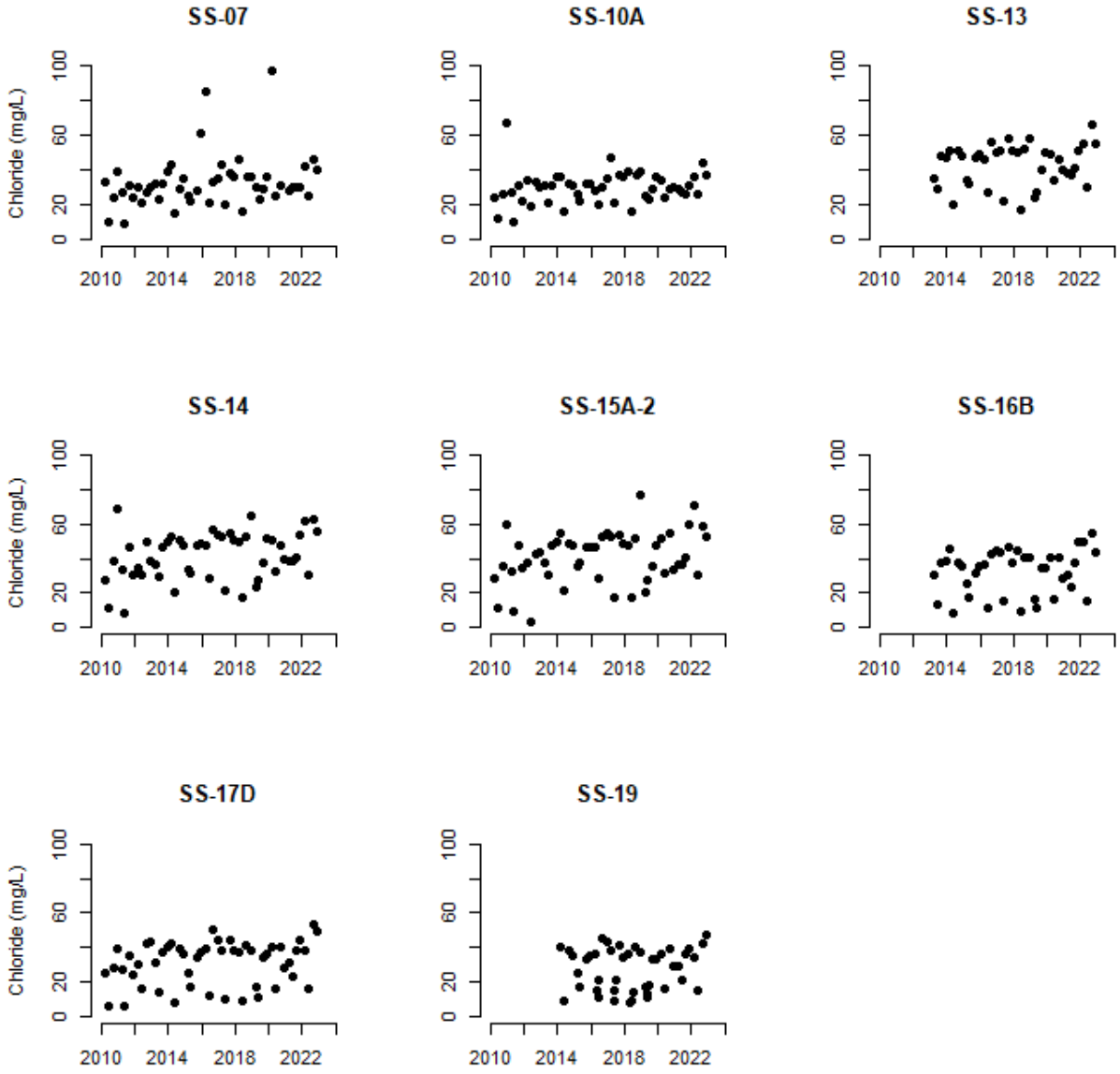


Figure 1-24. Chloride concentrations at Streamside Tailings Operable Unit sample sites, 2010-2022.[17]

[17] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.5.7 Sulfate

Sulfate ranged from 95-675 mg/L in 2022 (Figure 1-25). Since Q1 2020, concentrations have been substantially higher than prior results at each site (Figure 1-26).

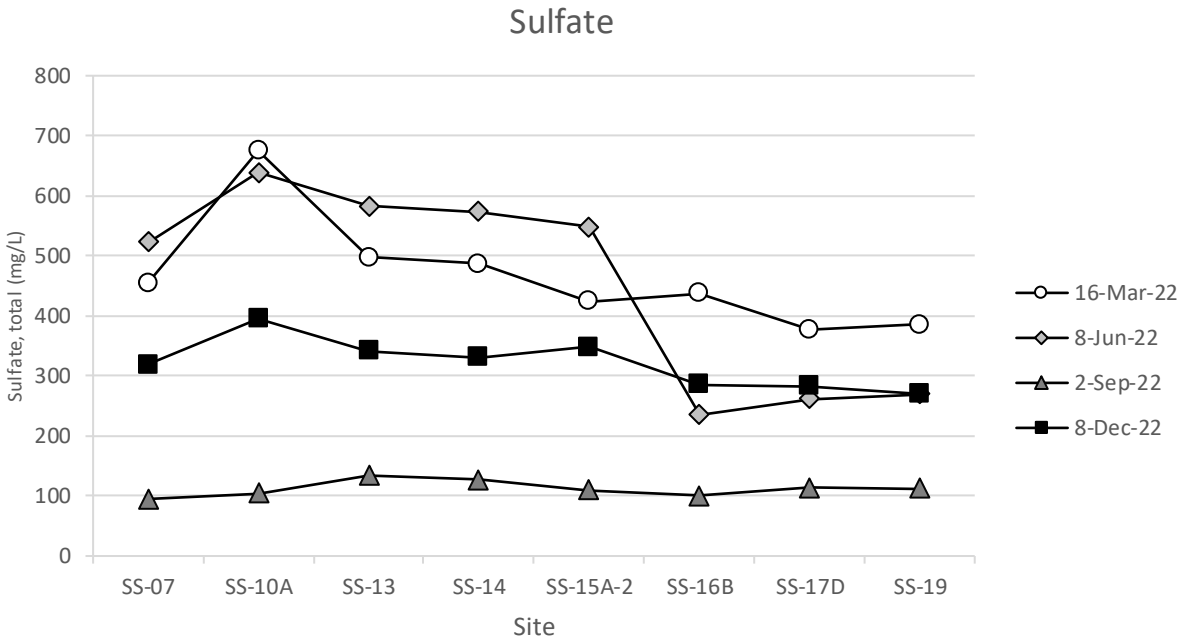


Figure 1-25. Sulfate concentrations at Streamside Tailings Operable Unit sample sites, 2022.

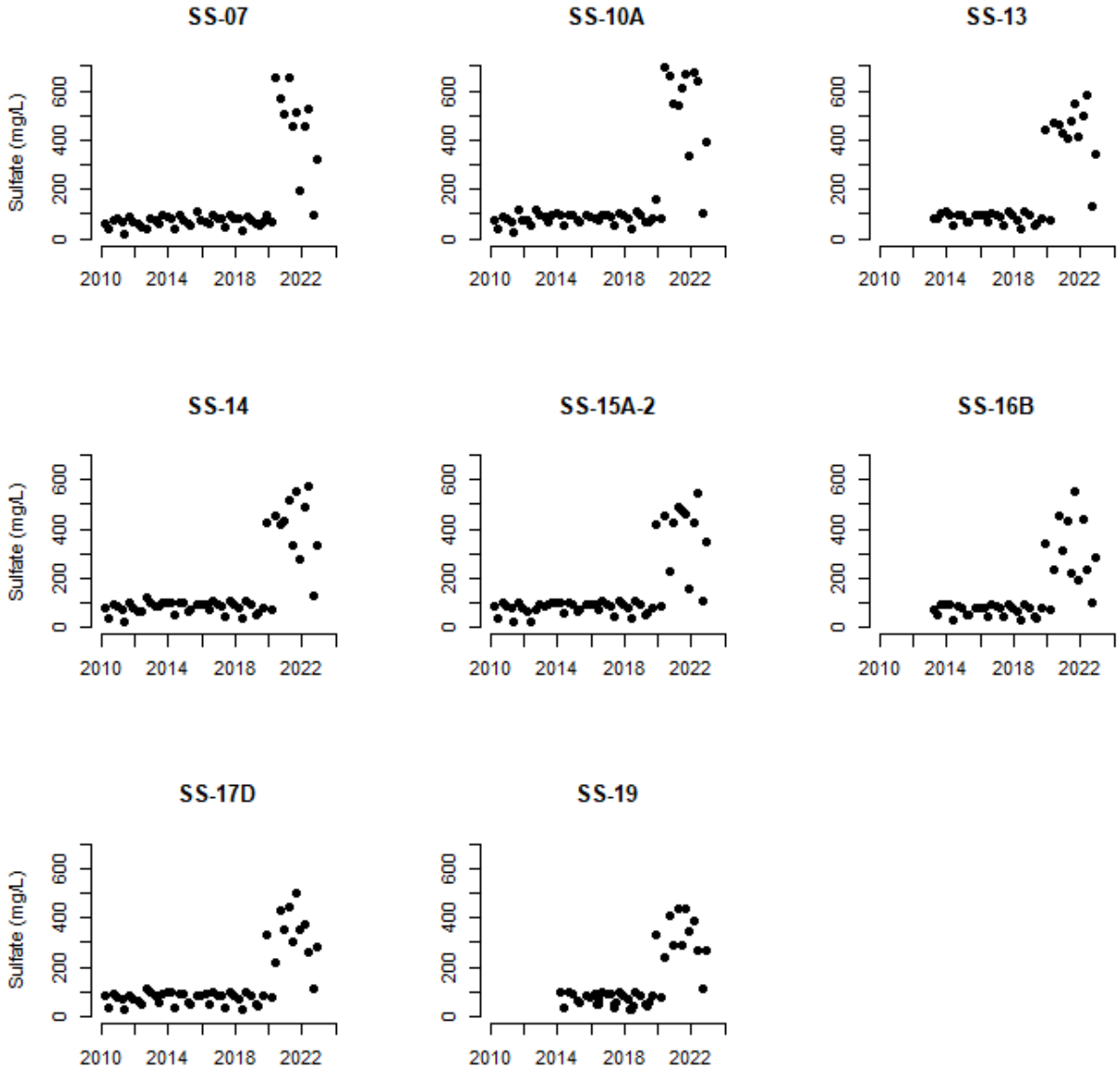


Figure 1-26. Sulfate concentrations at Streamside Tailings Operable Unit sample sites, 2010-2022.[18]

[18] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.5.8 Potassium

Potassium concentrations ranged from 7-17 mg/L in 2022 (Figure 1-27). Since 2020, concentrations have been high compared to prior results at all sites (Figure 1-28).

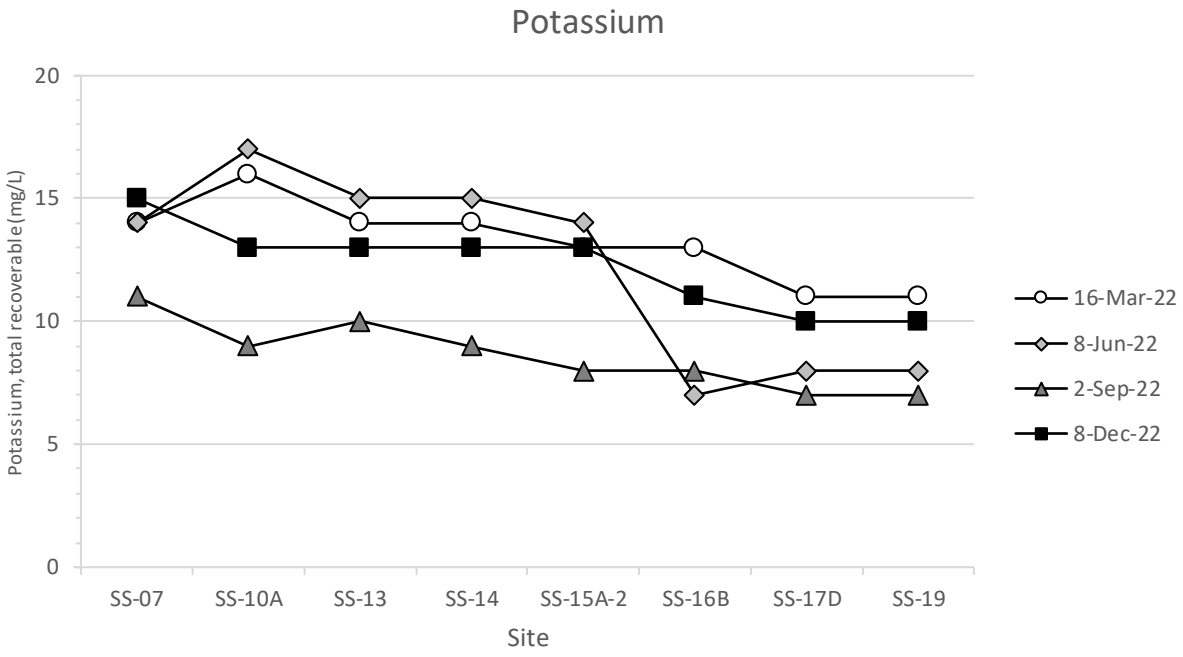


Figure 1-27. Potassium concentrations at Streamside Tailings Operable Unit sample sites, 2022.

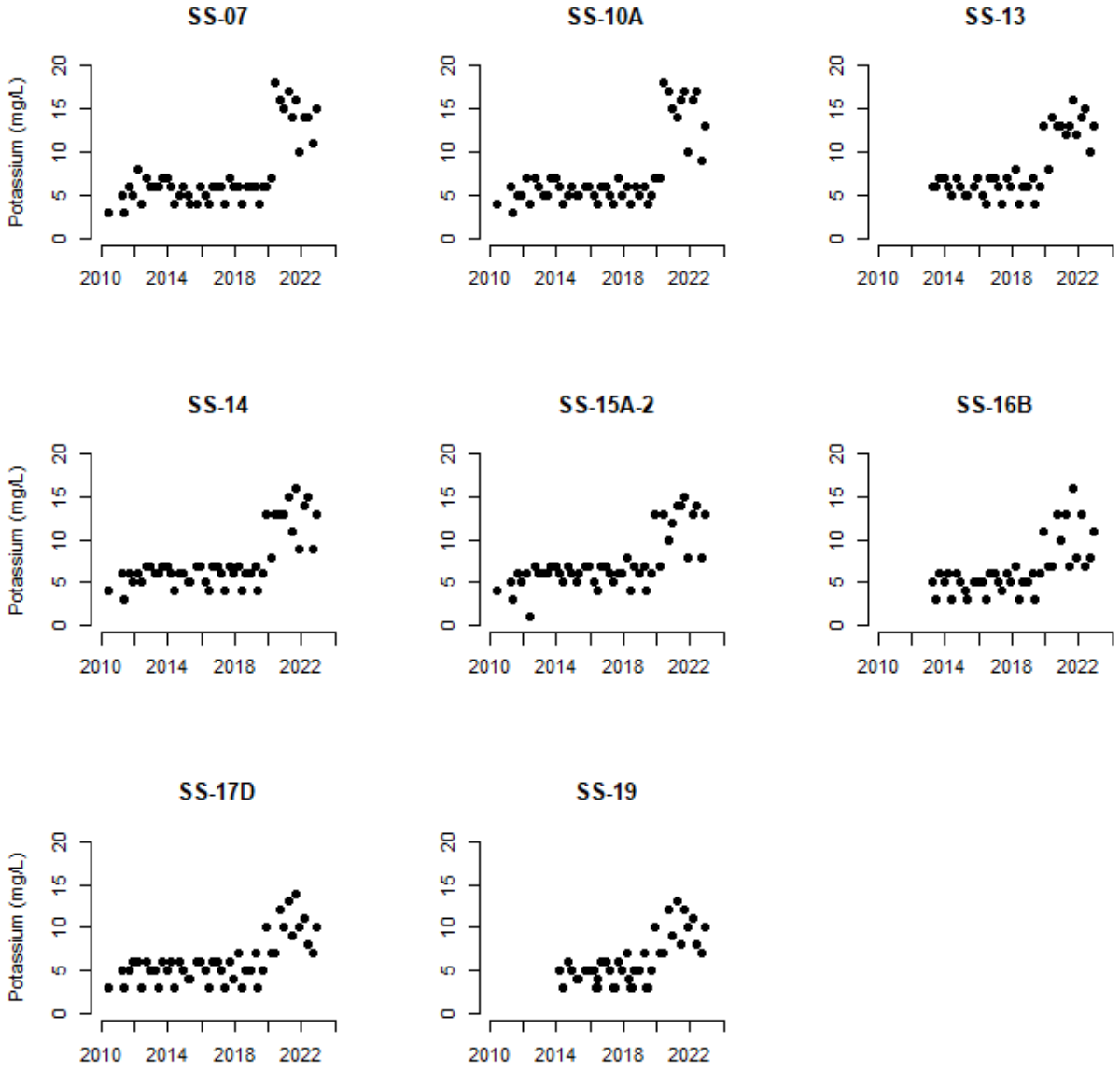


Figure 1-28. Potassium concentrations at Streamside Tailings Operable Unit sample sites, 2010-2022. [19]

[19] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.6 Nutrients

1.4.6.1 Total Nitrogen

Total nitrogen concentrations in 2022 were high (0.29-1.64 mg/L) in the SSTOU (Table 1-9). During each quarter, the highest concentrations occurred at Site SS-07 (Figure 1-29). Downstream from Site SS-07, concentrations tended to decline gradually at each downstream site (Figure 1-29). In Q3, when the total nitrogen standard is applicable, all sites exceeded the 0.3 mg/L total nitrogen standard (Figure 1-29). Site SS-07 exceeded the Q3 total nigrogen standard by more than 5.4 times (Figure 1-29). Seasonally, concentrations were highest during the late winter (Q1) or late fall (Q4) at all sites (Figure 1-29).

Although elevated relative to the standard, total nitrogen concentrations have decreased at all sites over the last decade, particularly since the peak at most sites during the relatively low streamflow period from 2013-2015 (Figure 1-30).

Table 1-9. Total nitrogen concentrations (mg/L) at Streamside Tailings Operable Unit monitoring stations, 2022.

Site ID	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	1.70	0.85	1.64	1.36
SS-10A	Silver Bow Creek above Sand Creek	1.05	0.71	0.80	1.16
SS-13	Silver Bow Creek in Reach L	1.15	0.68	0.93	1.06
SS-14	Silver Bow Creek at Miles Crossing	1.21	0.68	0.85	1.09
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	1.36	0.63	0.34	1.02
SS-16B	Silver Bow Creek in Reach P near Fairmont	1.23	0.37	0.32	0.91
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	1.06	0.29	0.33	0.87
SS-19	Silver Bow Creek at Frontage Road	1.06	0.45	0.34	0.92

Exceeds upper Clark Fork River summertime (June 21-September 21) total nitrogen standard (0.3 mg/L; ARM 17.30.631)

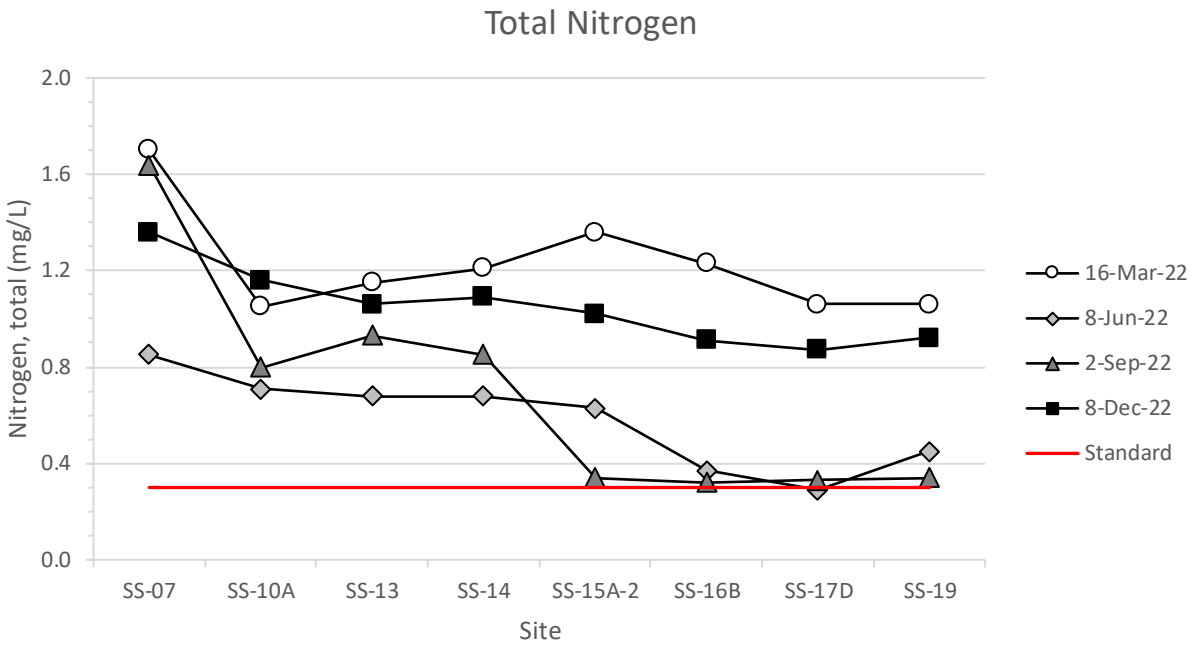


Figure 1-29. Total nitrogen concentrations at Streamside Tailings Operable Unit monitoring stations, 2022. Red line represents the total nitrogen standard for the upper Clark Fork River (ARM 17.30.631).

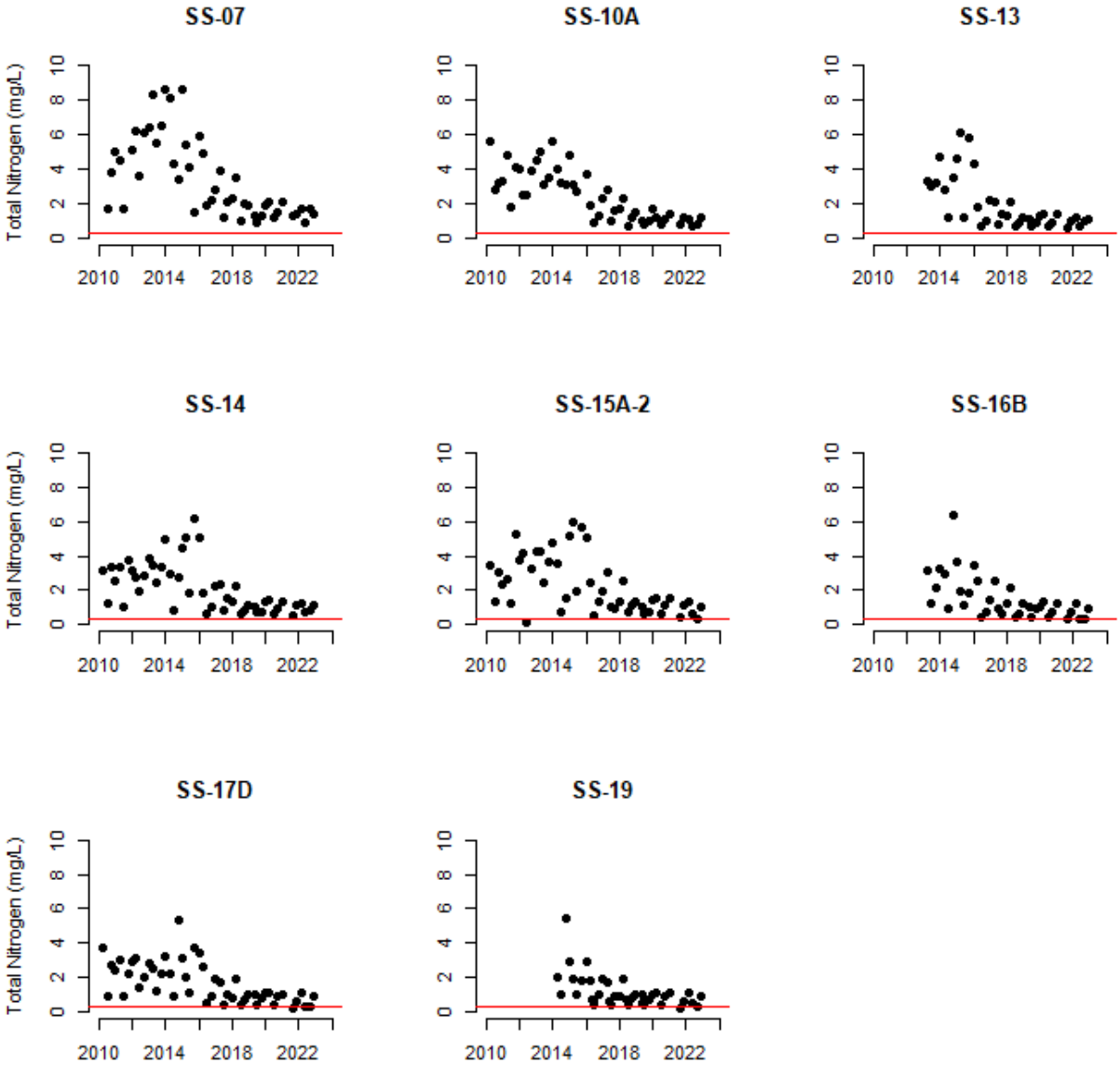


Figure 1-30. Total nitrogen concentrations at Streamside Tailings Operable Unit monitoring stations, 2010-2022. Red line represents the total nitrogen standard for the upper Clark Fork River (ARM 17.30.631).[20,21]

[20] Several samples with very high total nitrogen concentrations are not depicted: 16.5 mg/L at Site SS-07 on March 23, 2010; 11.0 mg/L at Site SS-07 on September 8, 2011; and 32.9 mg/L at Site SS-07 and 18.8 mg/L at Site SS-10A on September 9, 2015.

[21] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.6.2 Nitrate plus Nitrite Nitrogen

Nitrate plus nitrite concentrations in 2022 were high (<0.004-1.46 mg/L) (Table 1-10). During each quarter, the highest concentrations occurred at Site SS-07 (Figure 1-31). Downstream from Site SS-07, concentrations tended to decline at each downstream site with some minor deviations to this pattern (Figure 1-31). Seasonally, concentrations were highest during the late winter or fall and lowest during the spring and summer periods (Figure 1-31).

Nitrate plus nitrite concentrations have been relatively low since 2018 compared to prior monitoring years (Figure 1-32).

Table 1-10. Nitrate plus nitrite nitrogen concentrations (mg/L) at Streamside Tailings Operable Unit monitoring stations, 2022.

Site ID	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	1.16	0.55	1.22	1.46
SS-10A	Silver Bow Creek above Sand Creek	0.73	0.45	0.44	0.87
SS-13	Silver Bow Creek in Reach L	0.65	0.36	0.53	0.77
SS-14	Silver Bow Creek at Miles Crossing	0.67	0.34	0.48	0.80
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.82	0.29	ND	0.76
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.74	0.13	ND	0.65
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.53	0.08	0.04	0.63
SS-19	Silver Bow Creek at Frontage Road	0.53	0.10	0.04	0.70

ND Not detected at method detection limit.

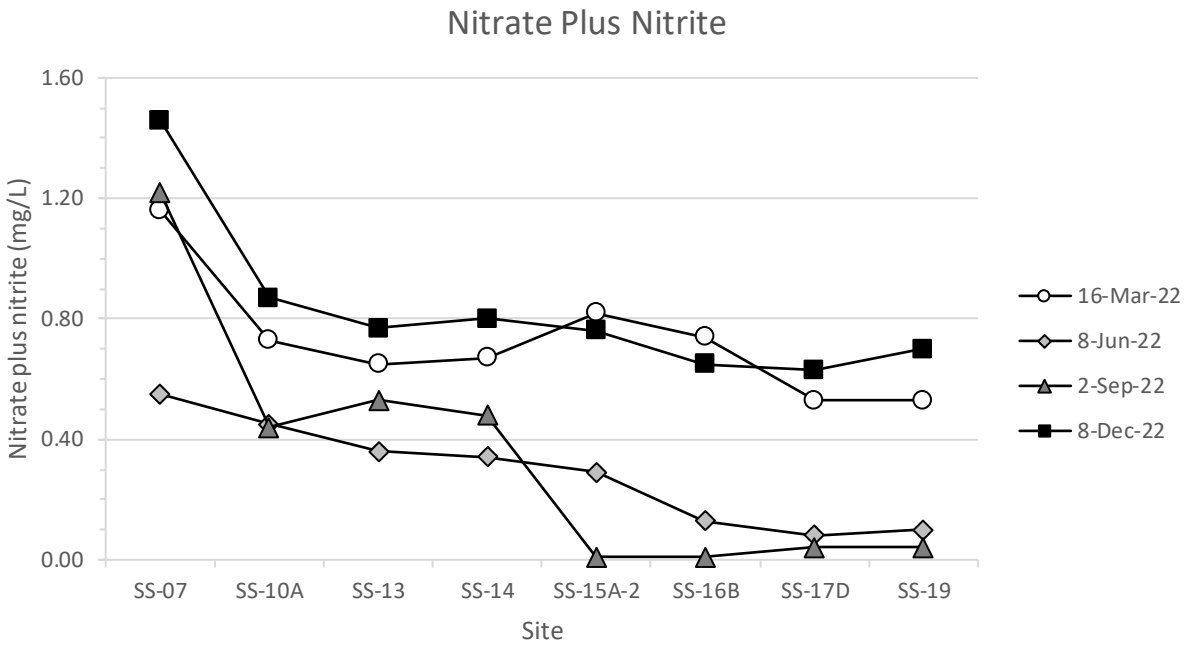


Figure 1-31. Nitrate plus nitrite nitrogen concentrations at Streamside Tailings Operable Unit monitoring stations, 2022.

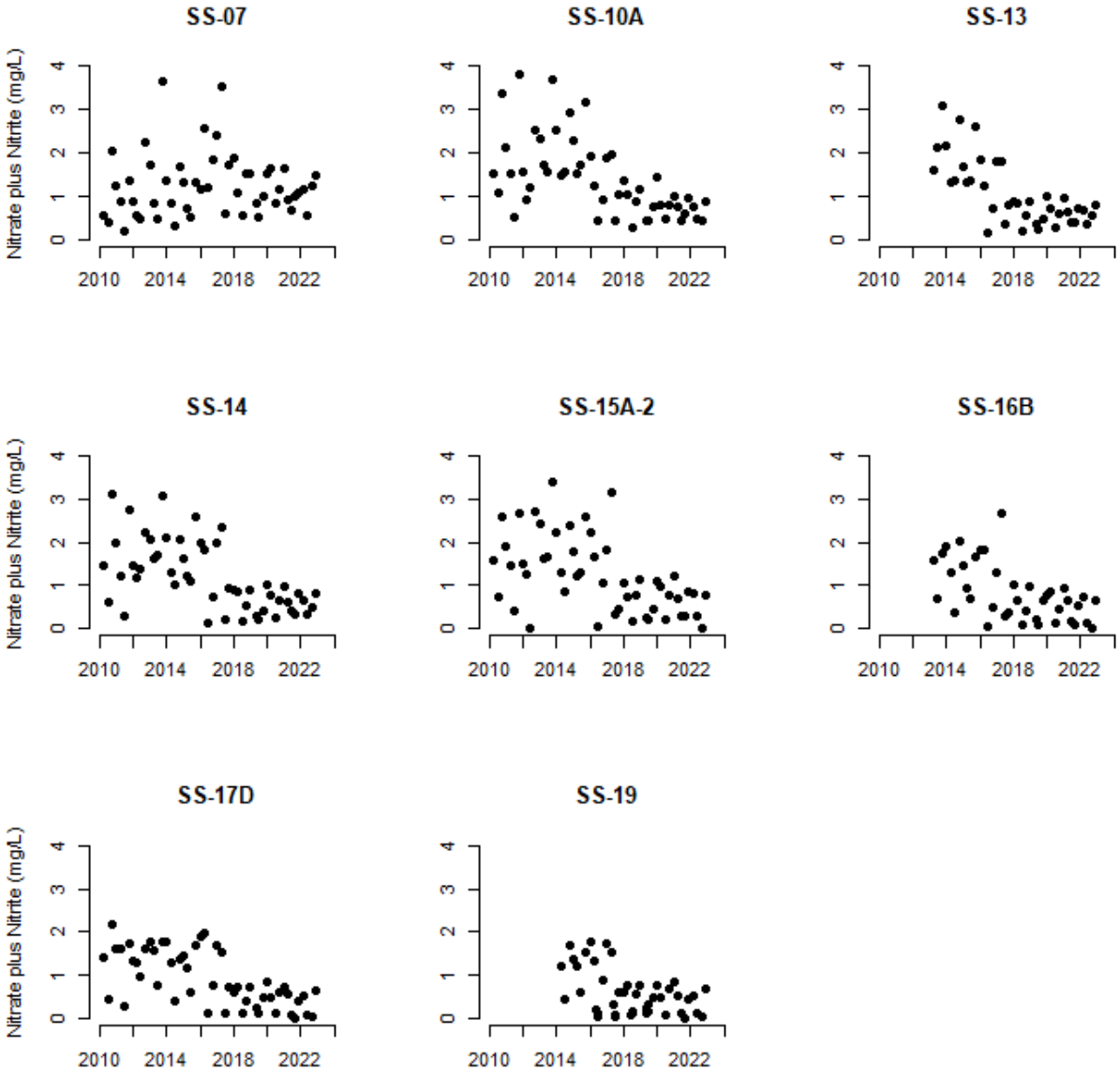


Figure 1-32. Nitrate plus nitrite nitrogen concentrations at Streamside Tailings Operable Unit monitoring stations, 2010-2022.[22]

[22] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.6.3 Total Ammonia

Ammonia concentrations were below the method detection limit in 14 of the 32 SSTOU samples collected in 2022 (Table 1-11). Eight of those 32 samples had concentrations above the analytical reporting limit (Table 1-11).

Although the frequency of ammonia detections above method and analytical reporting limits was relatively high in 2022, Ammonia concentrations have been sharply reduced from historic levels following the upgrades to the Butte WWTP in early 2016 (Figure 1-33).

Table 1-11. Total ammonia concentrations (mg/L) at Streamside Tailings Operable Unit monitoring stations, 2022.

Site ID	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	0.04[J]	ND	ND	0.04[J]
SS-10A	Silver Bow Creek above Sand Creek	ND	ND	ND	0.05[J]
SS-13	Silver Bow Creek in Reach L	0.06	ND	ND	0.06
SS-14	Silver Bow Creek at Miles Crossing	0.07	ND	ND	0.06
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.05	ND	ND	0.06
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.05[J]	ND	ND	0.05
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.10	ND	ND	0.03[J]
SS-19	Silver Bow Creek at Frontage Road	ND	ND	ND	0.03[J]

ND Not detected at method detection limit.

J Estimated result either because sample result was below analytical reporting limit or because the associated field sample and duplicate pair had a relative percent difference greater than 25 percent.

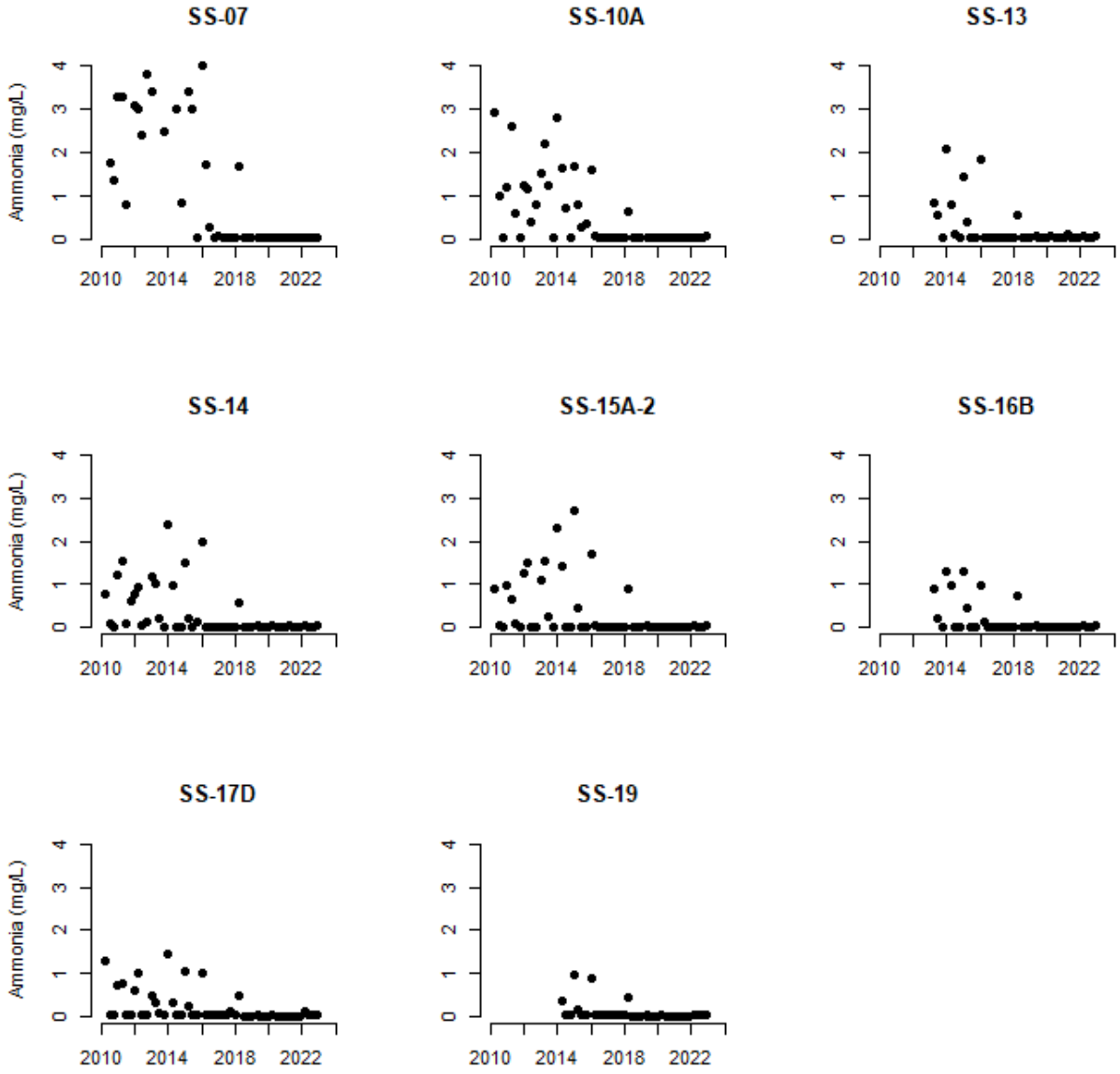


Figure 1-33. Total ammonia concentrations (mg/L) at Streamside Tailings Operable Unit monitoring stations, 2010-2022.[23],[24]

[23] One sample is not depicted: 11.2 mg/L at Site SS-07 on March 23, 2010.

[24] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.6.4 Total Phosphorus

Total phosphorus concentrations in 2022 were high (0.039-0.138 mg/L) throughout the SSTOU (Table 1-12). In Q3, when the total phosphorus standard is applicable, all sites exceeded the 0.02 mg/L upper Clark Fork River summertime standard (Figure 1-34). Seasonally, concentrations were generally highest in Q1 and Q3 and lowest in Q4 (Figure 1-34).

Although elevated relative to the standard, total phosphorus concentrations have decreased substantially at all sites over the last decade (Figure 1-35).

Table 1-12. Total phosphorus concentrations (mg/L) at Streamside Tailings Operable Unit monitoring stations, 2022.

Site ID	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	0.042	0.064	0.040	0.039
SS-10A	Silver Bow Creek above Sand Creek	0.054	0.059	0.088	0.105
SS-13	Silver Bow Creek in Reach L	0.100	0.085	0.133	0.065
SS-14	Silver Bow Creek at Miles Crossing	0.104	0.086	0.125	0.069
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.115	0.087	0.138	0.054
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.118	0.068	0.095	0.051
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.115	0.057	0.088	0.044
SS-19	Silver Bow Creek at Frontage Road	0.116	0.058	0.067	0.044

Exceeds upper Clark Fork River summertime (June 21-September 21) total phosphorus standard (0.02 mg/L; ARM 17.30.631).

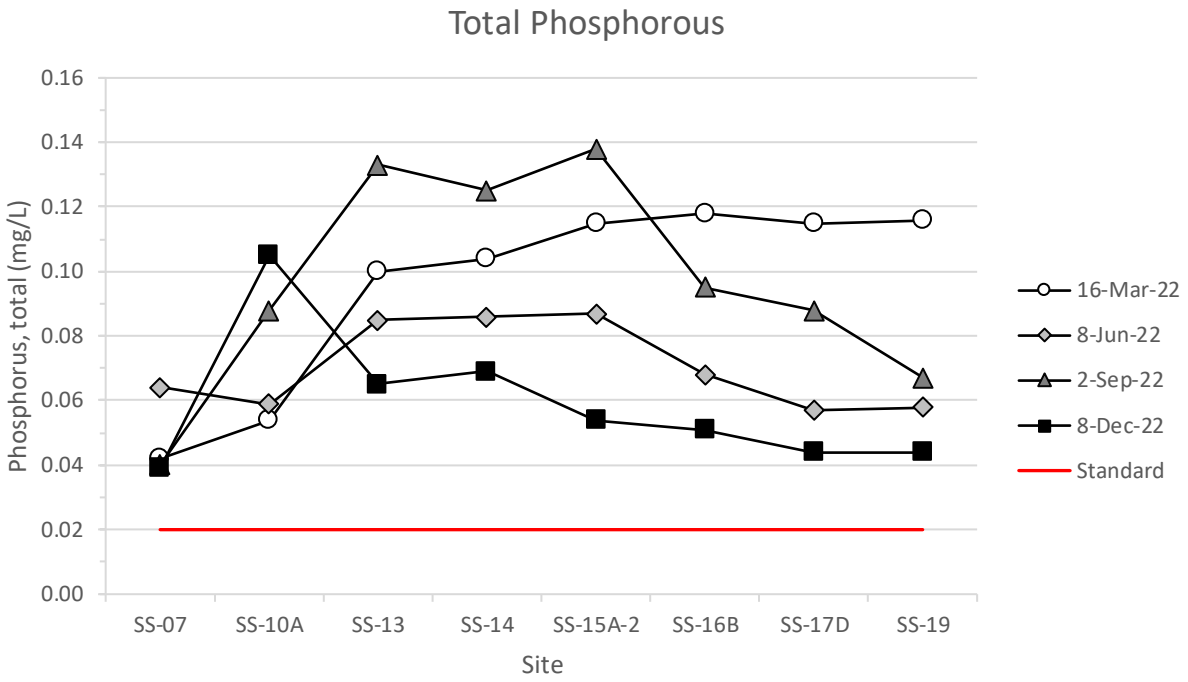


Figure 1-34. Total phosphorus concentrations at Streamside Tailings Operable Unit monitoring stations, 2022. The red line represents the total phosphorus standard for the upper Clark Fork River (ARM 17.30.631).

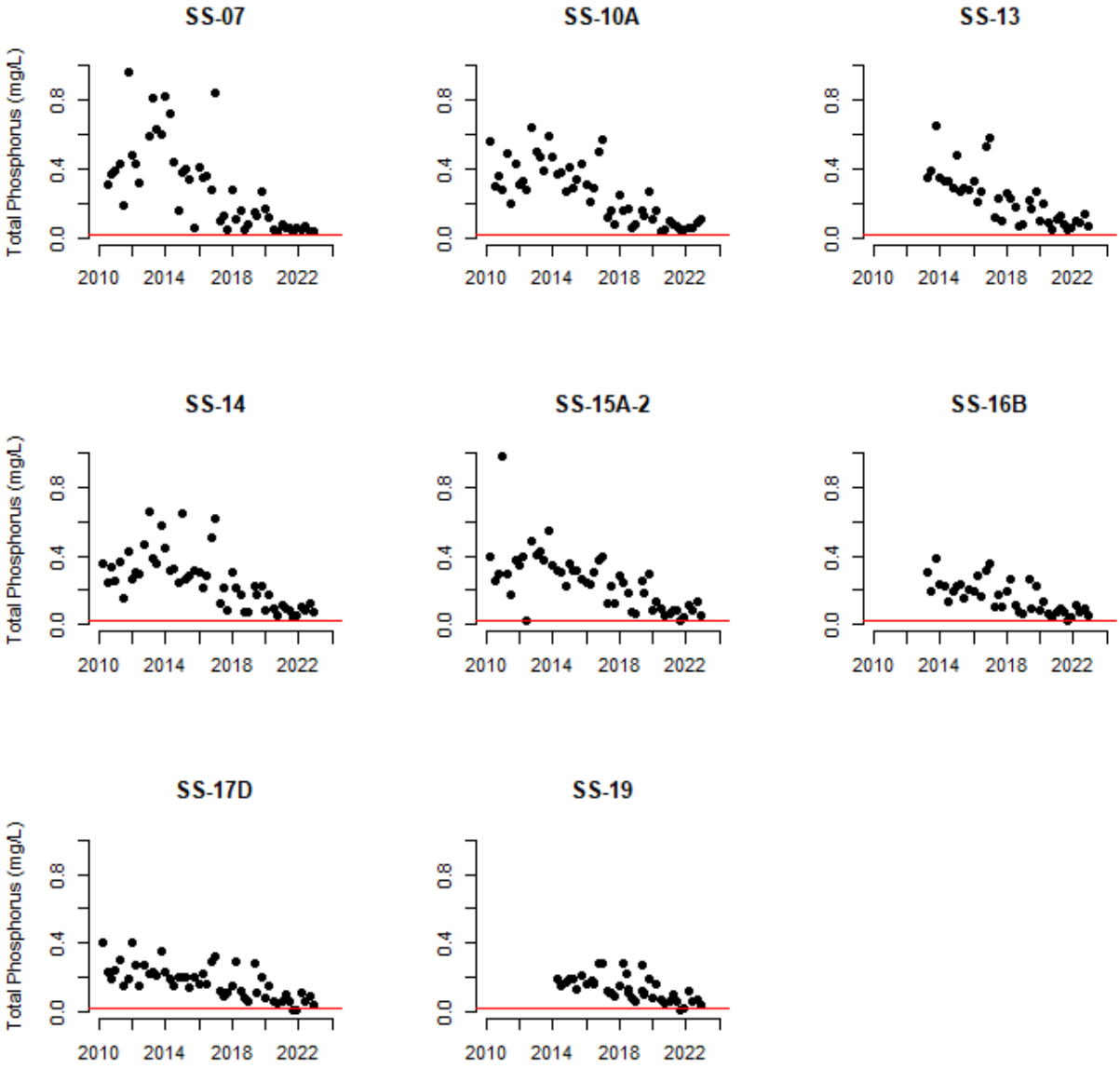


Figure 1-35. Total phosphorus concentrations at Streamside Tailings Operable Unit monitoring stations, 2010-2022. Red line represents the total phosphorus standard for the upper Clark Fork River (ARM 17.30.631).[25,26]

[25] Two Site SS-07 samples are not depicted: 1.37 mg/L on March 23, 2010 and 1.18 mg/L on September 20, 2012.

[26] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.7 Contaminants of Concern

1.4.7.1 Arsenic

In 2022, total recoverable arsenic concentrations in the SSTOU ranged from 0.002-0.009 mg/L (Table 1-13). No samples exceeded the 0.010 mg/L human health surface water standard (Table 1-13). Concentrations were similar among quarters in 2022, although generally lowest in Q4 (Figure 1-36). Compared to prior years, concentrations in 2022 were low (Figure 1-37).

Table 1-13. Total recoverable arsenic concentrations (mg/L) at Streamside Tailings Operable Unit monitoring stations, 2022.

Site ID	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	0.002	0.004	0.003	0.002
SS-10A	Silver Bow Creek above Sand Creek	0.004	0.005	0.007	0.005
SS-13	Silver Bow Creek in Reach L	0.005	0.008	0.007	0.004
SS-14	Silver Bow Creek at Miles Crossing	0.006	0.008	0.007	0.004
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.006	0.008	0.009	0.004
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.006	0.006	0.007	0.004
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.007	0.006	0.008	0.004
SS-19	Silver Bow Creek at Frontage Road	0.007	0.006	0.007	0.005

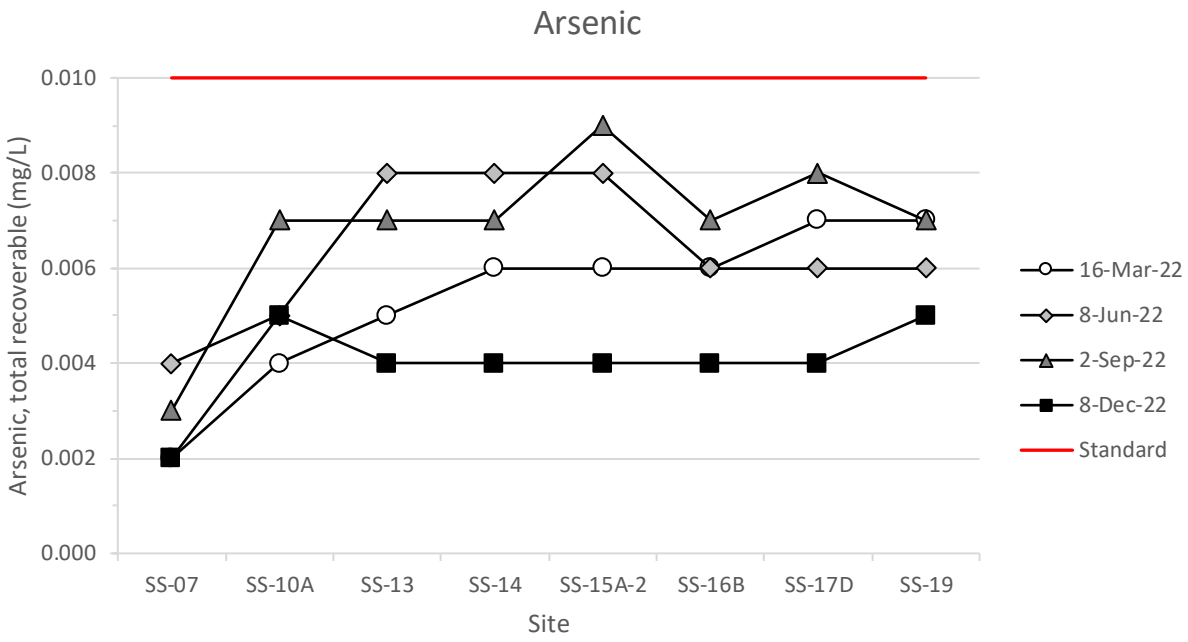


Figure 1-36. Total recoverable arsenic concentrations at Streamside Tailings Operable Unit monitoring stations, 2022. The red line represents the human health surface water standard [DEQ, 2019a].

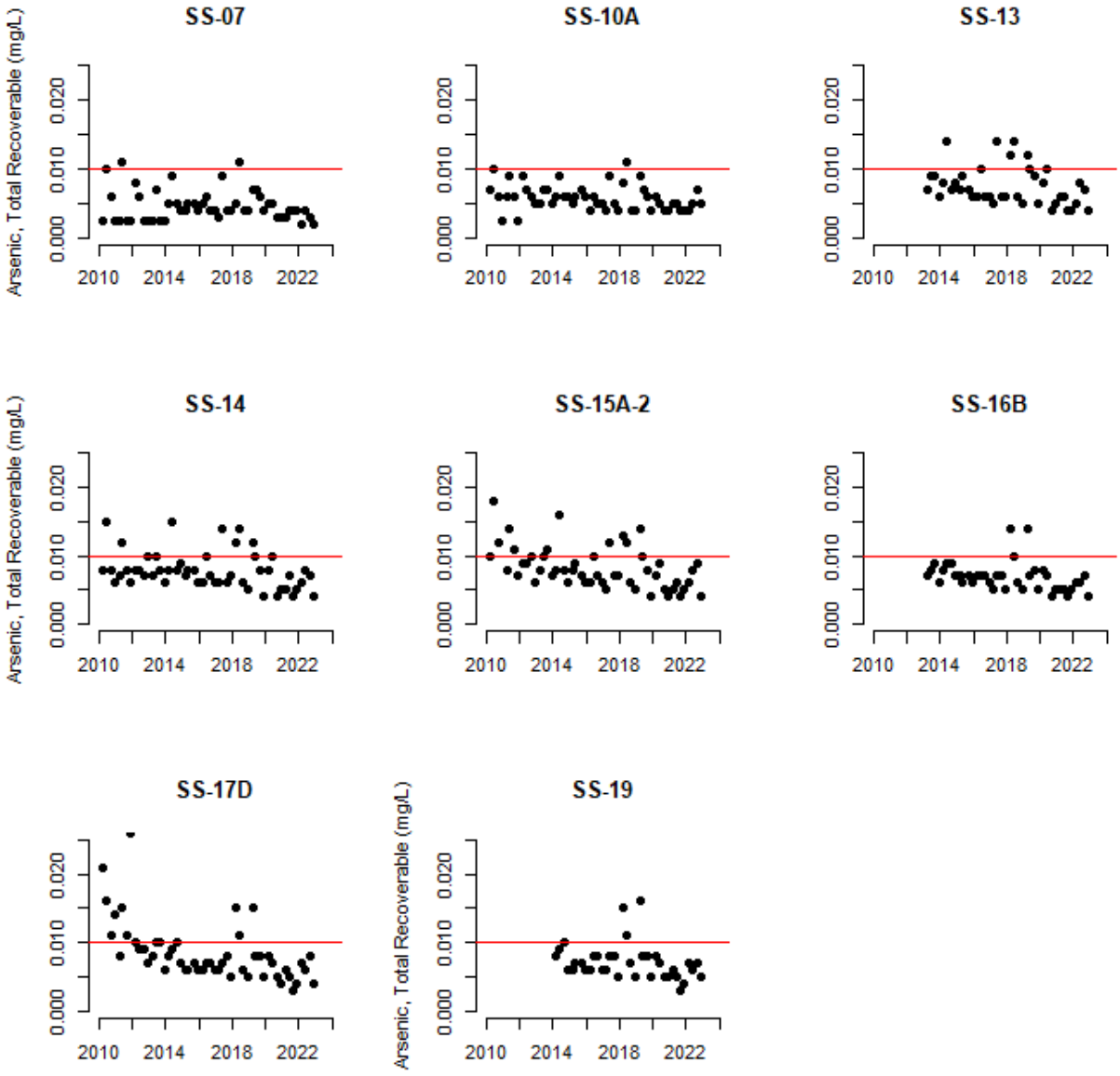


Figure 1-37. Total recoverable arsenic concentrations (mg/L) in the Streamside Tailings Operable Unit, 2010-2022. Red line represents the human health surface water standard [DEQ, 2019a].[27,28]

[27] One outlier is not depicted: 0.111 mg/L at SS-15A-2 on December 13, 2010.

[28] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.7.2 Cadmium

In 2022, total recoverable cadmium concentrations in the SSTOU ranged from 0.00005-0.00061 mg/L (Table 1-14). No samples exceeded the DEQ [2019a] chronic aquatic life standard (Table 1-14). Concentrations in 2022 were highest at nearly all sites in Q1 (Figure 1-38). Concentrations in 2022 were generally similar to prior years (Figure 1-39).

Table 1-14. Total recoverable cadmium concentrations (mg/L) at Streamside Tailings Operable Unit monitoring stations, 2022.

Site ID	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	0.00009	0.00016	0.00005	0.00009
SS-10A	Silver Bow Creek above Sand Creek	0.00029	0.00028	0.00018	0.00040
SS-13	Silver Bow Creek in Reach L	0.00033	0.00028	0.00014	0.00028
SS-14	Silver Bow Creek at Miles Crossing	0.00036	0.00031	0.00008	0.00031
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.00048	0.00035	0.00043	0.00034
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.00050	0.00021	0.00013	0.00028
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.00061	0.00030	0.00013	0.00038
SS-19	Silver Bow Creek at Frontage Road	0.00060	0.00031	0.00009	0.00032

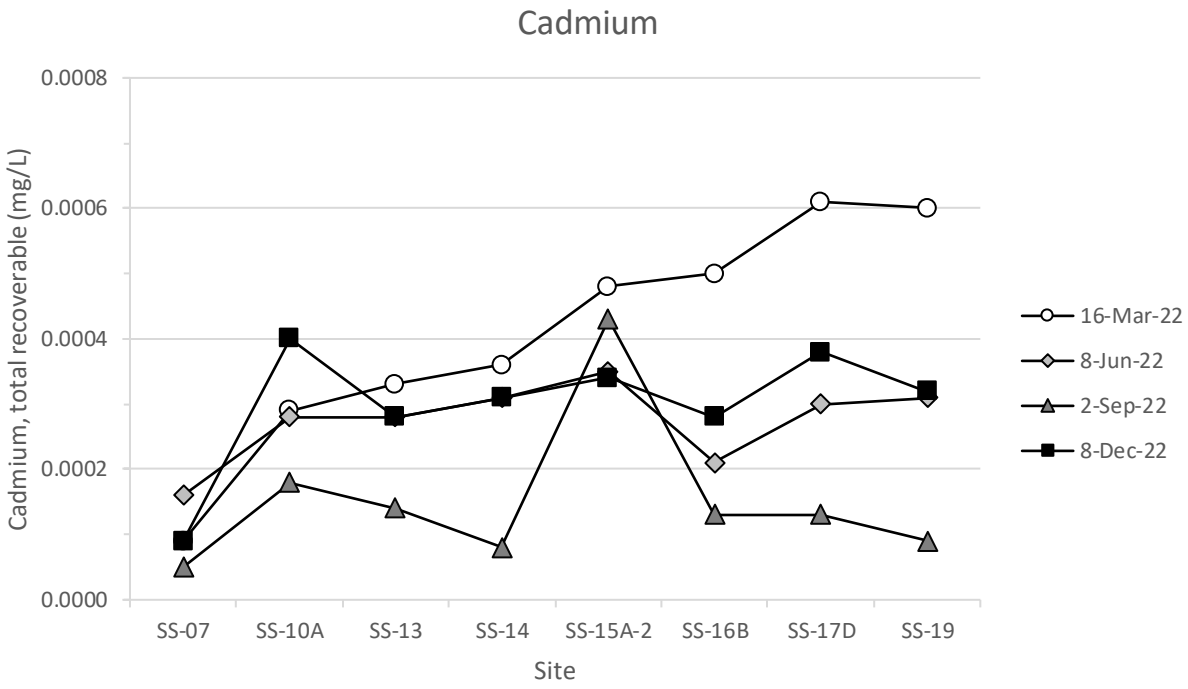


Figure 1-38. Total recoverable cadmium concentrations at Streamside Tailings Operable Unit monitoring stations, 2022.

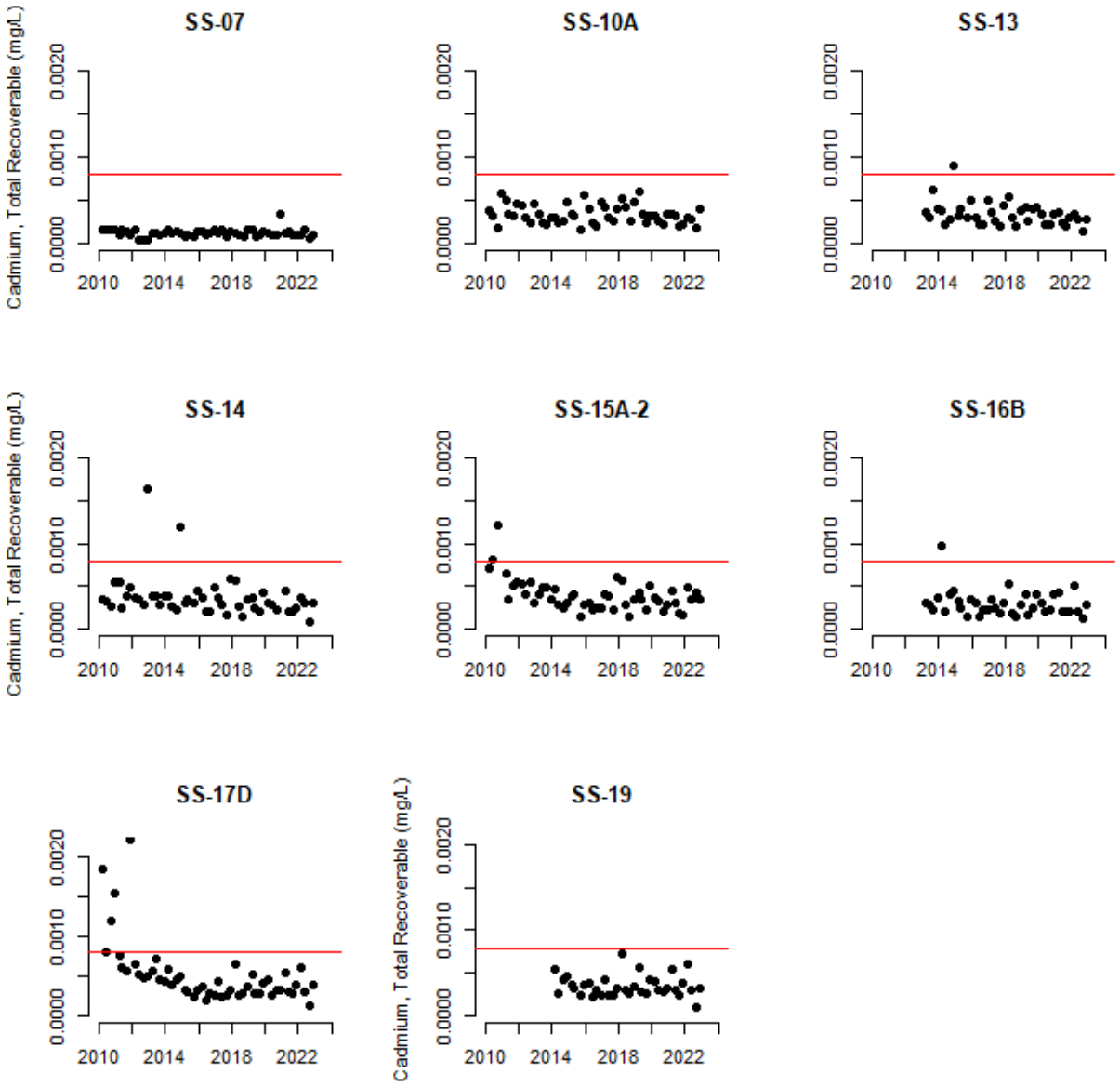


Figure 1-39. Total recoverable cadmium concentrations (mg/L) in the Streamside Tailings Operable Unit, 2010-2022. Red line represents the chronic aquatic life standard assuming hardness is 100 mg/L [DEQ, 2019a].[29,30]

[29] One outlier is not depicted: 0.01180 mg/L at SS-15A-2 on December 13, 2010.

[30] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.7.3 Copper

1.4.7.3.1 Long-term Data

In 2022, total recoverable copper concentrations in the SSTOU ranged from 0.005-0.045 mg/L (Table 1-15). Seven samples collected in 2022 exceeded the DEQ [2019a] chronic aquatic life standard and one sample exceeded the acute aquatic life standard (Table 1-15). Exceedances of the standards occurred at the four downstream-most sites (Sites SS-15A-2, SS-16B, SS-17D, and SS-19) in Q1, at Site SS-10A in Q3 and Q4, and at Site SS-15A-2 in Q3 (Table 1-15). The acute exceedance at Site SS-15A-2 was an anomaly during that sample period as that site sample concentration was more than three times higher than the concentrations at adjacent sites (Table 1-15). Concentrations during each monitoring period of 2022 were generally highest, with the notable exceptions previously described, during Q1 (Figure 1-40). Concentrations in 2022 were generally within the range of prior years at each site although some sample concentrations were relatively high compared to recent prior years (Figure 1-41).

Table 1-15. Total recoverable copper concentrations (mg/L) at Streamside Tailings Operable Unit monitoring stations, 2022.

Site ID	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	0.005	0.008	0.006	0.006
SS-10A	Silver Bow Creek above Sand Creek	0.022	0.019	0.018	0.045
SS-13	Silver Bow Creek in Reach L	0.020	0.014	0.012	0.013
SS-14	Silver Bow Creek at Miles Crossing	0.023	0.015	0.008	0.013
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.034	0.021	0.035	0.012
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.033	0.014	0.010	0.009
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.033	0.017	0.011	0.011
SS-19	Silver Bow Creek at Frontage Road	0.034	0.018	0.007	0.010

Exceeds the chronic aquatic life standard [DEQ, 2019a].

Exceeds the acute aquatic life standard [DEQ, 2019a].

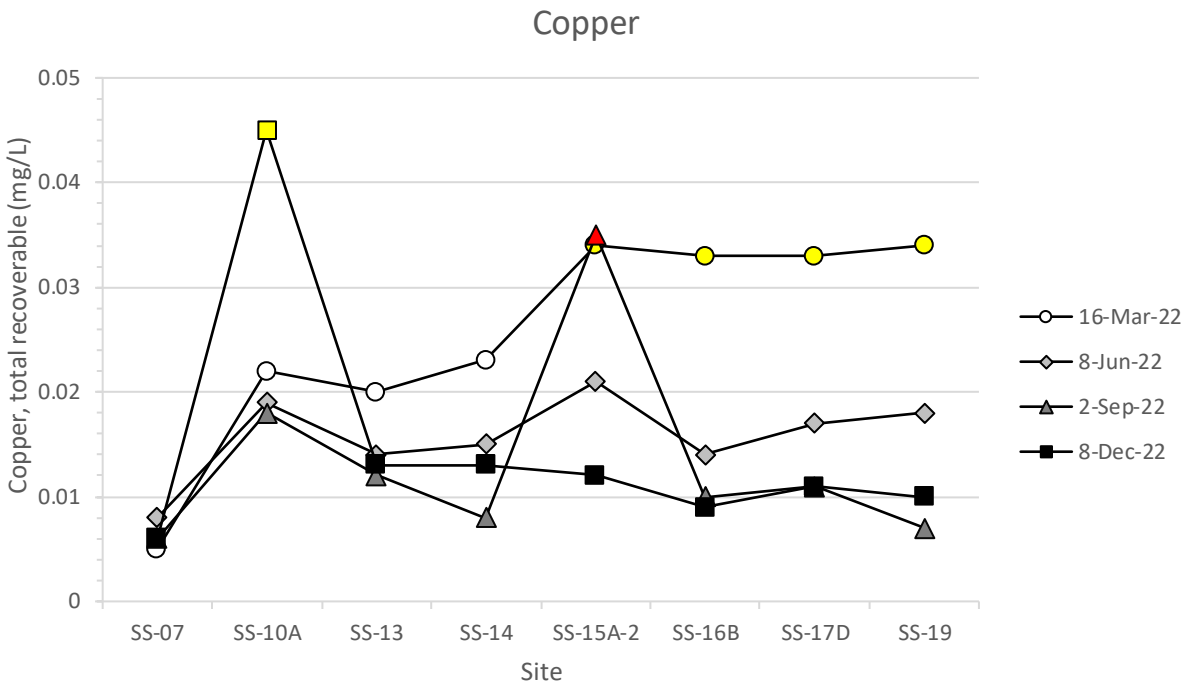


Figure 1-40. Total recoverable copper concentrations at Streamside Tailings Operable Unit monitoring stations, 2022. Colored symbols represent samples exceeding the chronic (yellow) and acute (red) aquatic life standards [DEQ, 2019a].

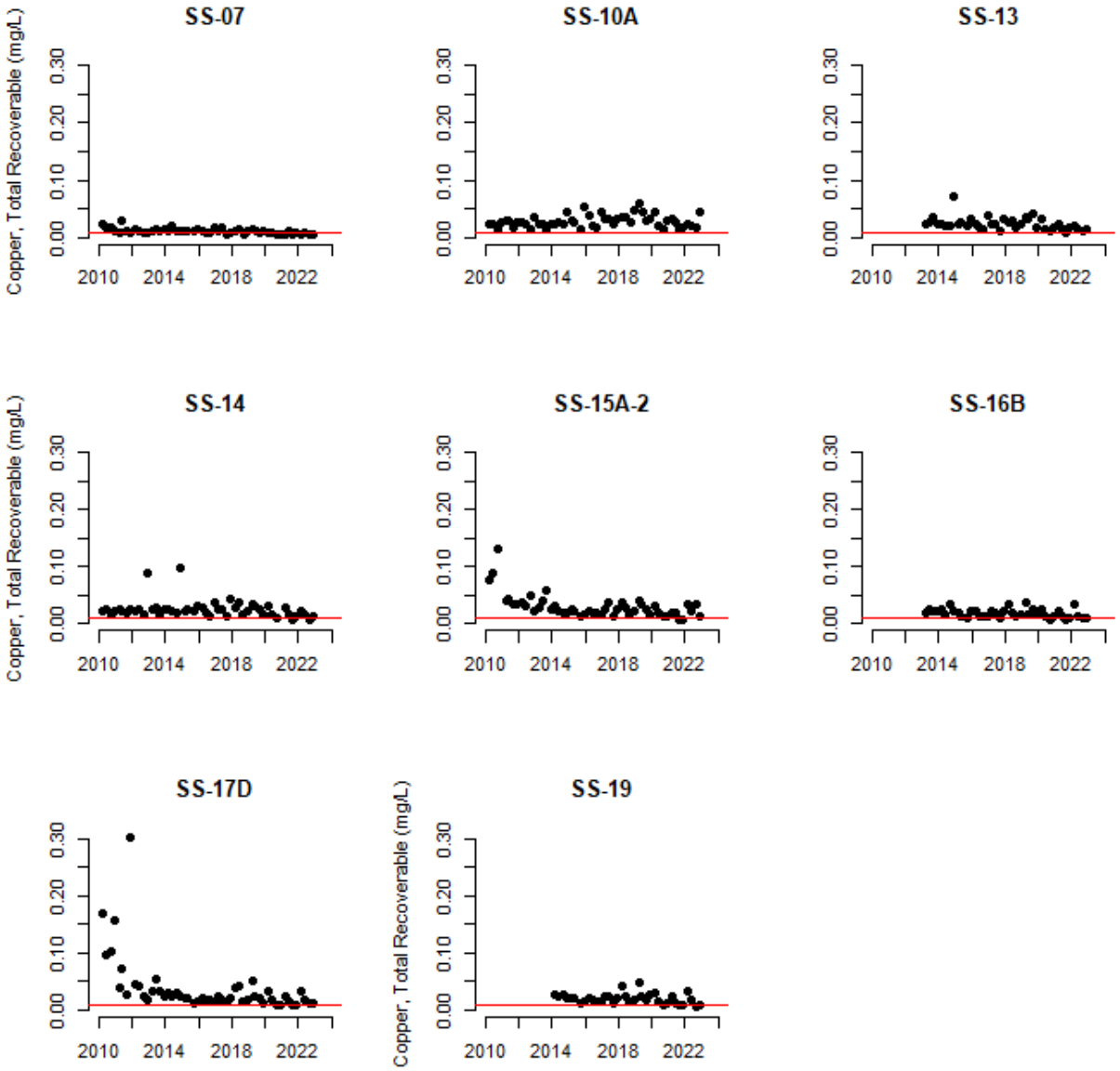


Figure 1-41. Total recoverable copper concentrations (mg/L) in the Streamside Tailings Operable Unit, 2010-2022. Red line represents the chronic aquatic life standard assuming hardness is 100 mg/L [DEQ, 2019a].[31,32]

[31] One outlier is not depicted: 2.01 mg/L at Site SS-15A (displayed as Site SS-15A-2) on December 13, 2010.

[32] The scatterplot representing samples at Site SS-15A-2 include samples from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.7.3.2 Synoptic Data

Among the three sample periods when synoptic sampling occurred in 2022, total recoverable copper concentrations ranged from 0.006-0.042 mg/L among all the 16 sites sampled (Table 1-16). During all three sample periods, there was an approximate doubling of concentrations between Sites SS-07-3.0 and SS-07-3.5 (Table 1-16).

During the last sample period of 2022, four additional sites were sampled in between Sites SS-07-3.0 and SS-07-3.5 at 0.1-mile spacing to improve sampling resolution in that reach where the spike in copper concentrations were observed during Q2 and Q3 (Table 1-16). During the Q4 sample period, concentrations increased sharply (by approximately five times) between sites SS-07-3.0, and then declined by about half over the next 0.1-mile reach (at Site SS-07-3.2) (Table 1-16). Concentrations increased modestly at sites downstream from Site SS-07-3.2 (Table 1-16).

Median results of the synoptic sampling demonstrate a consistent, sharp increase in total copper concentrations occurring in the stream immediately below Site SS-07-3.0 (Figure 1-42). These results suggest there is a potential point source of copper to the stream in this 0.1-mile stream reach between Sites SS-07-3.0 and SS-07-3.1. Since there are no major surface water inputs in this reach, the copper source is likely related to groundwater input.

Table 1-16. Total recoverable copper concentrations (mg/L) at synoptic sampling sites in Subarea 1 of the Streamside Tailings Operable Unit, 2022.

Synoptic Site ID	Long-term Site ID	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07-0.0	SS-07	-	0.008	-	0.010
SS-07-0.5		-	0.008	0.007	0.006
SS-07-1.0		-	0.008	0.008	0.008
SS-07-1.5		-	0.009	0.007	0.011
SS-07-2.0		-	0.012	0.006	0.010
SS-07-2.5		-	0.012	0.008	0.008
SS-07-3.0		-	0.012	0.008	0.008
SS-07-3.1		-	-	-	0.042
SS-07-3.2		-	-	-	0.021
SS-07-3.3		-	-	-	0.021
SS-07-3.4		-	-	-	0.020
SS-07-3.5		-	0.021	0.018	0.020
SS-07-4.0		-	0.022	0.018	0.033
SS-07-4.5		-	0.022	0.019	0.022
SS-07-5.0		-	0.021	0.017	0.023
SS-07-5.2	SS-10A	-	0.022	0.018	0.022

\- Not sampled

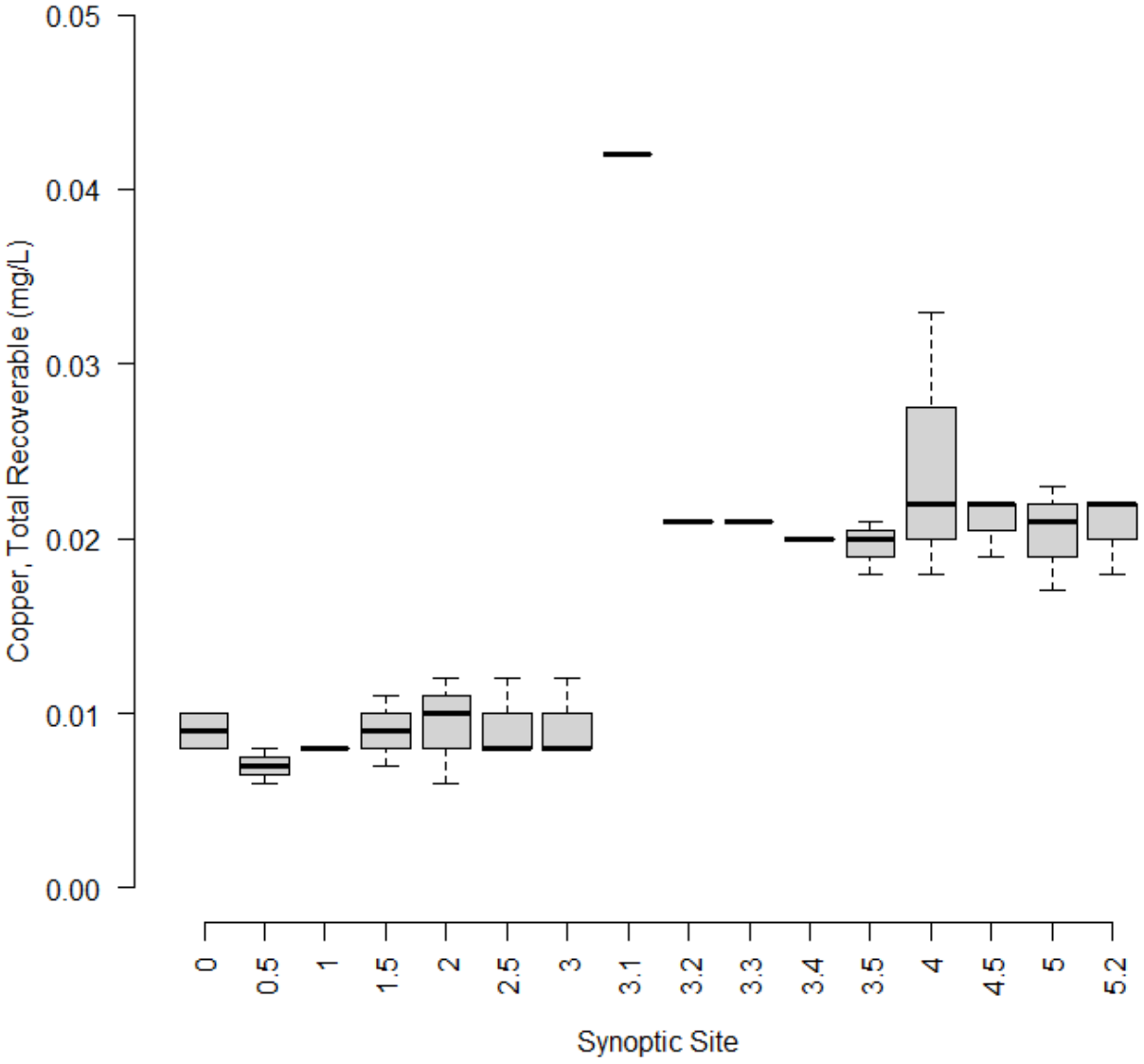


Figure 1-42. Total recoverable copper concentrations (mg/L) at synoptic sampling sites in Subarea 1 of the Streamside Tailings Operable Unit, 2022.

1.4.7.4 Lead

In 2022, total recoverable lead concentrations in the SSTOU ranged from 0.0002-0.0071 mg/L (Table 1-17). When adjusted for water hardness, no samples exceeded the DEQ [2019a] chronic aquatic life standard (Table 1-17).

Longitudinal trends in concentrations in 2022 varied seasonally. Q1 concentrations were highest at SS-16B (Figure 1-43). In Q2 and Q3, concentrations were highest at Site SS-15A-2 and generally declined with downstream distance (Figure 1-43). The highest concentration in Q4 was at SS-10A (Figure 1-43). In Q1, concentrations were lowest at Site SS-07, increased substantially (by approximately four times) at Site SS-10A, rose until SS-15A-2 and were relatively steady (between 0.0038-0.0042 mg/L) at each downstream site (Figure 1-43). Concentrations in 2022 were generally similar to prior years (Figure 1-44).

Table 1-17. Total recoverable lead concentrations (mg/L) at Streamside Tailings Operable Unit monitoring stations, 2022.

Site ID	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	0.0005	0.0011	0.0010	0.0010
SS-10A	Silver Bow Creek above Sand Creek	0.0023	0.0015	0.0015	0.0071
SS-13	Silver Bow Creek in Reach L	0.0020	0.0013	0.0009	0.0008
SS-14	Silver Bow Creek at Miles Crossing	0.0025	0.0014	0.0002[J]	0.0009
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.0042	0.0026	0.0044	0.0005
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.0044	0.0016	0.0005	0.0004
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.0038	0.0020	0.0003[J]	0.0003
SS-19	Silver Bow Creek at Frontage Road	0.0041	0.0022	0.0002[J]	0.0004

J Estimated result either because sample result was below analytical reporting limit or because the associated field sample and duplicate pair had a relative percent difference greater than 25 percent.

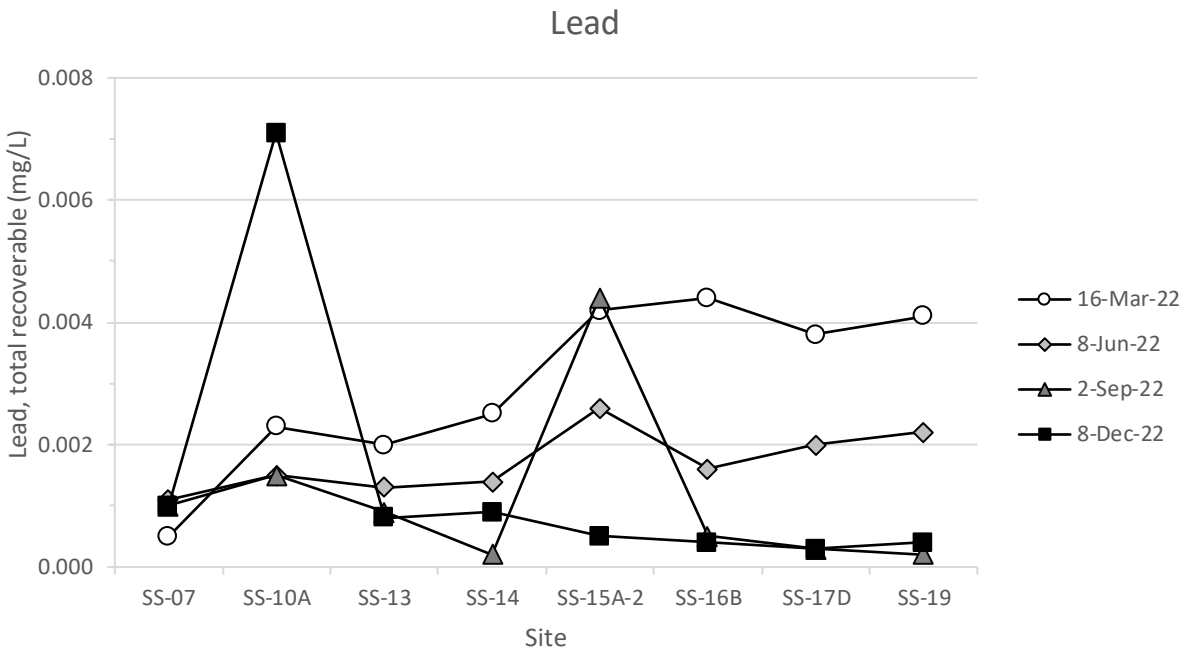


Figure 1-43. Total recoverable lead concentrations at Streamside Tailings Operable Unit monitoring stations, 2022.

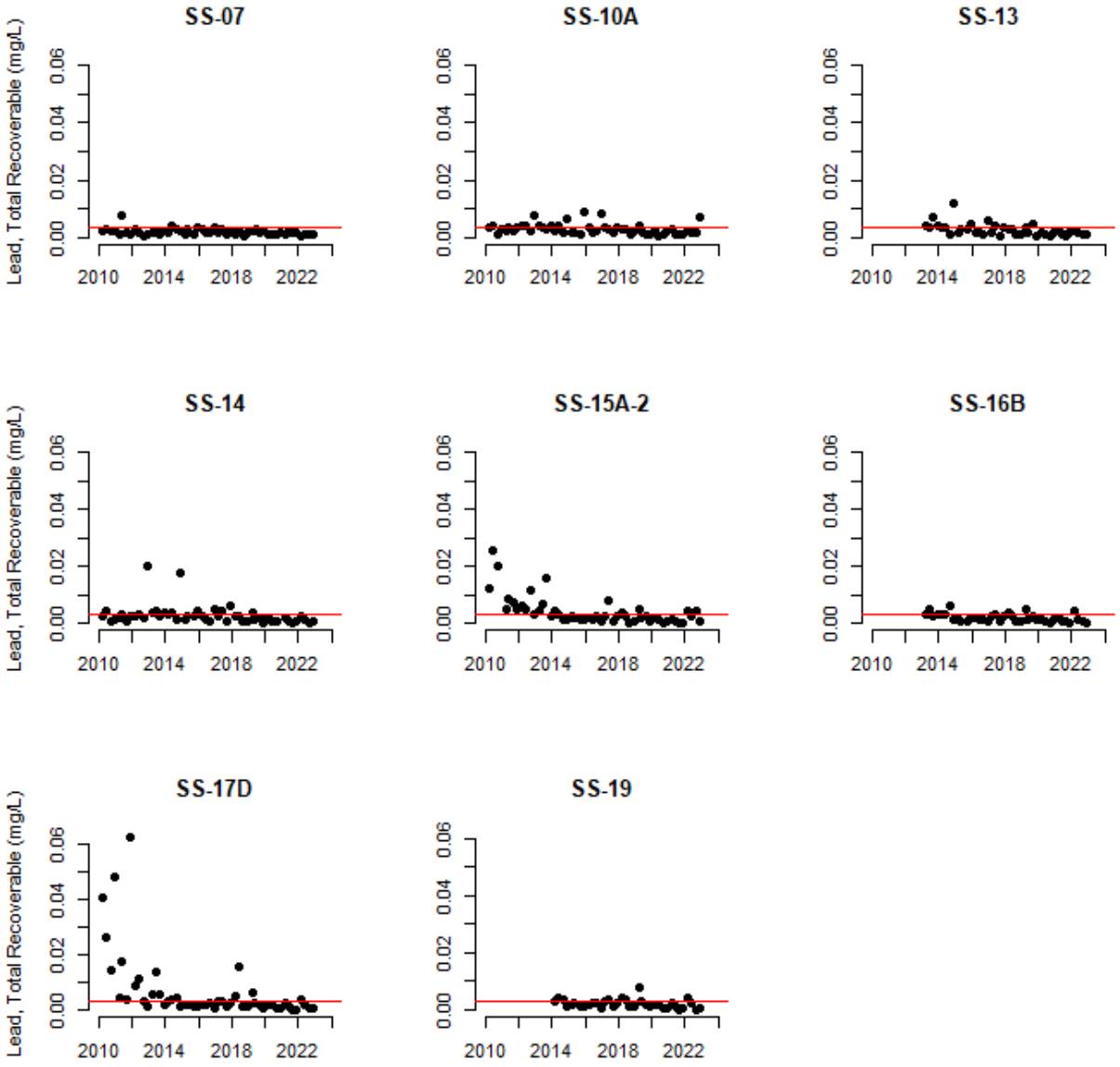


Figure 1-44. Total recoverable lead concentrations (mg/L) in the Streamside Tailings Operable Unit, 2010-2022. Red line represents the chronic aquatic life standard assuming hardness is 100 mg/L [DEQ, 2019a].[33,34]

[33] One outlier is not depicted: 0.785 mg/L at SS-15A-2 on December 13, 2010.

[34] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.7.5 Mercury

In 2022, total recoverable mercury concentrations in the SSTOU ranged from 0.003-0.035 µg/L (Table 1-18). Fourteen samples had concentrations exceeding the MDHES [1994] chronic aquatic life standard of 0.012 µg/L (Table 1-18). Spatially and seasonally, there were no clear trends in concentrations (Figure 1-45). Concentrations in 2022 were similar to prior years although some 2022 samples were relatively high compared to recent prior years (e.g., SS-15A-2 in Q3 2022) (Figure 1-46).

Table 1-18. Total recoverable mercury concentrations (µg/L) at Streamside Tailings Operable Unit monitoring stations, 2022.

Site ID	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	0.005[J]	0.011	0.004[J]	0.005
SS-10A	Silver Bow Creek above Sand Creek	0.015	0.012	0.011	0.035
SS-13	Silver Bow Creek in Reach L	0.015	0.013	0.007	0.006
SS-14	Silver Bow Creek at Miles Crossing	0.018	0.014	0.005[J]	0.007
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.030	0.018	0.024	0.004[J]
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.027	0.018	0.004[J]	0.004[J]
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.026	0.019	0.003[J]	0.004[J]
SS-19	Silver Bow Creek at Frontage Road	0.026	0.017	0.005[J]	0.003[J]

J — Estimated result either because sample result was below analytical reporting limit or because the associated field sample and duplicate pair had a relative percent difference greater than 25 percent.

Exceeds the chronic aquatic life standard [MDHES, 1994].

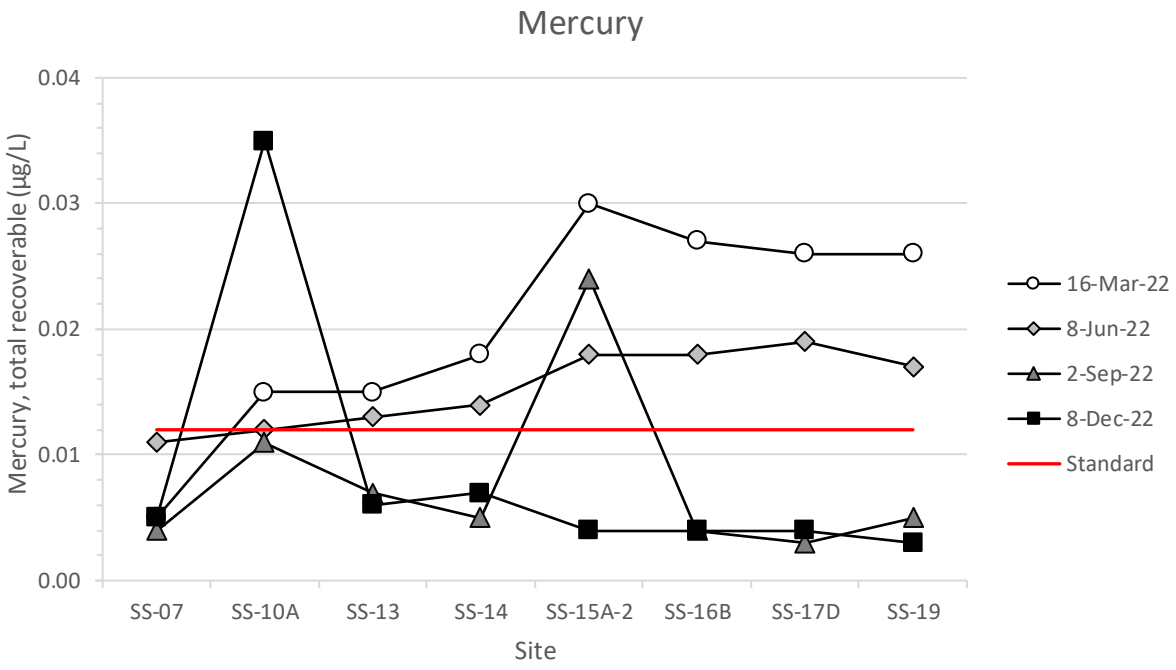


Figure 1-45. Total recoverable mercury concentrations at Streamside Tailings Operable Unit monitoring stations, 2022. Red line represents the chronic aquatic life standard [MDHES, 1994].

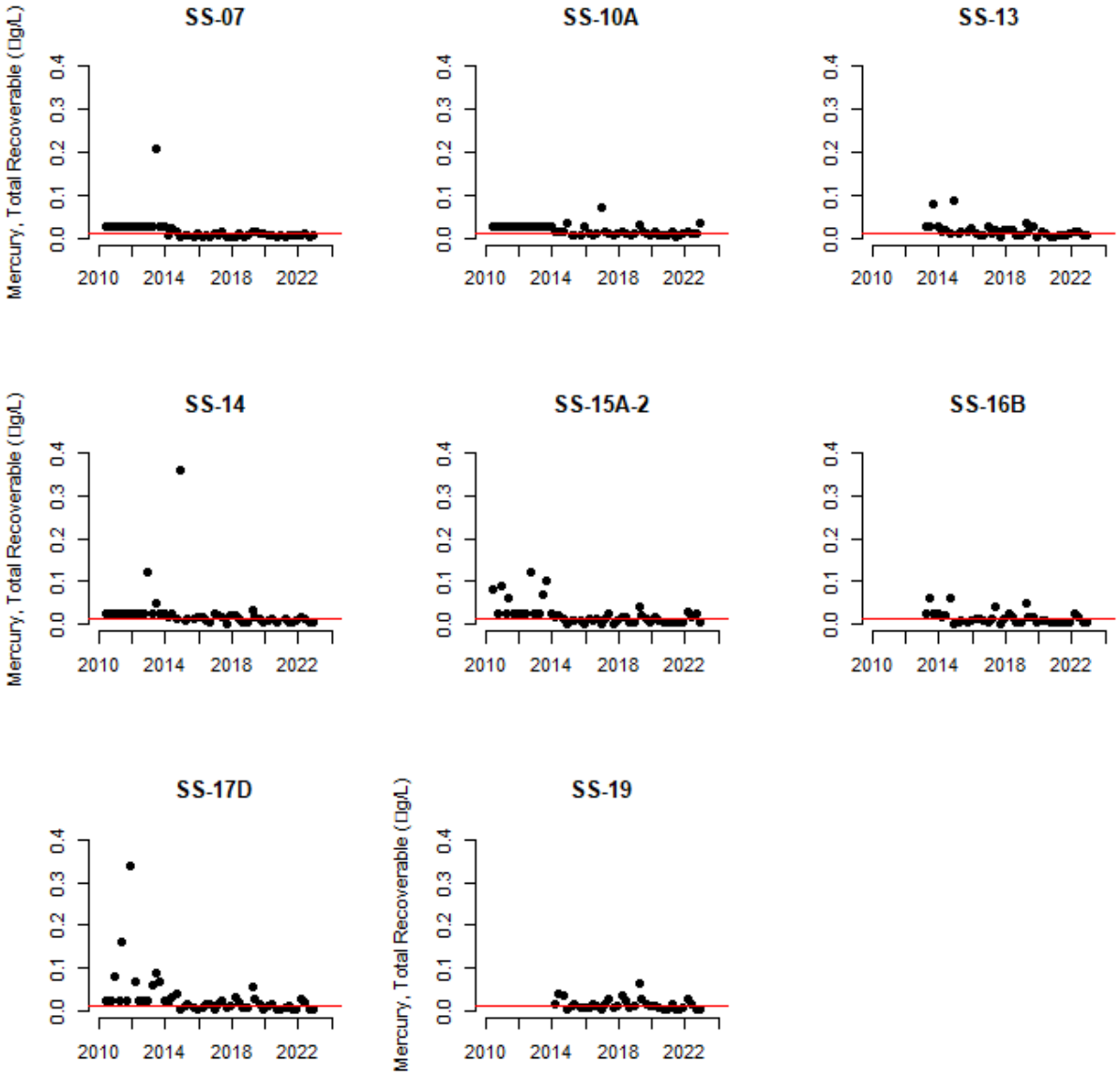


Figure 1-46. Total recoverable mercury concentrations in the Streamside Tailings Operable Unit, 2010-2022. Red line represents the chronic aquatic life standard [MDHES, 1994].[35,36]

[35] Samples collected on March 23, 2010 are not included because the reporting limit was high (1 µg/L).

[36] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.7.6 Zinc

In 2022, total recoverable zinc concentrations in the SSTOU ranged from 0.020-0.174 mg/L (Table 1-19). When adjusted for water hardness, no samples exceeded the MDHES [1994] chronic aquatic life standard (Table 1-19).In Q1 and Q4, zinc concentrations tended to increase from upstream to downstream. During other quarters, concentrations were relatively stable between sites except between Sites SS-14 and SS-15A-2 where concentrations increased in each quarter, before decreasing again at SS-16B (Figure 1-47). Zinc concentrations in 2022 were generally similar to prior years, but typically the 2022 results were at the lower end of the range of prior samples at each site (Figure 1-48).

Table 1-19. Total recoverable zinc concentrations (mg/L) at Streamside Tailings Operable Unit monitoring stations, 2022.

Site ID	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	0.038	0.026	0.046	0.045
SS-10A	Silver Bow Creek above Sand Creek	0.066	0.044	0.033	0.106
SS-13	Silver Bow Creek in Reach L	0.085	0.044	0.029	0.081
SS-14	Silver Bow Creek at Miles Crossing	0.098	0.054	0.021	0.088
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.132	0.078	0.093	0.123
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.130	0.044	0.025	0.097
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.156	0.064	0.029	0.125
SS-19	Silver Bow Creek at Frontage Road	0.174	0.070	0.020	0.128

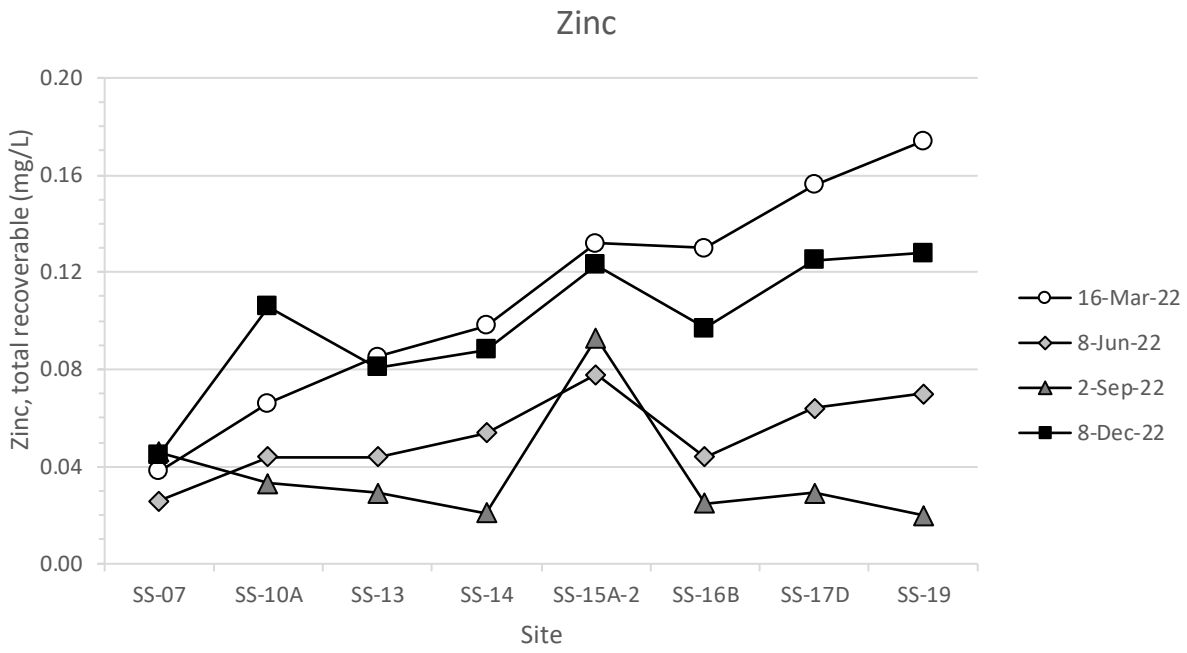


Figure 1-47. Total recoverable zinc concentrations at Streamside Tailings Operable Unit monitoring stations, 2022.

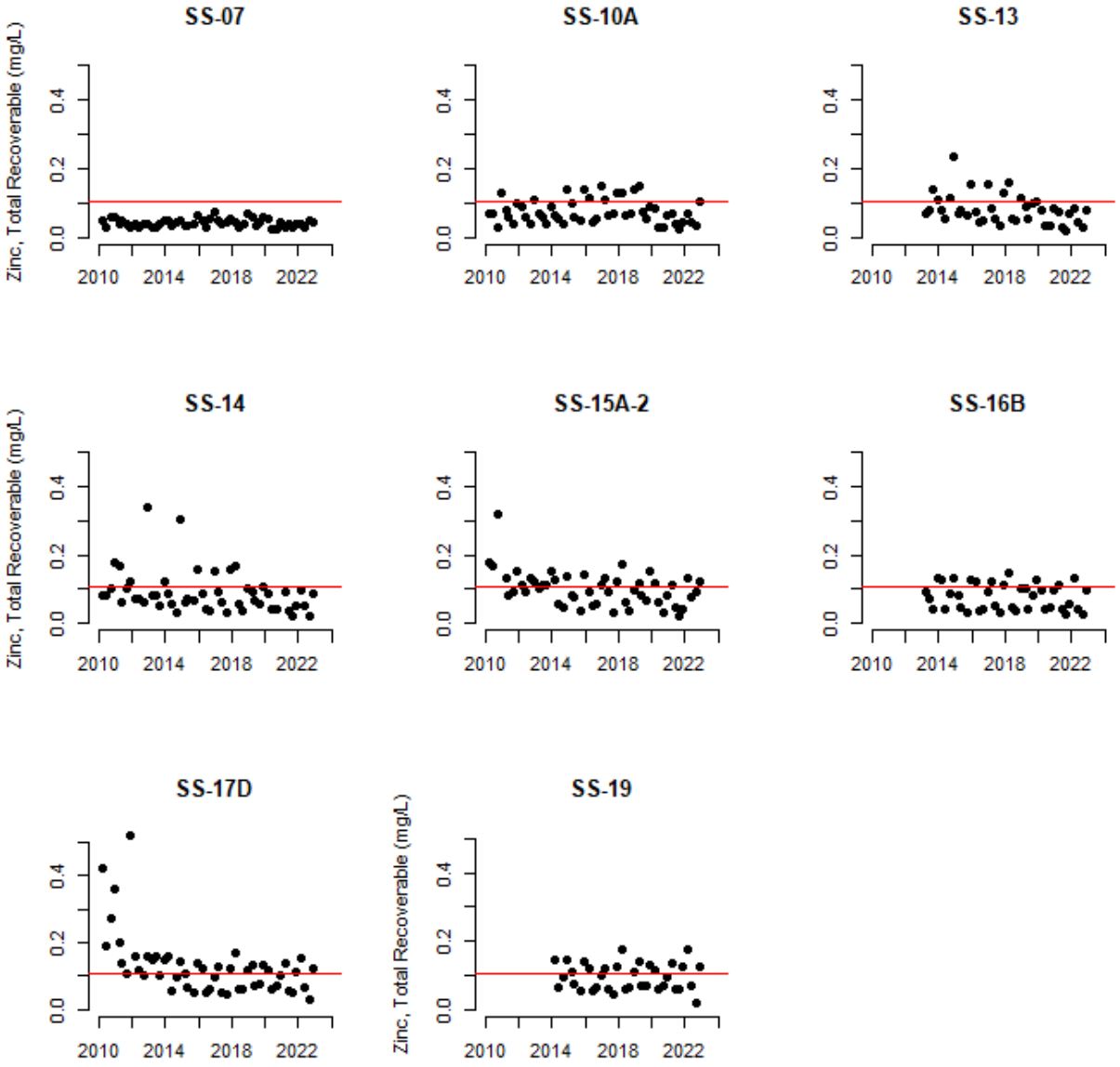


Figure 1-48. Total recoverable zinc concentrations (mg/L) in the Streamside Tailings Operable Unit, 2010-2022. Red line represents the chronic aquatic life standard assuming hardness is 100 mg/L [MDHES, 1994].[37,38]

[37] One outlier is not depicted: 2.41 mg/L at Site SS-15A-2 on December 13, 2010.

[38] The scatterplot representing data at Site SS-15A-2 includes data from Site SS-15A in years prior to 2017. Site SS-15A was relocated approximately 100 m upstream and renamed (Site SS-15A-2) to better represent prevailing conditions in the remediated stream channel in Subarea 3 above German Gulch [RESPEC, 2018].

1.4.8 Other Metals

1.4.8.1 Aluminum

Dissolved aluminum was detected at concentrations above the method detection limit (0.003 mg/L) in 19 of 32 collected in 2022; concentrations ranged from <0.003-0.023 mg/L. No samples had dissolved concentrations exceeding the 0.087 mg/L chronic aquatic life standard [DEQ, 2019a].

Total recoverable aluminum was detected at concentrations above the method detection limit (0.006 mg/L) in 31 of 32 samples collected in 2022; concentrations ranged from <0.031-0.606 mg/L.

1.4.8.2 Antimony

Dissolved antimony was detected at concentrations above the method detection limit (0.0002 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.0002-0.0004 mg/L.

Total recoverable antimony was detected at concentrations above the method detection limit (0.0002 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.0002-0.0004 mg/L. No samples had concentrations exceeding the 0.0056 mg/L human health surface water standard [DEQ, 2019a].

1.4.8.3 Barium

Dissolved barium was detected at concentrations above the method detection limit (0.0002 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.02-0.056 mg/L.

Total recoverable barium was detected at concentrations above the method detection limit (0.0002 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.022-0.052 mg/L. No samples had concentrations exceeding the 1.0 mg/L human health surface water standard [DEQ, 2019a].

1.4.8.4 Beryllium

Beryllium was not detected above the method detection limit (0.0002 mg/L) in any of the dissolved or total recoverable samples collected in 2022. No samples had concentrations exceeding the 0.004 mg/L human health surface water standard [DEQ, 2019a].

1.4.8.5 Boron

Dissolved boron was detected above the method detection limit (0.004 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.013-0.10 mg/L.

Total recoverable boron was detected above the method detection limit (0.007 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.025-0.10 mg/L.

1.4.8.6 Chromium

Dissolved chromium was detected above the method detection limit (0.0001 mg/L) in 20 of 32 samples collected in 2022; concentrations ranged from <0.0001-0.0003 mg/L.

Total recoverable chromium was detected above the method detection limit (0.0002 mg/L) in 25 of 32 samples collected in 2022; concentrations ranged from <0.0002-0.006 mg/L. No samples had total recoverable concentrations exceeding the 0.086 mg/L chronic aquatic life standard [DEQ, 2019a].

1.4.8.7 Cobalt

Dissolved cobalt was not detected above the method detection limit (0.0005 mg/L) in any samples collected in 2022.

Total recoverable cobalt was detected above the method detection limit (0.0003 mg/L) in 13 of 32 samples collected in 2022; concentrations ranged from <0.0004-0.0009 mg/L.

1.4.8.8 Iron

Dissolved iron was detected at concentrations above the method detection limit (0.006 mg/L) in all 32 samples collected in 2022; concentrations ranged from <0.005-0.090 mg/L.

Total recoverable iron was detected at concentrations above the method detection limit (0.010 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.016-1.01 mg/L. Two samples exceeded the 1.00 mg/L chronic aquatic life standard [DEQ, 2019a].

1.4.8.9 Manganese

Dissolved manganese was detected above the method detection limit (0.0003 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.012-0.312 mg/L.

Total recoverable manganese was detected above the method detection limit (0.003 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.029-0.326 mg/L.

1.4.8.10 Molybdenum

Dissolved molybdenum was detected at concentrations above the method detection limit (0.0003 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.007-0.330 mg/L.

Total recoverable molybdenum was detected at concentrations above the method detection limit (0.0003 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.007-0.334 mg/L.

1.4.8.11 Nickel

Dissolved nickel was detected at concentrations above the method detection limit (0.0002 mg/L) in all 32 samples collected in 2022; concentrations ranged from <0.0004-0.0009 mg/L.

Total recoverable nickel was detected at concentrations above the method detection limit (0.0002 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.0004-0.0012 mg/L. No samples exceeded the 0.052 mg/L chronic aquatic life standard [DEQ, 2019a].

1.4.8.12 Selenium

Dissolved selenium was detected at concentrations above the method detection limit (0.0001 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.00013-0.0010 mg/L.

Total recoverable selenium was detected at concentrations above the method detection limit (0.0001 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.0001-0.0010 mg/L. No samples exceeded the 0.005 mg/L chronic aquatic life standard [DEQ, 2019a].

1.4.8.13 Silver

Dissolved silver was not detected at concentrations above the method detection limit (0.00006 mg/L) in any of the 32 samples collected in 2022.

Total recoverable Silver was detected at concentration above the method detection limit (0.00006 mg/L) in 8 of the 32 samples collected in 2022; concentrations ranged from 0.00007-0.00009 mg/L. No samples exceeded the 0.0041 acute aquatic life standard [DEQ, 2019a].

1.4.8.14 Uranium

Dissolved uranium was detected above the method detection limit (0.00001 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.0021-0.0058 mg/L.

Total recoverable uranium was detected above the method detection limit (0.00003 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.0022-0.0058 mg/L. No samples exceeded the 0.03 mg/L human health surface water standard [DEQ, 2019a].

1.4.8.15 Vanadium

Dissolved vanadium was detected above the method detection limit (0.0001 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.0014-0.0040 mg/L.

Total recoverable vanadium was detected above the method detection limit (0.0001 mg/L) in all 32 samples collected in 2022; concentrations ranged from 0.0017-0.0049 mg/L.

1.4.9 Data Validation

Data quality objectives (DQOs) were evaluated for accuracy and precision. These DQOs were largely met in 2022, with a few exceptions. To assess accuracy, analyte concentrations were measured in field blanks to evaluate sampling accuracy and the extent to which the field techniques may have contaminated the samples. Sixty analytes were analyzed in four separate field blank samples. Of the 60 separate analyte concentrations in those field blanks, 2.5 percent (6 of 240) had concentrations equal to or greater than the respective analytical reporting limit. Barium was detected in two dissolved field blank samples with detectable concentrations of 0.005 mg/L in each (RL = 0.003 mg/L). Zinc was also detected in two dissolved field blank samples with concentrations of 0.012 mg/L in each (RL = 0.008 mg/L). Lead was detected in one dissolved field blank sample with a concentration of 0.0004 mg/L in each (RL = 0.0003 mg/L).

Paired field sample and field duplicate concentrations were compared to evaluate sampling precision. In each pair, sixty analytes were compared in four separate field sample and field duplicate pairs. In total, there were 240 sample and duplicate pairs. Relative percent difference (RPD) comparisons were made between each of those pairs which had at least one of the sample pair concentrations greater than five times the analytical reporting limit. Five analytes in these pairings (2.1 percent) exceeded the data quality objective for sampling precision (RPD less than 25 percent) in 2022. Exceedances included: total recoverable aluminum (RPD = 44.2 percent), total recoverable iron (RPD = 36.4 percent), and total suspended sediment (RPD = 66.7 percent) in the sample pair collected at Site SS-10A on September 2, 2022; total nitrogen (RPD = 31 percent) in the sample pair collected at Site SS-19 on June 8, 2022; and total recoverable mercury (RPD = 29.5 percent) in the sample pair collected at Site SS-10A on December 8, 2022.

1.5 DISCUSSION

The SSTOU remedy is intended to remove threats to human health and the environment posed by mining related contaminants within the floodplain of Silver Bow Creek. As of 2022, major remedial measures had been completed throughout the SSTOU, but minor actions may continue to be implemented in forthcoming years to remove residual contaminant sources. This monitoring report represents a continuing assessment of post-remediation conditions in the SSTOU.

1.5.1 Streamflows

Streamflow in Silver Bow Creek in 2022 at the upper end of the SSTOU (below Butte) was at, or above, the long-term median level for most of the year. This was likely due to the ongoing addition of treated discharge water from the Berkeley Pit. Prior to the addition of this discharge water, upper Silver Bow Creek below Butte typically had a base streamflow level of about 20 ft^3/s.

The treated discharge water is typically about 7 ft^3/s, which represents a 35 percent increase at baseflow.

In contrast, streamflow in lower Silver Bow Creek at Opportunity was much lower than the long-term median for most of the year after March 2022. Flows were particularly low during the summer and fall. In September, streamflow at opportunity fell below 4 ft^3/s, or nearly 20 percent of the median, and those levels were the lowest ever recorded at that gage during its 34-year period of operation. It is also notable that flows in Silver Bow Creek below Butte were typically 3-4 times higher than at Opportunity during much of the summer of 2022.

1.5.2 Field Parameters

Differences in water temperature, pH, turbidity, and dissolved oxygen among sample quarters reflected normal seasonal variation for those parameters. This sampling program does not represent mid-summer conditions and does not reflect stressful conditions for salmonids and other cold-water organisms. All pH measurements in the SSTOU in 2022 were within the 6.5–9.5 goal range for I-classification streams. Conductivity was extremely high (2-3 times higher) relative to historic levels at all sites presumably due to the addition of the treated discharge from the Butte Mine Flooding Operable Unit.

All measured dissolved oxygen concentrations were above the 1-day minimum standard for an I-classification stream without juvenile salmonids (3 mg/L; DEQ [2019a]). In the recent past, Silver Bow Creek was severely affected by hypoxia (dissolved oxygen less than 2 mg/L) during summer nights [Plumb, 2009; Gammons et al., 2011; Naughton, 2013] due to ammonia-rich effluent from the Butte WWTP [Gammons et al., 2011]. However, following the WWTP upgrades, ammonia concentrations are sharply reduced from prior levels and dissolved oxygen levels have increased [Nagisetty et al., 2019].

1.5.3 Common Ions

Common ions describe the basic water chemistry of the subject water bodies, and certain ions (e.g., sulfate) may be used as indicators for the presence of mine-related contaminants. Water hardness buffers the toxic effects of some heavy metals and aquatic life toxicity standards for some SSTOU COCs (cadmium, copper, lead, and zinc) vary as a function of water hardness to account for the mediating effect of hardness on toxicity. Saturation of calcium and magnesium (the constituents of water hardness) mitigates metal toxicity by inhibiting uptake of metals through the gills. Carbonate and bicarbonate alkalinity also contribute to the buffering system of surface waters by resisting changes in pH. Levels of water hardness and alkalinity also influence the productivity of aquatic systems. Western freshwater fisheries typically have alkalinity values of 100–200 mg/L.

Since 2020, multiple ions (including calcium, sodium, sulfate, and potassium) have been quite elevated (by up to seven times the historic baseline) at SSTOU sites. These elevated ion

concentrations were presumably due to the addition of treated discharge from the Butte Mine Flooding Operable Unit. One exception was during the September 2022 sample period when water hardness and ion concentrations were similar to pre-discharge years.

1.5.4 Nutrients

The 2016 monitoring year was important for evaluation of nutrient concentrations because upgrades to the Butte WWTP plant became effective during that year. Data from 2022 further supports the conclusion that the 2016 WWTP upgrades have drastically reduced nutrient constituent concentrations monitored under this program, particularly ammonia. Despite the upgrades, total nitrogen and phosphorus concentrations remain elevated.

1.5.5 Contaminants of Concern

The SSTOU remedy is intended to remove threats to human health and the environment posed by the presence of metals-rich tailings within the floodplain of Silver Bow Creek. Although other constituents are monitored (e.g., nutrients), metal COCs are the primary focus of this monitoring program.

Exceedance rates of surface water performance goals since 2020 are much lower than in years prior to 2020, especially for copper (Figure 1-49). Copper exceedance rates declined gradually from 2010-2019 (from 95 percent to 73 percent), but since 2020 copper exceedances have dropped to no more than 22 percent in any particular year (Figure 1-49). Since 2020, no other COCs with hardness-based performance goals (cadmium, lead, or zinc) have exceeded standards (Figure 1-49). Results through 2019 reflect steady declines in metal concentrations whereas the results since 2020 are largely due to the pronounced increase in water hardness related to the input of treated Berkeley Pit discharge water with high hardness.

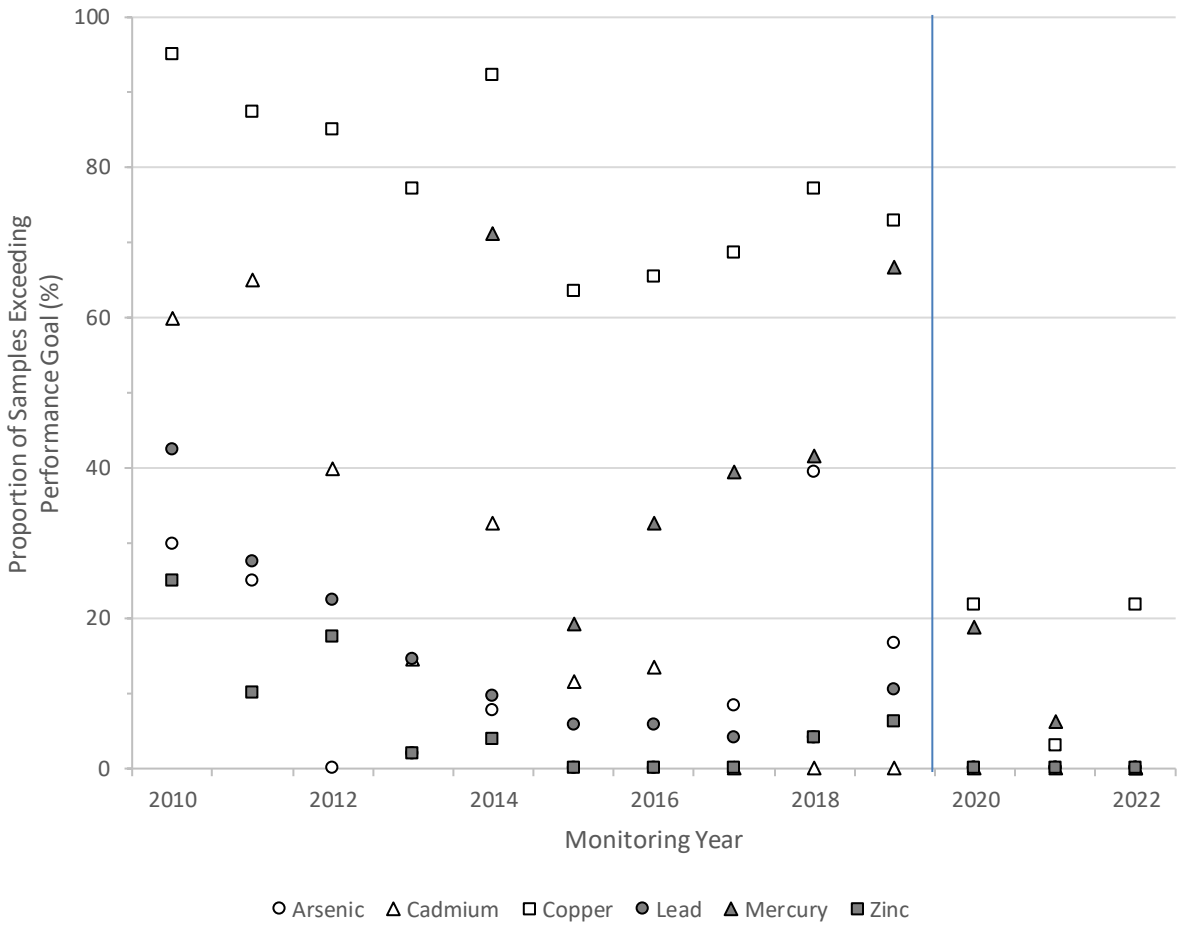


Figure 1-49. Exceedance rates for each contaminant of concern in the Streamside Tailings Operable Unit, 2010-2022. Vertical line represents timing of treated discharge from the Butte Mine Flooding Operable Unit which has resulted in sharply increased water hardness.

1.5.6 Synoptic Copper Sampling

Synoptic sampling results for Subarea 1 strongly suggest that there is a copper source in Silver Bow Creek approximately 0.5 miles downstream from the town of Rocker. Because there are no known surface water discharges in this stream reach, a groundwater source in this reach cannot be ruled out. Continued monitoring of this reach is appropriate to further identify and define likely source areas for more detailed investigations.

1.5.7 Other Metals

Two surface water samples exceeded the chronic aquatic life standard for iron [DEQ, 2019a] in 2022.

1.5.8 Data Validation

All data derived from laboratory analysis of surface water were validated through field and laboratory quality control procedures. A quality assurance and quality control checklist, field duplicate and blank results, and assessments of data quality objectives are included in Appendix A.

Few detections of any analytes in field blanks suggest the field techniques generally introduced little contamination into the samples. However, dissolved barium and zinc were detected in several field blank samples, although at low concentrations relative to the reporting limits. The consistency with which the dissolved field blanks were contaminated with barium and zinc suggests the sample processing technique consistently introduces low levels of barium and zinc into the dissolved samples and likely results in a slight positive bias (i.e., actual dissolved barium and zinc concentrations in the stream were probably lower than the concentrations reported). Although contamination of dissolved barium and zinc is a concern, barium is not a metal of concern and the performance goal for zinc is based on total recoverable (i.e., unfiltered) concentrations which were not influenced by these procedures.

There were few (2.1 percent) exceedances of the project data quality objective for sampling precision (i.e., paired sample and duplicate RPDs were less than 25 percent) in 2022 suggesting sampling precision for the data collected was relatively high.

2.0 SEDIMENT

2.1 INTRODUCTION

The Streamside Tailings Operable Unit (SSTOU) Record of Decision (ROD) did not specify numeric remediation standards for concentrations of contaminants of concern in instream sediment, stating "No metals concentration cleanup goal is established by this action" [DEQ and EPA, 1995]. The 1998 Explanation of Significant Differences (ESD) [DEQ and EPA, 1998] modified the sediment goals to recognize that the realignment and reconstruction of the stream channel in many areas provided for the streambed to be reconstructed with clean materials. In those areas where the existing channel was to be maintained, the sediments would be excavated to a minimum depth of one foot and the new channel bed reconstructed with clean fill material. Thus, the contaminated sediments were replaced with clean material throughout the operable unit.

2.2 REFERENCE VALUES

Contaminant of concern concentrations in instream sediments are compared to ecological reference values to evaluate the influence of remediation and extent of recontamination from upstream on sediment. These reference values are the "threshold effect concentration" (TEC) and the "probable effect concentration" (PEC) which are consensus-based sediment quality guidelines for benthic organisms [MacDonald et al., 2000]. At metal COC concentrations above the TEC, benthic organisms may be affected. At metal COC concentrations above the PEC, benthic organisms are likely to be affected (Table 2-1).

Table 2-1. Reference values for contaminant of concern concentrations (dry weight [DW]) of instream sediments in the Streamside Tailings Operable Unit. The threshold effect concentration (TEC) and probable effect concentration (PEC) were described in MacDonald et al. [2000].

Contaminant of Concern	Threshold Effect Concentration (mg/kg-DW)	Probable Effect Concentration (mg/kg-DW)
Arsenic	9.79	33
Cadmium	0.99	4.98
Copper	31.6	149
Lead	35.8	128
Mercury	0.18	1.06
Zinc	121	459

2.3 METHODS

The purpose of the instream sediment monitoring program is to collect data describing the temporal and spatial variation of COC concentrations in the SSTOU. These data provide a long-term record of environmental conditions in the SSTOU. This long-term record provides a dataset to evaluate the effect of remediation on environmental conditions in the SSTOU over time. Changes to the sediment monitoring program have occurred over time and a record of these changes is provided in the project sampling and analysis plan [RESPEC, 2022]. The program attempts to fully adhere to monitoring requirements specified in the SSTOU ROD (Table 2-2).

Table 2-2. Minimum post-remedy instream sediment monitoring requirements specified in the Record of Decision for the Streamside Tailings Operable Unit [DEQ and EPA, 1995].

Locations/Physical	Analytical Parameters	Analytes
Surface water locations and at each depositional area.	Metals (total) in three size fractions: <0.063 mm, 0.063-1 mm, >1 mm and greater	Arsenic, cadmium, copper, lead, mercury, zinc

2.3.1 Monitoring Locations

Monitoring was conducted at eight long-term monitoring sites (Figure 2-1). All sites were located within the SSTOU (Table 2-3; Figure 2-1).

Table 2-3. Instream sediment sampling locations in the Streamside Tailings Operable Unit.

Site ID	Site Location	Location (GPS coordinates, NAD 83)	
		Latitude	Longitude
SS-07[39]	Silver Bow Creek below Butte WWTP	45.99679	-112.56470
SS-10A	Silver Bow Creek above Sand Creek	46.00375	-112.66084
SS-13	Silver Bow Creek in Reach L	46.00647	-112.71394
SS-14	Silver Bow Creek at Miles Crossing	46.01142	-112.72270
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	46.02096	-112.78802
SS-16B	Silver Bow Creek in Reach P near Fairmont	46.05494	-112.79611
SS-17D[40]	Silver Bow Creek below Stewart Street at Opportunity	46.10787	-112.80553
SS-19	Silver Bow Creek at Frontage Road	46.12250	-112.80077

[39] Co-located with USGS Gage 12323250.

[40] Co-located with USGS Gage 12323600.

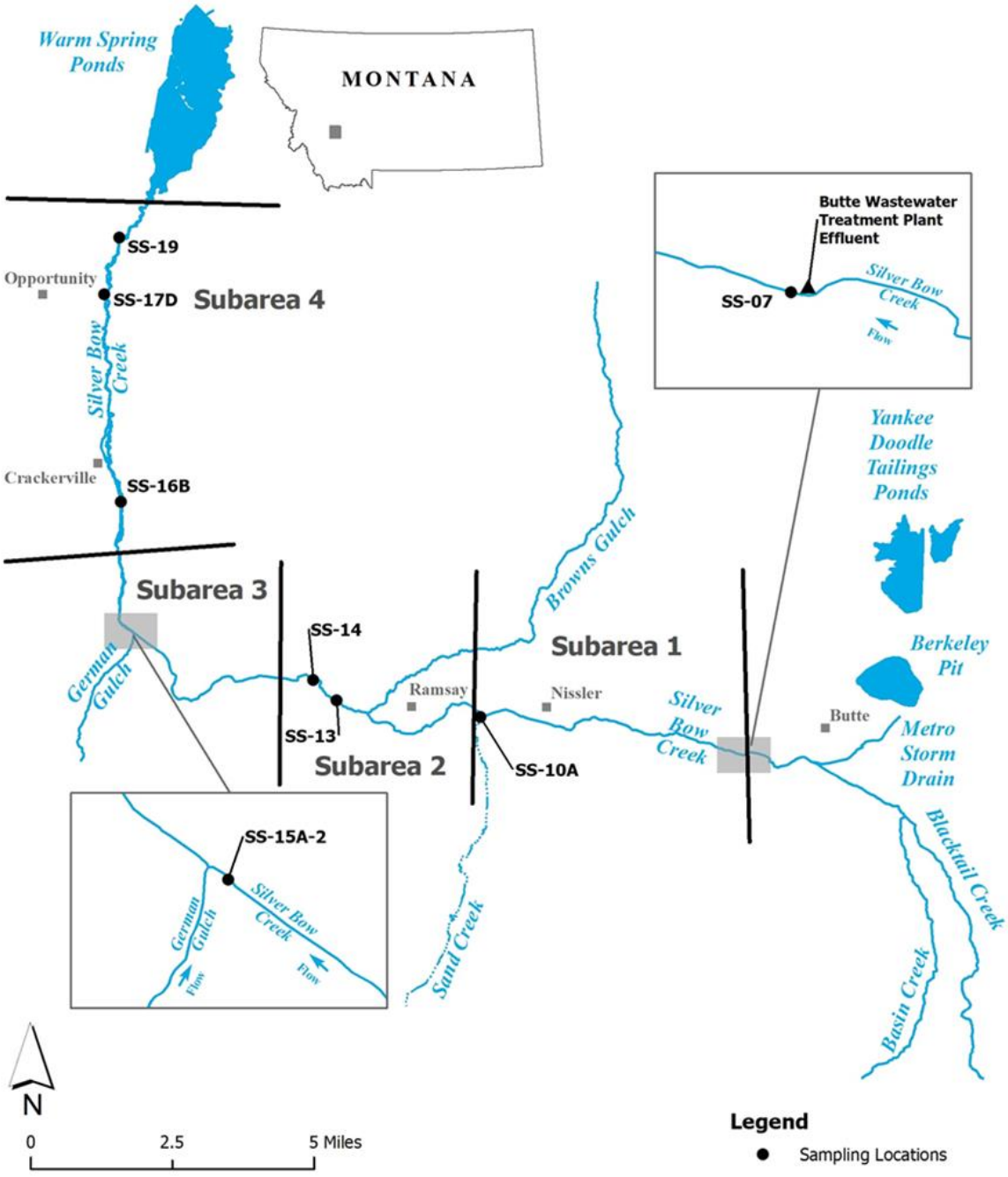


Figure 2-1. Instream sediment sampling locations in the Streamside Tailings Operable Unit.

2.3.2 Monitoring Schedule

Monitoring events were scheduled to describe seasonal variation in sediment chemistry within the SSTOU. One monitoring event occurred during each calendar quarter. Quarterly monitoring events occurred near the end of each quarter. First quarter (Q1) monitoring occurred on March 16, 2022 prior to spring snowmelt runoff. Second quarter (Q2) monitoring occurred on June 8, 2022 near the peak of the spring snowmelt runoff period. Third quarter (Q3) monitoring occurred on September 2, 2022 during low streamflow conditions. Fourth quarter (Q4) monitoring occurred on December 8, 2022 during late fall.

2.3.3 Monitoring Parameters

Instream sediment samples were analyzed for total extractable dry weight concentrations of COCs (arsenic, cadmium, copper, lead, mercury, and zinc) and other metals (aluminum, antimony, barium, beryllium, boron, chromium, cobalt, iron, manganese, molybdenum, nickel, selenium, silver, uranium, and vanadium). Each sample was sieved in the laboratory into three size fractions (<0.063 mm, 0.063–1 mm, and 1–2 mm) and metal concentrations were determined independently for each size fraction.

2.3.4 Sample Collection and Analysis

Sample collection and analysis procedures are described in the project sampling and analysis plan (SAP) [RESPEC, 2022] and quality assurance and quality control procedures are described in the program quality assurance project plan (QAPP) [RESPEC, 2014]. Sample collection methods generally followed standard operating procedures (SOPs) developed for the Clark Fork River [AR, 1992]. Composite sediment samples were collected from at least five depositional areas in the stream according to Montana Department of Environmental Quality (DEQ) standard operating procedures (SOPs) [DEQ, 2019b]. Each composite sample was wet sieved in the laboratory into three sediment size fractions: <0.063 mm, 0.063–1 mm, and 1–2 mm. Samples were analyzed by size fraction at Energy Laboratories (Helena, Montana). Laboratory analysis procedures included SW6010B, SW6020, SW7471A, or SW7471B (Table 2-4).

Table 2-4. Analytes and analytical methods for instream sediment monitoring in the Streamside Tailings Operable Unit.

Parameter	Category	Analytical Method
Arsenic	Contaminants of concern	SW6010B
Cadmium		SW6020
Copper		SW6010B
Lead		SW6010B
Zinc		SW6010B
Mercury		SW7471B
Aluminum	Other metals	SW6010B
Antimony		SW60120
Barium		SW6010B
Beryllium		SW6010B
Boron		SW6010B
Chromium		SW6010B
Cobalt		SW6010B
Iron		SW6010B
Manganese		SW6010B
Molybdenum		SW6020
Nickel		SW6010B
Selenium		SW6020
Silver		SW6020
Uranium		SW6020
Vanadium		SW6010B

2.3.5 Data Analysis

Data analysis includes description of spatial trends (among sample sites during the same sample period) and temporal (quarterly and annual) trends in constituent concentrations. For COCS, longer-term (since 2014) results are included to provide context for the 2022 results and to evaluate concentrations through time.

Analyte concentrations for each sample were compared to reference values identified for the SSTOU (Table 2-1). The weighted mean concentration of the three sediment size fractions (<0.063 mm, 0.063-1 mm, 1-2 mm) was used for comparison to the identified reference values. The weighted mean concentrations were computed for each COC metal on the basis of sample fraction weight among the three size fractions. In addition, all samples collected at each site were grouped and the median concentration of each COC in the finest size fraction (<0.063 mm) were compared using boxplots to evaluate general spatial trends.

2.3.6 Data Validation

Data quality objectives (DQOs) were established in the SSTOU QAPP for "data representativeness", "comparability", "completeness", "sensitivity", "precision", "bias", and

"accuracy" [RESPEC, 2014]. Methods for field and laboratory QA/QC procedures are also described in detail in the project QAPP. A completed QA/QC checklist, summary tables of field duplicate and field blank results, and assessments of data quality objectives are included in Appendix A. Results from the analytical laboratory are included in Appendix B.

Variability in sediment metals concentrations among samples was assessed by comparing field duplicate samples to field samples. Field duplicate samples were collected at the same location and at the same time as field samples and were processed and analyzed by the same methods. The relative percent difference (RPD) between the concentration in the field duplicate and field sample pair was determined for each metal. One field duplicate sample was collected during each sampling event and RPD statistics were calculated for each field duplicate and field sample pair.

2.4 RESULTS

2.4.1 Sample Size Fraction

The proportion of sediment by size fraction in each sample is displayed in Table 2-5.

Table 2-5. Proportion of each sediment sample in three size fractions in the Streamside Tailings Operable Unit, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
Fine fraction (<0.063 mm)					
SS-07	Silver Bow Creek below Butte WWTP	5.3	1.4	11.5	2.5
SS-10A	Silver Bow Creek above Sand Creek	8.7	13.8	5.5	-
SS-13	Silver Bow Creek in Reach L	6.5	7.8	14.7	-
SS-14	Silver Bow Creek at Miles Crossing	22.6	4.3	5.7	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	7.1	3.2	2.3	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	15.1	5.4	8.3	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	1.3	0.6	1.0	-
SS-19	Silver Bow Creek at Frontage Road	7.8	0.8	1.9	3.6
Mid fraction (0.063-1 mm)					
SS-07	Silver Bow Creek below Butte WWTP	34.3	33.8	28.8	18.5
SS-10A	Silver Bow Creek above Sand Creek	24.4	31.1	21.2	-
SS-13	Silver Bow Creek in Reach L	25.8	30.3	41.4	-
SS-14	Silver Bow Creek at Miles Crossing	40.2	25.8	36.9	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	22.4	15.2	10.7	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	41.0	31.9	47.4	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	16.8	15.0	13.7	-
SS-19	Silver Bow Creek at Frontage Road	46.5	27.5	26.9	33.8
Coarse fraction (1-2 mm)					
	Silver Bow Creek below Butte WWTP	16.8	21.2	16.1	13.6
SS-10A	Silver Bow Creek above Sand Creek	19.9	11.6	19.9	-
SS-13	Silver Bow Creek in Reach L	17.1	14.0	16.9	-
SS-14	Silver Bow Creek at Miles Crossing	17.3	14.5	19.4	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	10.7	15.4	13.1	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	14.1	13.5	24.7	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	11.3	10.4	17.6	-
SS-19	Silver Bow Creek at Frontage Road	7.2	13.0	18.9	9

\- Data missing due to ice on stream

2.4.2 Contaminants of Concern

2.4.2.1 Arsenic

Among all samples collected in 2022, arsenic concentrations ranged from 24-188 mg/kg-DW in the <0.063 mm size fraction, from 6-74 mg/kg-DW in the 0.063-1 mm size fraction, and from 4.9-49 mg/kg-DW in the 1-2 mm size fraction (Table 2-6). Weighted mean arsenic concentrations ranged from 8.4-76.3 mg/kg-DW among samples with concentrations above the reporting limit in all three size fractions (Table 2-7). Based on the weighted mean concentrations in the 26 samples collected in 2022, exceedances of the TEC occurred in all 26 samples and the PEC was exceeded in four samples (Table 2-7).

Fine fraction (<0.063 mm) median arsenic concentrations in 2022 were about 125 mg/kg in Silver Bow Creek below the Butte WWTP (Site SS-07) and were about 2-3 times higher than in any other sites (Figure 2-2). At sites downstream from Site SS-07, median concentrations were generally similar and ranged from about 40-65 mg/kg (Figure 2-2). Median concentrations were above the PEC at all sites (Figure 2-2).

Since 2014, fine fraction arsenic concentrations at Site SS-07 appear to be increasing and becoming more variable (Figure 2-3). At other sites, concentrations appear to be relatively stable (Figure 2-3). Concentrations observed in 2022 were similar to those observed during recent monitoring years (Figure 2-3).

Table 2-6. Total arsenic concentrations (mg/kg dry weight) by size fraction in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
Fine fraction (<0.063 mm)					
SS-07	Silver Bow Creek below Butte WWTP	115	126	86	148
SS-10A	Silver Bow Creek above Sand Creek	36	60	45	-
SS-13	Silver Bow Creek in Reach L	37	41	70	-
SS-14	Silver Bow Creek at Miles Crossing	72	31	60	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	41	24	53	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	54	188	63	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	47	61	70	-
SS-19	Silver Bow Creek at Frontage Road	53	52	70	42
Mid fraction (0.063-1 mm)					
SS-07	Silver Bow Creek below Butte WWTP	25	22	24	24
SS-10A	Silver Bow Creek above Sand Creek	13	17	10	-
SS-13	Silver Bow Creek in Reach L	10	9	6	-
SS-14	Silver Bow Creek at Miles Crossing	7	6	6	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	29	21	41	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	19	74	17	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	18	23	22	-
SS-19	Silver Bow Creek at Frontage Road	9	15	12	15
Coarse fraction (1-2 mm)					
SS-07	Silver Bow Creek below Butte WWTP	22	17	14	31
SS-10A	Silver Bow Creek above Sand Creek	17	15	7	-
SS-13	Silver Bow Creek in Reach L	7	6	4.9[J]	-
SS-14	Silver Bow Creek at Miles Crossing	10	6	6	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	26	15	17	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	20	37	31[J]	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	16	18	49[J]	-
SS-19	Silver Bow Creek at Frontage Road	12	13	18	9

J — Estimated result either because sample result was below analytical reporting limit or because the associated field sample and duplicate pair had a relative percent difference greater than 40 percent.

\- — Data missing due to ice on stream.

Table 2-7. Weighted mean (by size fraction) for total arsenic concentrations (mg/kg dry weight) in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	32.6	22.7	33.8	35.7
SS-10A	Silver Bow Creek above Sand Creek	18.3	27.1	12.8	-
SS-13	Silver Bow Creek in Reach L	12.5	13.0	18.6	-
SS-14	Silver Bow Creek at Miles Crossing	26.0	8.4	11.0	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	30.3	18.6	30.0	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	26.7	76.3	26.0	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	18.5	21.9	38.2	-
SS-19	Silver Bow Creek at Frontage Road	14.9	15.1	16.7	15.9

Exceeds the threshold effect concentration [MacDonald et al., 2000].

Exceeds the probable effect concentration [MacDonald et al., 2000].

\- Data missing due to ice on stream.

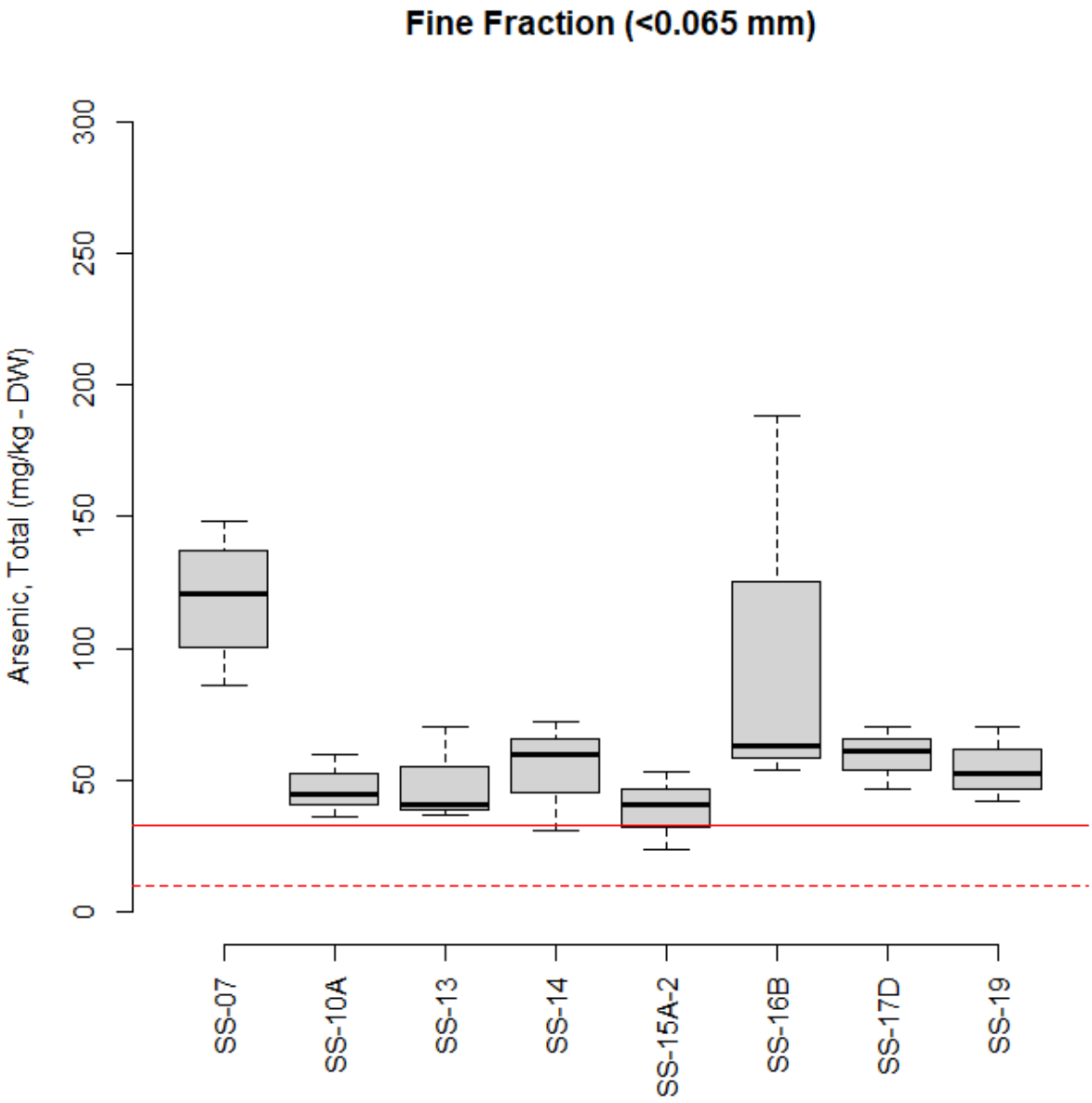


Figure 2-2. Total arsenic concentrations in instream sediment (<0.063 mm) samples collected at Streamside Tailings Operable Unit monitoring stations, 2022. Solid red line is the 33 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 9.79 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

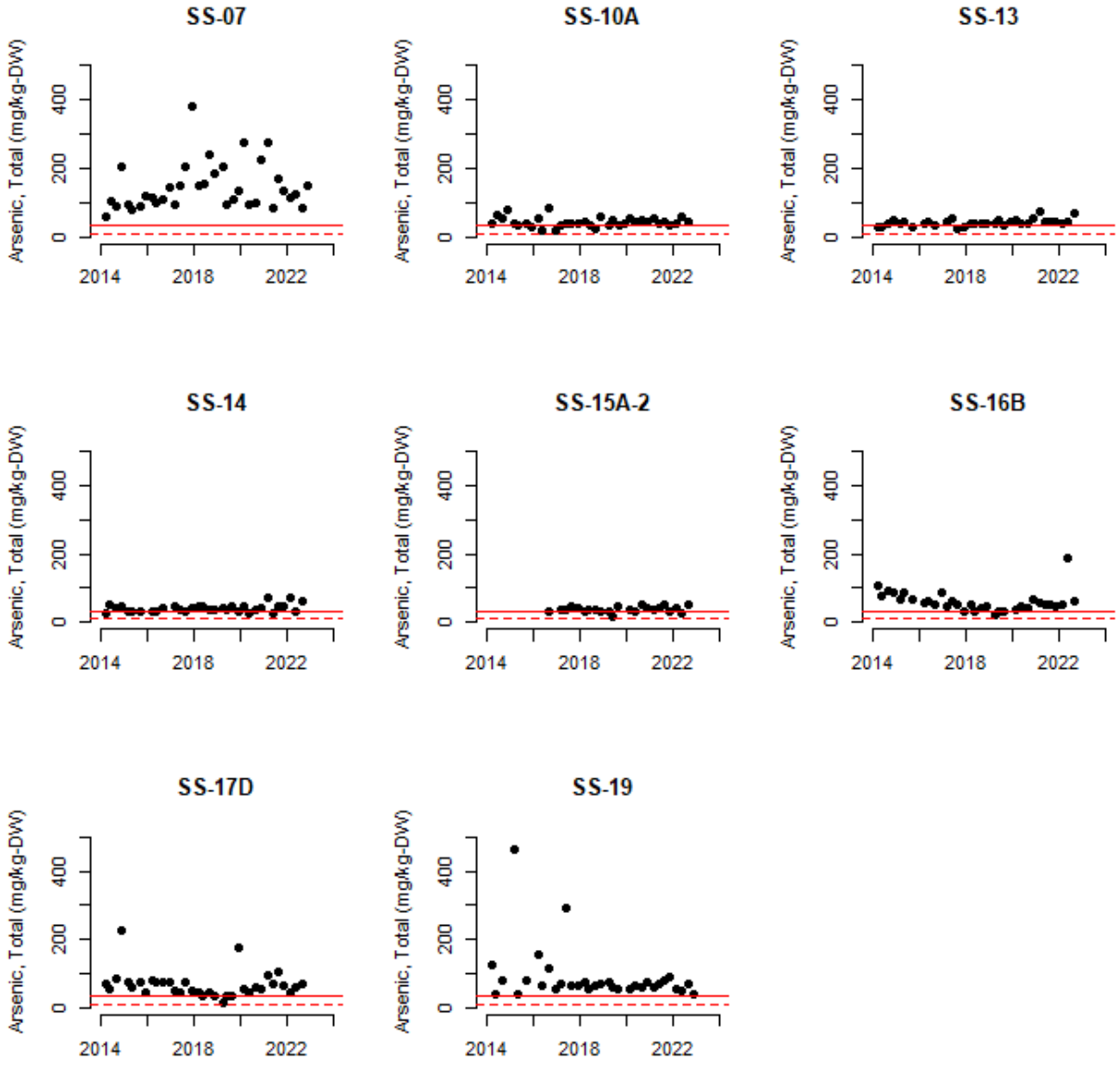


Figure 2-3. Fine fraction (<0.063 mm) total dry-weight arsenic concentrations (mg/kg-DW) in the Streamside Tailings Operable Unit, 2014-2022. Solid red line is the 33 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 9.79 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

2.4.2.2 Cadmium

Among all samples collected in 2022, cadmium concentrations ranged from 3.7-124 mg/kg-DW in the <0.063 mm size fraction, from 0.8-7.0 mg/kg-DW in the 0.063-1 mm size fraction, and from 0.2-13.6 mg/kg-DW in the 1-2 mm size fraction (Table 2-8). Weighted mean concentrations ranged from 0.9-10.9 mg/kg-DW among samples with concentrations above the reporting limit in all three size fractions (Table 2-9). Based on the weighted mean concentrations in the 26 samples collected in 2022, exceedances of the TEC occurred in 25 samples and the PEC was exceeded in one sample (Table 2-9).

Spatially, fine fraction (<0.063 mm) median cadmium concentrations in 2022 were relatively similar ranging from about 7-19 mg/kg-DW (Figure 2-4). The highest median concentrations were at Sites SS-17D and SS-19 (Figure 2-4). Median concentrations were above the PEC at all sites (Figure 2-4).

Since 2014, fine fraction cadmium concentrations have been highly variable at all sites (Figure 2-5). Given the extent of variability, it is difficult to identify increasing or decreasing trends at any sites (Figure 2-5). Other than a sample collected on March 26, 2015 (97 mg/kg-DW), one 2022 sample collected at Site SS-19 (September 2, 2022; 124 mg/kg-DW) was substantially higher (about six times as high) than any prior concentrations observed at that site (Figure 2-5). Concentrations observed in 2022 maintain the preceding trend of high variability in concentrations at each site (Figure 2-5).

Table 2-8. Total cadmium concentrations (mg/kg dry weight) by size fraction in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
Fine fraction (<0.063 mm)					
SS-07	Silver Bow Creek below Butte WWTP	6.4	10.9	6.9	5.8
SS-10A	Silver Bow Creek above Sand Creek	7.4	9.8	10.1	-
SS-13	Silver Bow Creek in Reach L	8.9	6.5	12.4	-
SS-14	Silver Bow Creek at Miles Crossing	11.8	7.0	8.4	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	9.0	3.7	15.7	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	9.3	13.9	7.4	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	11.4	17.4	13.7	-
SS-19	Silver Bow Creek at Frontage Road	5.5	19.3	124	18.4
Mid fraction (0.063-1 mm)					
SS-07	Silver Bow Creek below Butte WWTP	1.2	1.7	1.7	1.1
SS-10A	Silver Bow Creek above Sand Creek	2.1	2.4	1.1	-
SS-13	Silver Bow Creek in Reach L	1.7	1.2	1.5	-
SS-14	Silver Bow Creek at Miles Crossing	1.0	1.4	1.0	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	4.8	1.0	2.5	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	1.4	2.8	1.6	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	1.5	1.3	0.8	-
SS-19	Silver Bow Creek at Frontage Road	1.1	1.0	7.0	1.2
Coarse fraction (1-2 mm)					
SS-07	Silver Bow Creek below Butte WWTP	0.7	0.8	0.7	13.6
SS-10A	Silver Bow Creek above Sand Creek	0.9	1.1	1.0	-
SS-13	Silver Bow Creek in Reach L	0.8	0.4	0.2	-
SS-14	Silver Bow Creek at Miles Crossing	0.8	0.4	0.3	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	1.2	0.2	0.5	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.5	0.8	0.5	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.5	0.6	0.5	-
SS-19	Silver Bow Creek at Frontage Road	0.6	0.8	5.2	9.0

J — Estimated result either because sample result was below analytical reporting limit or because the associated field sample and duplicate pair had a relative percent difference greater than 40 percent.

\- — Data missing due to ice on stream.

Table 2-9. Weighted mean (by size fraction) for total cadmium concentrations (mg/kg dry weight) in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	1.5	1.6	2.5	1.2
SS-10A	Silver Bow Creek above Sand Creek	2.5	3.9	2.1	-
SS-13	Silver Bow Creek in Reach L	2.3	1.8	3.4	-
SS-14	Silver Bow Creek at Miles Crossing	4.0	1.6	1.5	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	4.6	0.9	2.7	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	2.9	3.4	1.9	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	1.6	1.4	1.0	-
SS-19	Silver Bow Creek at Frontage Road	1.6	1.3	10.9	2.4

Exceeds the threshold effect concentration [MacDonald et al., 2000].

Exceeds the probable effect concentration [MacDonald et al., 2000].

\- Data missing due to ice on stream.

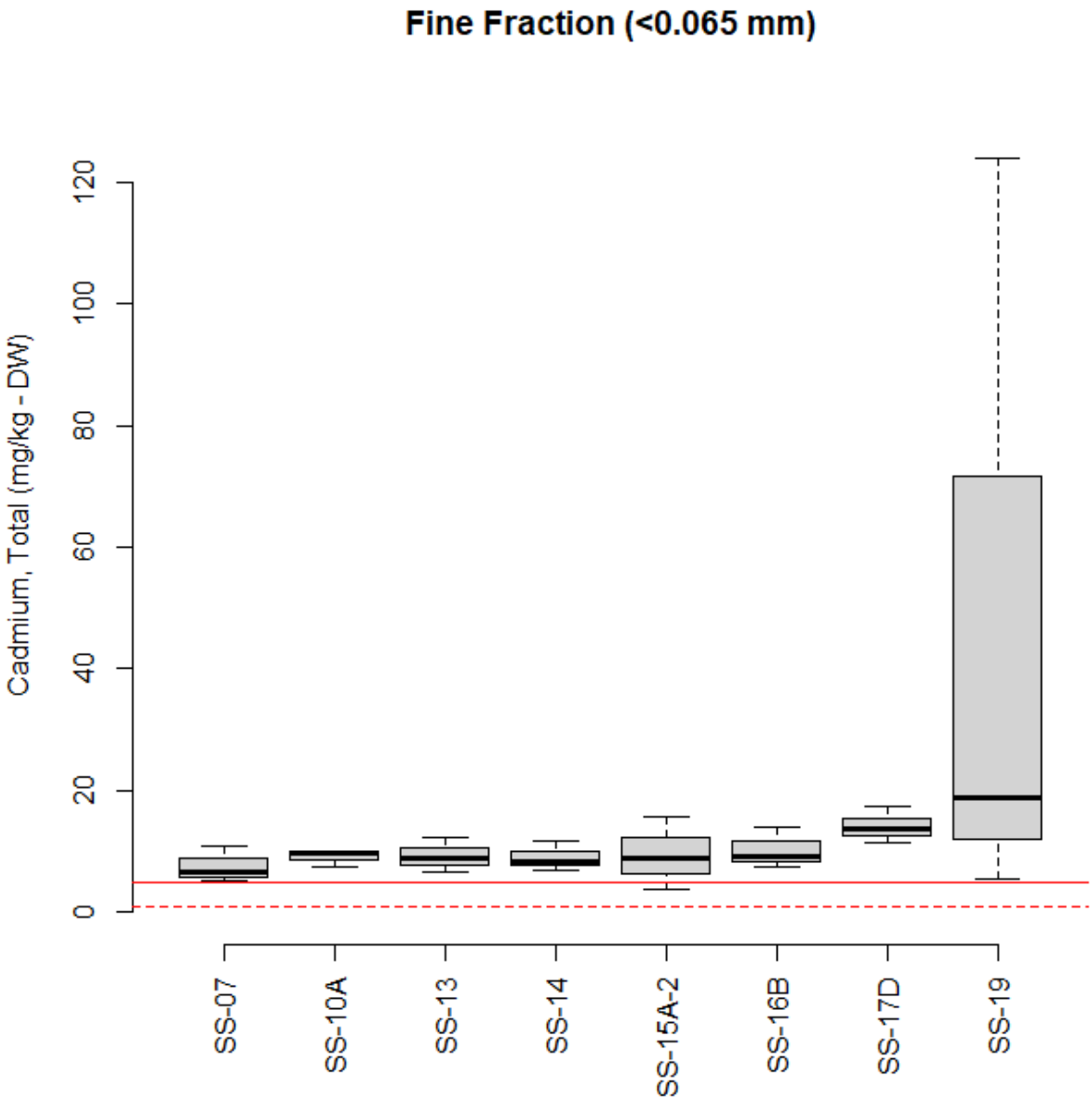


Figure 2-4. Total cadmium concentrations in instream sediment (<0.063 mm) samples collected at Streamside Tailings Operable Unit monitoring stations, 2022. Solid red line is the 4.98 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 0.99 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

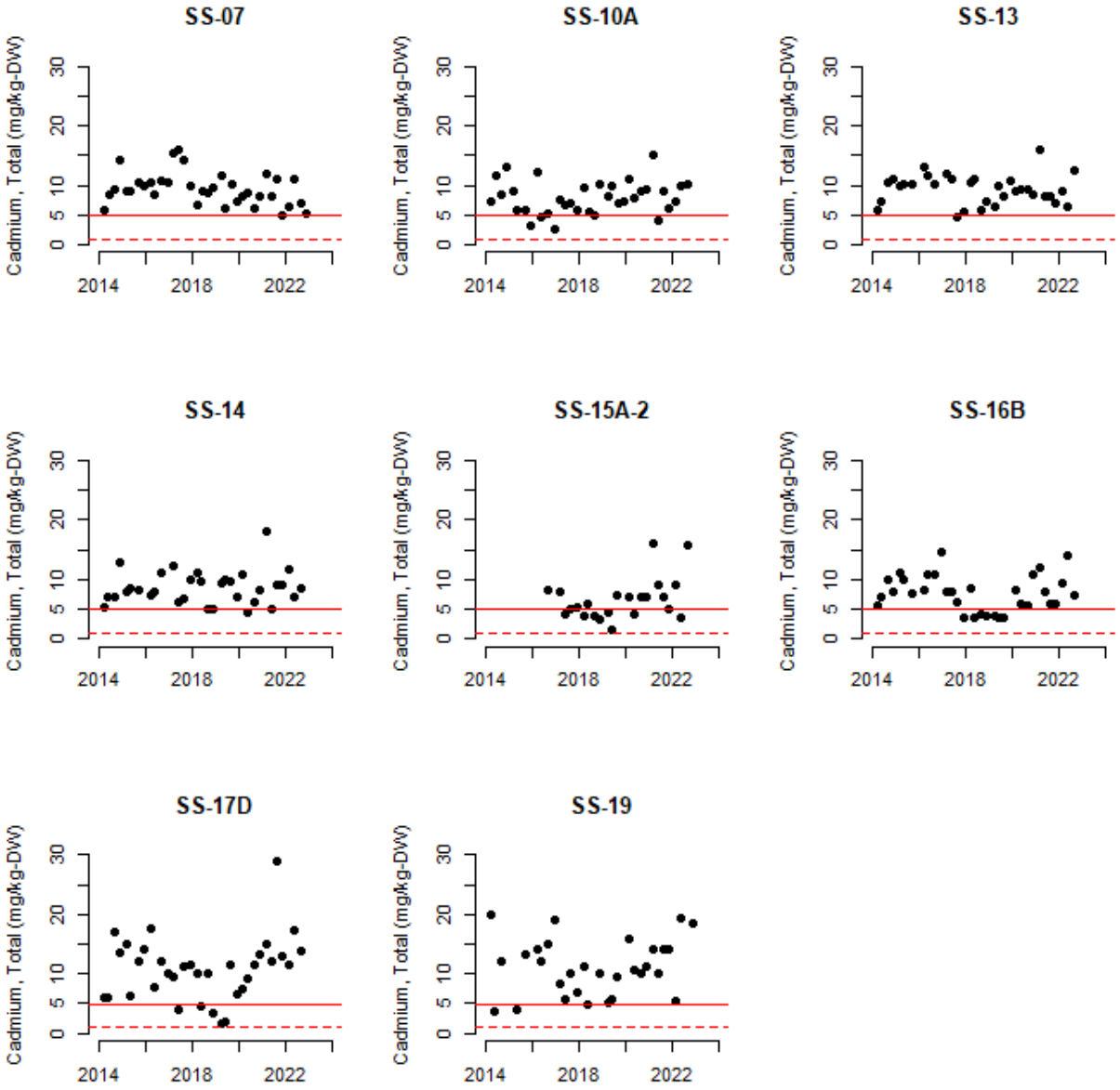


Figure 2-5. Fine fraction (<0.063 mm) total dry-weight cadmium concentrations (mg/kg-DW) in the Streamside Tailings Operable Unit, 2014-2022.[41] Solid red line is the 4.98 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 0.99 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

[41] Two sample results from Site SS-19 on March 26, 2015 (97 mg/kg-DW) and September 2, 2022 (124 mg/kg-DW) are not depicted.

2.4.2.3 Copper

Among all samples collected in 2022, copper concentrations ranged from 316-2,410 mg/kg-DW in the <0.063 mm size fraction, from 50-432 mg/kg-DW in the 0.063-1 mm size fraction, and from 15-187 mg/kg-DW in the 1-2 mm size fraction (Table 2-10). Weighted mean concentrations ranged from 74-577 mg/kg-DW among samples with concentrations above the reporting limit in all three size fractions (Table 2-11). Based on the weighted mean concentrations, exceedances of the TEC occurred in all 26 samples and exceedances of the PEC occurred in 16 samples (Table 2-11).

Spatially, fine fraction (<0.063 mm) median copper concentrations generally decreased from the upstream-most site (Silver Bow Creek below Butte WWTP; Site SS-07) to the downstream-most site (Silver Bow Creek at Frontage Road; Site SS-19 (Figure 2-6). Although the median concentration at Sites SS-14 and SS-16B were lower than expected based on that prevailing trend (Figure 2-6). Median copper concentrations in all SSTOU sites were above the PEC (Figure 2-6).

Since 2014, fine fraction copper concentrations were relatively constant through time in Subareas 1, 2, and 3 (Figure 2-7). In Subarea 4, concentrations at Fairmont (Site SS-16B) and Opportunity (Site SS-17D) appeared to decrease between 2018-2020 but concentrations have recently rebounded (Figure 2-7). No temporal trend is apparent at the Frontage Road site (Site SS-19), primarily due to the high degree of variability in the results (Figure 2-7). Concentrations observed in 2022 were similar to those observed during recent monitoring years (Figure 2-7).

Table 2-10. Total copper concentrations (mg/kg dry weight) by size fraction in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
Fine fraction (<0.063 mm)					
SS-07	Silver Bow Creek below Butte WWTP	856	782	817	900
SS-10A	Silver Bow Creek above Sand Creek	616	1,120	878	-
SS-13	Silver Bow Creek in Reach L	821	814	1,070	-
SS-14	Silver Bow Creek at Miles Crossing	857	599	640	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	790	316	910	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	638	2,410	488	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	639	724	887	-
SS-19	Silver Bow Creek at Frontage Road	364	687	816	495
Mid fraction (0.063-1 mm)					
SS-07	Silver Bow Creek below Butte WWTP	157	163	193	134
SS-10A	Silver Bow Creek above Sand Creek	180	226	76	-
SS-13	Silver Bow Creek in Reach L	102	95	80	-
SS-14	Silver Bow Creek at Miles Crossing	75	67	52	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	241	116	213	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	141	432	130	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	99	87	85	-
SS-19	Silver Bow Creek at Frontage Road	67	58	62	50
Coarse fraction (1-2 mm)					
SS-07	Silver Bow Creek below Butte WWTP	87	86[J]	63[J]	76
SS-10A	Silver Bow Creek above Sand Creek	130	87[J]	36[J]	-
SS-13	Silver Bow Creek in Reach L	59	22	15	-
SS-14	Silver Bow Creek at Miles Crossing	56	36[J]	20	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	135	82[J]	78[J]	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	92	187[J]	130[J]	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	60	77[J]	166[J]	-
SS-19	Silver Bow Creek at Frontage Road	47	71[J]	63[J]	43

J — Estimated result either because sample result was below analytical reporting limit or because the associated field sample and duplicate pair had a relative percent difference greater than 40 percent.

\- — Data missing due to ice on stream.

Table 2-11. Weighted mean (by size fraction) for total copper concentrations (mg/kg dry weight) in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	202	149	283	167
SS-10A	Silver Bow Creek above Sand Creek	233	416	154	-
SS-13	Silver Bow Creek in Reach L	182	183	264	-
SS-14	Silver Bow Creek at Miles Crossing	292	108	96	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	310	119	207	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	238	577	167	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	108	98	154	-
SS-19	Silver Bow Creek at Frontage Road	102	74	92	83

Exceeds the threshold effect concentration [MacDonald et al., 2000].

Exceeds the probable effect concentration [MacDonald et al., 2000].

\- Data missing due to ice on stream.

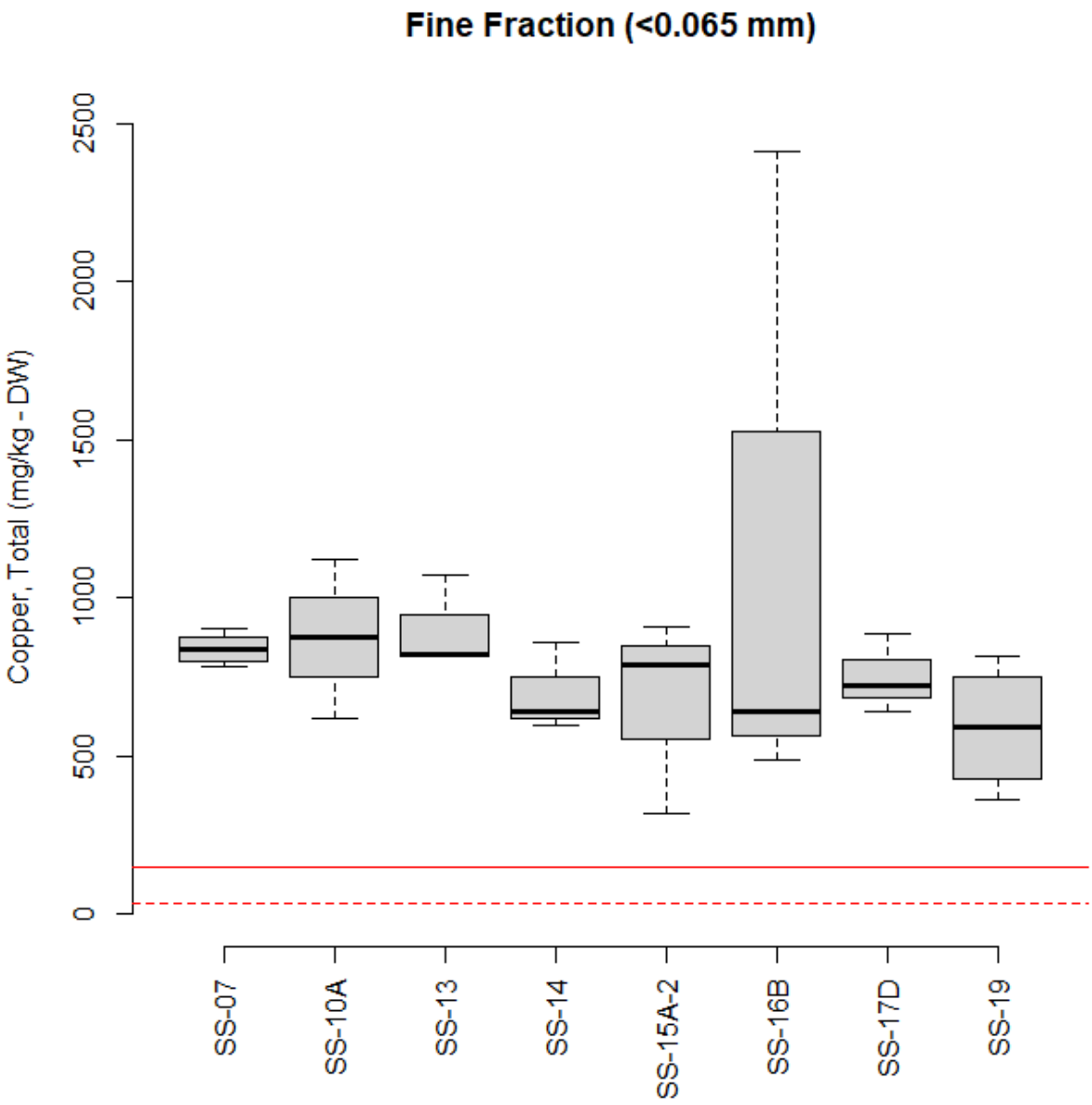


Figure 2-6. Total copper concentrations in instream sediment (<0.063 mm) samples collected at Streamside Tailings Operable Unit monitoring stations, 2022. Solid red line is the 149 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 31.6 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

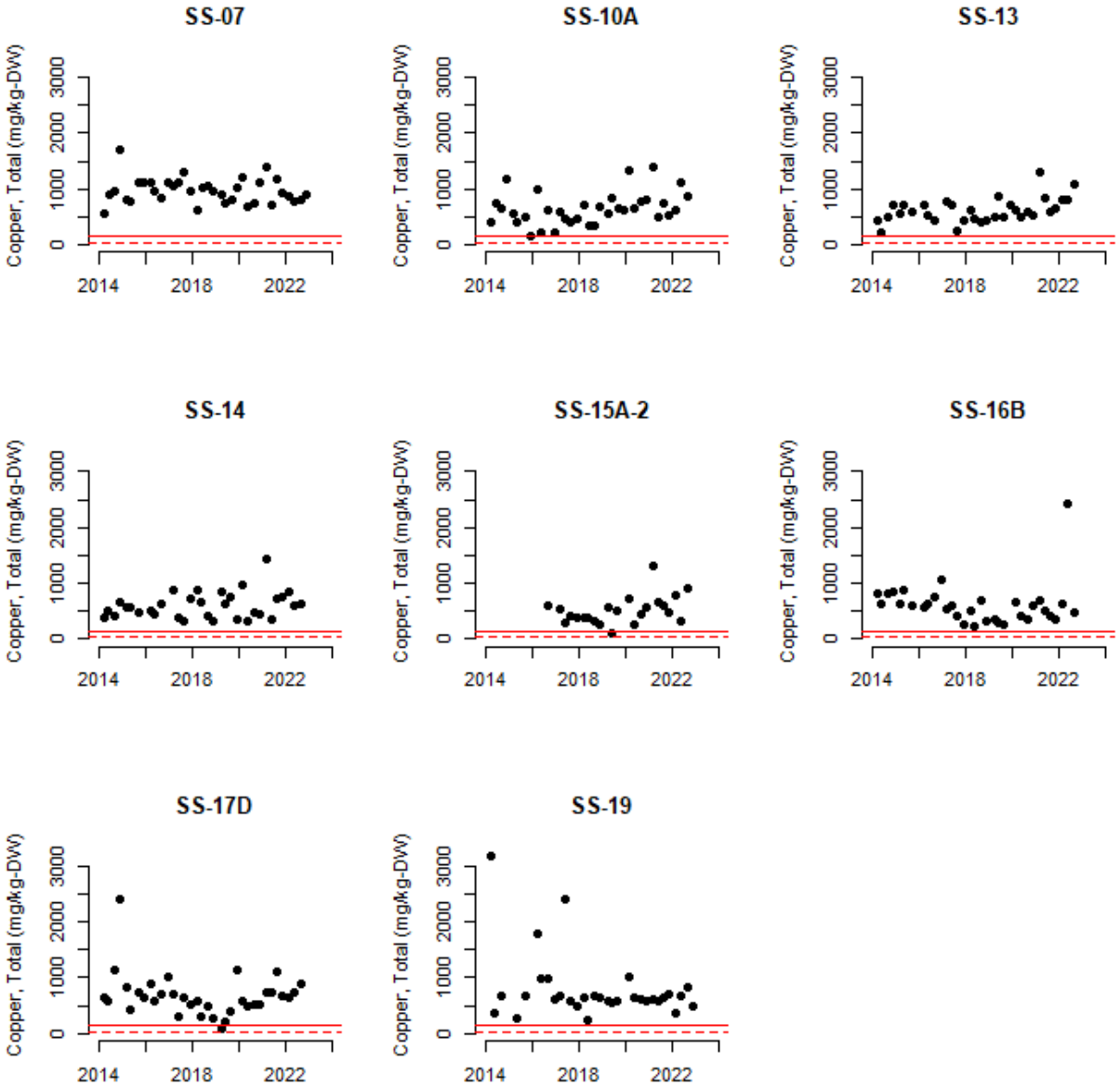


Figure 2-7. Fine fraction (<0.063 mm) total dry-weight copper concentrations (mg/kg-DW) in the Streamside Tailings Operable Unit, 2014-2022.[42] Solid red line is the 149 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 31.6 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

[42] One sample result at Site SS-19 is not depicted (35,700 mg/kg-DW on March 26, 2015).

2.4.2.4 Lead

Among all samples collected in 2022, lead concentrations ranged from 69-506 mg/kg-DW in the <0.063 mm size fraction, from 13-115 mg/kg-DW in the 0.063-1 mm size fraction, and from 6-184 mg/kg-DW in the 1-2 mm size fraction (Table 2-12). Weighted mean concentrations ranged from 22-139 mg/kg-DW among samples with concentrations above the reporting limit in all three size fractions (Table 2-13). Based on the weighted mean concentrations, exceedances of the TEC occurred in 18 samples and the PEC was exceeded in one sample (Table 2-13).

Fine fraction (<0.063 mm) median lead concentrations were about 415 mg/kg-DW in Silver Bow Creek below the Butte WWTP (Site SS-07) and were nearly twice as high as in any other site (Figure 2-8). Median concentrations were above the PEC at all sites except Silver Bow Creek above German Gulch (Site SS-15A-2)); at Site SS-15A-2 concentrations were between the TEC and PEC (Figure 2-8).

Since 2014, fine fraction lead concentrations have been relatively constant through time and were generally at or slightly above the PEC at all sites (Figure 2-9). Concentrations at Fairmont (Site SS-16B) declined from 2015-2019 (Figure 2-9). However, concentrations in the Subarea three sites (Sites SS-16B, SS-17D, and SS-19) have increased slightly since 2019 (Figure 2-9).

Table 2-12. Total lead concentrations (mg/kg dry weight) by size fraction in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
Fine fraction (<0.063 mm)					
SS-07	Silver Bow Creek below Butte WWTP	402[J]	416	414	506
SS-10A	Silver Bow Creek above Sand Creek	151[J]	246	319	-
SS-13	Silver Bow Creek in Reach L	130[J]	143	202	-
SS-14	Silver Bow Creek at Miles Crossing	156[J]	116	185	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	126[J]	69	179	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	189[J]	337	182	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	128[J]	198	233	-
SS-19	Silver Bow Creek at Frontage Road	134[J]	132	232	131
Mid fraction (0.063-1 mm)					
SS-07	Silver Bow Creek below Butte WWTP	71	78	94	62
SS-10A	Silver Bow Creek above Sand Creek	57	63	59	-
SS-13	Silver Bow Creek in Reach L	22	22	16	-
SS-14	Silver Bow Creek at Miles Crossing	14	13	14	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	59	30	47	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	44	115	40	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	31	29	44	-
SS-19	Silver Bow Creek at Frontage Road	26	30	22	22
Coarse fraction (1-2 mm)					
SS-07	Silver Bow Creek below Butte WWTP	57	36	22	56
SS-10A	Silver Bow Creek above Sand Creek	36	38	51[J]	-
SS-13	Silver Bow Creek in Reach L	19	9	6	-
SS-14	Silver Bow Creek at Miles Crossing	16	9	11	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	184	17	28[J]	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	47	51	74[J]	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	22	28	17	-
SS-19	Silver Bow Creek at Frontage Road	15	21	15	14

J — Estimated result either because sample result was below analytical reporting limit or because the associated field sample and duplicate pair had a relative percent difference greater than 40 percent.

\- — Data missing due to ice on stream.

Table 2-13. Weighted mean (by size fraction) for total lead concentrations (mg/kg dry weight) in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	98	71	139	92
SS-10A	Silver Bow Creek above Sand Creek	65	103	86	-
SS-13	Silver Bow Creek in Reach L	35	37	51	-
SS-14	Silver Bow Creek at Miles Crossing	54	22	29	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	104	28	49	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	76	122	65	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	32	33	35	-
SS-19	Silver Bow Creek at Frontage Road	38	29	28	29

Exceeds the threshold effect concentration [MacDonald et al., 2000].

Exceeds the probable effect concentration [MacDonald et al., 2000].

\- Data missing due to ice on stream.

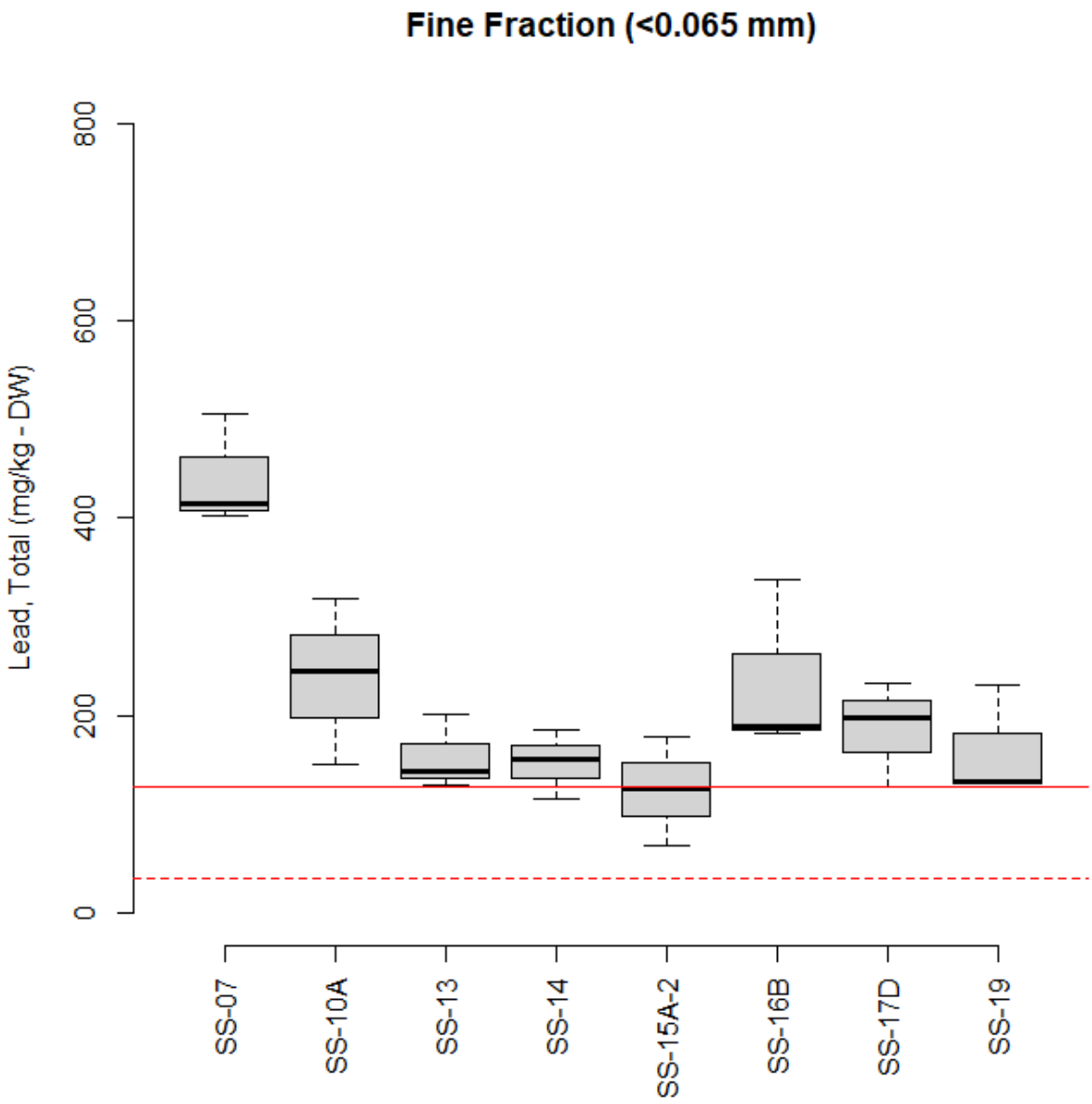


Figure 2-8. Total lead concentrations in instream sediment (<0.063 mm) samples collected at Streamside Tailings Operable Unit monitoring stations, 2022. Solid red line is the 128 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 35.8 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

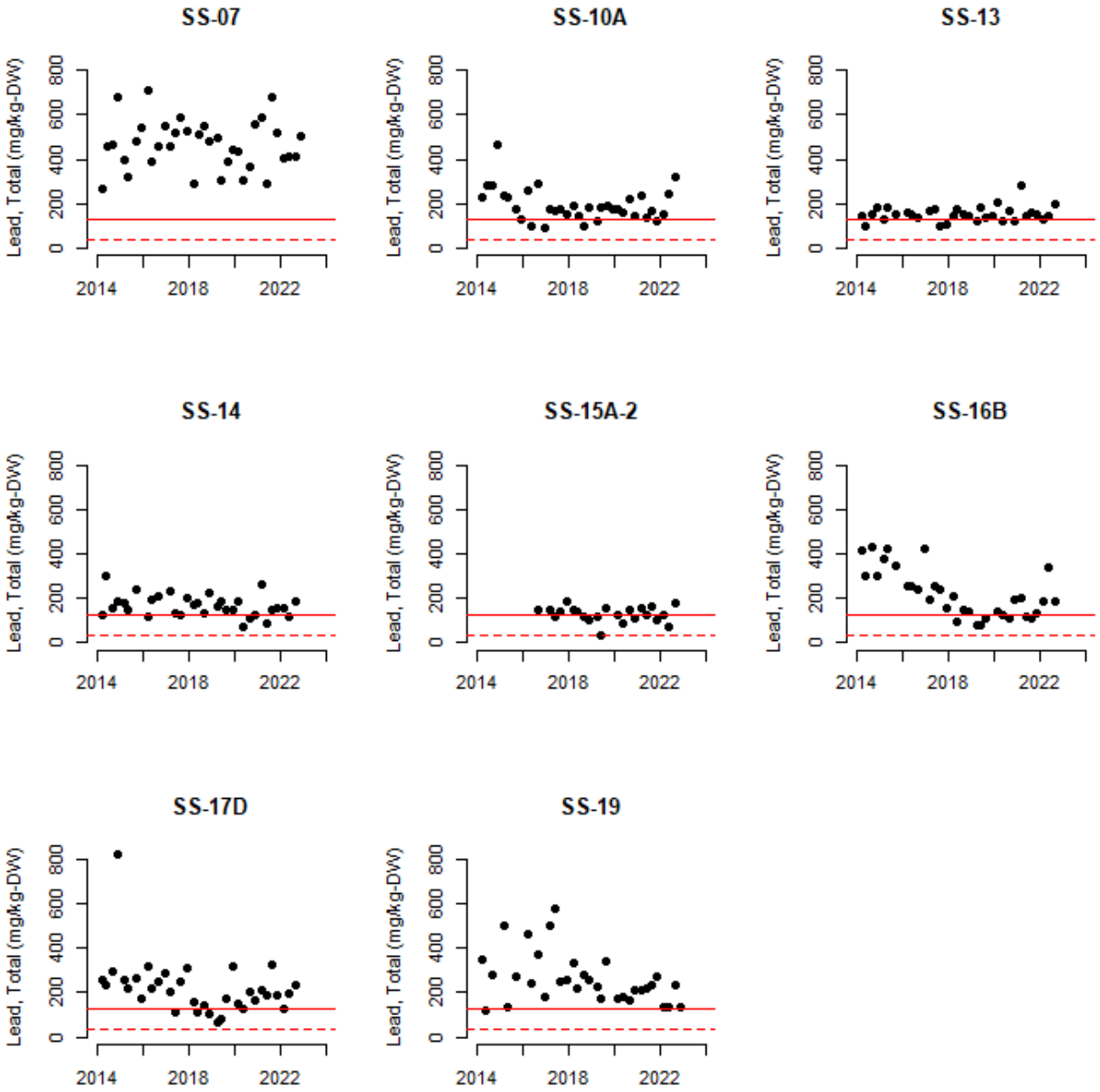


Figure 2-9. Fine fraction (<0.063 mm) total dry-weight lead concentrations (mg/kg-DW) in the Streamside Tailings Operable Unit, 2014-2022. Solid red line is the 128 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 35.8 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

2.4.2.5 Mercury

Among all samples collected in 2022, sediment mercury concentrations ranged from 0.32-3.50 mg/kg-DW in the <0.063 mm size fraction, from 0.05-0.56 mg/kg-DW in the 0.063-1 mm size fraction, and from 0.01-0.22 mg/kg-DW in the 1-2 mm size fraction (Table 2-14). Weighted mean concentrations ranged from 0.08-0.76 mg/kg-DW among samples with concentrations above the reporting limit in all three size fractions (Table 2-15). Based on the weighted mean concentrations, exceedances of the TEC occurred in 11 samples, but no samples exceeded the PEC (Table 2-15).

Median fine fraction (<0.063 mm) mercury concentrations in 2022 were highest (about 1.1 mg/kg-DW) in Silver Bow Creek above Sand Creek (Site SS-10A) and were about twice as high as at other sites except SS-07 and SS-16B (Figure 2-10). Median concentrations were above the TEC at all sites but only exceeded the PEC at Site SS-10A (Figure 2-10).

Since 2014, mercury concentrations have been relatively constant at each site with the exception of Site SS-16B (Figure 2-11). Concentrations at Site SS-16B declined from 2014-2019 but have remained steady since then (Figure 2-11). Concentrations observed in 2022 were similar to those observed during recent monitoring years (Figure 2-11).

Table 2-14. Total mercury concentrations (mg/kg dry weight) by size fraction in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
Fine fraction (<0.063 mm)					
SS-07	Silver Bow Creek below Butte WWTP	1.00	1.10	0.92	0.95
SS-10A	Silver Bow Creek above Sand Creek	0.56	1.10	1.20	-
SS-13	Silver Bow Creek in Reach L	0.60	0.71	0.78	-
SS-14	Silver Bow Creek at Miles Crossing	0.62	0.46	0.50	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.72	0.32	0.63	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.88	3.50	0.58	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.62	0.62	0.77	-
SS-19	Silver Bow Creek at Frontage Road	0.64	0.65	0.68	0.56
Mid fraction (0.063-1 mm)					
SS-07	Silver Bow Creek below Butte WWTP	0.17	0.35	0.15	0.15
SS-10A	Silver Bow Creek above Sand Creek	0.26	0.22	0.39	-
SS-13	Silver Bow Creek in Reach L	0.07[J]	0.08[J]	0.07[J]	-
SS-14	Silver Bow Creek at Miles Crossing	0.06[J]	0.05[J]	0.07[J]	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.21	0.08[J]	0.14	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.20	0.56	ND	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.07[J]	0.09[J]	0.07[J]	-
SS-19	Silver Bow Creek at Frontage Road	0.09[J]	0.10[J]	0.07[J]	0.06[J]
Coarse fraction (1-2 mm)					
SS-07	Silver Bow Creek below Butte WWTP	0.13	0.07[J]	0.02[J]	0.02[J]
SS-10A	Silver Bow Creek above Sand Creek	0.13	0.06[J]	0.03[J]	-
SS-13	Silver Bow Creek in Reach L	0.02[J]	0.01[J]	0.01[J]	-
SS-14	Silver Bow Creek at Miles Crossing	0.04[J]	0.01[J]	0.02[J]	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.17	0.03[J]	0.11	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.10	0.15	0.05[J]	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.18	0.15	0.04[J]	-
SS-19	Silver Bow Creek at Frontage Road	0.22	0.12	0.03[J]	0.03[J]

ND Not detected at analytical reporting limit.

J Estimated result either because sample result was below analytical reporting limit or because the associated field sample and duplicate pair had a relative percent difference greater than 40 percent.

- Data missing due to ice on stream.

Table 2-15. Weighted mean (by size fraction) for total mercury concentrations (mg/kg dry weight) in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	0.24	0.26	0.27	0.16
SS-10A	Silver Bow Creek above Sand Creek	0.26	0.40	0.33	-
SS-13	Silver Bow Creek in Reach L	0.12	0.16	0.20	-
SS-14	Silver Bow Creek at Miles Crossing	0.21	0.08	0.09	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	0.29	0.08	0.17	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	0.33	0.76	DNA	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	0.14	0.13	0.08	-
SS-19	Silver Bow Creek at Frontage Road	0.17	0.12	0.08	0.09

DNA Does not apply because one or more sample fractions had ND concentration.

Exceeds the threshold effect concentration [MacDonald et al., 2000].

Exceeds the probable effect concentration [MacDonald et al., 2000].

\- Data missing due to ice on stream.

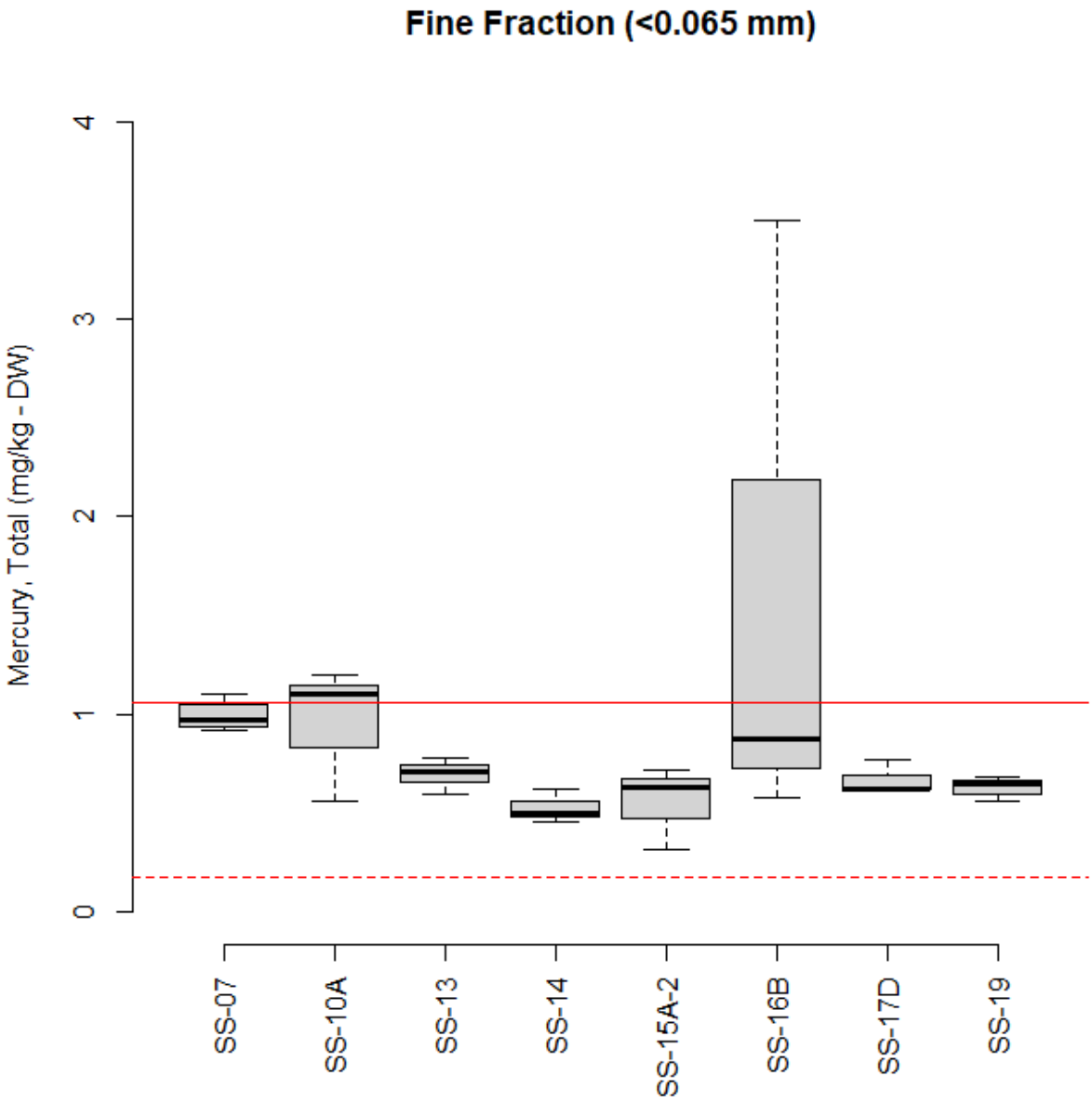


Figure 2-10. Total mercury concentrations in instream sediment (<0.063 mm) samples collected at Streamside Tailings Operable Unit monitoring stations, 2022. Solid red line is the 1.06 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 0.18 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

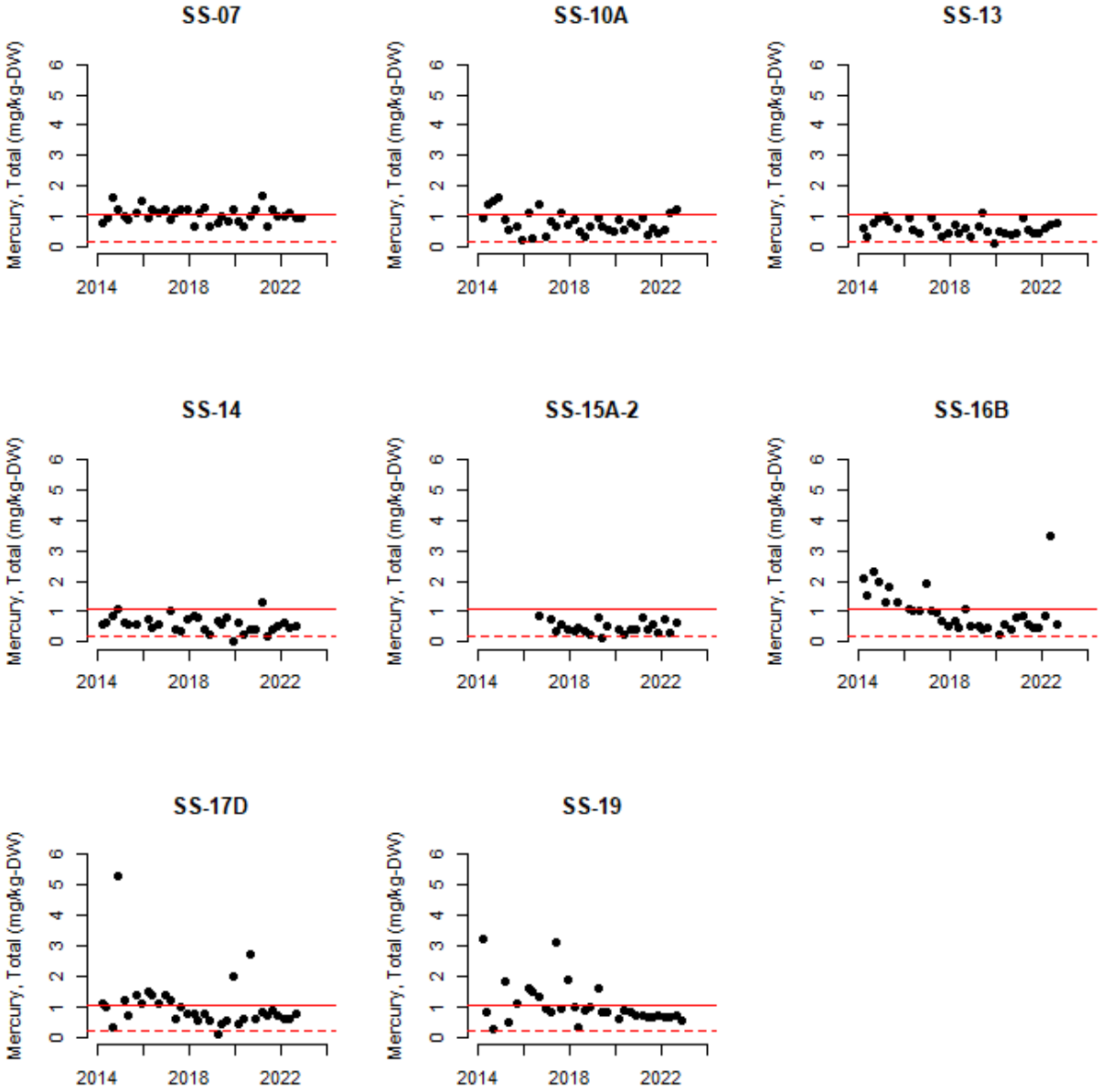


Figure 2-11. Fine fraction (<0.063 mm) total dry-weight mercury concentrations (mg/kg-DW) in the Streamside Tailings Operable Unit, 2014-2022. Solid red line is the 1.06 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 0.18 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

2.4.2.6 Zinc

Among all samples collected in 2022, zinc concentrations ranged from 798-2,500 mg/kg-DW in the <0.063 mm size fraction, from 156-1,190 mg/kg-DW in the 0.063-1 mm size fraction, and from 68-366 mg/kg-DW in the 1-2 mm size fraction (Table 2-16). Weighted mean concentrations ranged from 220-997 mg/kg-DW among samples with concentrations above the reporting limit in all three size fractions (Table 2-17). Based on the weighted mean concentrations, exceedances of the TEC occurred in all 26 samples and exceedances of the PEC occurred in 14 samples (Table 2-17).

Median fine fraction (<0.063 mm) zinc concentrations were highest (about 2,100 mg/kg-DW) at Opportunity (Site SS-17D) (Figure 2-12). At other sites, median concentrations ranged from approximately 1,400-2,000 mg/kg-DW (Figure 2-12). Median concentrations were above the PEC at all sites (Figure 2-12).

Since 2014, zinc concentrations have demonstrated no clear increasing or decreasing trends with the possible exceptions of the Subarea 4 Sites (SS-16B, SS-17D, SS-19) (Figure 2-13). At those sites, concentrations appeared to decline from 2016-2019, but appear to have increased since then (Figure 2-13). Concentrations at Site SS-07 have remained elevated and highly variable throughout the monitoring period (Figure 2-13). Concentrations observed in 2022 were similar to those observed during recent monitoring years (Figure 2-13).

Table 2-16. Total zinc concentrations (mg/kg dry weight) by size fraction in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
Fine fraction (<0.063 mm)					
SS-07	Silver Bow Creek below Butte WWTP	1,750	2,090	1,870	2,050
SS-10A	Silver Bow Creek above Sand Creek	1,180	1,910	1,590	-
SS-13	Silver Bow Creek in Reach L	1,420	1,150	2,200	-
SS-14	Silver Bow Creek at Miles Crossing	2,230	1,070	1,990	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	1,460	798	2,400	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	1,760	2,030	1,710	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	1,650	2,500	2,070	-
SS-19	Silver Bow Creek at Frontage Road	1,570	1,760	2,330	2,060
Mid fraction (0.063-1 mm)					
SS-07	Silver Bow Creek below Butte WWTP	578	655	802	534
SS-10A	Silver Bow Creek above Sand Creek	429	442	243	-
SS-13	Silver Bow Creek in Reach L	264	208	209	-
SS-14	Silver Bow Creek at Miles Crossing	210	156	196	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	1,190	340	653	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	487	698	524	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	405	366	225	-
SS-19	Silver Bow Creek at Frontage Road	418	193	241	205
Coarse fraction (1-2 mm)					
SS-07	Silver Bow Creek below Butte WWTP	230	286	259	215
SS-10A	Silver Bow Creek above Sand Creek	290	283	177	-
SS-13	Silver Bow Creek in Reach L	169	102	68	-
SS-14	Silver Bow Creek at Miles Crossing	148	83	97	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	285	90	144	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	229	366	169	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	251	199	151	-
SS-19	Silver Bow Creek at Frontage Road	256	213	312	117

J — Estimated result either because sample result was below analytical reporting limit or because the associated field sample and duplicate pair had a relative percent difference greater than 40 percent.

\- — Data missing due to ice on stream.

Table 2-17. Weighted mean (by size fraction) for total zinc concentrations (mg/kg dry weight) in quarterly instream sediment samples from Streamside Tailings Operable Unit monitoring stations, 2022.

Site	Site Location	Sample Quarter			
		Q1	Q2	Q3	Q4
SS-07	Silver Bow Creek below Butte WWTP	584	552	865	518
SS-10A	Silver Bow Creek above Sand Creek	500	768	374	-
SS-13	Silver Bow Creek in Reach L	383	321	577	-
SS-14	Silver Bow Creek at Miles Crossing	767	220	330	-
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	997	269	551	-
SS-16B	Silver Bow Creek in Reach P near Fairmont	709	751	537	-
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	401	348	242	-
SS-19	Silver Bow Creek at Frontage Road	545	230	352	332

Exceeds the threshold effect concentration [MacDonald et al., 2000].

Exceeds the probable effect concentration [MacDonald et al., 2000].

\- Data missing due to ice on stream.

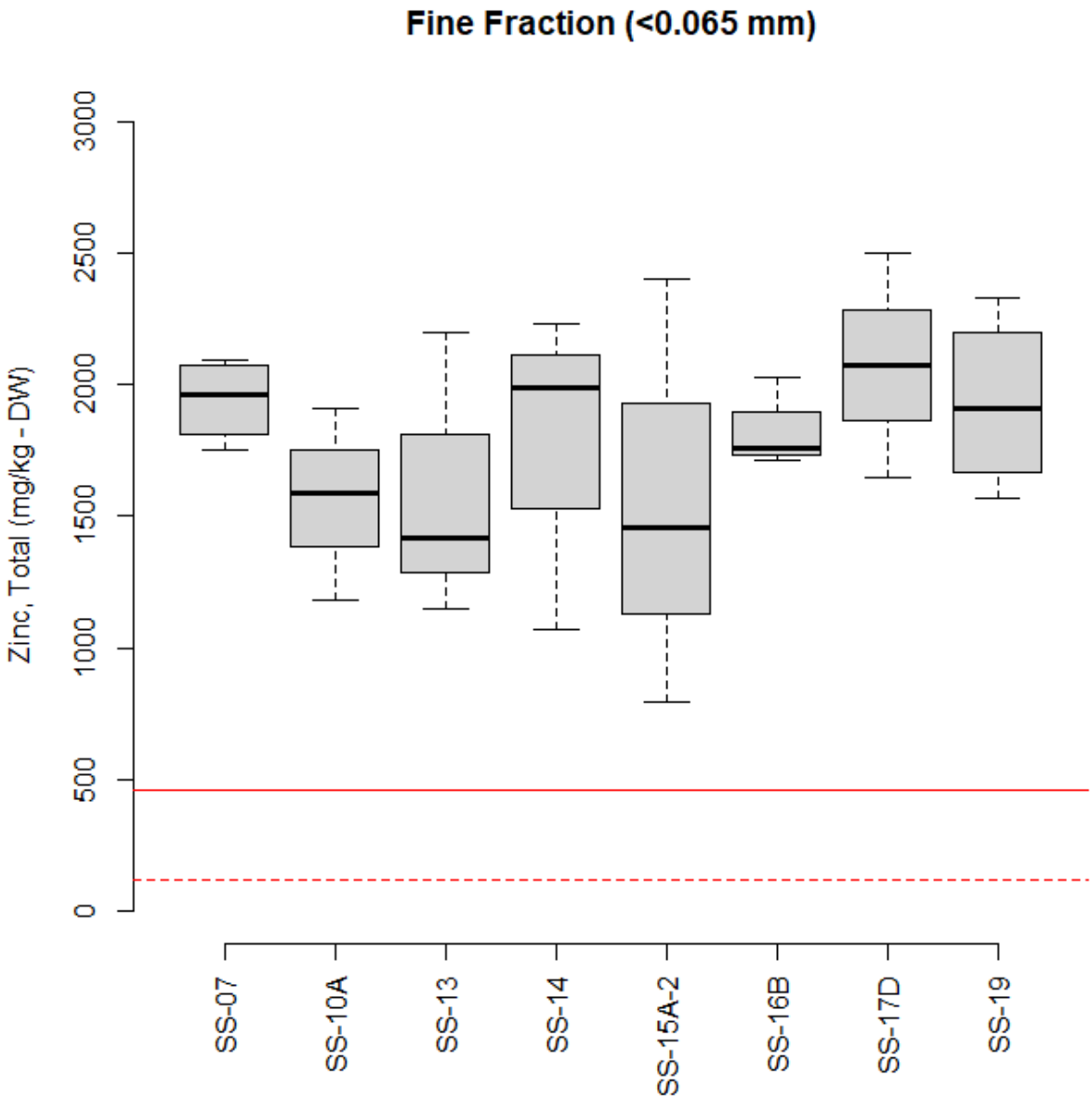


Figure 2-12. Total zinc concentrations in instream sediment (<0.063 mm) samples collected at Streamside Tailings Operable Unit monitoring stations, 2022. Solid red line is the 459 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 121 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

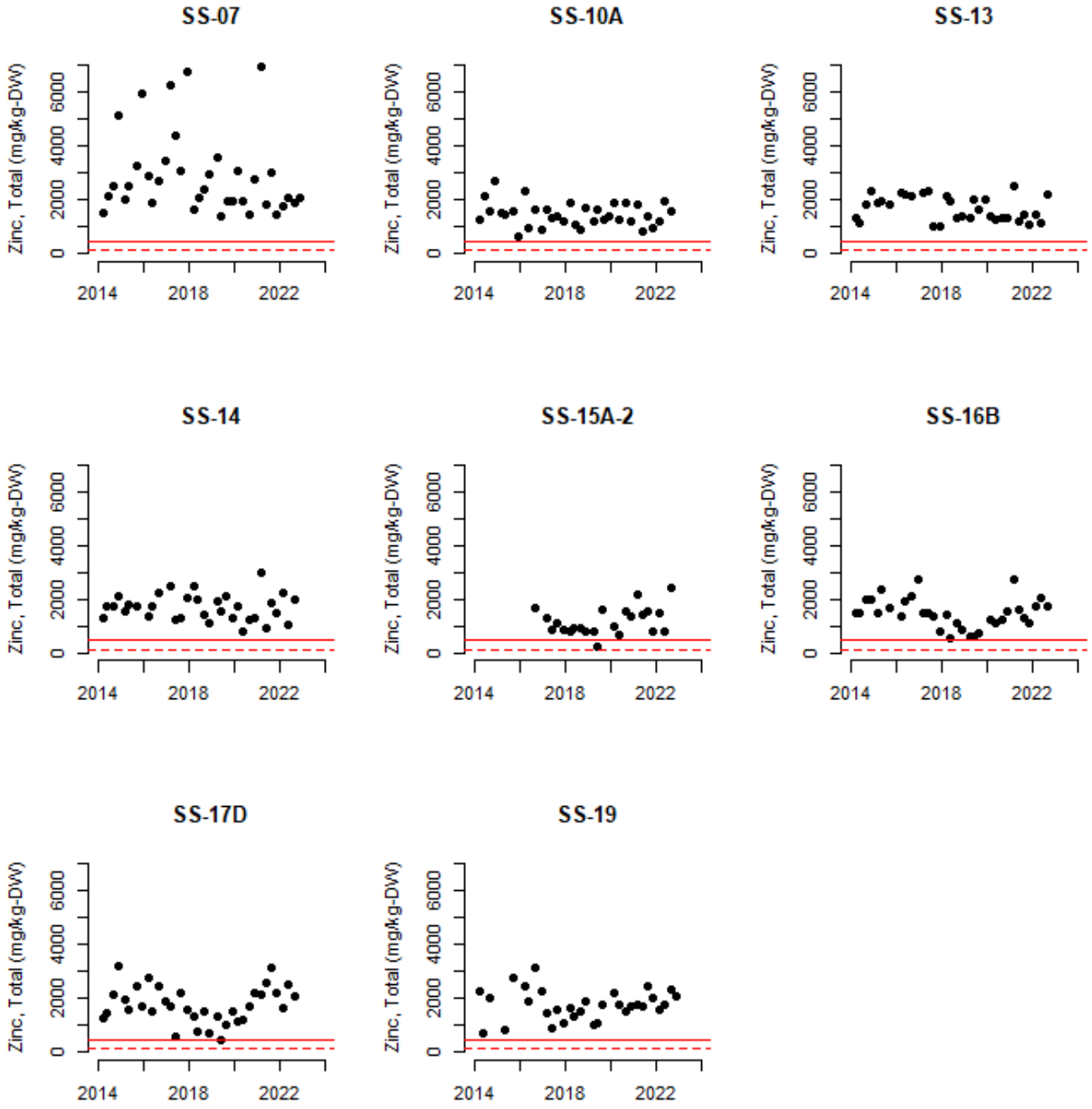


Figure 2-13. Fine fraction (<0.063 mm) total dry-weight zinc concentrations (mg/kg-DW) in the Streamside Tailings Operable Unit, 2014-2022.[43] Solid red line is the 459 mg/kg-DW "probable effect concentration" (PEC) and the dashed red line is the 121 mg/kg-DW "threshold effect concentration" (TEC) [MacDonald et al., 2000].

[43] An outlier for Site SS-19 is not shown (15,000 mg/kg during on March 26, 2015).

2.4.3 Other Metals

Summary statistics for non-COC sediment concentrations are presented by sediment size fraction in Table 2-18. Actual concentrations for all non-COC constituents in each sample are available in Appendix D. Two of the non-COCs (chromium and nickel) have identified reference values [MacDonald et al., 2000]. Therefore, exceedances of the reference values for chromium and nickel are discussed further.

Chromium exceeded the TEC (43.4 mg/kg-DW) in 15 percent (4 of 26) of the samples but did not exceed the PEC (111 mg/kg-DW) in any of the samples.

Nickel exceeded the TEC (22.7 mg/kg-DW) in 15 percent (4 of 26) of the samples but did not exceed the PEC (48.6 mg/kg-DW) in any of the samples..

Table 2-18. Summary statistics for dry weight (DW) sediment metal concentrations (stratified by size fraction) for samples (*n* = 26) collected in the Streamside Tailings Operable Unit (SSTOU), 2022. No metals in this table are contaminants of concern in the SSTOU.

Metal	Method Detection Limits (mg/kg)		Sample Concentration (mg/kg-DW)			
	Minimum	Maximum	Minimum	Maximum	Mean[44]	Standard Deviation
Fine fraction (<0.063 mm)						
Aluminum	40	80	16,600	35,700	24,250	4,970
Antimony	3	10	<10	<10	<10	<10
Barium	1	3	189	463	286	76
Beryllium	2	5	<5	<5	<5	<5
Boron	3.0	20.0	4.5	17.0	11.5	3.3
Chromium	7	10	21	74	46	15
Cobalt	4.0	8.0	7.0	23.0	13.5	3.4
Iron	200	500	18,700	52,900	29,862	7,209
Manganese	4	10	765	8,370	2,583	1,738
Molybdenum	1	3	9	102	37	26
Nickel	3.0	6.0	13.0	43.0	25.7	8.4
Selenium	0.7	2.0	1.0	5.0	2.4	0.8
Silver	0.8	8.0	1.3	9.0	3.3	1.7
Uranium	0.1	0.2	1.7	16.0	5.1	3.0
Vanadium	1	4	39	125	74	22
Mid fraction (0.063-1 mm)						
Aluminum	9	30	4,050	11,900	6,588	1,854
Antimony	2	4	<4	<4	<4	<4

[44] Samples with concentrations below method detection limit (MDL) were assumed to be half the MDL for calculation of means and standard deviations.

Metal	Method Detection Limits (mg/kg)		Sample Concentration (mg/kg-DW)			
	Minimum	Maximum	Minimum	Maximum	Mean[44]	Standard Deviation
Barium	0.8	1	75	183	131	33
Beryllium	1	2	<2	<2	<2	<2
Boron	2.0	5.0	2.0	4.0	2.7	0.5
Chromium	4	5	8	22	14	3
Cobalt	1.0	3.0	3.0	7.0	4.9	1.1
Iron	50	200	11,200	36,700	19,292	6,131
Manganese	2	4	195	1,540	666	408
Molybdenum	0.7	1.0	1.1	18.0	6.1	4.7
Nickel	2.0	2.0	3.0	7.0	5.6	1.1
Selenium	0.4	0.6	0.4	2.5	2.3	0.7
Silver	2	3	<3	<3	<3	<3
Uranium	0.07	0.09	1.1	10.0	2.8	2.0
Vanadium	1	1	24	96	49	18
Coarse fraction (1-2 mm)						
Aluminum	9	30	2,650	13,000	4,620	2,257
Antimony	2	4	<4	<4	<4	<4
Barium	0.4	1	48	223	100	46
Beryllium	0.6	2	<2	<2	<2	<2
Boron	2.0	5.0	2.0	3.0	2.5	0.2
Chromium	2.0	5.0	4.0	16.0	7.9	2.8
Cobalt	1.0	3.0	2.0	13.0	4.2	2.7
Iron	50	200	5,800	12,200	8,085	1,607
Manganese	0.9	4	130	3,130	712	704
Molybdenum	0.3	0.9	0.9	21.0	5.6	5.4
Nickel	0.7	2.0	2.0	7.0	4.0	1.3
Selenium	0.2	0.5	<0.5	<0.5	<0.5	<0.5
Silver	1.0	3.0	2.5	3.0	2.5	0.1
Uranium	0.03	0.08	0.7	3.4	1.4	0.5
Vanadium	0.4	1	11	22	16	3

2.4.4 Data Validation

Data quality objectives (DQOs) were evaluated for sampling precision. Four paired field sample and field duplicate concentrations were compared to evaluate sampling precision. In each field sample and duplicate pair, 63 comparisons were made; comparisons were made for each pair of 21 metals and in three size fractions (<0.063 mm, 0.063–1 mm, and 1–2 mm). In total, there were 252 sample and duplicate pairs. For each of those pairs, relative percent difference (RPD) comparisons were made. In total, 12 (4.8 percent) had RPDs greater than the DQO specified for sampling precision (40 percent).

2.5 DISCUSSION

2.5.1 Sample Size Fraction

Sediment data collected in the SSTOU in 2022, and prior years, have demonstrated that sediment size fraction is strongly related (inversely) to most metal concentrations, and these results are consistent with the findings of others [Horowitz and Ehrlick, 1987; Jain and Ram, 1997]. The reason for this relationship between metal concentrations and sediment size fraction is primarily because finer sediments have greater surface area per mass for adsorption of metals [Horowitz and Ehrlick, 1987]. Therefore, when evaluating weighted mean sample concentrations, samples with higher percentages of fine sediments will generally have higher analyte concentrations.

The sample collection method requires that samples are collected and composited from at least five depositional areas, which provides a more representative sample than a sample collected from a single depositional area [DEQ, 2019b]. The weighted mean concentrations have been compared to the reference values (TEC and PEC) to provide the most representative composite sample concentration for all sediments (less than 2 mm) at each site. However, for comparisons of sediment metal concentrations through time (or space), it is more useful to compare concentrations in the same size fractions to eliminate the confounding influence of size fraction proportions among disparate samples. Variance in size fractions was high between sites and between sample periods of the same site.

2.5.2 Contaminants of Concern

Prior sampling results suggest a major metal contaminant source, or sources, exists in Butte somewhere between Blacktail Creek at Father Sheehan Park (Site SS-01) and Silver Bow Creek above the Butte Reduction Works (Site SS-05A) [RESPEC, 2020]. These sites are located upstream from the SSTOU and are no longer sampled under this monitoring program, but prior sampling demonstrated that the most severe sediment contamination in Silver Bow Creek routinely occurred in that reach.

In the SSTOU in 2022, there were two samples with somewhat anomalous results. In the fine sediment fraction (<0.063 mm), concentrations were high in the sample from Site SS-16B in Q2 (arsenic, copper, and mercury) and in the sample from Site SS-19 in Q3 (cadmium). Each of those results was the highest on record for that size fraction at these particular sites.

Time series data from 2014-2022 suggest some temporal trends have occurred for some COCs at specific locations. These trends were most apparent at two Subarea 4 sites (Sites SS-16B and SS-17D) which demonstrated declines in concentrations, particularly in the 2016-2019 period, although concentrations since then appear to have rebounded and were somewhat higher at those sites.

2.5.3 Data Validation

Some DQOs were exceeded for sampling precision. Of the 252 field sample and field duplicate pairs compared, 12 exceeded the specified DQO for sampling precision (relative percent different of the field sample and field duplicate was greater than 40 percent). All associated data will be qualified (i.e., "J-flagged") in the project database as described in the quality assurance project plan [RESPEC, 2014].

3.0 GROUNDWATER

3.1 INTRODUCTION

This chapter describes groundwater monitoring data collected in 2022 to assess the effectiveness of remedial actions implemented in the Streamside Tailings Operable Unit (SSTOU) of the Silver Bow Creek/Butte Area National Priorities List site. Data were collected to evaluate the effects of remedial actions on groundwater quality and progress toward attainment of performance goals. Groundwater contamination is among the environmental concerns for Silver Bow Creek and may pose a threat to human health and the environment. A remediation objective in the SSTOU is to reduce loading of contaminants from floodplain soils to groundwater and surface water.

3.2 PERFORMANCE GOALS

The SSTOU Record of Decision (ROD) specifies that the final remediation standards for concentrations of contaminants of concern (COC) in groundwater are to "attain compliance with applicable Circular WQB-7 standards, federal MCLs (maximum contaminant levels) and federal nonzero maximum contaminant level goals (MCLGs) for all SSTOU groundwater." Moreover, "the groundwater levels to be attained consist of the more stringent of the MCL, any nonzero MCLG, or the WQB-7 human health standard for each parameter." While more stringent standards promulgated since the issuance of the ROD have not yet been formally adopted as performance standards for this operable unit, this monitoring report uses the more stringent of the ROD's Circular WQB-7 standards [MDHES, 1994] or current Montana Department of Environmental Quality (DEQ) Circular DEQ-7 standards [DEQ, 2019a] as the goal to be attained for evaluation purposes. The most stringent of these standards for each COC is shown in Table 3-1. The DEQ [2019a] human health groundwater standards for non-COC metals are summarized in Table 3-2.

Table 3-1. Comparison of the Montana groundwater standards in July 1994 (effective at the time of issuance of the Streamside Tailings Operable Unit Record of Decision) and June 2019 (effective in 2019) for each contaminant of concern. Gray cells identify the most restrictive standard.

Contaminant of Concern	Human Health Groundwater Standard (mg/L)	
	MDHES [1994]	DEQ [2019a]
Arsenic	0.018	0.010
Cadmium	0.00500	0.00500
Copper	1.000	1.300
Lead	0.0150	0.0150
Mercury	0.00014	0.00200
Zinc	5.0	2.0

Table 3-2. Montana groundwater standards for metals that are not contaminants of concern in the Streamside Tailings Operable Unit.

Metal	Human Health Groundwater Standard (mg/L)
Aluminum	–
Antimony	0.006
Barium	1
Beryllium	0.004
Boron	–
Chromium	0.1
Cobalt	–
Iron	–
Manganese	–
Molybdenum	–
Nickel	0.1
Selenium	0.05
Silver	0.1
Uranium	0.03
Vanadium	–

3.3 METHODS

The purpose of the groundwater monitoring program is to collect data describing temporal and spatial variation in metal and ion concentrations for groundwater in the SSTOU. These data provide a long-term record of environmental conditions in the SSTOU. As of 2022, 21 years of SSTOU groundwater data (2002–2022) have been collected under this monitoring program. This long-term record provides data to evaluate the effects of remediation on environmental conditions in the SSTOU over time. Improvement to groundwater quality may require long time periods (i.e., decades) following completion of remediation within the SSTOU.

Changes to the groundwater monitoring program have occurred over time and a record of these changes is provided in the program sampling and analysis plan [RESPEC, 2022]. The program attempts to adhere to monitoring requirements specified in the SSTOU ROD (Table 3-3).

3.3.1 Monitoring Locations

In 2022, monitoring occurred in 10 floodplain well clusters within the SSTOU. Major remediation was completed in all portions of the SSTOU as of 2022 (Figure 3-1; Table 3-4). Each floodplain well cluster consisted of three wells: two monitoring wells located within the stream floodplain and one background well located outside the floodplain and adjacent to the monitoring wells. Well cluster locations were selected based on SSTOU ROD requirements (Table 3-3).

One additional well cluster, the Mine Waste Relocation Repository (MWRR) well cluster, is located outside of the floodplain at a site where approximately 171,900 cubic yards of contaminated soil from Reach A of Subarea 1 were deposited [EPA, 2011]. The MWRR site consists of five monitoring wells and one background well. The background well is located up-gradient from the MWRR.

Table 3-3. Minimum post-remedy groundwater monitoring requirements specified in the Record of Decision for the Streamside Tailings Operable Unit [DEQ and EPA, 1995].

Locations/Physical	Analytical Parameters	Analytes
Near Colorado Tailings, Rocker, Silver Bow, Nissler, Ramsay Flats, Miles Crossing, Fairmont, Crackerville, Stuart, Opportunity, STARS *in situ* treatment areas and every repository location.	Metals (dissolved)	Arsenic, cadmium, copper, lead, mercury, zinc
	Common ions	Calcium, magnesium, sodium, potassium, chloride, sulfate
	Physical properties	Temperature, acidity (pH), oxidation-reduction potential (Eh), conductance, dissolved oxygen concentration

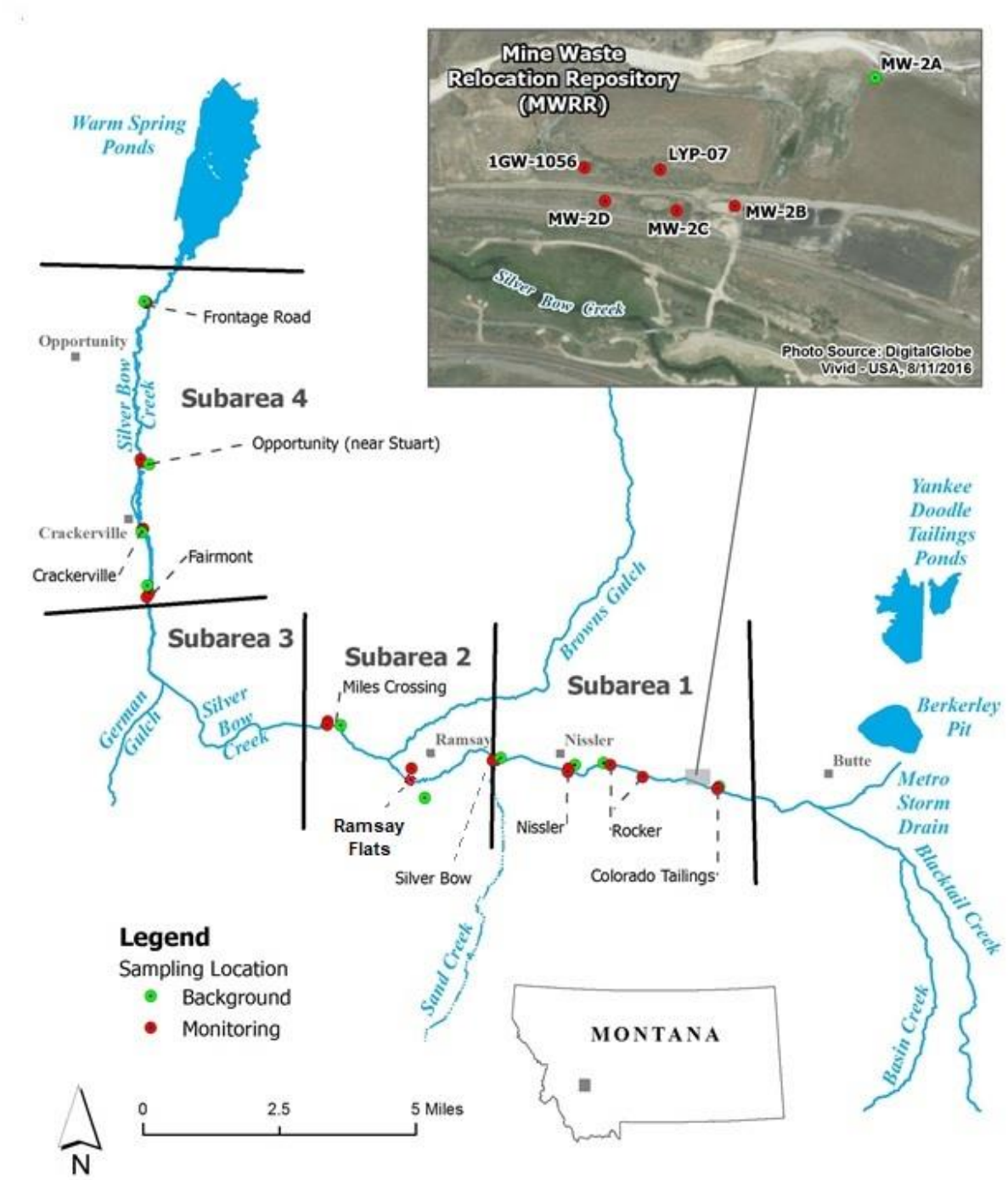


Figure 3-1. Sampling locations for groundwater monitoring in the Streamside Tailings Operable Unit.

Table 3-4. Sampling locations for groundwater monitoring in the Streamside Tailings Operable Unit.

Well Cluster	Well I.D.	Well Purpose	Location (GPS Coordinates, NAD 83)	
			Latitude	Longitude
Colorado Tailings	GW-1010R	Background	45.99979	–112.57561
	GW-WG-SS	Floodplain	45.99940	–112.57622
	GW-WG-NS	Floodplain	45.99916	–112.57624
Rocker	GW-RK-BG	Background	46.00483	–112.62020
	MW-10	Floodplain	46.00447	–112.61734
	MW-01	Floodplain	46.00155	–112.60496
Nissler	GW-1003R	Background	46.00405	–112.63095
	GW-1004A	Floodplain	46.00307	–112.63343
	P-58A	Floodplain	46.00211	–112.63355
Silver Bow	P-39R	Floodplain	46.00440	–112.66235
	P-37A	Floodplain	46.00449	–112.66112
	P-114	Background	46.00508	–112.65941
Ramsay Flats	GW-RM-BG[45]	Background	45.99889	–112.69417
	GW-RM-NS	Floodplain	46.00333	–112.69806
	GW-RM-SS	Floodplain	46.00222	–112.65941
Miles Crossing	GW-MC-NS	Floodplain	46.01300	–112.72600
	GW-MC-SS	Floodplain	46.01200	–112.72600
	GW-MC-BG	Background	46.01200	–112.72100
Mine Waste Relocation Repository	1GW-1056	Monitoring	46.00263	–112.58615
	LYP-07	Monitoring	46.00264	–112.58483
	MW-2A	Background	46.00386	–112.58114
	MW-2B	Monitoring	46.00223	–112.58350
	MW-2C	Monitoring	46.00215	–112.58451
	MW-2D	Monitoring	46.00223	–112.58577
Fairmont	GW-FM-ES	Floodplain	46.04400	–112.79692
	GW-FM-WS	Floodplain	46.04510	–112.79601
	GW-FM-BG	Background	46.04711	–112.79700
Crackerville	GW-CR-ES	Floodplain	46.06211	–112.79942
	GW-CR-WS	Floodplain	46.06196	–112.79980
	GW-CR-BG	Background	46.06112	–112.79994
Opportunity (near Stuart)	GW-ST-ES	Floodplain	46.07975	–112.80107
	GW-ST-WS	Floodplain	46.08053	–112.80146
	GW-ST-BG	Background	46.07939	–112.79810
Frontage Road	GW-FR-ES	Floodplain	46.12223	–112.80167
	GW-FR-WS	Floodplain	46.12250	–112.80225

[45] Well GW-RM-BG was locked by a third party at the time of sampling and therefore was not sampled in 2022.

Well Cluster	Well I.D.	Well Purpose	Location (GPS Coordinates, NAD 83)	
			Latitude	Longitude
	GW-FR-BG	Background	46.12263	–112.80268

3.3.2 Monitoring Schedule

Groundwater was monitored from September 14-16, 2022, during the summer stream baseflow period. At the MWRR well cluster, monitoring also occurred during the spring snowmelt runoff period on May 24, 2022.

3.3.3 Monitoring Parameters

Groundwater samples were analyzed for the parameters and analytes listed in Table 3-5.

Table 3-5. Sampling parameters and analytes for groundwater monitoring of the Streamside Tailings Operable Unit.

Parameter	Analytes
Concentrations of dissolved metal COCs	Arsenic, cadmium, copper, lead, mercury, zinc
Concentrations of other dissolved metals	Aluminum, antimony, barium, beryllium, boron, cobalt, chromium, iron, manganese, molybdenum, nickel, selenium, silver, uranium, vanadium
Common ion concentrations	Sulfate, total alkalinity, bicarbonate alkalinity, calcium, magnesium, sodium, potassium, chloride, hardness
Other physical properties	Water temperature, pH, specific conductivity

3.3.4 Sample Collection and Analysis

Sample collection and analysis procedures are described in the project sampling and analysis plan (SAP) [RESPEC, 2022] and quality assurance and quality control (QA/QC) procedures are described in the program quality assurance project plan (QAPP) [RESPEC, 2014]. Sample collection methods generally followed standard operating procedures (SOPs) developed for the Clark Fork River [AR, 1992]. Field sampling procedures were in accordance with DEQ [2018] and followed "clean hands/dirty hands" procedures described in USGS [2006]. Dedicated or disposable well bailers were used in low yield wells where installing a submersible pump was impractical. Field parameters (i.e., water temperature, pH, and conductivity) were measured during each monitoring event with a field multimeter (YSI Professional Plus). Dissolved metal samples were filtered in the laboratory rather than in the field because some wells had high levels of suspended sediment, which made field filtering impractical. Samples were analyzed by Energy Laboratories (Helena, Montana). Laboratory analysis procedures for each analyte are presented in Table 3-6.

Table 3-6. Analytes, methods, and reporting limits for groundwater sampling in the Streamside Tailings Operable Unit.

Analyte	Requested Method	Requested Reporting Limit (mg/L)[46]	Holding Time (days)	Bottle	Preservative[47]
Water Samples - Physical Properties and Inorganics					
Alkalinity, Total (as $CaCO_3$)	A 2320 B	4	14	250 mL HDPE	HNO_3 to pH <2
Alkalinity, Bicarbonate (as HCO_3)	A 2320 B	4	14		
Chloride	EPA 300.0	1	7		
Sulfate	EPA 300.0	1	7		
Hardness (as $CaCO_3$)	A 2340 B	1	180		
Water Samples - Dissolved Metals (0.45 µm filtered)					
Aluminum	EPA 200.8	0.009	180	250 mL HDPE	HNO_3 to pH <2
Antimony	EPA 200.8	0.0005			
Arsenic	EPA 200.8	0.001			
Barium	EPA 200.8	0.003			
Beryllium	EPA 200.8	0.0008			
Boron	EPA 200.7	0.1			
Cadmium	EPA 200.8	0.00003			
Calcium	EPA 200.7	1			
Chromium	EPA 200.8	0.01			
Cobalt	EPA 200.8	0.01			
Copper	EPA 200.8	0.001			
Iron	EPA 200.7	0.02			
Lead	EPA 200.8	0.0003			
Magnesium	EPA 200.7	1			
Manganese	EPA 200.8	0.001			
Mercury	EPA 245.1	0.000005			
Molybdenum	EPA 200.8	0.005			
Nickel	EPA 200.8	0.002			
Potassium	EPA 200.7	1			
Selenium	EPA 200.8	0.001			
Silver	EPA 200.8	0.0002			
Sodium	EPA 200.7	1			
Uranium	EPA 200.8	0.0002			

[46] Requested reporting limits are either the required reporting limit of DEQ [2019a] or the lowest reporting limit previously provided by the analytical laboratory, whichever is lower.

[47] All groundwater samples were filtered and preserved in the laboratory.

Analyte	Requested Method	Requested Reporting Limit (mg/L)[46]	Holding Time (days)	Bottle	Preservative[47]
Vanadium	EPA 200.8	0.1			
Zinc	EPA 200.8	0.008			

3.3.5 Data Analysis

3.3.5.1 Contaminants of Concern

For each sample, the concentration of each COC in 2022 was compared to the Montana groundwater standards (Table 3-1). To provide the temporal trend for each COC concentration in each well, all COC concentrations throughout the monitoring period of record were also plotted through time. In each well cluster, COC concentrations were grouped according to the well purpose (i.e., background or monitoring), and narrative discussions are focused on comparing the conditions in the background wells to those observed in the monitoring wells in each cluster.

3.3.5.2 Other Metals and Common Ions

Concentrations of non-COC metals and common ions from 2022 were tabulated. Sample concentrations are compared to DEQ [2019a] groundwater standards for non-COC metals with regulatory standards.

3.3.6 Data Validation

Data quality objectives were established in the SSTOU monitoring project QAPP for data representativeness, comparability, completeness, sensitivity, precision, bias, and accuracy [RESPEC, 2014]. Methods for field and laboratory quality assurance and quality control procedures are also described in detail in the project QAPP [RESPEC, 2014]. A completed checklist, summary tables of field-duplicate and field-blank results, and assessments of data quality objectives are included in Appendix A.

3.4 RESULTS

3.4.1 Mine Waste Relocation Repository

3.4.1.1 Contaminants of Concern

Two MWRR monitoring wells (Background Well MW-2A and Monitoring Well MW-2B) had arsenic concentrations exceeding the DEQ groundwater standard during both the May and September 2022 sampling events (Table 3-7). No other MWRR monitoring wells had samples with COC concentrations exceeding the DEQ [2019a] groundwater standard (Table 3-7).

Table 3-7. Dissolved metal contaminant of concern concentrations (mg/L) in groundwater monitoring wells of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit, 2022.

Site	Arsenic	Cadmium	Copper	Lead	Mercury (µg/L)	Zinc
May						
MW-2A*	0.012	ND	ND	ND	ND	ND
1GW-1056	0.006	ND	0.0005[J]	ND	0.002[J]	0.002[J]
LYP-07	0.005	ND	0.0002[J]	ND	0.009	0.002[J]
MW-2B	0.012	ND	0.0008[J]	ND	0.001[J]	ND
MW-2C	0.006	ND	ND	ND	ND	ND
MW-2D	0.007	ND	ND	ND	ND	ND
September						
MW-2A*	0.014	0.00002[J]	0.004	ND	ND	0.002[J]
1GW-1056	0.007	0.00002[J]	0.0008[J]	ND	ND	ND
LYP-07	0.002	ND	0.0002[J]	ND	ND	0.005[J]
MW-2B	0.013	ND	0.002	ND	ND	ND
MW-2C	0.006	ND	0.001	ND	ND	0.003[J]
MW-2D	0.007	ND	0.001	ND	ND	0.002[J]

*	Background well.
ND	Not detected at method detection limit.
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).
	Exceeds human health groundwater standard [DEQ, 2019a].

3.4.1.1.1 Arsenic

Arsenic concentrations in the MWRR have generally been consistent at each well since monitoring began in 2006 (Figure 3-2). Monitoring wells have had arsenic concentrations that were less than, or similar to, the background well concentration throughout the period of record (Figure 3-2). Data do not suggest an increasing trend in any well, with the exception of Well MW-2B (Figure 3-2). Concentrations in Well MW-2B appear to have increased and have exceeded the groundwater standard during 8 of the last 10 sample periods (Figure 3-2).

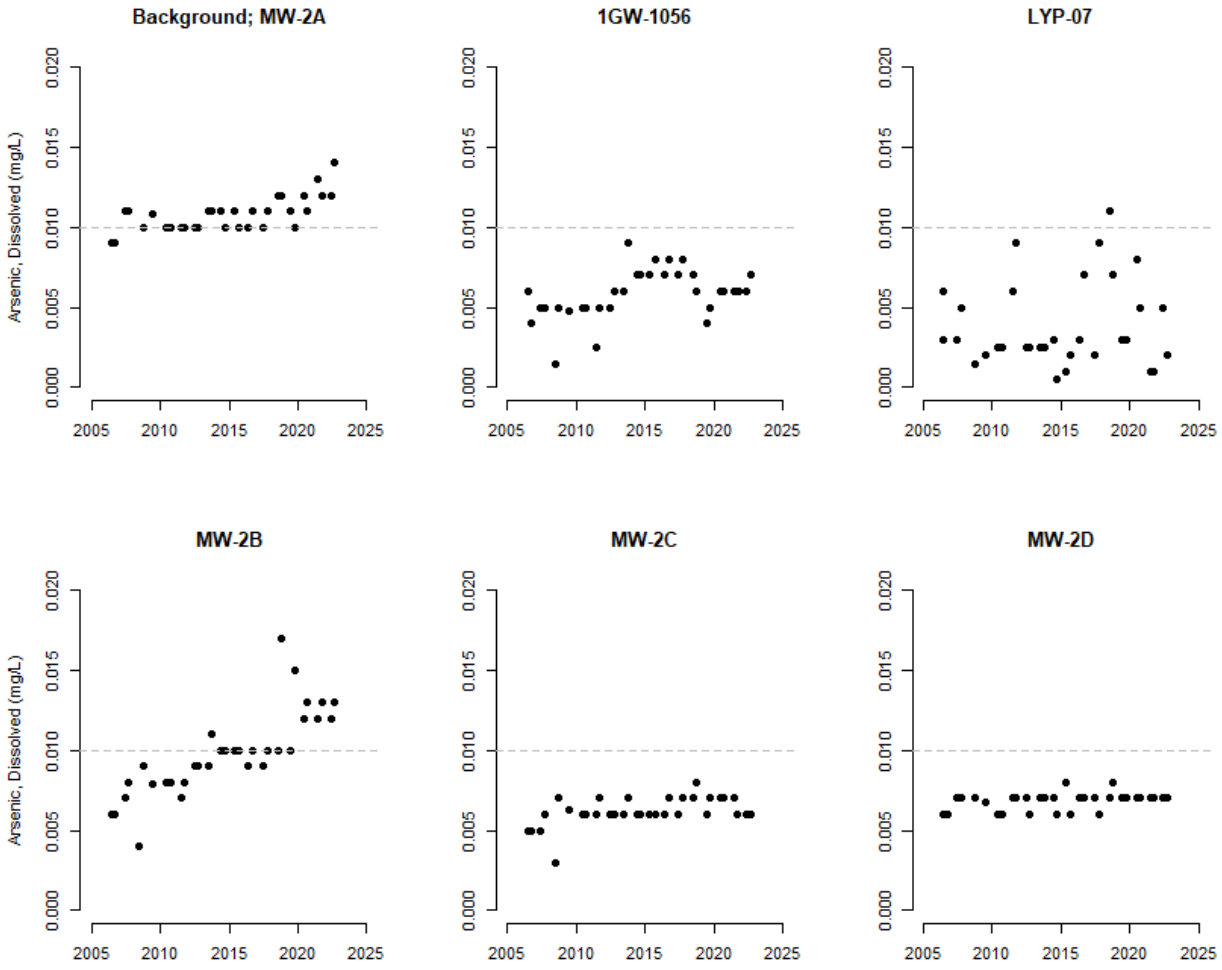


Figure 3-2. Arsenic concentrations in groundwater wells in the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

3.4.1.1.2 Cadmium

Based on the monitoring period of record in the MWRR, all samples had cadmium concentrations below the most restrictive groundwater standard (Figure 3-3). Cadmium concentrations do not appear to be increasing through time in any of the MWRR wells (Figure 3-3).

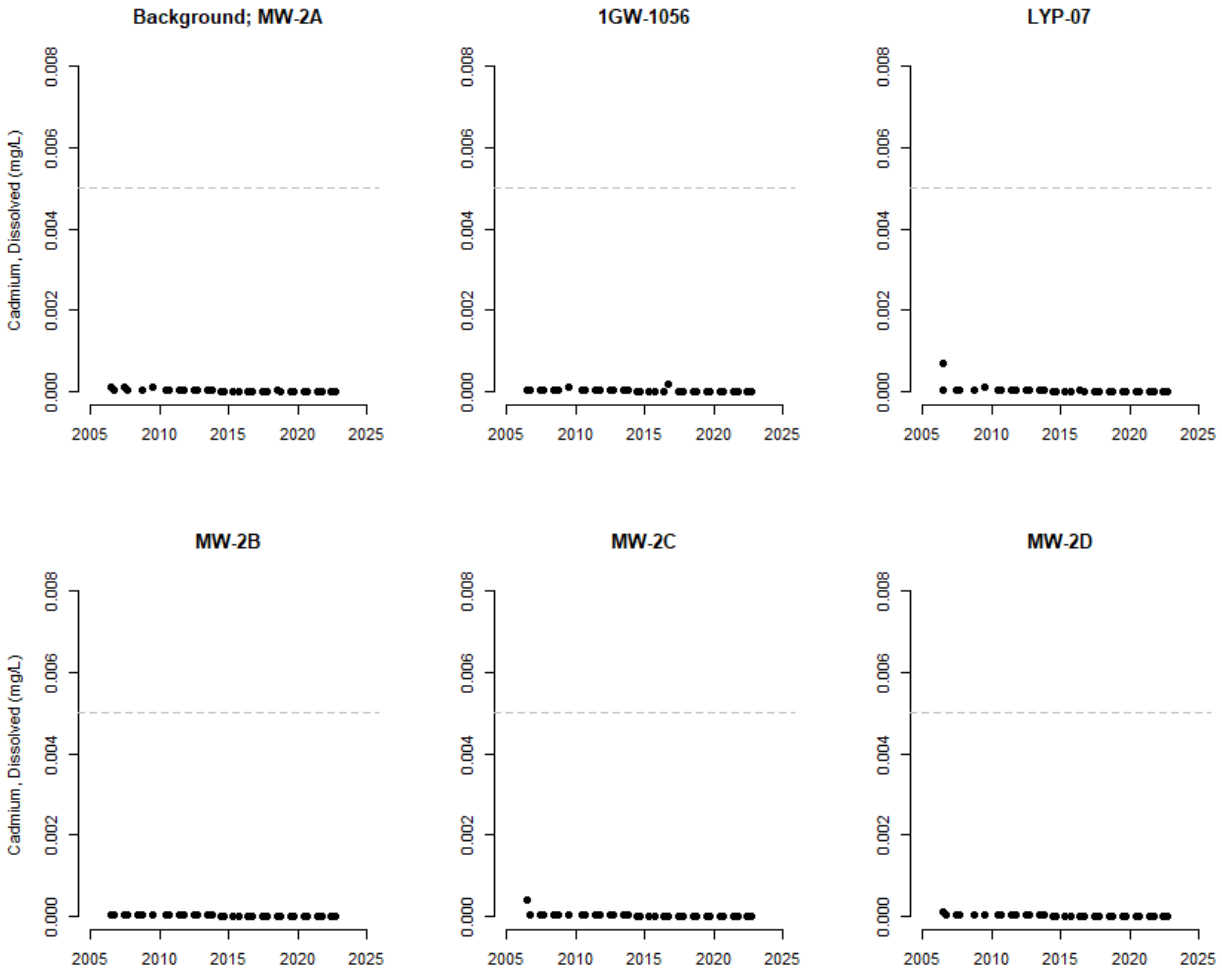


Figure 3-3. Cadmium concentrations in groundwater wells in the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

3.4.1.1.3 Copper

Based on the monitoring period of record in the MWRR, all samples had copper concentrations well below the groundwater standard (Figure 3-4). Copper concentrations do not appear to be increasing through time in any of the MWRR wells (Figure 3-4).

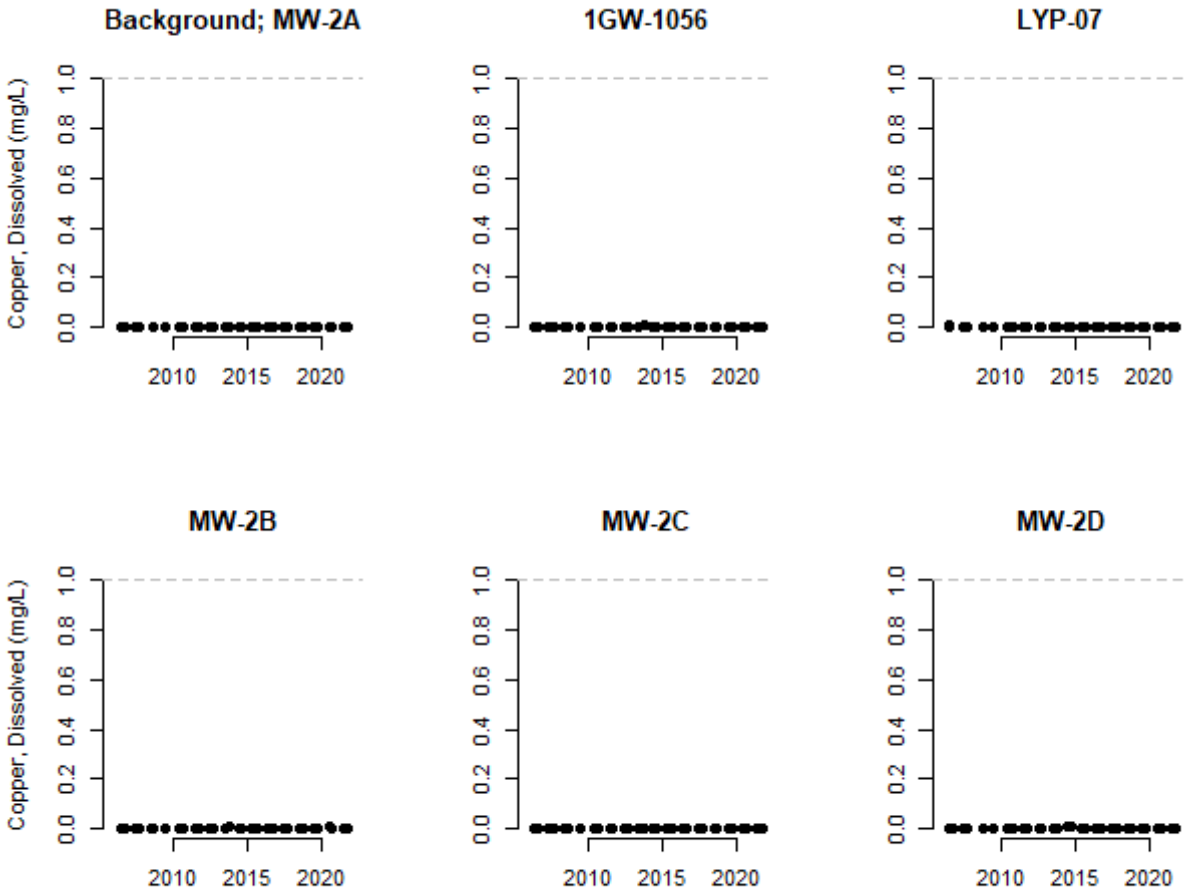


Figure 3-4. Copper concentrations in groundwater wells in the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [MDHES, 1994].

3.4.1.1.4 Lead

Based on the monitoring period of record in the MWRR, all lead concentrations were well below the groundwater standard (Figure 3-5). Lead concentrations do not appear to be increasing through time in any monitoring wells (Figure 3-5).

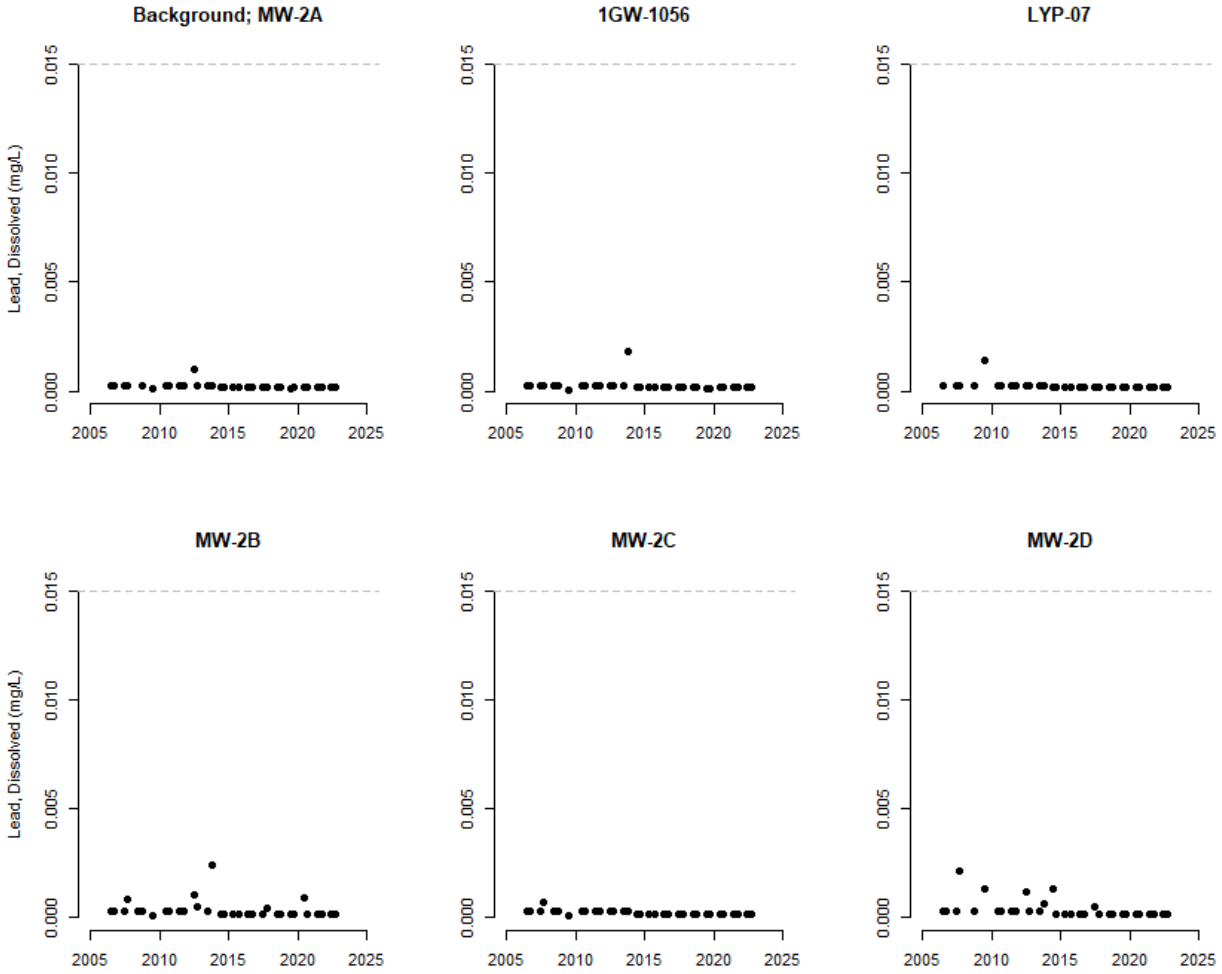


Figure 3-5. Lead concentrations in groundwater wells in the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

3.4.1.1.5 Mercury

Based on the monitoring period of record in the MWRR, all mercury concentrations were near or below the analytical reporting limits during all sample periods (Figure 3-6). Mercury concentrations do not appear to be increasing through time in any monitoring wells (Figure 3-6). Nearly all sample variance in Figure 3-6 was from variance in the reporting limit.

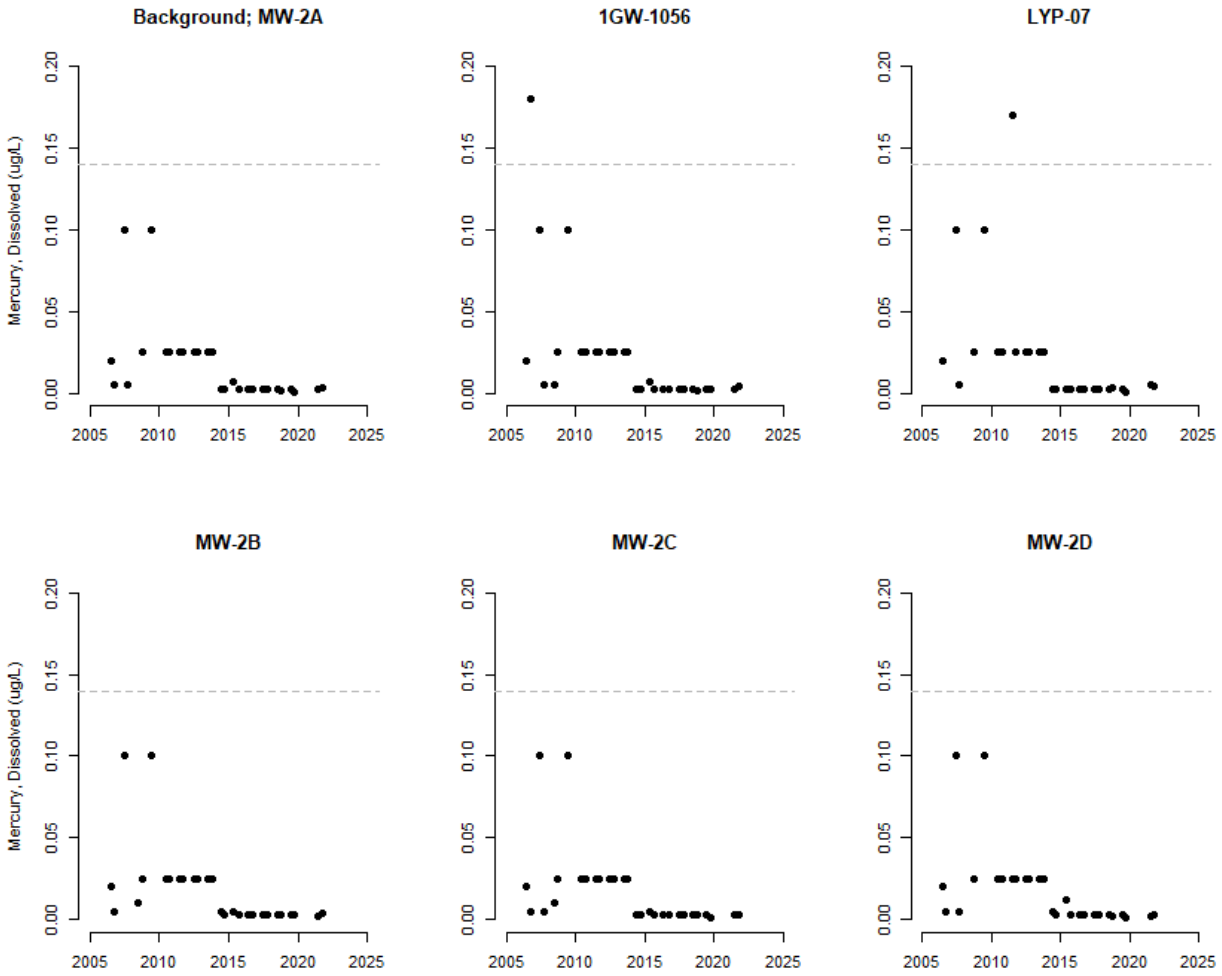


Figure 3-6. Mercury concentrations in groundwater wells in the Mine Waste Relocation Repository in the Streamside Tailings Operable Units (2006–2022). Gray dashed line represents the human health groundwater standard [MDHES, 1994]. Samples with concentrations below the analytical reporting limit are represented at half the reporting limit.

3.4.1.1.6 Zinc

Based on the monitoring period of record in the MWRR, all zinc concentrations were well below the most restrictive groundwater standard (Figure 3-7). Zinc concentrations do not appear to be increasing through time in any monitoring wells (Figure 3-7).

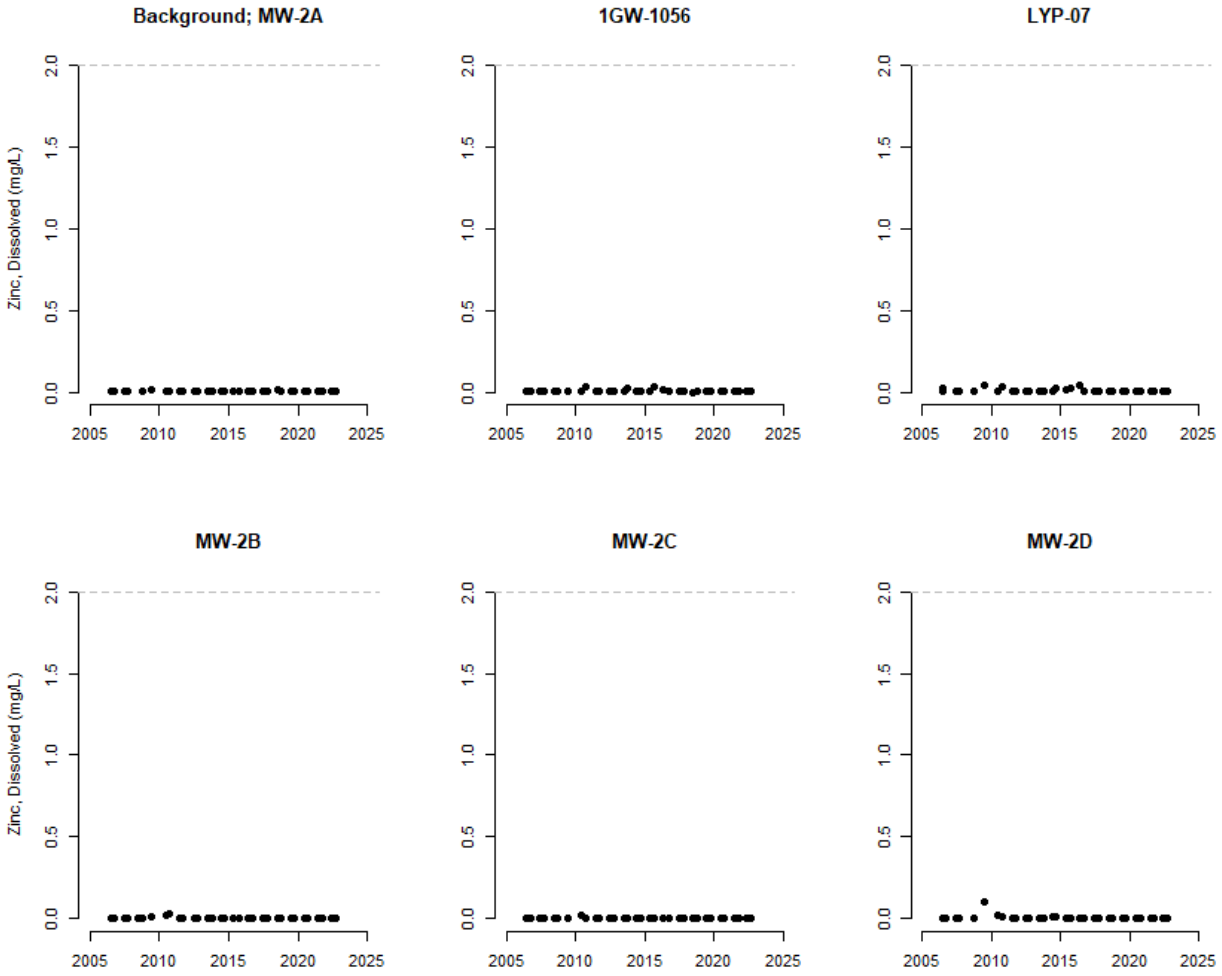


Figure 3-7. Zinc concentrations in groundwater wells in the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

3.4.1.2 Other Metals

In the MWRR in 2022, uranium concentrations exceeded the 0.030 mg/L DEQ [2019a] standard in the background well (Well MW-2A) and in three monitoring wells (Wells 1GW-1056, LYP-07, and MW-2D) in both the May and September samples (Table 3-8). No other non-COC metals exceeded the DEQ [2019a] standards in the MWRR wells in 2022.

3.4.1.3 Common Ions

Common ion concentrations in the MWRR wells for 2022 are presented in Table 3-9.

Table 3-8. Dissolved metal (non-contaminant of concern) concentrations (mg/L) in Mine Waste Relocation Repository groundwater monitoring wells in the Streamside Tailings Operable Unit, 2022.

Sites	Dissolved Metal[48]														
	Al	Sb	Ba	Be	B	Cr	Co	Fe	Mn	Mb	Ni	Se	Ag	U	V
May															
MW-2A*	ND	0.0002[J]	0.013	ND	0.025[J]	ND	ND	ND	ND	0.008	ND	0.011	ND	0.0382	0.0032[J]
1GW-1056	0.147	ND	0.035	ND	0.039[J]	0.0001[J]	ND	0.08	0.018	0.006	0.0008[J]	0.005	ND	0.0397	0.0028[J]
LYP-07	ND	0.0005[J]	0.055	ND	0.046[J]	ND	0.002[J]	0.55	0.165	0.003[J]	0.002	0.003	ND	0.0361	0.0033[J]
MW-2B	ND	0.0002[J]	0.027	ND	0.028[J]	0.0002[J]	ND	ND	ND	0.0022[J]	ND	0.003	ND	0.0068	0.0029[J]
MW-2C	ND	ND	0.019	ND	0.038[J]	ND	ND	ND	ND	0.0015[J]	ND	0.003	ND	0.0062	0.0025[J]
MW-2D	ND	ND	0.045	ND	0.050[J]	ND	ND	ND	0.0007[J]	0.005	ND	0.005	ND	0.0468	0.0027[J]
September															
MW-2A*	ND	0.0004[J]	0.012	ND	0.034[J]	ND	ND	ND	0.0009[J]	0.009	ND	0.009	ND	0.0399	0.0022[J]
1GW-1056	ND	ND	0.036	ND	0.057[J]	ND	ND	ND	0.0009	0.007	0.0003[J]	0.004	ND	0.0419	0.0028[J]
LYP-07	ND	0.0001	0.065	ND	0.057[J]	ND	0.001[J]	0.010[J]	0.051	0.0011	0.004	0.003	ND	0.1200	0.0004[J]
MW-2B	ND	0.0002[J]	0.031	ND	0.045[J]	0.0002[J]	ND	0.005[J]	0.0005[J]	0.0027[J]	ND	0.002	ND	0.0092	0.0033[J]
MW-2C	ND	0.0002[J]	0.020	ND	0.052[J]	0.0001[J]	ND	ND	0.001[J]	0.0017[J]	ND	0.002	ND	0.0075	0.0024[J]
MW-2D	ND	0.0002[J]	0.046	ND	0.060[J]	ND	ND	ND	0.001[J]	0.006	ND	0.004	ND	0.0498	0.0026[J]

*	Background well.
ND	Not detected at method detection limit.
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).
	Exceeds human health groundwater standard [DEQ, 2019a].

[48] Metals abbreviations: Al = aluminum, Sb = antimony, Ba = barium, Be = beryllium, B = boron, Cr = chromium, Co = cobalt, Fe = iron, Mn = manganese, Mb = molybdenum, Ni = nickel, Se = selenium, Ag = silver, U = uranium, and V = vanadium.

Table 3-9. Common ion concentrations (mg/L) in Mine Waste Relocation Repository groundwater wells in the Streamside Tailings Operable Unit, 2022.

Site	Alkalinity (as $CaCO_3$)	Bicarbonate Alkalinity (as HCO_3)	Calcium	Chloride	Hardness (as $CaCO_3$)	Magnesium	Potassium	Sodium	Sulfate
May									
MW-2A*	120	140	87	8	269	13	4	26	193
1GW-1056	130	150	89	39	299	19	3	28	164
LYP-07	200	240	99	42	327	19	11	35	143
MW-2B	92	110	57	33	196	13	3	22	106
MW-2C	99	120	67	37	229	15	3	29	140
MW-2D	150	180	104	50	342	20	4	30	178
September									
MW-2A*	120	140	91	8	272	12	3	26	191
1GW-1056	130	150	89	39	295	18	3	29	171
LYP-07	180	220	104	45	338	19	5	35	181
MW-2B	100	130	61	33	212	15	3	25	109
MW-2C	100	130	69	36	234	15	3	31	143
MW-2D	150	180	100	50	332	20	4	29	173

* Background well.

3.4.2 Floodplain

3.4.2.1 Contaminants of Concern

In the Silver Bow Creek floodplain monitoring wells in 2022, five of six COCs had concentrations that exceeded the most restrictive human health groundwater standard from MDHES [1994] or DEQ [2019a] in at least one well (Table 3-10). Four wells, distributed among four well clusters, exceeded the arsenic standard with two of the exceedances occurring in background wells (Table 3-10). Eight monitoring wells, in six separate well clusters, exceeded the cadmium standard (Table 3-10). Three monitoring wells, in three separate well clusters, exceeded the copper standard (Table 3-10). One sample from a monitoring well in the Nissler Cluster exceeded the lead standard (Table 3-10). Six monitoring wells, in four separate well clusters, exceeded the zinc standard (Table 3-10). These results were generally similar to previous years. No concentrations in background wells exceeded standards for cadmium, copper, lead, mercury, or zinc (Table 3-10).

Table 3-10. Dissolved metal (contaminant of concern) concentrations (mg/L) in groundwater monitoring wells located along Silver Bow Creek in the Streamside Tailings Operable Unit, September 14-16, 2022.

Cluster	Site	Arsenic	Cadmium	Copper	Lead	Mercury (µg/L)	Zinc
Colorado Tailings	GW-1010R*	0.002	ND	0.0030	ND	ND	0.004J
	GW-WG-NS	0.001	0.00020	0.0009J	ND	0.003J	0.593
	GW-WG-SS	0.021	0.00008	0.0010	ND	ND	0.002J
Rocker	GW-RK-BG*	0.007	0.00002J	0.0005	ND	ND	ND
	MW-01	0.011	0.00139	0.0770	ND	ND	0.302
	MW-10	0.002	0.00560	0.0810	0.0003	ND	6.920
Nissler	GW-1003R*	0.012	ND	0.0008J	ND	ND	ND
	GW-1004A	0.0002J	0.00433	0.1980	0.0416	0.006	5.680
	P-58A	0.002	0.02360	2.7000	0.0011	ND	8.800
Silver Bow	P-114*	0.002	0.00005	0.0004	ND	0.018	0.003J
	P-37A	0.002	0.01560	0.0230	ND	0.005J	0.422
	P-39R	0.012	0.00005	0.0260	ND	0.002J	0.003J
Ramsay Flats	GW-RM-BG	-	-	-	-	-	-
	GW-RM-NS	0.004	ND	0.0007J	ND	ND	ND
	GW-RM-SS	0.004	0.00003	0.0008J	ND	ND	ND
Miles Crossing	GW-MC-BG*	0.004	0.00009	0.0080	0.0004	ND	0.004J
	GW-MC-NS	0.003	0.05250	1.8000	0.0018	ND	13.20
	GW-MC-SS	0.003	0.05320	0.1150	0.0003	0.008	1.880
Fairmont	GW-FM-BG*	0.001	0.00081	0.0020	0.0002J	0.004J	0.018
	GW-FM-ES	0.001	0.00005	0.0020	ND	ND	0.424
	GW-FM-WS	0.001	0.00010	0.0009J	ND	ND	0.172
Crackerville	GW-CR-BG*	0.023	ND	0.0020	ND	0.004J	ND
	GW-CR-ES	0.0009J	0.00202	0.0040	ND	0.003J	0.433
	GW-CR-WS	0.008	0.01640	0.0340	0.0001J	0.013	0.263
Stuart	GW-ST-BG*	0.002	0.00300	0.0040	ND	0.002J	1.760
	GW-ST-ES	0.0003J	0.03940	2.2000	0.0027	0.002J	5.260
	GW-ST-WS	0.002	0.03690	0.2070	ND	0.006	5.420
Frontage Road	GW-FR-BG*	0.008	0.00005	0.0030	ND	0.003J	ND
	GW-FR-ES	0.003	ND	0.0006J	ND	0.002J	ND
	GW-FR-WS	0.009	ND	0.0010	ND	ND	ND

-	Not sampled.
*	Background well.
ND	Not detected at method detection limit.
J	Estimated result either because, (1) sample result was below analytical reporting limit, or (2) the associated field sample and duplicate pair had a relative percent difference greater than 25 percent.
	Exceedance of the human health groundwater standard [DEQ, 2019a].

3.4.2.1.1 Arsenic

Over the period of record, arsenic concentrations in the floodplain monitoring wells have been similar to (or lower than) concentrations in the background wells during most monitoring periods, with a few exceptions (Figure 3-8; Figure 3-9; Figure 3-10). In the Colorado Tailings Cluster, concentrations in both monitoring wells have tended to be slightly higher than in the background well (Figure 3-8). In the Rocker Cluster, concentrations in each monitoring well have been similar to the background well concentration but have occasionally been anomalously high in the monitoring wells in certain samples (Figure 3-8). In the Silver Bow Cluster, one sample from one monitoring well (Well P-37A) in Q2 2020 was anomalously high, and all samples from the other monitoring well (Well P-39R) have been higher than the background well (Figure 3-9).

Arsenic concentrations have exceeded the groundwater standard routinely in four background wells (Wells GW-1003R, GW-MC-BG, GW-CR-BG, and GW-FR-BG) and in three monitoring wells (Wells MW-01, P-39R, and GW-CR-WS) (Figure 3-8; Figure 3-9; Figure 3-10). No wells appear to be demonstrating clear evidence of an increasing or decreasing trend through time (Figure 3-8; Figure 3-9; Figure 3-10).

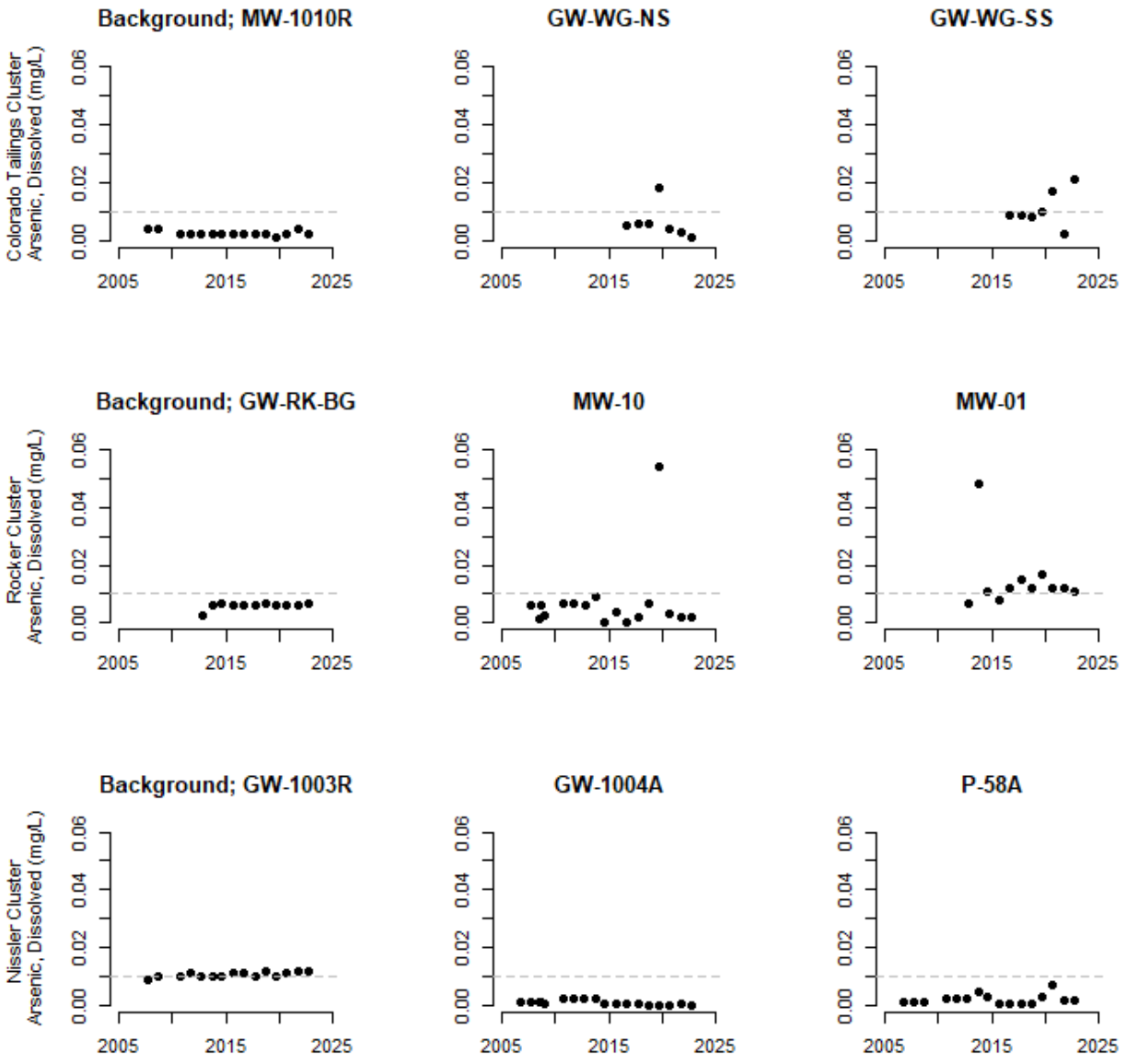


Figure 3-8. Arsenic concentrations in groundwater wells located in Subarea 1 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

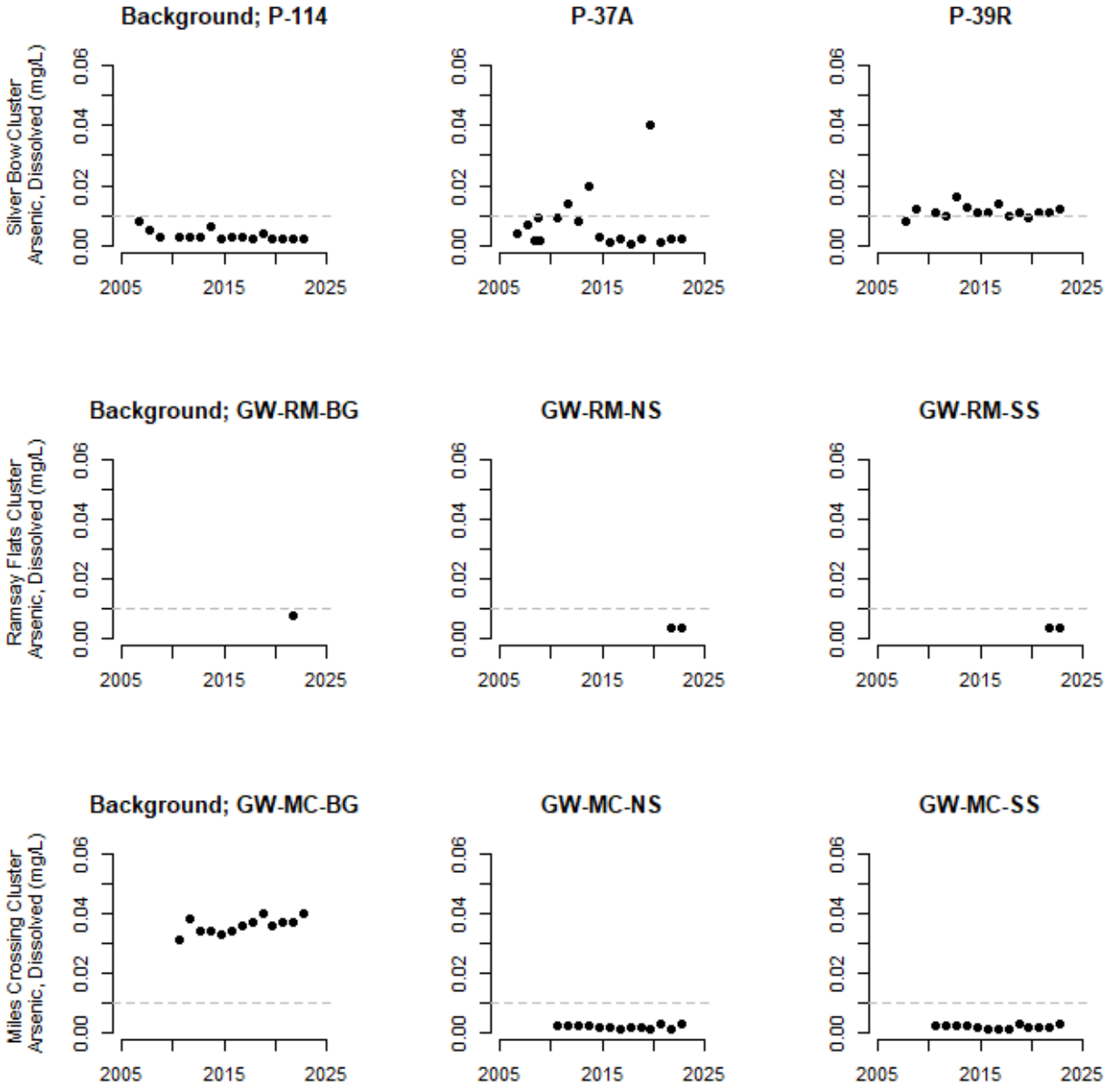


Figure 3-9. Arsenic concentrations in groundwater wells located in Subarea 2 of the Streamside Tailings Operable Unit (2006-2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

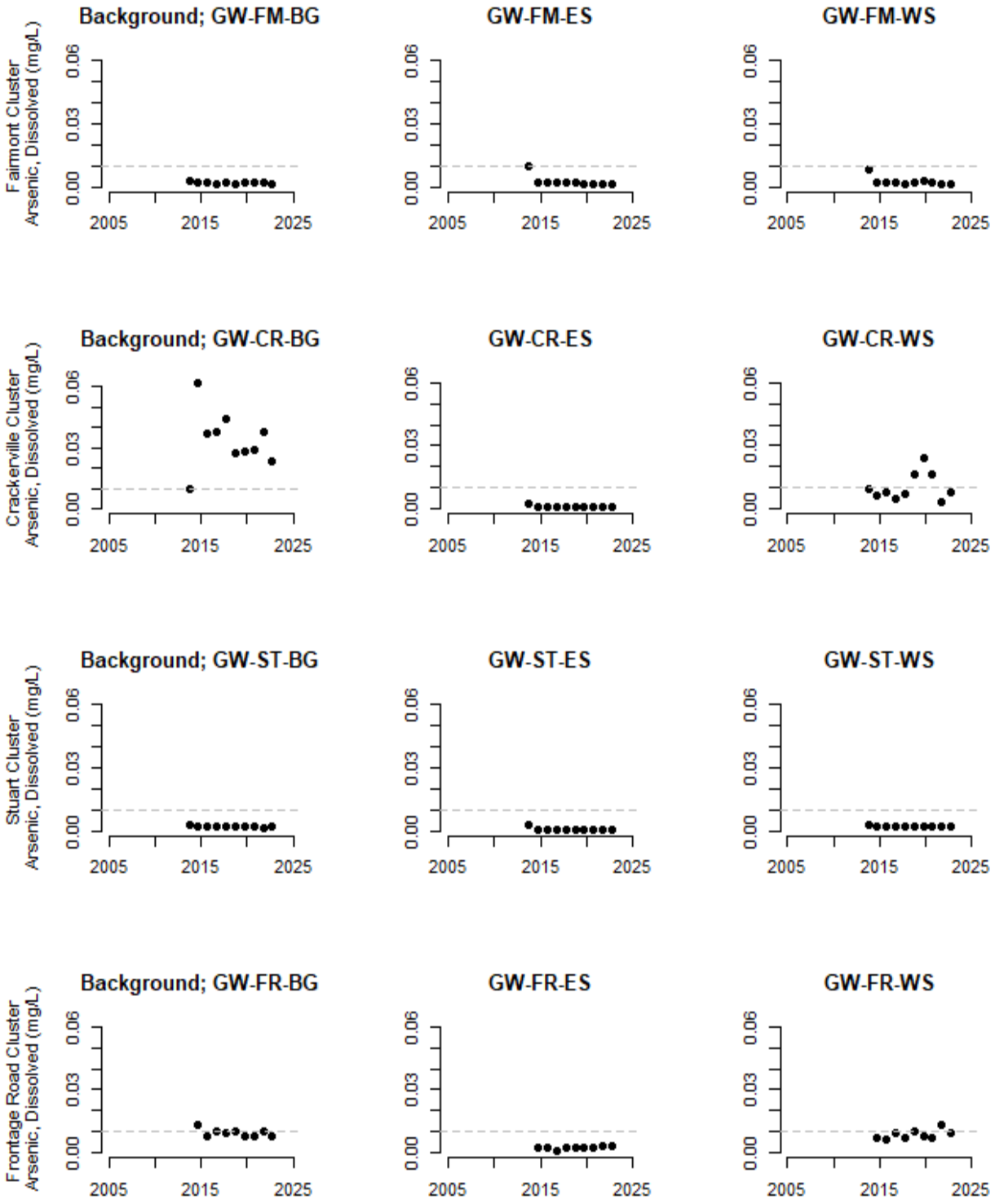


Figure 3-10. Arsenic concentrations in groundwater wells located in Subarea 4 of the Streamside Tailings Operable Unit (2006-2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

3.4.2.1.2 Cadmium

Over the period of record, cadmium concentrations in the floodplain monitoring wells have generally been higher than the concentrations in the background wells of each cluster with certain exceptions (Figure 3-11; Figure 3-12; Figure 3-13). In the Colorado Tailings, Ramsay Flats, Fairmont, and Frontage Road Clusters, concentrations in the monitoring wells were generally similar to the background wells (Figure 3-12; Figure 3-13). Concentrations in both monitoring wells in the Miles Crossing and Stuart clusters have been higher than in the background well (Figure 3-12; Figure 3-13). In the Silver Bow and Crackerville Clusters, concentrations in one of the two monitoring wells have been higher than in the background well, but concentrations in the other monitoring well have been similar to background (Figure 3-12; Figure 3-13).

Cadmium concentrations have routinely exceeded the groundwater standard in 7 of the 20 monitoring wells (Wells P-58A, P-37A, GW-MC-NS, GW-MC-SS, GW-CR-WS, GW-ST-ES, and GW-ST-WS), but have not exceeded the standard in any background well samples (Figure 3-11; Figure 3-12; Figure 3-13).

There is no clear evidence an increasing or decreasing trend in cadmium concentrations through time in any of the wells with the possible exception of Well P-37A which appears to have declining concentrations (Figure 3-11; Figure 3-12; Figure 3-13). Cadmium concentrations in some wells were particularly high in 2022, including: Well MW-01, MW-10, P-58A, GW-1004A, GW-MC-NS, GW-MC-SS, GW-ST-ES, and GW-ST-WS (Figure 3-11; Figure 3-12; Figure 3-13).

Cadmium concentrations in 2022 were substantially higher than the majority of prior monitoring results in several floodplain monitoring wells including: Well P-58A (Nissler Cluster), Wells GW-MC-NS and GW-MC-SS (Miles Crossing Cluster), and Wells GW-ST-ES and GW-ST-WS (Stuart Cluster) (Figure 3-11; Figure-3-12; Figure 3-13).

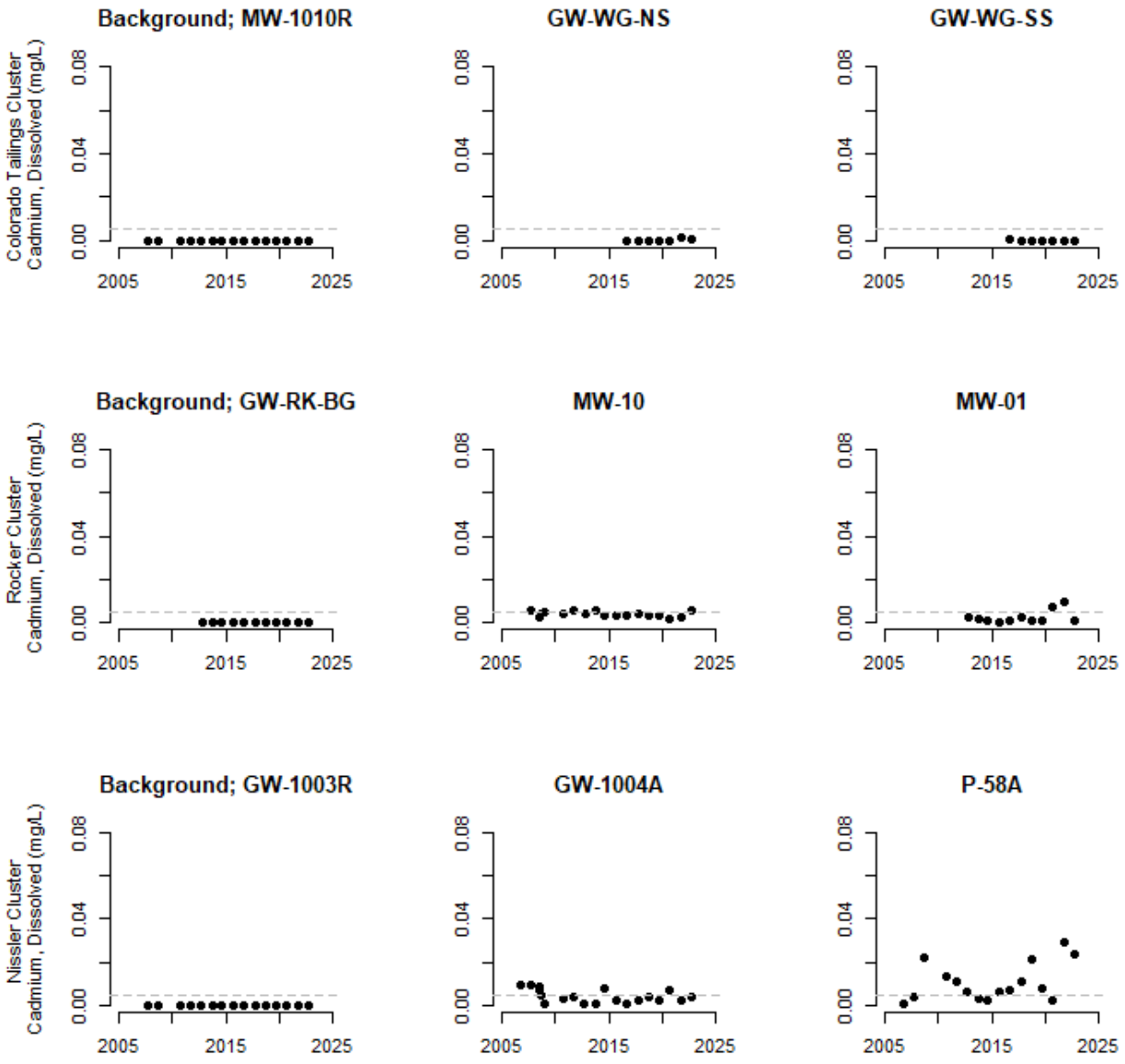


Figure 3-11. Cadmium concentrations in groundwater wells located in Subarea 1 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

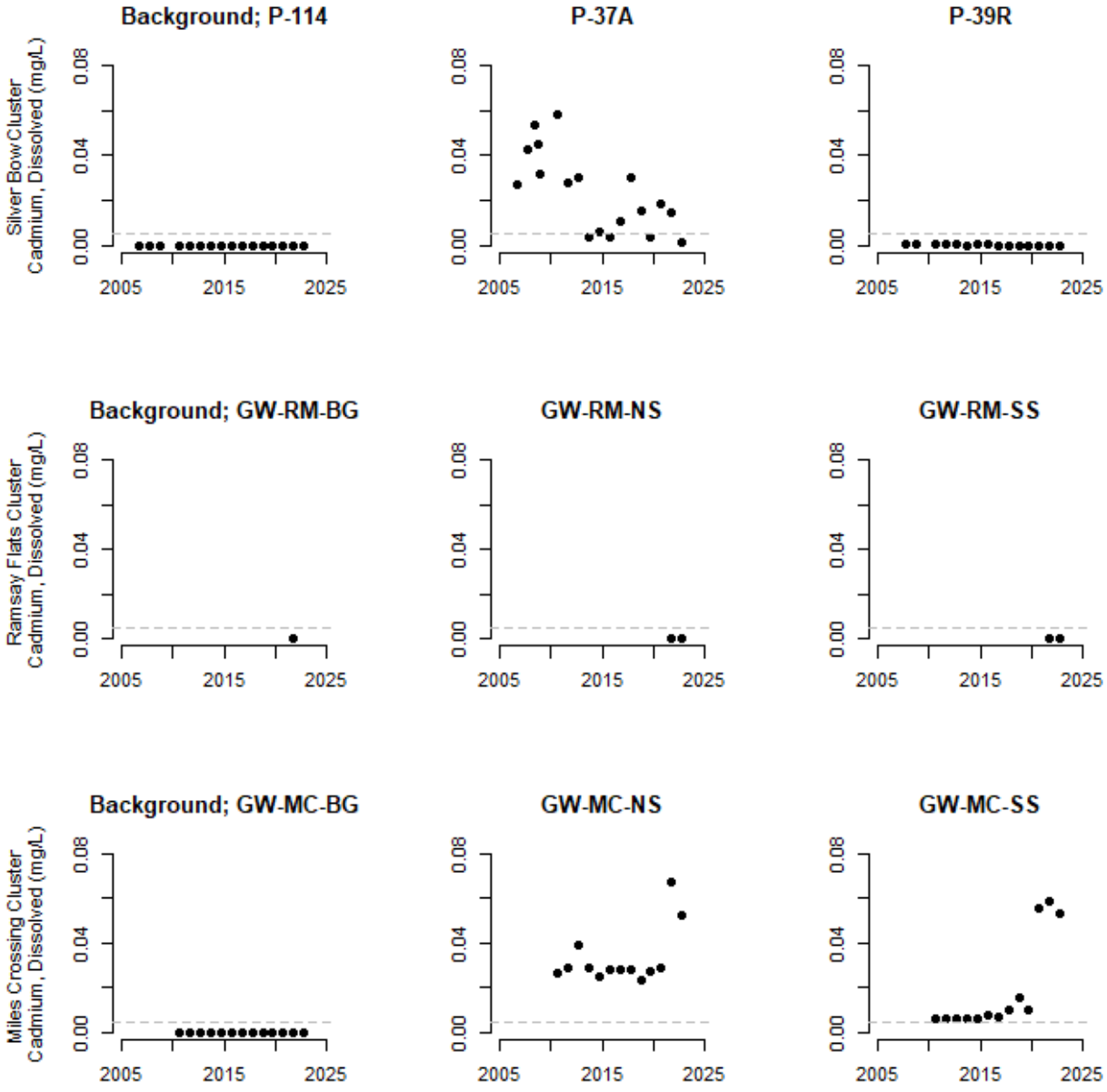


Figure 3-12. Cadmium concentrations in groundwater wells located in Subarea 2 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

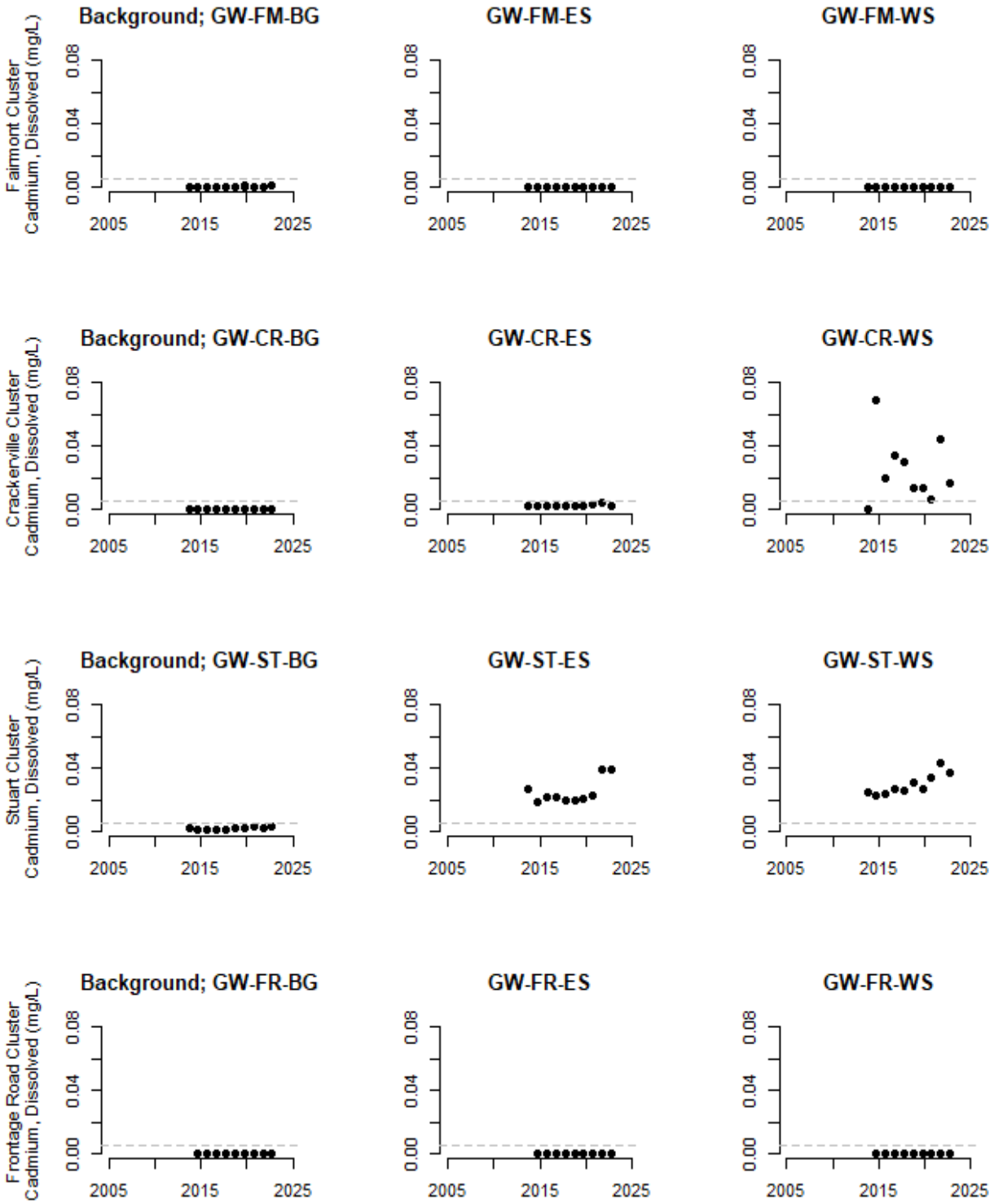


Figure 3-13. Cadmium concentrations in groundwater wells located in Subarea 4 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

3.4.2.1.3 Copper

Over the period of record, copper concentrations in the floodplain monitoring wells have been similar to concentrations in the background wells during most monitoring periods, with a few exceptions (Figure 3-14; Figure 3-15; Figure 3-16). In the Rocker, Nissler, Miles Crossing, and Stuart Clusters, concentrations in both monitoring wells have tended to be higher than in the background well (Figure 3-14; Figure 3-16).

In 2022, copper concentrations exceeded the groundwater standard in 3 of the 20 monitoring wells (P-58A, GW-MC-NS, and GW-ST-ES). Copper concentrations have routinely exceeded the groundwater standard in 1 of the 20 monitoring wells (Stuart Cluster Well GW-ST-ES). The copper concentrations have also been exceeded in one of the Rocker Cluster monitoring wells (P-58A) for the past two years, and in one of the Miles Crossing Cluster monitoring wells (Well GW-MC-NS) for the past three years (Figure 3-15; Figure 3-16). Copper concentrations have not exceeded the standard in any of the background well samples since monitoring began (Figure 3-14; Figure 3-15; Figure 3-16). There is no clear evidence of an increasing or decreasing trend through time in most of the wells (Figure 3-14; Figure 3-15; Figure 3-16). However, the trend in Well GW-ST-WS suggests that concentrations are increasing over time (Figure 3-16).

Copper concentrations in 2022 were substantially higher than most prior monitoring results in several floodplain monitoring wells including: Well P-58A (Rocker Cluster), Wells GW-MC-NS and GW-MC-SS (Miles Crossing Cluster), and Well GW-ST-ES (Stuart Cluster) (Figure 3-14; Figure 3-15; Figure 3-16).

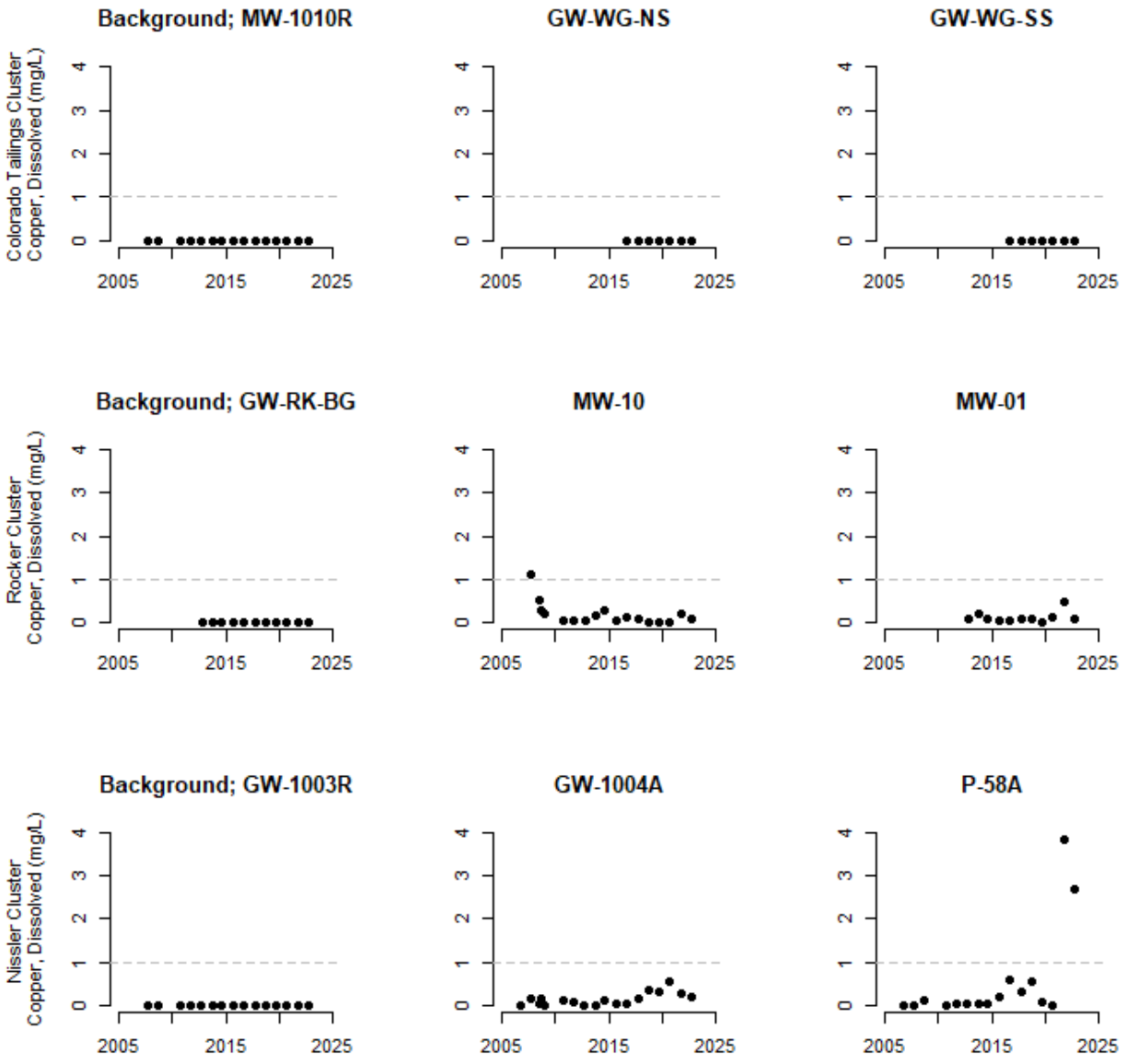


Figure 3-14. Copper concentrations in groundwater wells located in Subarea 1 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [MDHES, 1994].

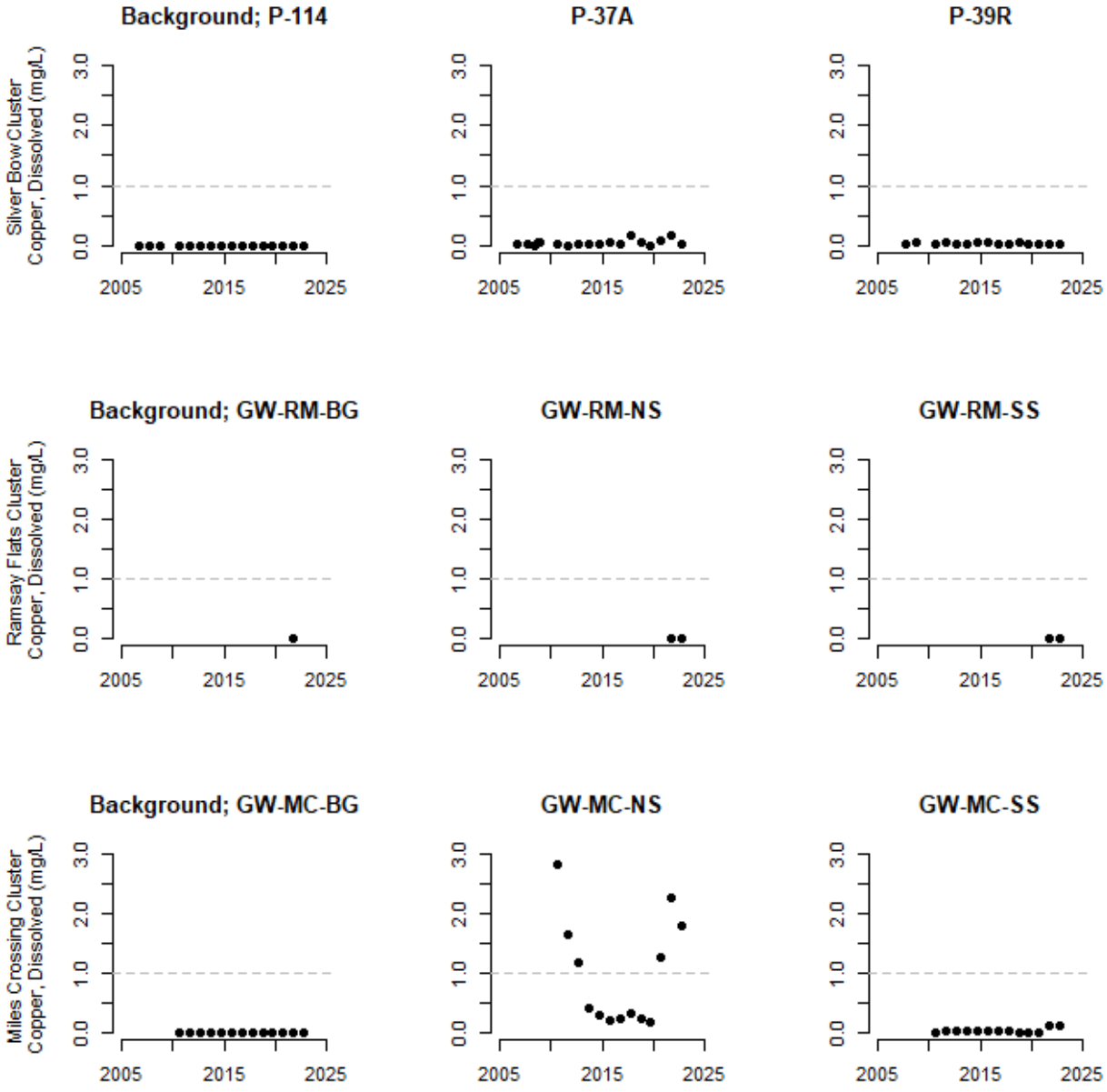


Figure 3-15. Copper concentrations in groundwater wells located in Subarea 2 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [MDHES, 1994].

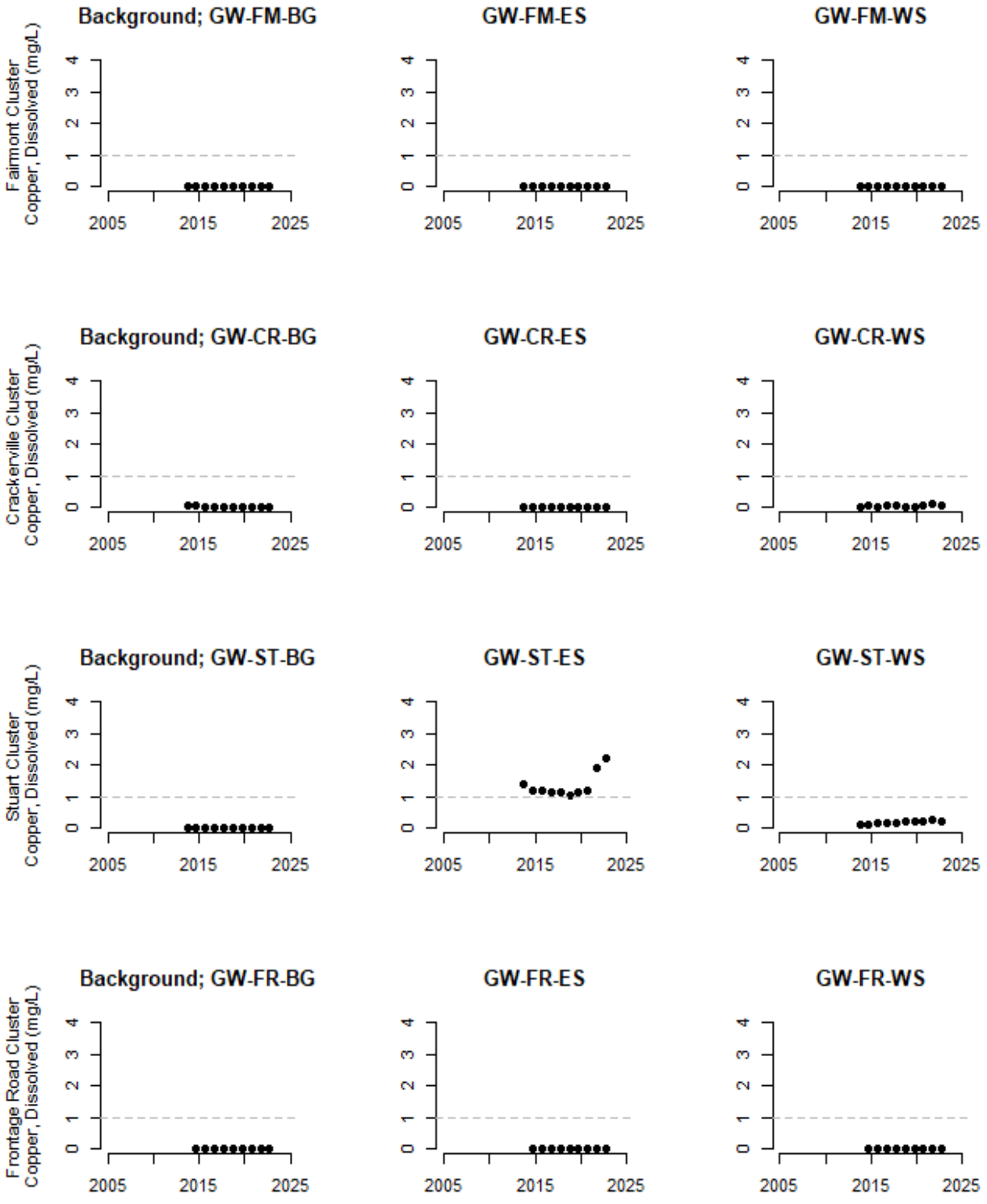


Figure 3-16. Copper concentrations in groundwater wells located in Subarea 4 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [MDHES, 1994].

3.4.2.1.4 Lead

Over the period of record, lead concentrations in the floodplain monitoring wells have been similar to concentrations in the background wells during most monitoring periods, with a few exceptions (Figure 2-30; Figure 2-31; Figure 2-32). In the Nissler Cluster, concentrations in one of the two monitoring wells were higher than in the background well, but concentrations in the other monitoring well were similar to background (Figure 2-31).

Lead concentrations have not routinely exceeded the groundwater standard in any of the monitoring wells (Figure 2-30; Figure 2-31; Figure 2-32). There is no clear evidence of an increasing or decreasing trend through time in any of the wells (Figure 2-30; Figure 2-31; Figure 2-32). Lead concentrations in Well GW-1004A (Nissler Cluster) increased substantially in 2020, 2021, and 2022 compared to prior results (Figure 2-30).

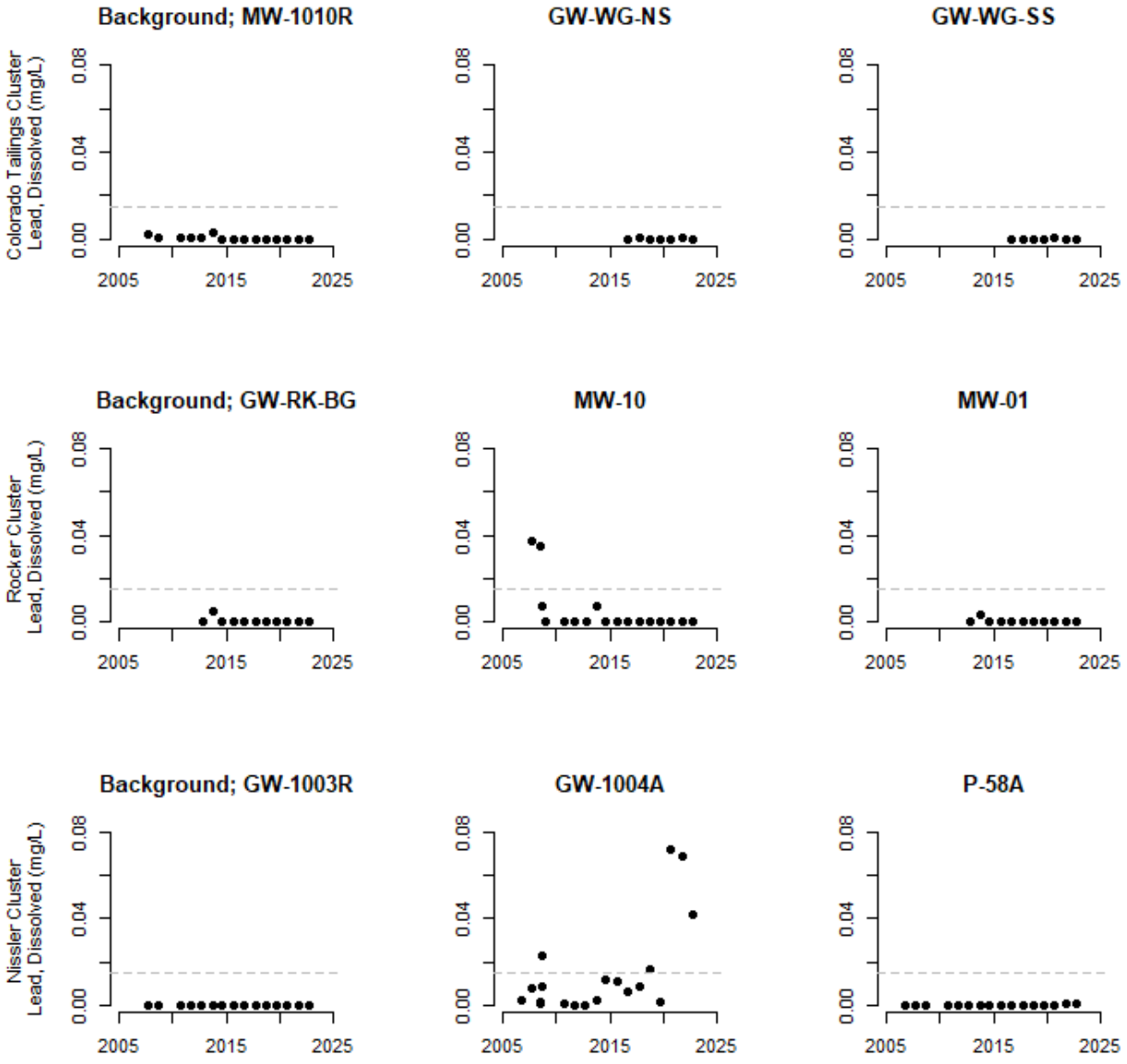


Figure 3-17. Lead concentrations in groundwater wells located in Subarea 1 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

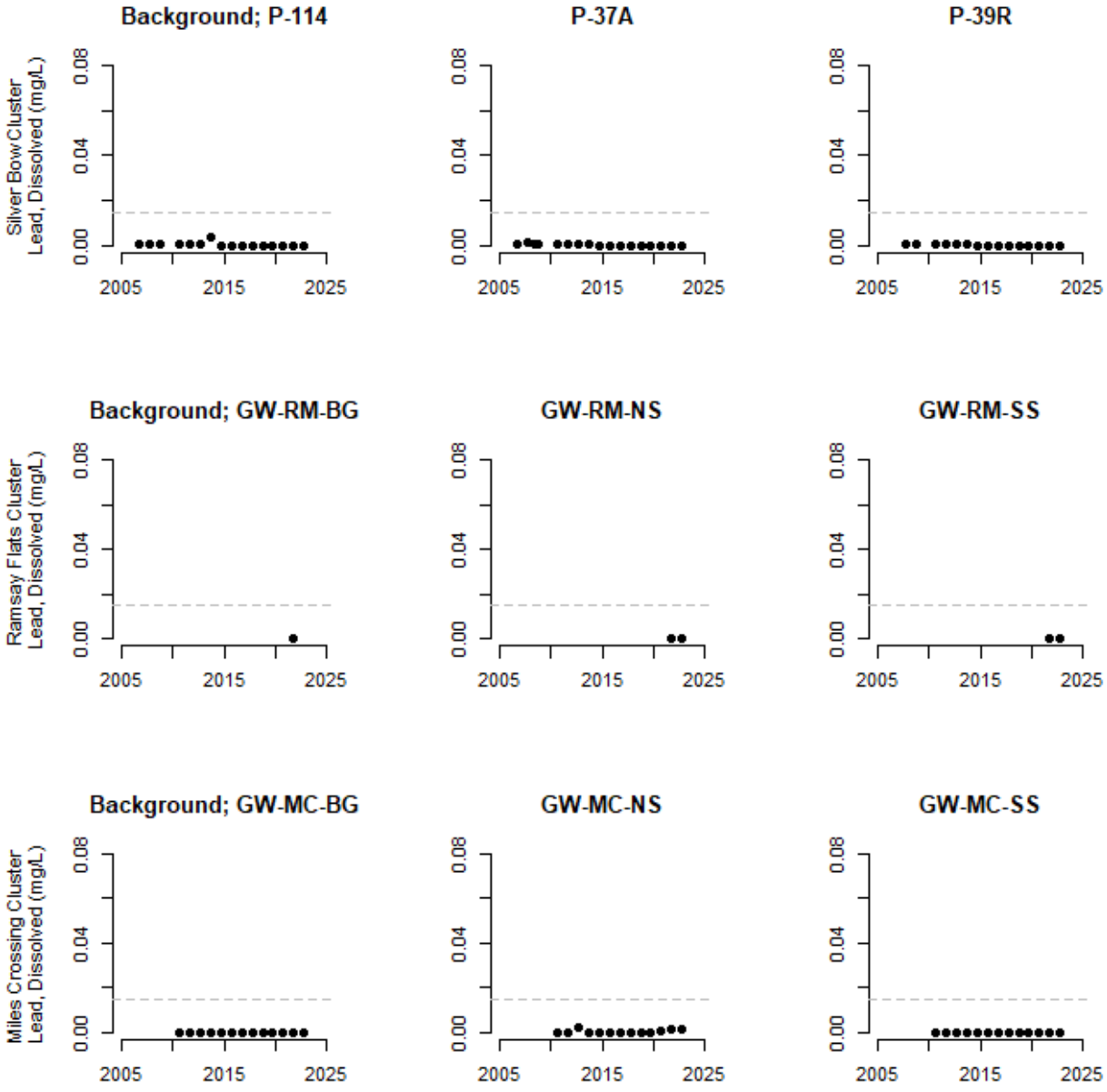


Figure 3-18. Lead concentrations in groundwater wells located in Subarea 2 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

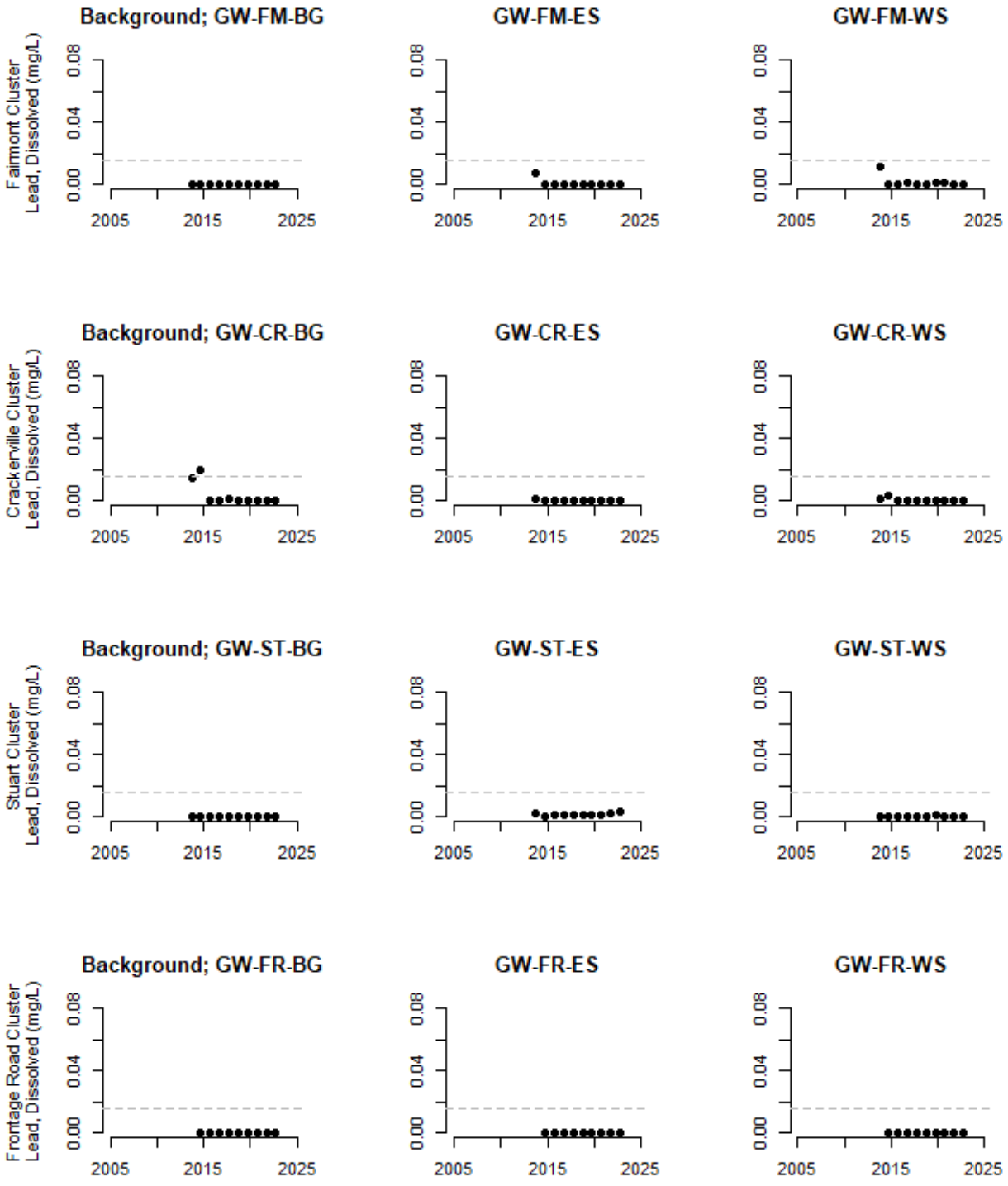


Figure 3-19. Lead concentrations in groundwater wells located in Subarea 4 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

3.4.2.1.5 Mercury

Over the period of record, mercury concentrations in the floodplain monitoring wells have generally been similar to concentrations in the background wells during most monitoring periods (Figure 3-20; Figure 3-21; Figure 3-22). Concentrations have only exceeded the groundwater standard in one background well and not since 2012 (Figure 3-20; Figure 3-21; Figure 3-22). There is no clear evidence of an increasing or decreasing trend through time in any of the wells (Figure 3-20; Figure 3-21; Figure 3-22).

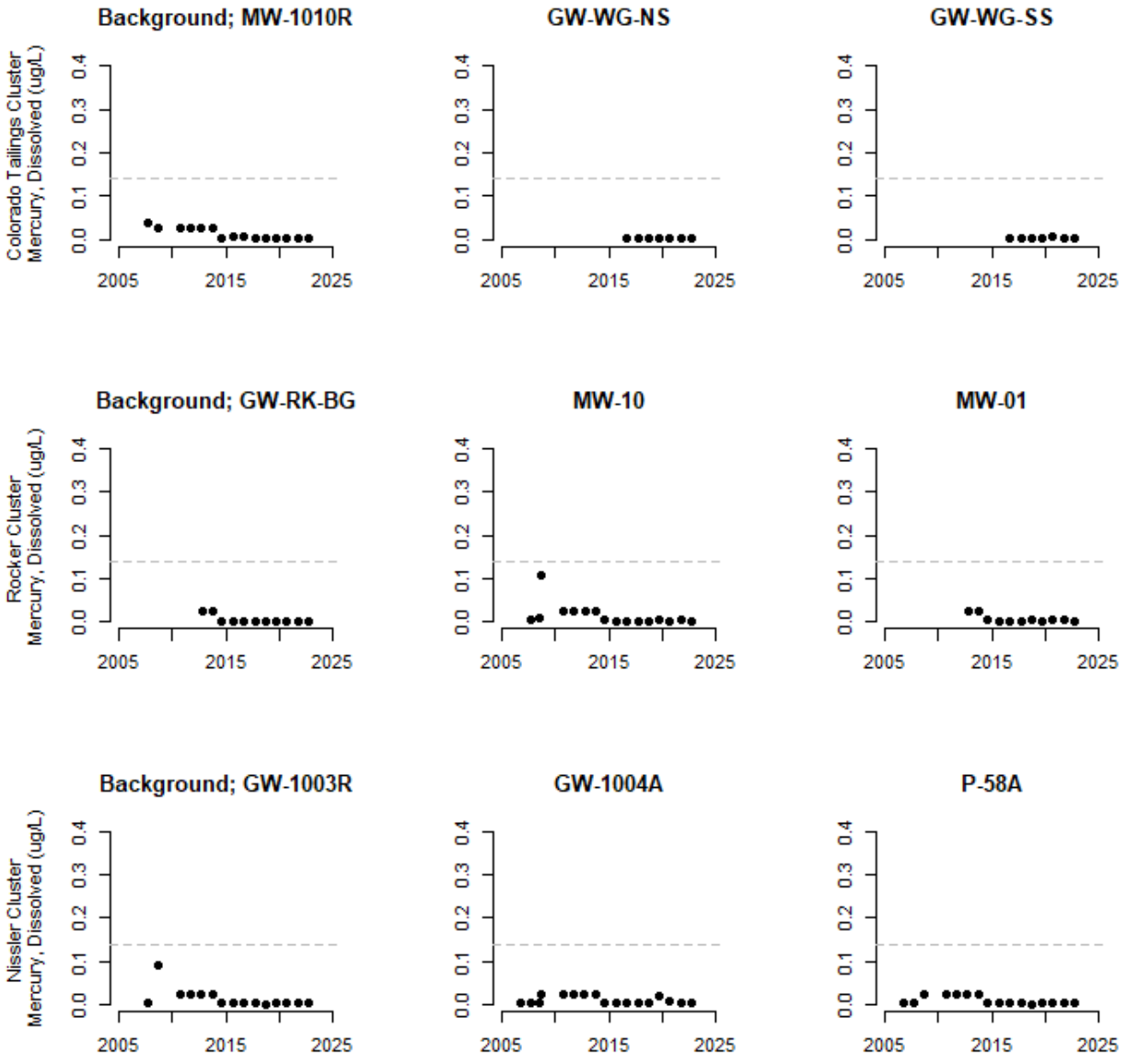


Figure 3-20. Mercury concentrations in groundwater wells located in Subarea 1 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [MDHES, 1994].

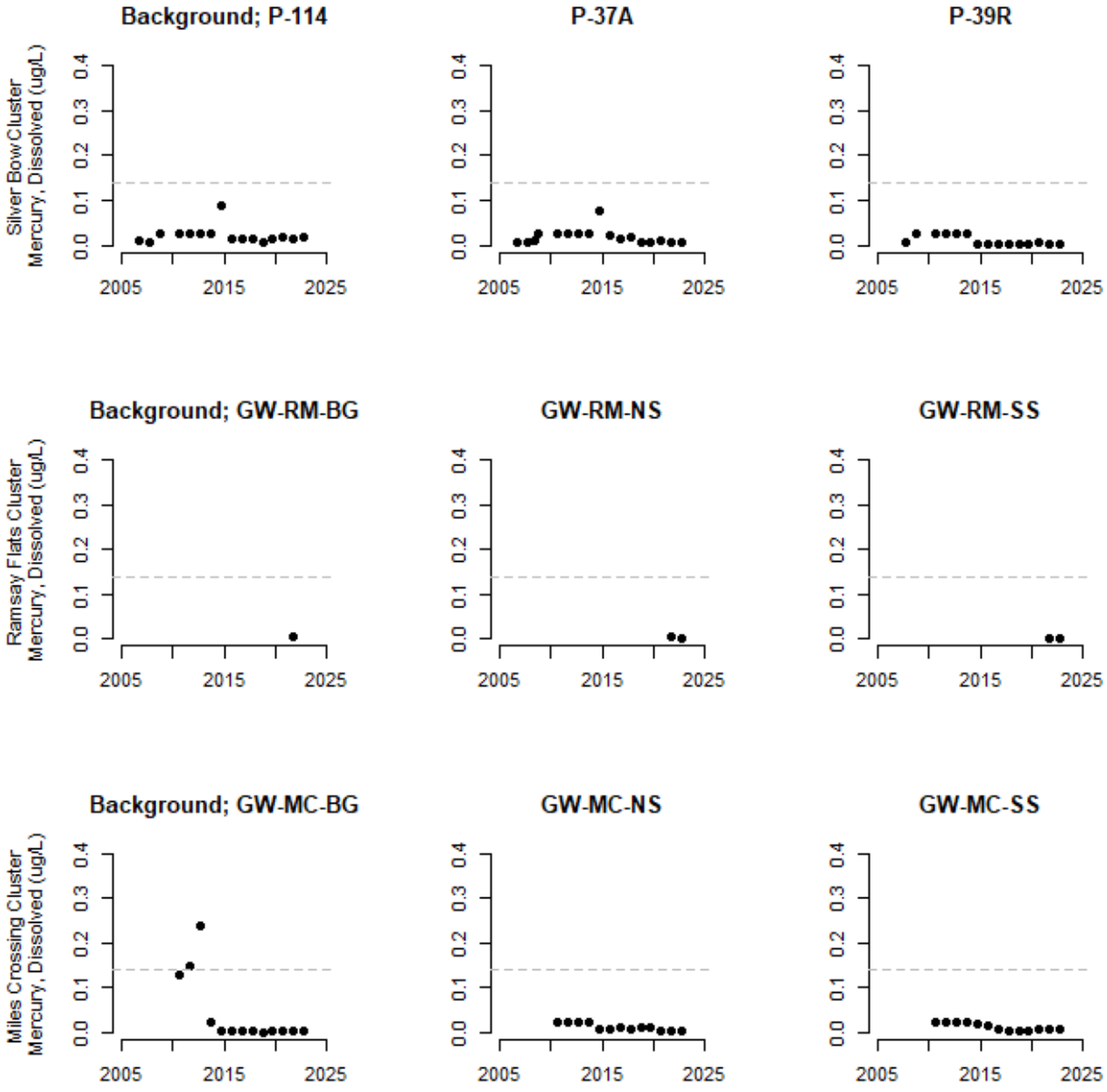


Figure 3-21. Mercury concentrations in groundwater wells located in Subarea 2 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [MDHES, 1994].

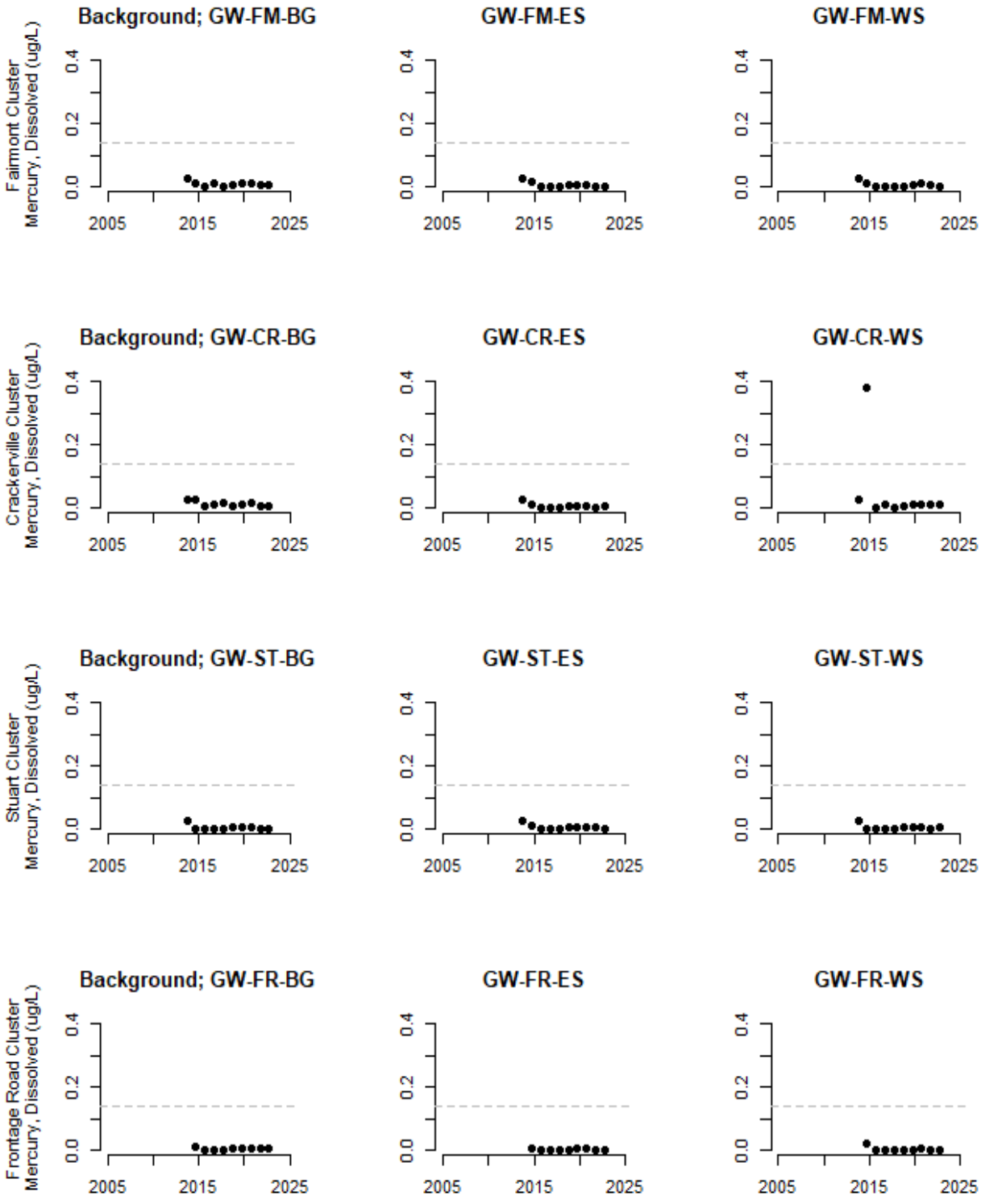


Figure 3-22. Mercury concentrations in groundwater wells located in Subarea 4 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [MDHES, 1994].

3.4.2.1.6 Zinc

Over the period of record, zinc concentrations in the floodplain monitoring wells have frequently been higher than the concentrations in the background wells of each cluster (Figure 3-23; Figure 3-24; Figure 3-25). In the Nissler, Miles Crossing, and Stuart Clusters, concentrations in both monitoring wells have generally exceeded concentrations in the background (Figure 3-23; Figure 3-24; Figure 3-25). In the Colorado Tailings, Rocker, and Silver Bow Clusters, concentrations in one of the two monitoring wells have been higher than in the background well, but concentrations in the other monitoring well have been similar to background (Figure 3-23; Figure 3-24).

Zinc concentrations have routinely exceeded the groundwater standard in 7 of the 18 monitoring wells (Wells MW-10, GW-1004A, P-58A, GW-MC-NS, GW-MC-SS, GW-ST-ES, and GW-ST-WS) but have only exceeded the standard in one background well sample, on one occasion in 2020, from Well GW-ST-BG (Figure 3-23; Figure 3-24; Figure 3-25).

Zinc concentrations were particularly high compared to prior results in a couple wells, specifically Well P-58A (Nissler Cluster), Well GW-MC-NS (Miles Crossing Cluster), and Wells GW-ST-ES and GW-ST-WS (Stuart Cluster) (Figure 3-23; Figure 3-25).

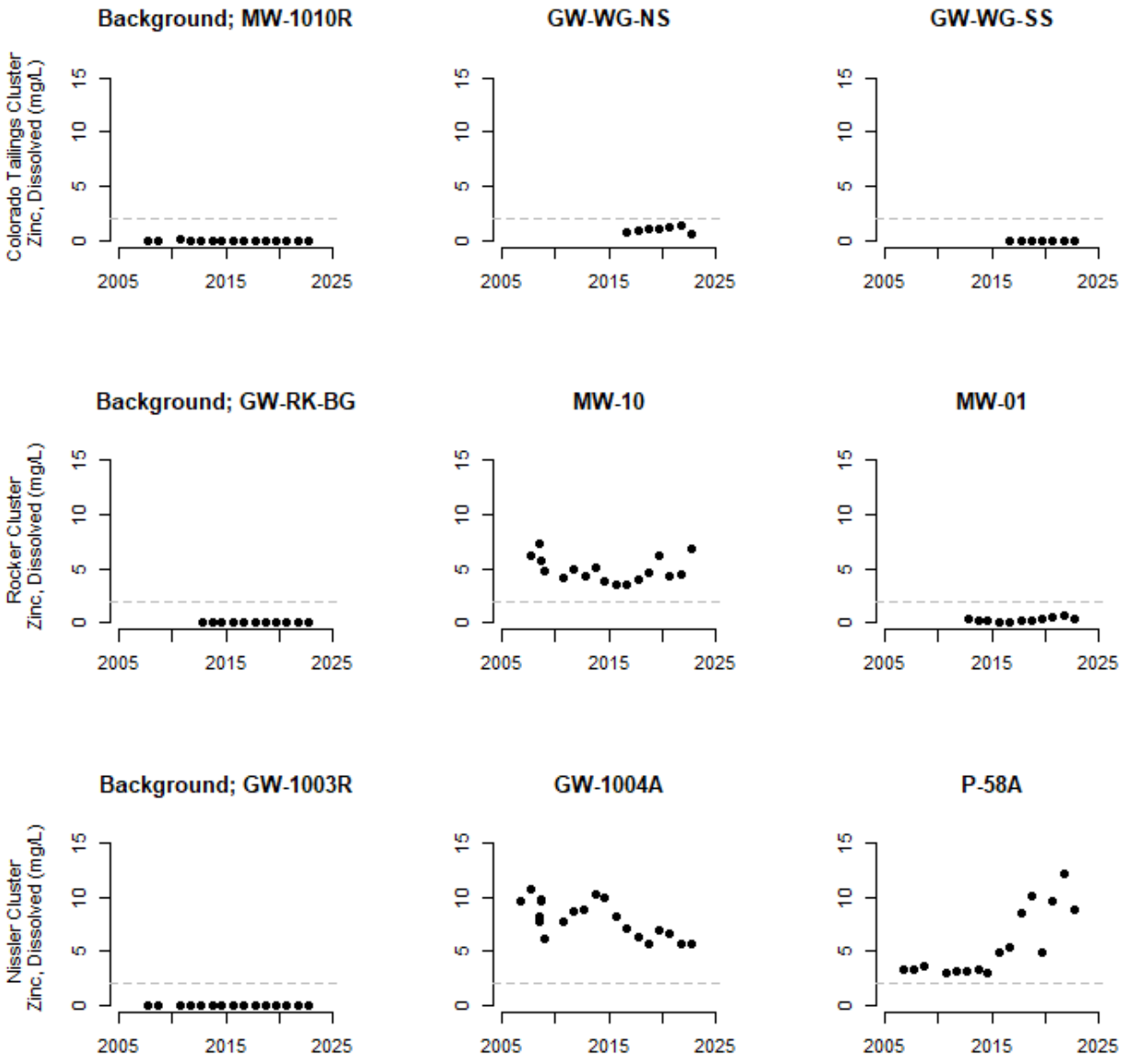


Figure 3-23. Zinc concentrations in groundwater wells located in Subarea 1 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

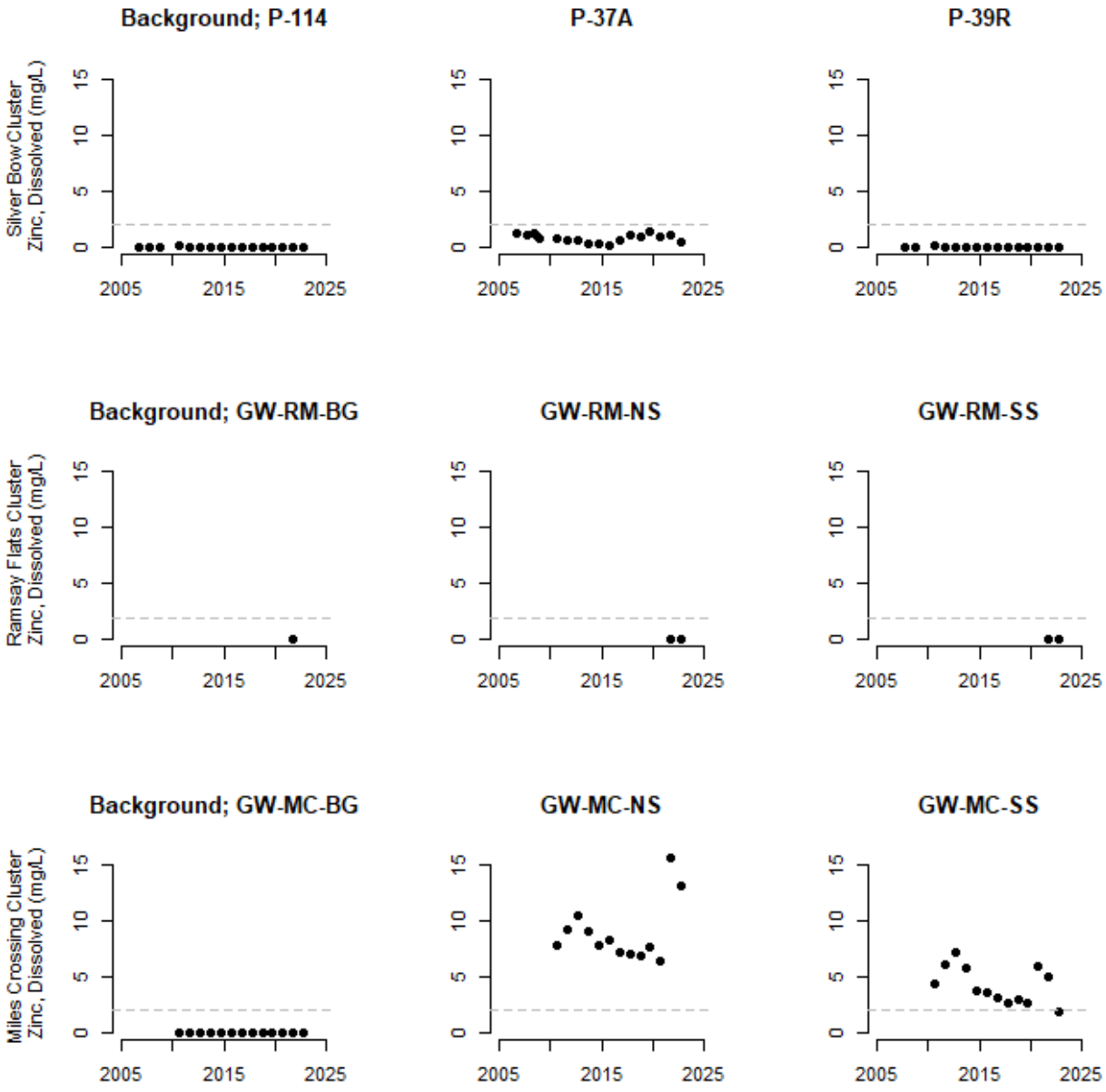


Figure 3-24. Zinc concentrations in groundwater wells located in Subarea 2 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

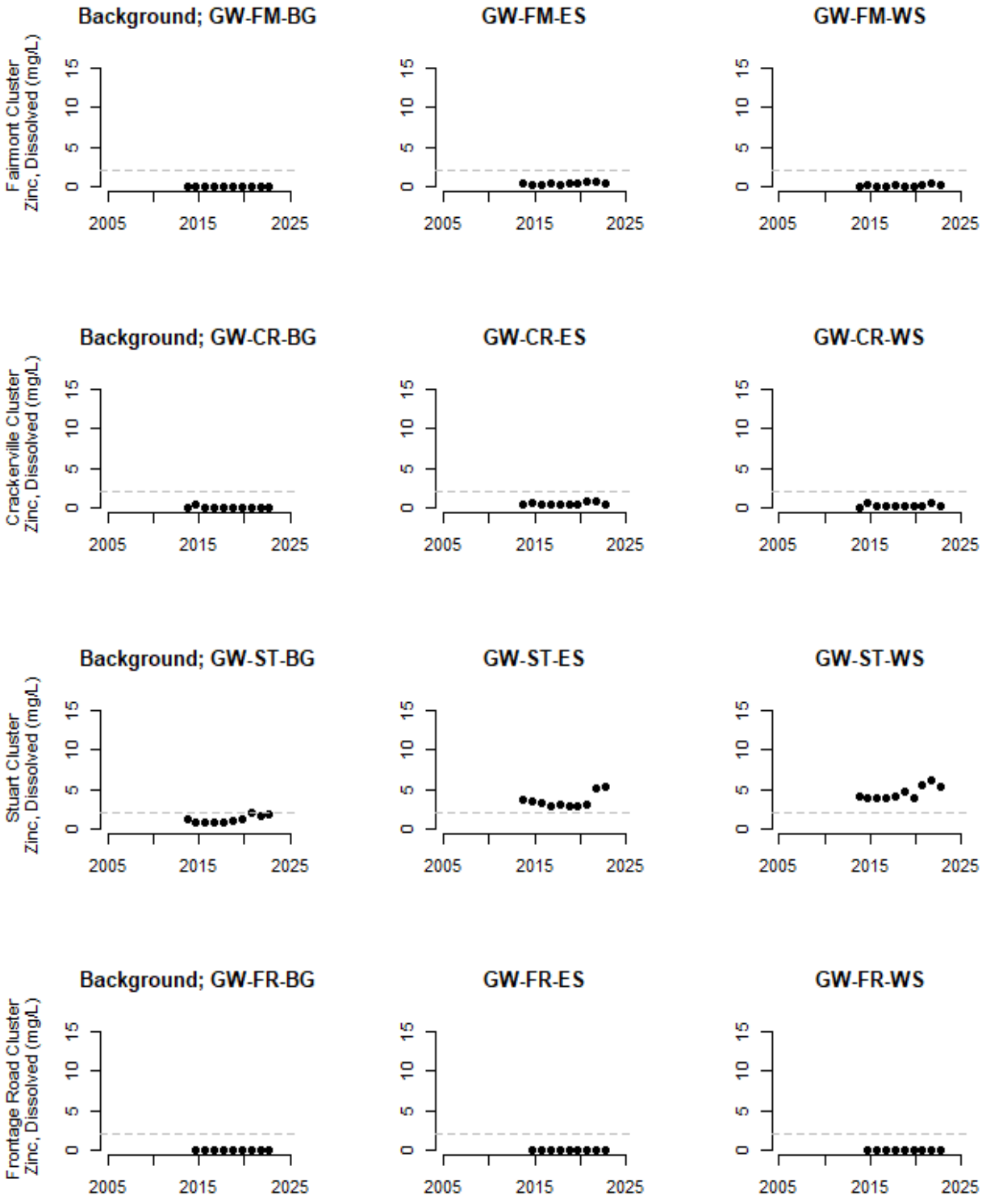


Figure 3-25. Zinc concentrations in groundwater wells located in Subarea 4 of the Streamside Tailings Operable Unit (2006–2022). Gray dashed line represents the human health groundwater standard [DEQ, 2019a].

3.4.2.2 Other Metals

Concentrations of non-COC metals in the Silver Bow Creek floodplain wells in 2021 are displayed in Table 3-11. Three samples had uranium concentrations that exceeded the DEQ [2019a] human health groundwater standard: Well MW-1010R which is a monitoring well in the Colorado Tailings Cluster, Well P-39R which is a monitoring well in the Silver Bow Cluster, and the background well (Well GW-RM-BG) in the Ramsay Flats Cluster (Table 3-11).

3.4.2.3 Common Ions

Common ion concentrations in floodplain monitoring wells are depicted in Table 3-12.

3.4.3 Data Validation

Four field blank samples were collected in 2022 and each was analyzed for 30 analytes. All but one analyte in the field blanks had concentrations below the analytical reporting limits. The one reporting limit exceedance was for dissolved boron at a concentration of 0.2 mg/L (RL = 0.1 mg/L). Associated data will be qualified in the project database. Four field duplicate samples were collected in 2022 and each analyte concentration in those duplicate samples was compared to the analyte concentration in the paired field sample. No groundwater field sample and field duplicate pairs had RPDs exceeding the project criteria for "overall precision" (RPD below 25 percent) defined in the QAPP [RESPEC, 2014].[49]

[49] RPDs were not calculated for field sample and duplicate pairs with both analyte concentrations below 500 percent of the analytical reporting limit.

Table 3-11. Dissolved metal (non-contaminant of concern) concentrations (mg/L) in groundwater monitoring wells located along Silver Bow Creek in the Streamside Tailings Operable Unit, September 2022.

Cluster	Site	Dissolved Metal[50]														
		Al	Sb	Ba	Be	B	Cr	Co	Fe	Mn	Mb	Ni	Se	Ag	U	V
Colorado Tailings	GW-1010R*	ND	0.0004[J]	0.028	ND	0.100	0.0005[J]	ND	ND	0.003	0.009	ND	0.00009[J]	ND	0.0827	0.0009[J]
	GW-WG-NS	0.006[J]	ND	0.03	ND	0.100	ND	0.003[J]	0.012[J]	3.98	0.031	0.0008[J]	ND	ND	0.0099	0.0002[J]
	GW-WG-SS	0.013	0.0012	0.005	ND	0.095[J]	0.0003[J]	ND	0.04	0.0008	0.026	0.0008[J]	0.00026	ND	0.0097	0.0011[J]
Rocker	GW-RK-BG*	ND	ND	0.079	ND	0.041[J]	0.0003[J]	ND	ND	0.0005[J]	0.0130	ND	0.00095[J]	ND	0.0085	0.0051[J]
	MW-01	ND	0.0003[J]	0.025	ND	0.10	ND	ND	0.007[J]	0.544	0.0039	0.0009[J]	0.00009[J]	ND	0.0094	0.0006[J]
	MW-10	0.146	ND	0.024	0.0002[J]	0.088[J]	ND	0.0400	24.10	15.80	ND	0.0130	ND	ND	0.0006	ND
Nissler	GW-1003R*	ND	ND	0.044	ND	0.039[J]	0.0001[J]	ND	ND	0.0009[J]	0.0110	ND	0.00032[J]	ND	0.0031	0.0056[J]
	GW-1004A	0.680	ND	0.010	0.0004[J]	0.097[J]	ND	0.0400	27.80	15.90	ND	0.0150	ND	ND	0.0014	ND
	P-58A	3.76	ND	0.030	0.0020	0.067[J]	ND	0.0500	29.20	12.40	ND	0.0280	0.00015[J]	ND	0.0178	ND
Silver Bow	P-114*	ND	0.0004[J]	0.022	ND	0.072[J]	ND	ND	ND	0.0009[J]	0.0070	ND	0.00091[J]	ND	0.0036	0.0002[J]
	P-37A	0.004[J]	ND	0.019	ND	0.080[J]	ND	0.0030[J]	0.007[J]	2.430	0.0018[J]	0.0020[J]	ND	ND	0.0018	ND
	P-39R	ND	0.0002[J]	0.063	ND	0.400	0.0002[J]	ND	ND	0.0006[J]	0.0090	ND	0.0010	ND	0.0476	0.0090[J]
Ramsay Flats	GW-RM-BG*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GW-RM-NS	ND	ND	0.049	ND	0.022[J]	0.0001[J]	ND	ND	0.0010	0.0012[J]	0.0010	0.00018[J]	ND	0.0071	0.0065[J]
	GW-RM-SS	0.005[J]	ND	0.054	ND	0.028[J]	0.0001[J]	ND	ND	0.0009[J]	0.0012[J]	0.0002	0.00023	ND	0.0082	0.0066[J]
Miles Crossing	GW-MC-BG*	0.028	0.0003[J]	0.022	ND	0.066[J]	ND	ND	0.012[J]	0.0030	0.0570	0.0009[J]	0.00028	ND	0.0067	0.0061
	GW-MC-NS	0.457	ND	0.020	0.0004[J]	0.054[J]	ND	0.0300	0.020	8.420	ND	0.0220	ND	ND	0.0019	ND
	GW-MC-SS	0.187	0.0005	0.051	ND	0.072[J]	0.0002[J]	ND	0.200	2.750	0.1860	0.0050	0.0001[J]	ND	0.0055	0.0070[J]
Fairmont	GW-FM-BG*	0.007[J]	ND	0.041	0.0004[J]	0.033[J]	ND	ND	0.060	0.5940	0.0003[J]	0.0070	0.00046[J]	ND	0.0003	0.0015[J]
	GW-FM-ES	ND	ND	0.062	ND	0.063[J]	ND	0.0030[J]	0.009[J]	1.850	0.0980	0.0019[J]	ND	ND	0.0006	ND
	GW-FM-WS	ND	0.0002[J]	0.159	ND	0.056[J]	ND	ND	0.007[J]	3.260	0.0650	0.0016[J]	0.00014[J]	ND	0.0022	0.0014[J]

[50] Metal abbreviations: Al = aluminum, Sb = antimony, Ba = barium, Be = beryllium, B = boron, Cr = chromium, Co = cobalt, Fe = iron, Mn = manganese, Mb = molybdenum, Ni = nickel, Se = selenium, Ag = silver, U = uranium, and V = vanadium.

Cluster	Site	Dissolved Metal[50]														
		Al	**Sb**	**Ba**	**Be**	**B**	**Cr**	**Co**	**Fe**	**Mn**	**Mb**	**Ni**	**Se**	**Ag**	**U**	**V**
Crackerville	GW-CR-BG*	0.009[J]	0.0011	0.017	ND	0.200	0.0002[J]	ND	ND	0.0006[J]	0.0210	0.0003[J]	0.00014[J]	ND	0.0021	0.0054[J]
	GW-CR-ES	0.009	0.0003[J]	0.021	ND	0.069[J]	ND	ND	ND	0.0070	0.0460	0.002	0.00015[J]	ND	0.0028	0.0023[J]
	GW-CR-WS	ND	0.0002[J]	0.064	ND	0.077[J]	ND	0.0040[J]	0.008[J]	3.110	0.0930	0.002	ND	ND	0.0097	ND
Stuart	GW-ST-BG*	0.029	ND	0.027	0.0003[J]	0.076[J]	0.0003[J]	ND	ND	0.5240	ND	0.027	ND	ND	0.0001[J]	0.0013[J]
	GW-ST-ES	0.491	ND	0.017	0.0012	0.058[J]	ND	0.0100	0.008[J]	2.540	0.0022[J]	0.016	0.00021[J]	ND	0.0054	0.0002[J]
	GW-ST-WS	0.056	0.0004[J]	0.033	0.0004[J]	0.066[J]	ND	0.0100	ND	2.860	0.0830	0.019	0.00015[J]	ND	0.0030	0.0024[J]
Frontage Road	GW-FR-BG*	0.005[J]	0.0014	0.039	ND	0.009[J]	ND	ND	0.009[J]	0.2370	0.0040[J]	0.0006[J]	0.0001	ND	0.0025	0.0068[J]
	GW-FR-ES	ND	ND	0.047	ND	0.031[J]	ND	ND	0.100	0.0630	0.0110	ND	0.00007[J]	ND	0.0053	ND
	GW-FR-WS	ND	0.0005	0.043	ND	0.013[J]	ND	ND	0.007[J]	0.0080	0.0050	ND	0.00013[J]	ND	0.0096	0.0034[J]

-	Not sampled
*	Background well.
ND	Not detected at method detection limit.
D	Result obtained from analysis of diluted sample.
J	Estimated because: (1) result is between the method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).
	Exceeds DEQ [2019a] standard.

Table 3-12. Common ion concentrations (mg/L) in groundwater monitoring wells located along Silver Bow Creek in the Streamside Tailings Operable Unit, September 2022.

Cluster	Site	Alkalinity (as CaCO3)	Bicarbonate Alkalinity (as HCO3)	Calcium	Chloride	Hardness (as $CaCO_3$)	Magnesium	Potassium	Sodium	Sulfate
Colorado Tailings	GW-1010R*	250	310	114	26	374	22	7	146	387
	GW-WG-SS	140	170	50	16	156	7	6	84	162
	GW-WG-NS	160	190	141	38	445	23	8	84	419
Rocker	GW-RK-BG*	160	190	70	40	240	16	6	44	126
	MW-01	160	200	92	19	297	16	8	23	151
	MW-10	2	2	82	103	292	21	7	39	307
Nissler	GW-1003R*	120	150	36	15	119	7	6	33	52
	GW-1004A	ND	ND	81	76	355	37	7	59	467
	P-58A	ND	ND	78	61	271	19	8	32	377
Silver Bow	P-114*	200	240	65	45	190	7	5	108	162
	P-37A	140	170	89	74	285	15	17	84	234
	P-39R	280	340	94	31	306	17	10	76	140
Ramsay Flats	GW-RM-BG*	-	-	-	-	-	-	-	-	-
	GW-RM-NS	140	170	48	19	158	9	7	29	57
	GW-RM-SS	150	180	50	22	168	10	7	30	59
Miles Crossing	GW-MC-BG*	290	350	43	96	149	10	6	269	290
	GW-MC-NS	3	3	124	62	431	29	8	63	506
	GW-MC-SS	120	150	83	61	252	11	8	42	146
Fairmont	GW-FM-BG*	40	48	35	27	119	8	5	26	106
	GW-FM-ES	110	130	90	45	295	17	6	41	224
	GW-FM-WS	120	140	108	39	348	19	5	35	261
Crackerville	GW-CR-BG*	140	170	21	27	63	3	4	130	151
	GW-CR-ES	110	130	78	50	247	13	3	54	172
	GW-CR-WS	110	140	110	47	345	17	6	58	281
Stuart	GW-ST-BG*	16	19	89	46	302	19	4	28	281

Cluster	Site	Alkalinity (as CaCO3)	Bicarbonate Alkalinity (as HCO3)	Calcium	Chloride	Hardness (as $CaCO_3$)	Magnesium	Potassium	Sodium	Sulfate
	GW-ST-ES	10	11	96	41	293	13	7	40	332
	GW-ST-WS	45	54	73	48	226	11	7	36	214
Frontage Road	GW-FR-BG*	190	230	36	1	120	7	1	8	27
	GW-FR-ES	140	170	86	19	285	17	3	22	203
	GW-FR-WS	140	170	43	1	142	8	2	10	24

- Not sampled

* Background well.

ND Not detected at method detection limit.

J Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent diffe rence of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).

3.5 DISCUSSION

3.5.1 Mine Waste Relocation Repository

Data from 2022 provided no evidence that COCs were leaching from the MWRR into nearby groundwater during wet (May) or dry periods (September). Except for arsenic, all COC concentrations in the monitoring wells were either below the analytical reporting limits or near the reporting limits. For arsenic, concentrations in monitoring wells were either similar to, or lower than, concentrations in the background well. Data do not indicate that any substantial increases in COC concentrations are occurring through time in any of the MWRR monitoring wells, which would be expected if leaching of COC from the repository had occurred.

3.5.2 Floodplain

In 2022, several floodplain well samples had COC concentrations above the background well concentration, above the most restrictive MDHES [1994] or DEQ [2019a] groundwater standard, or both. Arsenic concentrations exceeded the groundwater standard in one monitoring well of the Rocker and Silver Bow Clusters, as well as in the background wells in the Nissler and Crackerville Clusters. Cadmium concentrations exceeded the background well concentrations routinely in many floodplain monitoring wells and exceeded the groundwater standard in one well of each the Rocker and Nissler Clusters, Silver Bow and Crackerville Clusters and in both wells of the Miles Crossing and Stuart Clusters. Copper concentrations in floodplain monitoring wells routinely exceeded background well concentrations and also exceeded the groundwater standard in one well of the Nissler, Miles Crossing, and Stuart Clusters. Lead concentrations exceeded the groundwater standard in one monitoring well of the Nissler Cluster. Zinc concentrations routinely exceeded background well concentrations and samples from floodplain monitoring wells exceeded the groundwater standard in the Rocker (one of two wells), Nissler (both wells), Miles Crossing (one well), and Stuart Clusters (both wells). These results indicate that portions of the shallow groundwater aquifer in the SSTOU remain contaminated by these COCs.

Groundwater monitoring in 2022 yielded several notable results. Cadmium concentrations in Well P-37A (Silver Bow Cluster) appear to be trending downward over time. Cadmium concentrations in both wells of the Miles Crossing Cluster were abnormally high in 2021 and 2022. Zinc concentrations in one of the Miles Crossing wells (Well GW-MC-NS) were also abnormally high in 2021 and 2022. Copper and zinc concentrations in Well P-58A of the Nissler Cluster have also been abnormally high since 2021. Also in the Nissler Cluster, well GW-1004A has had abnormally high lead concentrations since 2020.

Uranium, which is not a COC, had concentrations exceeding the DEQ [2019a] groundwater standard in two wells, one of which was a background well. Monitoring results in 2022 were generally similar to previous years, although certain COC concentrations have been variable through time.

3.5.3 Data Validation

Quality assurance and quality control results suggested that field procedures in 2022 resulted in little sample contamination. All but one in the field blanks had concentrations below reporting limits suggesting decontamination procedures were adequate. Constituent comparisons of field samples and field duplicates were within the sampling precision data quality objective for the project for all of the analyte comparisons of the paired field samples and field duplicates.

4.0 VADOSE ZONE WATER

4.1 INTRODUCTION

This chapter describes vadose zone water quality monitoring data collected in 2022 to evaluate the effectiveness of the Mine Waste Relocation Repository (MWRR) at isolating the vadose zone from metal contaminants of concern (COCs) in waste materials stored at the MWRR. If leaching of metal COCs from the MWRR occurs there is a potential for contamination of groundwater and surface water in the Streamside Tailings Operable Unit (SSTOU) of the Silver Bow Creek/Butte Area National Priorities List site.

The vadose zone is the area between the soil surface and the groundwater table. Vadose zone soil moisture can transport colloidal and dissolved nutrients, minerals, and contaminants through the soil column. Constituent concentrations are typically higher in vadose zone water compared to groundwater; existing groundwater standards are not applicable to vadose zone water. Therefore, the vadose zone water monitoring program is primarily intended to assess variation in concentrations through time to determine if leaching of COCs from the repository may be in progress.

4.2 PERFORMANCE GOALS

Specific numeric concentration cleanup goals do not exist for vadose zone water COC concentrations in the SSTOU ROD [DEQ and EPA, 1995]. The ROD specifies metal and common ion concentrations need to be monitored in vadose zone water at each waste repository to assess the mobility of contaminants from the repository sites to underlying groundwater or to the Silver Bow Creek floodplain down-gradient from any repositories. The MWRR is the only waste repository established in the SSTOU at this time.

4.3 METHODS

The purpose of the vadose zone monitoring program is to collect data that describe temporal variation of metal and ion concentrations in vadose zone water near the MWRR of the SSTOU. These data provide a long-term record of vadose zone water metal and ion concentrations near the MWRR. These long-term data will be used to assess if leaching of COCs from the MWRR to groundwater and surface water in the SSTOU has occurred or is occurring. A record of changes to the vadose zone monitoring program is provided in the program monitoring plan [RESPEC, 2022]. This monitoring program attempts to fully adhere to monitoring requirements specified in the SSTOU Record of Decision (ROD) (Table 4-1).

4.3.1 Monitoring Locations

Vadose zone water chemistry was monitored at eight lysimeters located near the MWRR in 2022 (Figure 4-1). Lysimeter LYS-04 was discontinued (due to malfunction likely caused by frost heaving) and replaced by Lysimeter LYS-04R in 2018 (Figure 4-1; Table 4-2). Three lysimeters (Lysimeters LYS-04R, LYS-05, and LYS-08) sampled in 2022 had insufficient sample volume for analysis of any constituents during the fall sample period of 2022.

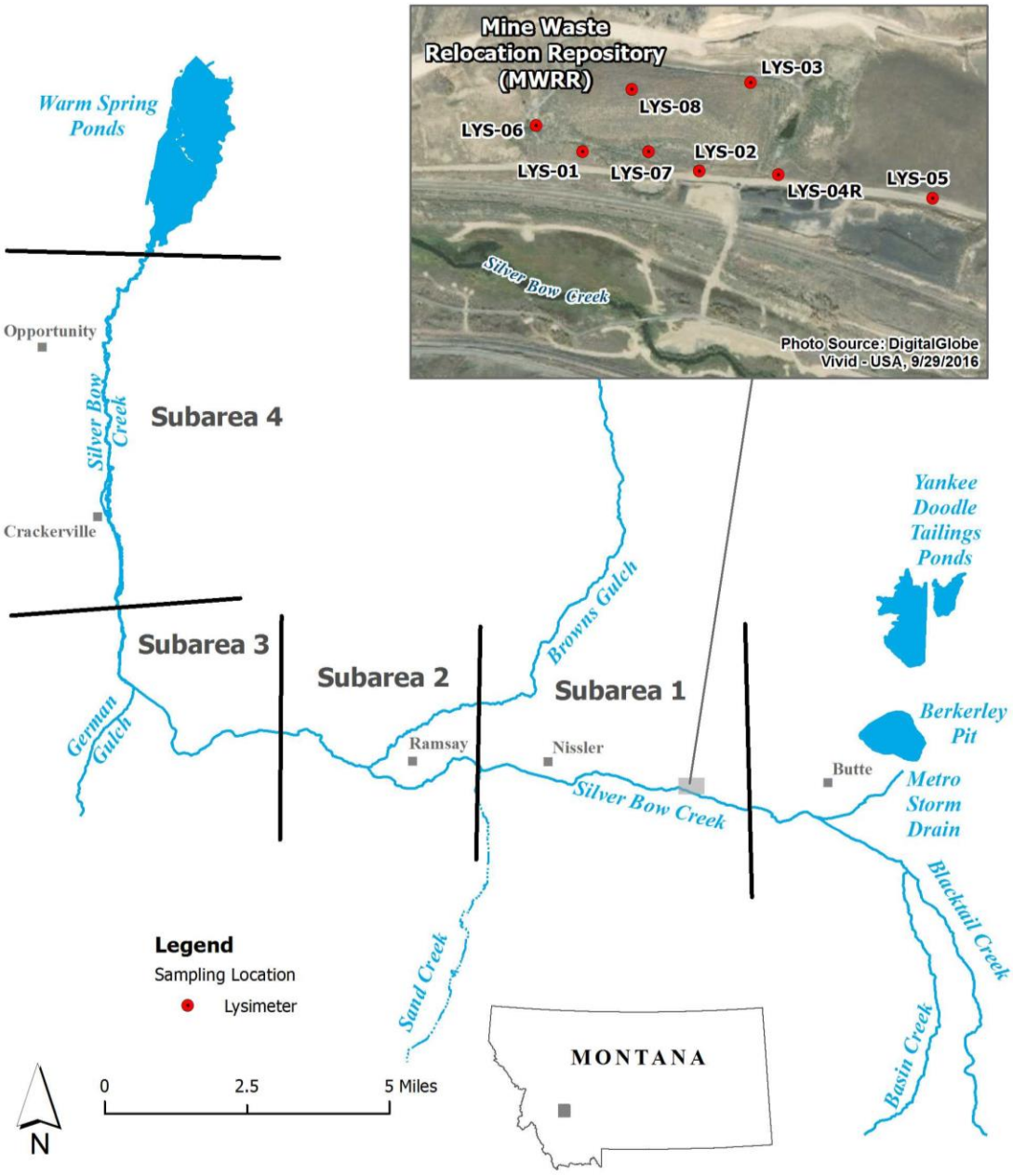


Figure 4-1. Sampling locations for vadose zone water monitoring in the Streamside Tailings Operable Unit.

Table 4-1. Minimum post-remedy monitoring requirements specified in the Record of Decision for the Streamside Tailings Operable Unit [DEQ and EPA, 1995].

Locations/Physical	Analytical Parameters	Analytes
In conjunction with groundwater sampling locations; three (3) per repository location	Metals (dissolved)	Arsenic, cadmium, copper, lead, mercury, zinc
	Common ions	Calcium, magnesium, sodium, potassium, chloride, sulfate
	Physical properties	Temperature, acidity (pH), oxidation-reduction potential, conductance

Table 4-2. Lysimeter locations for vadose zone water monitoring of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit.

Lysimeter	Location (GPS coordinates; NAD 83)	
	Latitude	Longitude
LYS-01	46.00261	-112.58599
LYS-02	46.00244	-112.58403
LYS-03	46.00349	-112.58323
LYS-04R	46.00243	-112.58270
LYS-05	46.00223	-112.58011
LYS-06	46.00289	-112.58679
LYS-07	46.00264	-112.58489
LYS-08	46.00336	-112.58521

4.3.2 Monitoring Schedule

Vadose zone samples were collected during the spring on May 24, 2022 and again in the fall on October 25, 2022. Biannual monitoring is intended to represent wet soil periods during the spring and dry soil periods during the late summer or fall.

4.3.3 Monitoring Parameters

Vadose zone water samples were analyzed for the parameters and analytes listed in Table 4-3.

Table 4-3. Sampling parameters and analytes for vadose zone water monitoring near the Mine Waste Relocation Repository of the Streamside Tailings Operable Unit.

Parameter	Analytes
Concentrations of metal contaminants of concern (dissolved)	Arsenic, cadmium, copper, lead, mercury, zinc
Concentrations of other metals (dissolved)	Aluminum, antimony, barium, beryllium, boron, cobalt, chromium, iron, manganese, molybdenum, nickel, selenium, silver, uranium, vanadium
Common ion concentrations	Sulfate, total alkalinity, bicarbonate alkalinity, calcium, magnesium, sodium, potassium, chloride, hardness

4.3.4 Sample Collection and Analysis Procedures

Sample collection, analysis, and quality assurance procedures are described in the project sampling and analysis plan [RESPEC, 2022]. The methods generally followed standard operating procedures (SOPs) developed for the Clark Fork River [AR, 1992]. Field sampling procedures were in accordance with DEQ [2019b] and followed the "clean hands/dirty hands" procedures described by the U.S. Geological Survey [2006].

Because most lysimeters produced low sample volumes, some deviations from the described SOPs occurred. Sample bottles were not triple rinsed before collection and samples were lab filtered, instead of being field filtered. When sample volume was very limited (less than 20 milliliters [mL]), analysis of dissolved metals was prioritized over analysis of common ions. Finally, field parameters (i.e., water temperature, pH, dissolved oxygen concentration, and conductivity) were not measured.

Calibration methods for field meters, data recording and handling methods, and quality assurance and quality control procedures are described in the project quality assurance project plan (QAPP) [RESPEC, 2014]. Samples were analyzed by Energy Laboratories (Helena, Montana). Laboratory analysis procedures for each analyte are presented in Table 4-4.

4.3.5 Data Analysis

Dissolved metal and common ion concentrations from 2022 are tabulated for each sampling event in each monitoring lysimeter. In addition, all metal COC concentrations are plotted through time for the monitoring period from 2010–2022 for assessing temporal trends at each site.

4.3.6 Data Validation

Data quality objectives were established in the SSTOU monitoring project quality assurance project plan (QAPP) for data representativeness, comparability, completeness, sensitivity, precision, bias, and accuracy [RESPEC, 2014]. Methods for field and laboratory procedures are described in detail in the project QAPP. A completed quality assurance and quality control checklist, summary tables of field duplicate and field blank results, and assessments of data quality objectives are included in Appendix A.

Table 4-4. Analytes, methods, and reporting limits for groundwater sampling in the Streamside Tailings Operable Unit.

Analyte	Requested Method	Requested Reporting Limit (mg/L)[51]	Holding Time (days)	Bottle	Preservative[52]
Water Samples - Physical Properties and Inorganics					
Alkalinity, Total (as $CaCO_3$)	A 2320 B	4	14	500 mL HDPE	4 ± 2 C
Alkalinity, Bicarbonate (as HCO_3)	A 2320 B	4	14		
Chloride	EPA 300.0	1	28		
Sulfate	EPA 300.0	1	28		
Hardness (as $CaCO_3$)	A 2340 B	1	180		
Water Samples - Dissolved Metals (0.45 µm filtered)					
Aluminum	EPA 200.8	0.009	180	250 mL HDPE	HNO_3 to pH <2
Antimony	EPA 200.8	0.0005			
Arsenic	EPA 200.8	0.001			
Barium	EPA 200.8	0.003			
Beryllium	EPA 200.8	0.0008			
Boron	EPA 200.7	0.1			
Cadmium	EPA 200.8	0.00003			
Calcium	EPA 200.8	1			
Chromium	EPA 200.8	0.01			
Cobalt	EPA 200.8	0.01			
Copper	EPA 200.8	0.001			
Iron	EPA 200.8	0.02			
Lead	EPA 200.8	0.0003			
Magnesium	EPA 200.7	1			
Manganese	EPA 200.8	0.001			
Molybdenum	EPA 200.8	0.005			
Nickel	EPA 200.8	0.002			
Potassium	EPA 200.7	1			

[51] Requested reporting limits are either the required reporting limit from DEQ [2019a] or the lowest reporting limit previously provided by the analytical laboratory, whichever is lower.

[52] Vadose zone water samples were laboratory filtered.

Analyte	Requested Method	Requested Reporting Limit (mg/L)[51]	Holding Time (days)	Bottle	Preservative[52]
Selenium	EPA 200.8	0.001			
Silver	EPA 200.8	0.0002			
Sodium	EPA 200.7	1			
Uranium	EPA 200.8	0.0002			
Vanadium	EPA 200.8	0.1			
Zinc	EPA 200.8	0.008			
Mercury	EPA 245.1	0.000005	28		

4.4 RESULTS

Dissolved metal COC concentrations in MWRR lysimeters in 2022 are presented in Table 4-5. Concentrations of dissolved metals that are not COCs are presented in Table 4-6. Common ion concentrations are presented in Table 4-7. Sample volume was insufficient for analysis of metal or ion concentrations in Lysimeters LYS-04R, LYS-05, and LYS-08 in October.

Table 4-5. Dissolved metal contaminant of concern concentrations (mg/L) in lysimeters of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit, 2022.

Site	Arsenic	Cadmium	Copper	Lead	Mercury (µg/L)	Zinc
May						
LYS-01	0.003	0.00002[J]	0.0007[J]	ND	0.002[J]	0.003[J]
LYS-02	0.016	0.00004	0.016	ND	0.027	0.146
LYS-03	0.205	0.00009	0.006	0.0005	ND	0.017
LYS-04R	0.030	0.00004	0.007	0.0001[J]	0.004[J]	0.009
LYS-05	0.017	0.00014	0.009	ND	0.007	0.017
LYS-06	0.002	ND	0.006	ND	0.008	0.004[J]
LYS-07	0.007	0.00005	0.003	ND	0.008	0.007[J]
LYS-08	0.007	0.00008	0.0020	ND	0.003[J]	0.014
October						
LYS-01	0.004	ND	0.002	ND	ND	0.003[J]
LYS-02	0.020	0.00003	0.019	ND	0.032	0.020
LYS-03	0.312	0.00002[J]	0.005	ND	ND	ND
LYS-04R	DNA	DNA	DNA	DNA	DNA	DNA
LYS-05	DNA	DNA	DNA	DNA	DNA	DNA
LYS-06	0.004	ND	0.015	ND	0.012	0.020
LYS-07	0.007	ND	0.005	ND	-	0.004[J]
LYS-08	DNA	DNA	DNA	DNA	DNA	DNA

ND Not detected at method detection limit.

DNA Not sampled because of insufficient sample volume.

Table 4-6. Dissolved metal (not contaminants of concern) concentrations (mg/L) in lysimeters of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit, 2022.

Site	Dissolved Metals[53]														
	Al	Sb	Ba	Be	B	Cr	Co	Fe	Mn	Mb	Ni	Se	Ag	U	V
May															
LYS-01	ND	ND	0.038	ND	0.043[J]	ND	ND	ND	ND	0.0044[J]	ND	0.008	ND	0.0809	0.0020[J]
LYS-02	ND	0.0007	0.009	ND	0.600	0.0012[J]	ND	ND	ND	0.049	0.0009[J]	0.023	ND	1.370	0.0270[J]
LYS-03	0.021	0.0009	0.074	ND	0.700	0.0040[J]	ND	0.020	0.0030	0.079	0.0010	0.0020	ND	0.0072	0.1000
LYS-04R	ND	0.0006	0.074	ND	0.200	0.0011[J]	ND	ND	0.0008[J]	0.015	ND	0.006	ND	0.0365	0.0098[J]
LYS-05	ND	0.0012	0.013	ND	1.90	0.0066[J]	ND	ND	0.0004[J]	0.021	ND	0.002	ND	1.430	0.0044[J]
LYS-06	ND	0.0003[J]	0.016	ND	0.100	0.0007[J]	ND	ND	ND	0.011	0.0002[J]	0.017	ND	0.0013	0.0130[J]
LYS-07	0.008[J]	ND	0.009	ND	0.200	0.0015[J]	ND	ND	ND	0.068	ND	0.001	ND	0.1790	0.0036[J]
LYS-08	ND	0.0002[J]	0.018	ND	0.077[J]	0.0003[J]	ND	ND	0.0050	0.006	0.0002[J]	0.014	ND	0.1880	0.0250[J]
October															
LYS-01	0.004[J]	ND	0.056	ND	0.066[J]	ND	ND	ND	ND	0.007	0.0002[J]	0.007	ND	0.1600	0.0030[J]
LYS-02	ND	0.0009	0.015	ND	0.800	0.0017[J]	ND	ND	ND	0.077	0.0014[J]	0.059	ND	2.370	0.0420
LYS-03	0.004[J]	0.0016	0.066	ND	1.100	0.0050[J]	ND	ND	0.0004[J]	0.120	0.0005[J]	0.003	ND	0.0254	0.3000
LYS-04R	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA
LYS-05	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA
LYS-06	ND	0.0006	0.016	ND	0.200	0.0012[J]	ND	ND	0.0010[J]	0.019	0.0013[J]	0.075	ND	0.0084	0.0140[J]
LYS-07	0.011	0.0003[J]	0.008	ND	0.200	0.0014[J]	ND	ND	0.0006[J]	0.082	0.0003[J]	0.003	ND	0.3430	0.0033[J]
LYS-08	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA

ND Not detected at method detection limit.

DNA Not sampled because of insufficient sample volume.

J Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25%).

[53] Metals abbreviations: Al = aluminum, Sb = antimony, Ba = barium, Be = beryllium, B = boron, Cr = chromium, Co = cobalt, Fe = iron, Mn = manganese, Mb = molybdenum, Ni = nickel, Se = selenium, Ag = silver, U = uranium, and V =vanadium.

Table 4-7. Common ion concentrations (mg/L) in lysimeters of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit, 2022.

Site	Alkalinity (as CaCO3)	Bicarbonate Alkalinity (as HCO3)	Calcium	Chloride	Hardness (as CaCO3)	Magnesium	Potassium	Sodium	Sulfate
May									
LYS-01	170	210	108	46	360	22	3	34	203
LYS-02	560	680	388	270	1,920	282	3	2,420	6,820
LYS-03	ND	ND	92	ND	323	23	3	106	ND
LYS-04R	ND	ND	109	ND	448	42	28	185	ND
LYS-05	ND	ND	437	5	1,600	122	21	1,090	3,960
LYS-06	ND	ND	81	ND	251	12	0.14[J]	136	ND
LYS-07	ND	ND	378	ND	1,280	82	10	446	ND
LYS-08	ND	ND	430	73	1,900	201	6	202	1,970
October									
LYS-01	220	270	150	70	508	32	3	48	291
LYS-02	ND	ND	495	658	3,440	535	5	3,840	10,400
LYS-03	ND	ND	71	ND	367	46	1	208	ND
LYS-04R	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA
LYS-05	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA
LYS-06	ND	ND	232	65	753	42	0.2[J]	270	1,300
LYS-07	ND	ND	573	ND	1,990	136	14	623	ND
LYS-08	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA

DNA Not sampled because of insufficient sample volume.

D Result obtained from analysis of diluted sample.

J Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).

4.4.1 Arsenic

In 2022, arsenic concentrations in each MWRR lysimeter were generally similar to previous years. Concentrations in Lysimeter LYS-03 increased from the elevated values observed in 2021, but still remained lower than the observed 2019 high (Figure 4-2). Concentrations in Lysimeter LYS-03 have been variable and potentially suggest an increasing trend through time (Figure 4-2). In contrast, concentrations appear to be slightly decreasing through time at Lysimeter LYS-02 (Figure 4-2).

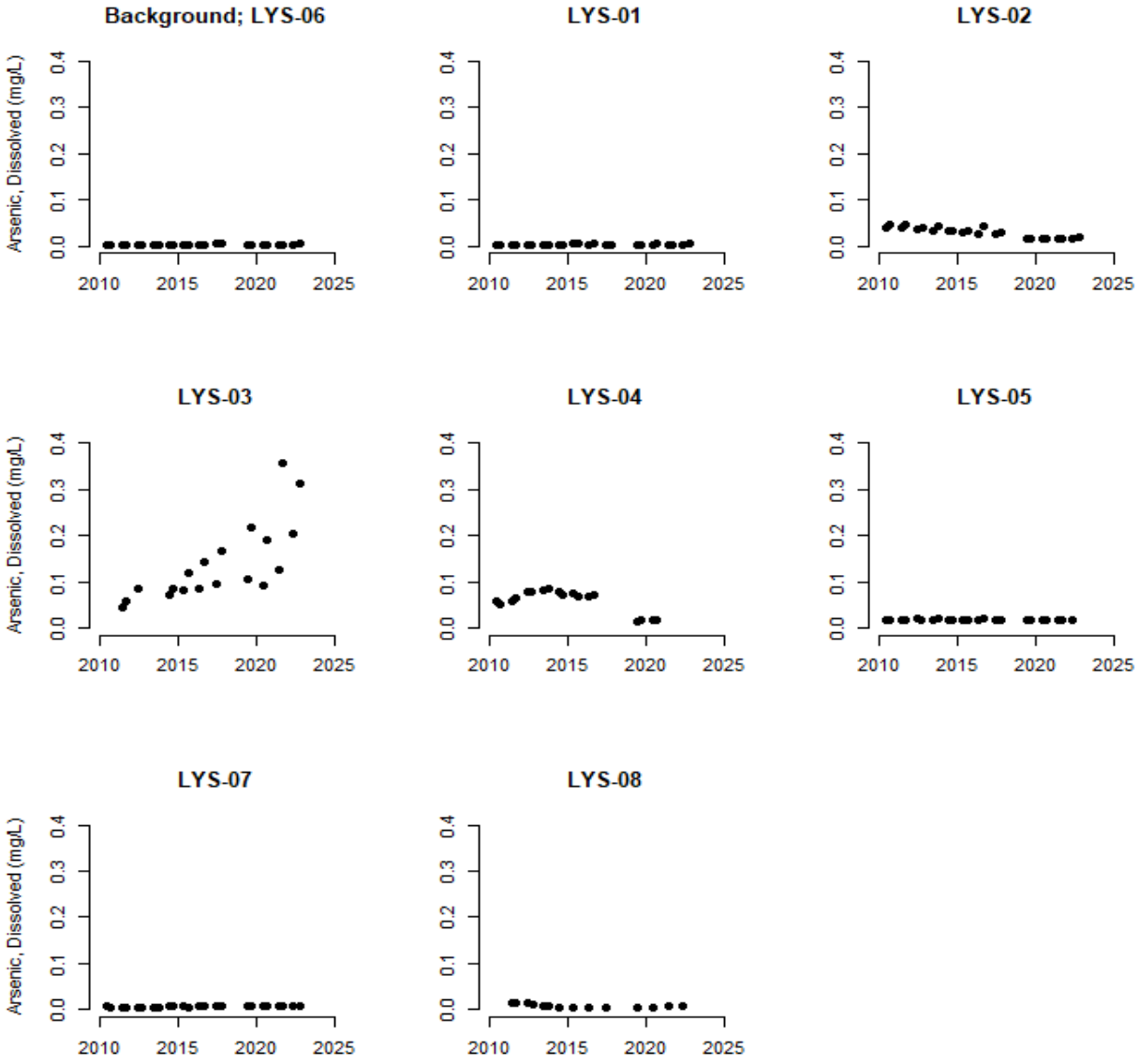


Figure 4-2. Arsenic concentrations in lysimeters of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2010–2022).

4.4.2 Cadmium

In 2022, cadmium concentrations in each MWRR lysimeter were similar to prior years (Figure 4-3). No lysimeters appeared to have increasing cadmium concentrations (Figure 4-3). Cadmium concentrations in Lysimeter LYS-05 appear to be decreasing over time (Figure 4-3).

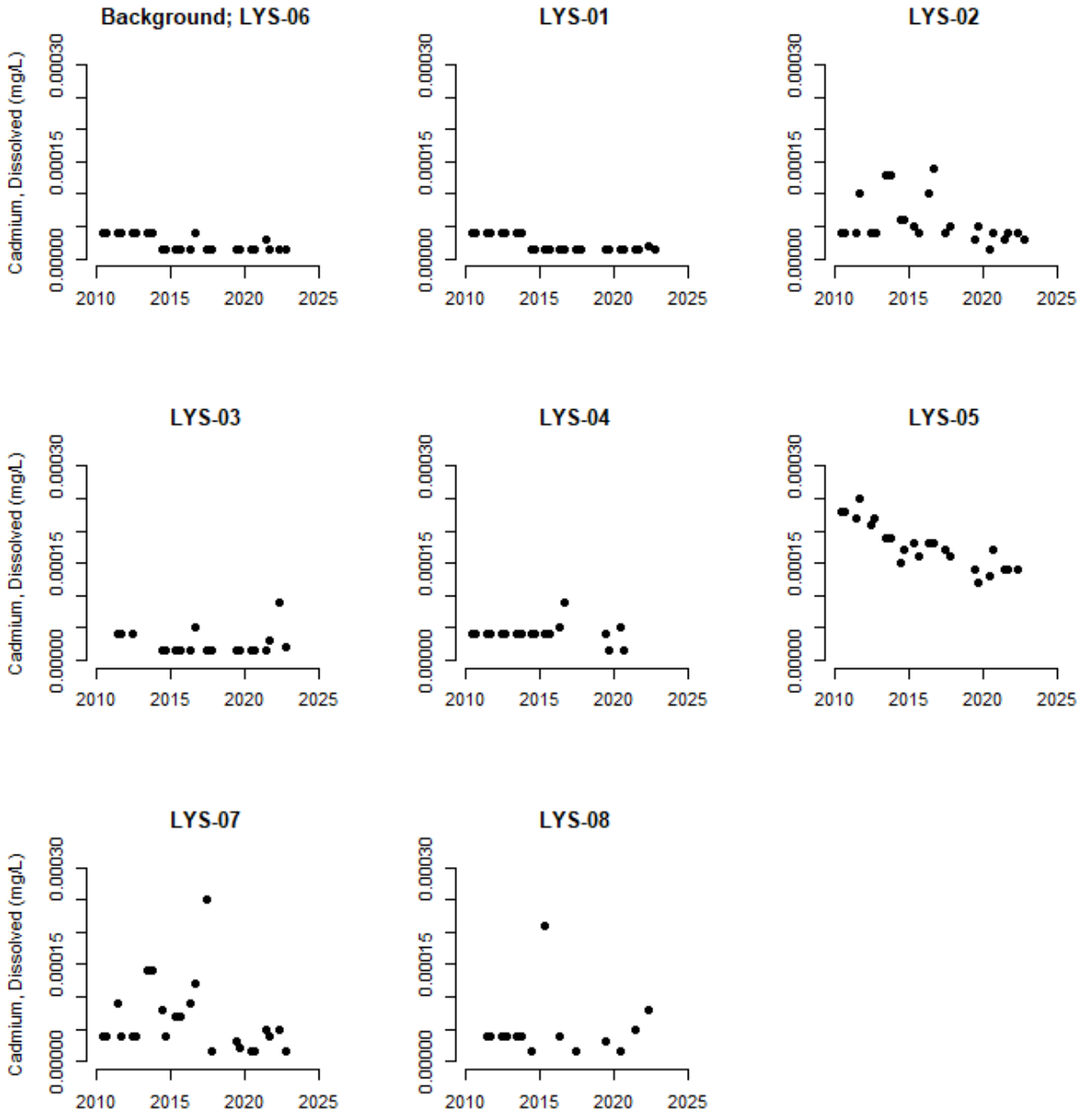


Figure 4-3. Cadmium concentrations in lysimeters of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2010–2022).

4.4.3 Copper

In 2022, copper concentrations in each MWRR lysimeter were similar to previous years (Figure 4-4), except for those in LYS-06 (background) and LYS-02, both of which had increased recorded concentrations compared to prior years. Copper concentrations appear to be increasing over time in Lysimeter LYS-02 (Figure 4-4). No other lysimeter demonstrated evidence of an increasing trend (Figure 4-4).

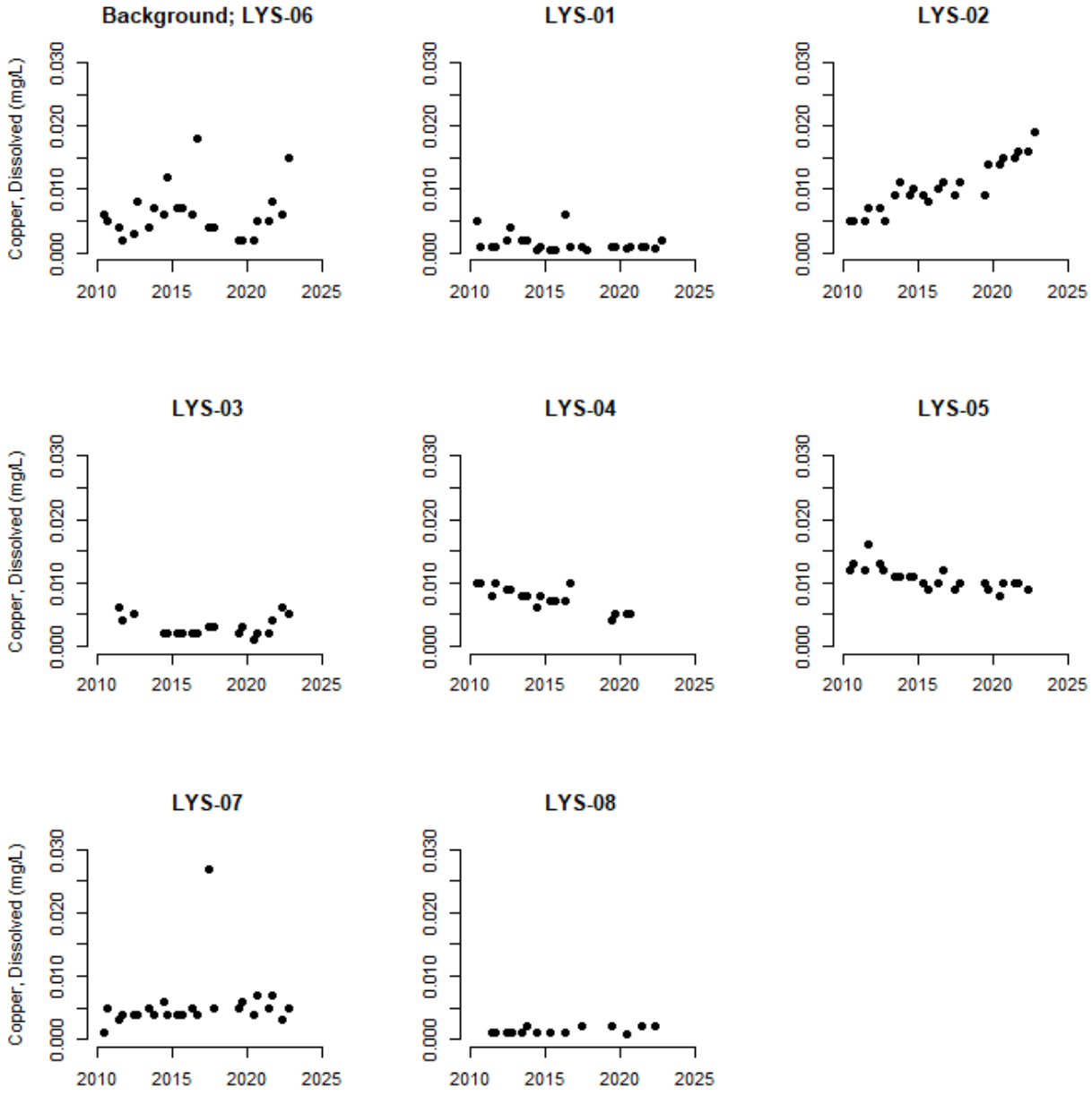


Figure 4-4. Copper concentrations in lysimeters of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2010–2022).

4.4.4 Lead

In 2022, lead concentrations in each MWRR lysimeter were similar to previous years (Figure 4-5). No lysimeters appeared to have increasing concentrations through time (Figure 4-5). Most (more than 90 percent) of the samples collected in these lysimeters since 2010 have had lead concentrations below analytical reporting limits.

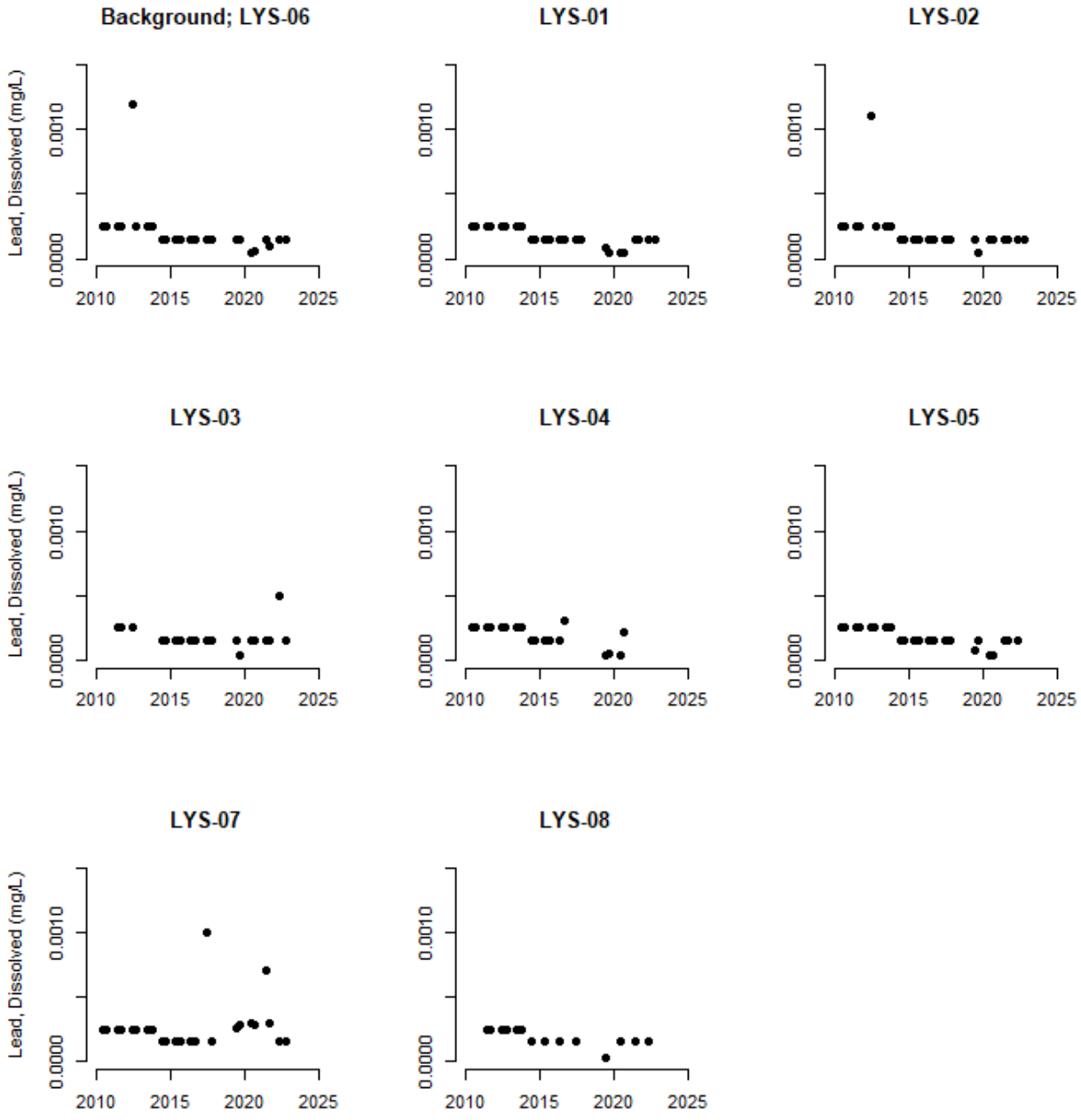


Figure 4-5. Lead concentrations in lysimeters of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2010–2022).

4.4.5 Mercury

In 2022, mercury concentrations in each MWRR lysimeter were similar to previous years (Figure 4-6). No lysimeters appeared to have increasing mercury concentrations over time (Figure 4-6).

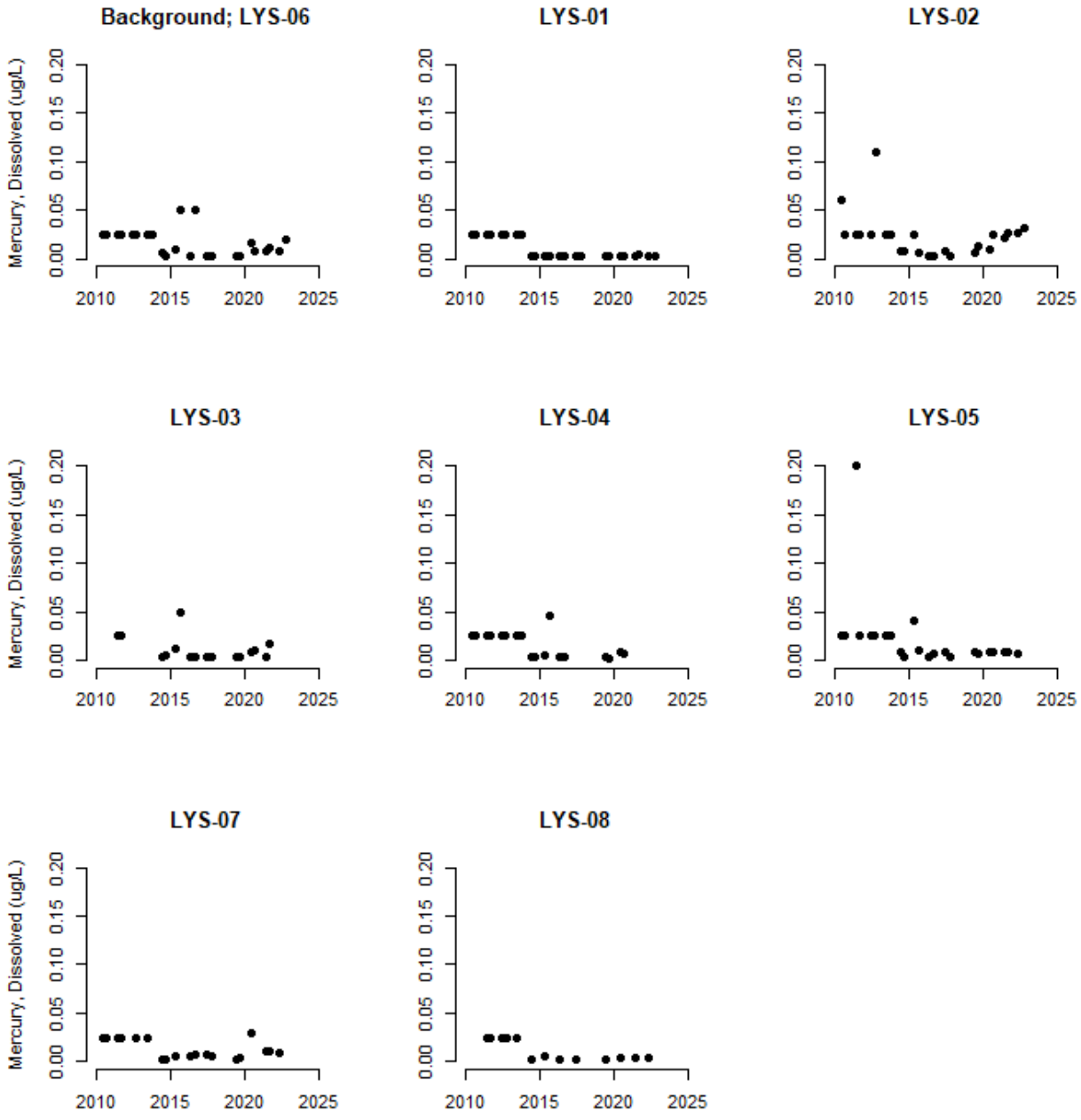


Figure 4-6. Mercury concentrations in lysimeters of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2010–2022).

4.4.6 Zinc

In 2022, zinc concentrations in each MWRR lysimeter were similar to previous years. Concentrations in Lysimeter LYS-02 have been variable since 2018 (Figure 4-7). Excluding the large variability in LYS-02, no lysimeters appeared to have increasing zinc concentrations over time (Figure 4-6).

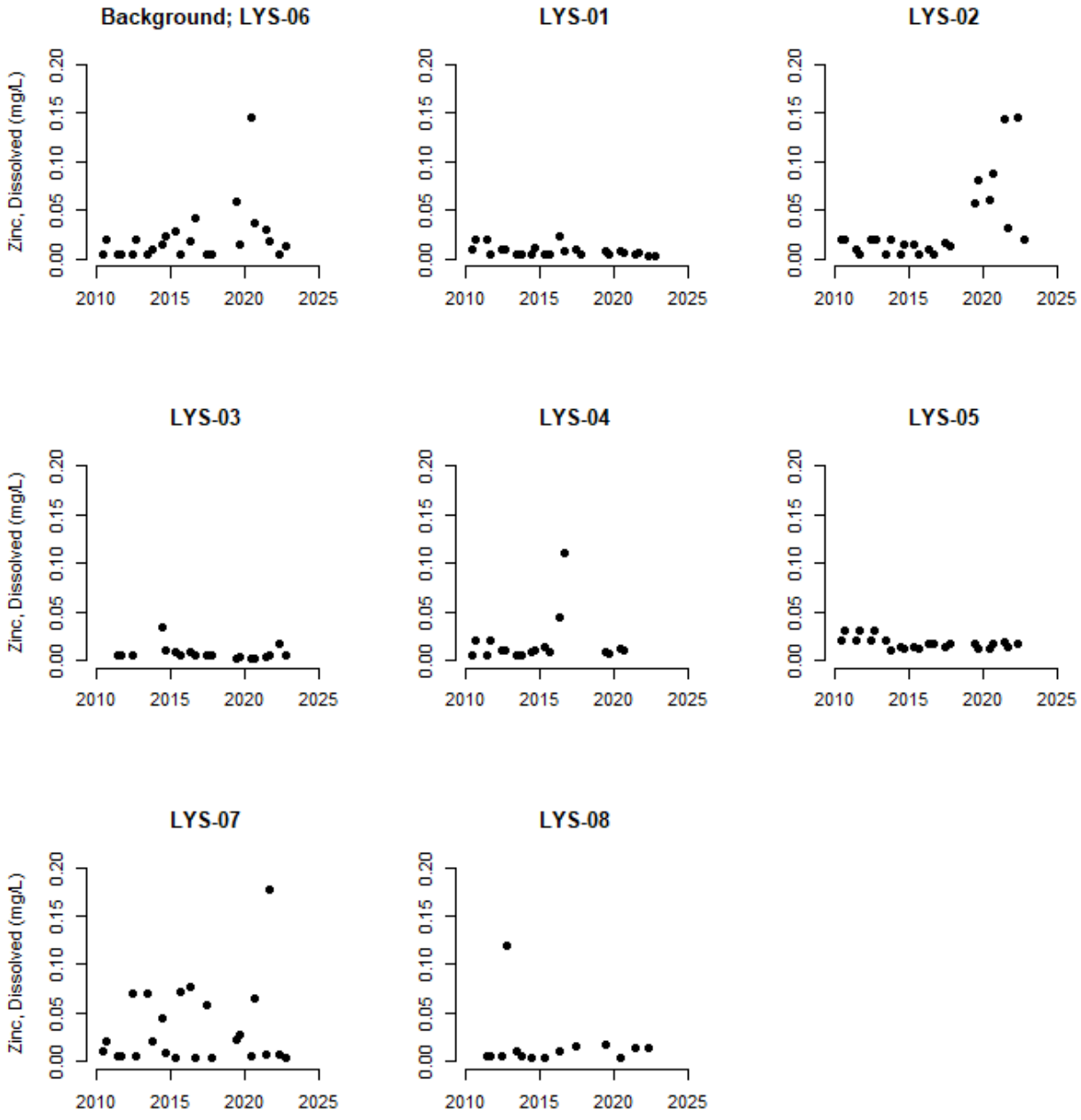


Figure 4-7. Zinc concentrations in lysimeters of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit (2010–2022).

4.5 DISCUSSION

4.5.1 Contaminants of Concern

Vadose zone sampling is conducted to provide advance notice in the event of COC releases from the repository which might threaten groundwater or surface water. In general, each COC concentration in each lysimeter was similar in 2022 to previous monitoring years, which indicates little inter-annual variability in vadose zone COC concentrations in the MWRR, and suggests the repository is functioning adequately.

Based on the 13-year time series at each lysimeter, COC concentrations generally do not appear to be increasing with a few exceptions. It appears that arsenic concentrations in Lysimeter LYS-03 and copper concentrations in Lysimeter LYS-02 may be increasing over time. However, extrapolating temporal trends in COC concentrations from the 2010 to 2022 time period to more extended time periods (e.g., through 2030 and beyond) may not be appropriate. Concentrations in both lysimeters will be monitored in future years to look for continued increasing trends.

4.5.2 Data Validation

Quality assurance and quality control results for vadose zone water are combined with groundwater (see Sections 3.4.3 and 3.5.3).

5.0 PERIPHYTON

5.1 INTRODUCTION

This report describes results of periphyton monitoring in 2022 within the SSTOU of the Silver Bow Creek/Butte Area National Priorities List site. A total of eight sites were sampled. Several approaches were used to analyze the periphyton samples. The taxonomy and assemblage structure of non-diatom (soft-bodied) algae and diatom (silica-walled) algae were examined. A suite of analytical metrics was applied to the diatom data to assess the degree of impairment from metals, nutrients, and sedimentation. These metrics included a stressor-specific tool developed for the Middle Rockies Ecoregion [Teply 2010a; 2010b] and adopted by Montana Department of Environmental Quality (DEQ) as a periphyton standard operating procedure for determining the probability of sediment impairment [DEQ, 2011b]. In addition, a variety of diatom metrics developed for Montana mountain streams were used [Bahls et al., 1992; Bahls, 1993; Teply and Bahls, 2005]. These metrics were based on autecological preferences or requirements of freshwater diatoms [Lowe, 1974; Van Dam et al., 1994; Bahls, 2006].

5.2 METHODS

5.2.1 Monitoring Locations

Periphyton samples were collected at eight Silver Bow Creek sites (Table 6-1). Each of these sites is consistent with ongoing surface water, sediment, macroinvertebrate, and geomorphic monitoring locations in the SSTOU.

Table 5-1. Periphyton sampling locations in the Streamside Tailings Operable Unit.

Site ID	Site Location	Location (GPS coordinates; NAD 83)	
		Latitude	Longitude
SS-07	Silver Bow Creek below Butte WWTP	45.99666	-112.56381
SS-10A	Silver Bow Creek above Sand Creek	46.00375	-112.66084
SS-13	Silver Bow Creek in Reach L	46.00647	-112.70394
SS-14	Silver Bow Creek at Miles Crossing	46.01143	-112.72229
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	46.02096	-112.78802
SS-16B	Silver Bow Creek in Reach P near Fairmont	46.05494	-112.79611
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	46.10787	-112.80553
SS-19	Silver Bow Creek at Frontage Road	45.98523	-112.50772

5.2.2 Monitoring Schedule

Periphyton monitoring occurred at all SSTOU sites on September 24, 2022. Macroinvertebrate samples were also collected at each site at the same time each periphyton sample was collected. Third quarter monitoring for surface water and sediment occurred about three weeks prior (September 2, 2022) to the biological monitoring period.

5.2.3 Monitoring Parameters

Each periphyton sample was analyzed for non-diatom and diatom algae relative abundance. Typically, non-diatom algae were identified to genus-level and diatoms were identified to species-level.

5.2.3.1 Non-diatom Algae

Relative abundances of non-diatom (soft-bodied) algae were estimated on an ordinal scale by genus. The scale was based on the average number of cells of a particular genus identified on a microscope slide at 200X magnification. The scale rankings for each genus were defined as the number of cells per field of view: "rare" (<1 cell), "common" (1-5 cells), "very common" (5-25 cells), and "abundant" (>25 cells).

Within each sample, each identified non-diatom algal genera was also ranked according to biovolume. Rare genera were noted but identified as contributing a negligible proportional biovolume contribution.

5.2.4 Sample Collection

One composite periphyton sample was collected from multiple substrates and habitat types at each site. Samples were collected following the DEQ standard operating procedure for flowing streams where a defined reach has not been established [DEQ, 2011b]. Periphyton samples were preserved in the field with Lugols solution and transported to Rhithron Associates (Missoula, Montana) for analysis.

5.2.5 Laboratory Analysis

At the laboratory, initial sample volumes were measured and recorded. The samples were thoroughly mixed by shaking and then split into two aliquots for separate analyses of non-diatom and diatom algae.

5.2.5.1 Non-Diatom Algae

For non-diatom algae sample aliquots, the raw periphyton material was manually homogenized and emptied into a porcelain evaporating dish. A small, random sub-sample of algal material was pipetted into a standard Palmer-Maloney counting chamber using a disposable

Pasteur pipette. Visible (macroscopic) algae were also sub-sampled, in proportion to their estimated abundance relative to the total volume of algal material in the sample and added to the liquid fraction on the slide. The Palmer-Maloney cell was then covered with a 22x30 mm coverslip for microscopic estimation of non-algae relative abundance.

5.2.5.2 Diatom Algae

Permanent diatom slides were prepared by the following protocol: subsamples were taken and treated with 70 percent nitric acid (HNO_3) and digested using a closed-vessel microwave digestion system (Milestone Ethos EZ), following the method developed by the Academy of Natural Sciences, Philadelphia [Charles et al., 2002]. The samples were neutralized by rinses with distilled water, and subsample volumes were adjusted to obtain adequate densities for slide mounts. Dilution and concentration factors, as appropriate, were recorded for each sample. Subsamples were dried onto 22-mm square coverslips. Coverslips were mounted on slides using Naphrax diatom mount. To ensure a high-quality mount for identification and to make replicates available for archives, two slide mounts were made from each sample. One of the replicates was selected from each sample batch for identification. A diamond scribe mark was made to define a transect line on the cover slip, and a minimum of 800 diatom valves were identified along the transect mark. A Leica DM 2500 compound microscope, Nomarski contrast, and 1000x magnification were used for identifications. Diatoms were identified to the lowest possible taxonomic level, generally species.

5.2.6 Data Analysis

Results of periphyton taxonomic analyses were summarized using two general approaches: (1) taxa richness and diversity and (2) diatom bioassessment indices.

5.2.6.1 Taxa Richness and Diversity

Richness of diatom and non-diatom taxa were examined separately within each sample to provide a general understanding of the diversity of the periphyton assemblages at each site. Non-diatom taxa richness and biovolume was summarized by genus within each taxonomic division for each site. Diatom taxa richness and Shannon diversity were compared among samples to evaluate general trends among sites. For diatoms, richness was estimated at the species-level and sub-species (i.e., variants) when practical. Detailed summaries of diatom identifications and richness for each sample are available in Appendix G.

5.2.6.2 Diatom Bioassessment Indices

Taxonomic results for diatom sample analysis were used to calculate an array of bioassessment indices for each sample. Three general types of bioassessment tools were applied to each: Increaser Taxa bioindices [DEQ, 2011b; Teply, 2010a], Diatom Association Metrics for Montana Mountain Streams [Bahls, 1993], and Ecological Indicator Values of Freshwater Diatoms [Van Dam et al., 1994]. Each bioassessment index generates a value summarizing the degree of impairment to the diatom assemblage at each site. Some indices are designed to represent

impairment from specific environmental stressors (e.g., hypoxia), whereas others represent general impairment.

5.2.6.2.1 Increaser Taxa

Each periphyton sample was evaluated according to the DEQ periphyton standard operating procedure [DEQ, 2011b] using "pollutant-diagnosing biometrics based on stressor-specific increaser diatom taxa as described in Teply [2010a; 2010b]". The pollutant-diagnosing biometrics described in DEQ [2011b] are known as "increaser taxa" and are specifically designed to diagnose stress from sediments and nutrients. According to DEQ [2011b], "the assessment tools have been designed to function properly in the presence (or absence) of the other stressor types". For the Middle Rockies ecoregion, the DEQ has adopted only the sediment biometric. However, the impairment probabilities for the nutrient increaser taxa are also summarized in this report using the general mountains ecoregions criteria [Teply and Bahls, 2006].

5.2.6.2.2 Diatom Association Metrics for Montana Mountain Streams

In addition to the diatom bioassessment indices, seven diatom association metrics were used to augment assessments of impairment (Table 5-2). Each of these seven diatom association metrics provides a general measure of environmental impairment. Results from each site were tabulated and sites were rated on an impairment scale based on the criteria listed in Table 5-2. Additional metrics were combined into an index that evaluates overall biointegrity at each site. The following paragraphs summarize each metric.

Species richness is a common measure of environmental impairment with greater richness generally reflecting more heterogeneous environmental conditions. Low taxa richness generally reflects environmental homogeneity, which may be the result of several specific stressors such as metal contamination or nutrient enrichment. Bahls [1979] used species richness as a measure of diatom biointegrity.

The diversity index is based on Shannon diversity which includes measures of species evenness and taxa richness and is sensitive to variation in water quality [Bahls, 1993].

Pollution tolerance groups, defined by Lange-Bertalot [1979], diatom autecological profiles described by Lowe [1974], and Montana diatom data described in Bahls [2006] were combined in the Pollution Index [Bahls, 1993]. This index rates diatom tolerance to nutrient enrichment, minerals, elevated temperatures, and metal toxicity. Diatom species are assigned a score from 1-3: a score of 1 corresponds to "most-tolerant", a score of 2 corresponds to "less-tolerant", and a score of 3 corresponds to "sensitive."

The Siltation Index examines the percentage of diatom taxa associated with fine sediments [Bahls, 1993; Teply and Bahls, 2005]. Many diatom species are motile. Motility is thought to be an adaptation to siltation whereby individual diatom cells can move to avoid inundation by deposited sediment. The Siltation Index [Bahls, 1993] is calculated as the total percent abundance

of motile diatom taxa which include species belonging to the genera *Navicula, Nitzschia, Surirella,* and other closely related taxa.

The Disturbance Index [Barbour et al., 1999] is based on the percent relative abundance of the diatom *Achnanthidium minutissimum*, which is highly specialized in the post-disturbance recolonization of stream substrates. Elevated numbers may be indicative of recent environmental stress caused by elevated or highly variable stream flows, water velocities, and water temperatures at a site. Care must be taken in the interpretation of this metric because this diatom may also be the dominant species in swiftly flowing mountain streams because of the naturally occurring disturbances there.

The relative abundance of the dominant diatom taxon [Teply and Bahls, 2005] in an assemblage is a measure of evenness; the greater the percentage of organisms in the dominant taxon, the more skewed the assemblage. The underlying principle is that a healthy and stable assemblage will be more even with a relatively consistent division of its organisms into taxa.

The percentage of abnormal diatom valves examines the relative abundance of diatom valves with irregular outlines and abnormal ornamentation. McFarland et al. [1997] examined the percentage of abnormal diatom (*Fragilaria* species) valves in a Rocky Mountain river in Colorado. Abnormal valves ranged from 0.2-12.0 percent and the percentage was positively correlated to the concentration of metals (cadmium, copper, iron, and zinc). These data suggested that morphologically abnormal diatoms may be an indicator of elevated dissolved metal concentrations in streams.

An overall biointegrity rating was assigned for each monitoring site based on the individual bioassessment metrics (Table 5-2). This overall rating was determined using a series of steps. First, at each site, scores were assigned for each diatom association metric on an ordinal scale: "excellent" = 3, "good" = 2, "fair" = 1, and "poor" = 0. Second, the mean score of those seven metrics at each site was calculated. The mean score of the seven metrics was then used as the overall biointegrity rating on another ordinal scale: "excellent" = more than 2.7, "good" = 1.7-2.7, "fair" = 0.7-1.7, and "poor" = less than 0.7.

Table 5-2. Summary of diatom association metrics to evaluate biological integrity in mountain streams: references range of values, expected response to increasing impairment or stress.

Metric	Biological Integrity				Range	Expected Response	Reference
	Excellent	Good	Fair	Poor			
Species Richness	>29	20-29	10-19	<10	0-100+	decrease	Bahls, 1993
Diversity Index	>2.99	2.00-2.99	1.00-1.99	<1.00	0-5+	decrease	Bahls, 1993
Pollution Index	>2.50	2.01-2.50	1.50-2.00	<1.5	1-3	decrease	Bahls, 1993
Siltation Index	<20.0	20.0-39.9	40.0-59.9	>59.9	0-90+	increase	Bahls, 1993
Disturbance Index	<25.0	25.0-49.9	50.0-74.9	>74.9	0-100	increase	Barbour et al., 1999
Dominant Species (%)	<25.0	25.0-49.9	50.0-74.9	>74.9	~5-100	increase	Barbour et al., 1999
Abnormal Valves (%)	0	>0.0, <3.0	3.0-9.9	>9.9	0-30+	increase	McFarland et al., 1997

5.2.6.2.3 Freshwater Diatoms as Ecological Indicators

Van Dam et al. [1994] identified diatom taxa considered to be indicators of specific conditions. Conditions identified by the Van Dam et al. [1994] indicator taxa included organic nitrogen tolerance and tolerance to hypoxia.

Most diatoms are nitrogen-autotrophs and are unable to directly utilize organic nitrogen. For some nitrogen-autotrophs, organic nitrogen may be toxic. Some diatoms directly assimilate organic nitrogen in addition to, or as an alternative to, inorganic nitrogen (i.e., facultative nitrogen heterotrophs). Van Dam et al. [1994] classified diatom species by trophic state, either as nitrogen-autotrophs or nitrogen heterotrophs. Relative abundances of diatoms in each group were quantified for each site. Nitrogen-heterotroph relative abundance is expected to generally increase in relation to organic nitrogen concentrations and the opposite relationship is expected for nitrogen-autotrophs intolerant of organic nitrogen.

Some diatoms are intolerant of saprobic conditions (i.e., waters with excessive organic materials in various states of decomposition resulting in high biochemical oxygen demand and less than 75 percent dissolved oxygen saturation) [Van Dam et al., 1994]. Diatoms with such sensitivities are referred to as oligosaprobous or ß-mesosaprobous and these would likely be found in low relative abundance in water with excessive organic pollution. Similarly, water with low dissolved oxygen saturation would likely have few species sensitive to hypoxia. The relative abundance of oligosaprobous or ß-mesosaprobous diatoms and oxygen-sensitive diatoms were summarized by site.

5.2.6.3 Spatial and Temporal Trends

Diatom bioassessment metrics for each SSTOU site from the last eight monitoring years (2015-2022) were compiled and presented graphically to assess temporal and spatial trends. Spatial trends were assessed by use of boxplots for each diatom bioassessment metric at each site. Boxplots included all samples from the last five years of monitoring (2018-2022). Statistics summarized in each boxplot include the median (midline of each box), quartiles (ends of each box), outlier extent (whiskers which extend 1.5 times the interquartile range), and outliers (circles above or below the whiskers which are any observations more than 1.5 times the interquartile range). Temporal trends were assessed for each site by examination of scatterplots for each diatom bioassessment metric.

5.3 RESULTS

5.3.1 Taxa Richness and Diversity

5.3.1.1 Non-Diatoms

In 2022, a total of 18 non-diatom genera, representing four taxonomic divisions, were identified in the Silver Bow Creek samples (Table 5-3). Taxa observed included 10 Chlorophyta (green algae) genera, six Cyanophyta (blue-green algae) genera, one Pyrrophyta (dinoflagellate) genera, and two Rhodophyta (red algae) genera. The Rhodophyta, Pyrrophyta, and one of the Chlorophyta species observed in the samples could not be identified with confidence to a lower taxonomic level.

Based on relative abundance and biovolume estimates for each sample, blue-green algae were common or abundant at Sites SS-10A (*Phormidium*) and SS-17D (*Anabaena* and *Phormidum*) (Table 5-3). Green algae were either common or abundant at Sites SS-13 (*Mougeotia*), SS-14 (*Closterium* and *Mougeotia*), SS-15A-2 (*Mougeotia*), SS-16B (*Mougeotia*), SS-17D (*Mougeotia*, and *Cladophora*), and SS-19 (*Mougeotia*) (Table 5-3). *Mougeotia* and *Phormidum* were each observed at 7 of the 8 sites although *Mougeotia* was more common in the samples compared to *Phormidium* (Table 5-3).

Richness of non-diatom algae ranged from 4-12 genera among the eight sites sampled (Figure 5-1). Green algae were present at all sites and blue-green algae were present at all sites except Site SS-14 (Figure 5-1). Non-diatom algae richness was lowest at Sites SS-13 and SS-14 (Figure 5-1). The three observed genera of dinoflagellates and red algae were observed in Sites SS-07 and SS-19 (Figure 5-1). Richness of non-diatom algae was highest at Site SS-19 (Figure 5-1).

Table 5-3. Relative abundance and relative biovolume of non-diatom algae in Silver Bow Creek, 2022.

Site	Taxon	Division	Relative Abundance[54]	Relative Biovolume[55]
SS-07	*Monoraphidium*	Chlorophyta	Rare	0
	Pediastrum	Chlorophyta	Rare	0
	Phormidium	Cyanophyta	Rare	0
	Undetermined *Rhodophyte*	Rhodophyta	Rare	0
SS-10A	*Phormidium*	Cyanophyta	Common	1
	Closterium	Chlorophyta	Rare	0
	Cosmarium	Chlorophyta	Rare	0
	Monoraphidium	Chlorophyta	Rare	0
	Mougeotia	Chlorophyta	Rare	0
	Pediastrum	Chlorophyta	Rare	0
	Scenedesmus	Chlorophyta	Rare	0
SS-13	*Mougeotia*	Chlorophyta	Common	1
	Phormidium	Cyanophyta	Rare	0
SS-14	*Closterium*	Chlorophyta	Common	2
	Mougeotia	Chlorophyta	Common	1
	Pediastrum	Chlorophyta	Rare	0
SS-15A-2	*Mougeotia*	Chlorophyta	Common	1
	Chroococcus	Cyanophyta	Rare	0
	Homoeothrix	Cyanophyta	Rare	0
	Monoraphidium	Chlorophyta	Rare	0
	Phormidium	Cyanophyta	Rare	0
	Scenedesmus	Chlorophyta	Rare	0
	Stigeoclonium	Chlorophyta	Rare	0
	Undetermined *Chlorophyte*	Chlorophyta	Rare	0
SS-16B	*Mougeotia*	Chlorophyta	Abundant	1
	Anabaena	Cyanophyta	Rare	0
	Cosmarium	Chlorophyta	Rare	0
	Nostoc	Cyanophyta	Rare	0
	Phormidium	Cyanophyta	Rare	0
	Scenedesmus	Chlorophyta	Rare	0
	Stigeoclonium	Chlorophyta	Rare	0
SS-17D	*Anabaena*	Cyanophyta	Common	4
	Phormidium	Cyanophyta	Common	3

[54] Scale rankings are the number of cells visible in each prepared sample slide: "rare" (<1 cell), "common" (1-5 cells), "very common" (5-25 cells), and "abundant" (>25 cells).

[55] Rank of taxa biovolume within each sample. Rare taxa are ranked as 0.

Site	Taxon	Division	Relative Abundance[54]	Relative Biovolume[55]
	Mougeotia	Chlorophyta	Common	2
	Cladophora	Chlorophyta	Abundant	1
	Chroococcus	Cyanophyta	Rare	0
	Stigeoclonium	Chlorophyta	Rare	0
SS-19	*Mougeotia*	Chlorophyta	Common	1
	Actinastrum	Chlorophyta	Rare	0
	Anabaena	Cyanophyta	Rare	0
	Calothrix	Cyanophyta	Rare	0
	Closterium	Chlorophyta	Rare	0
	Cosmarium	Chlorophyta	Rare	0
	Monoraphidium	Chlorophyta	Rare	0
	Pediastrum	Chlorophyta	Rare	0
	Phormidium	Cyanophyta	Rare	0
	Stigeoclonium	Chlorophyta	Rare	0
	Undetermined *Dinoflagellate*	Pyrrhophyta	Rare	0
	Undetermined *Rhodophyte*	Rhodophyta	Rare	0

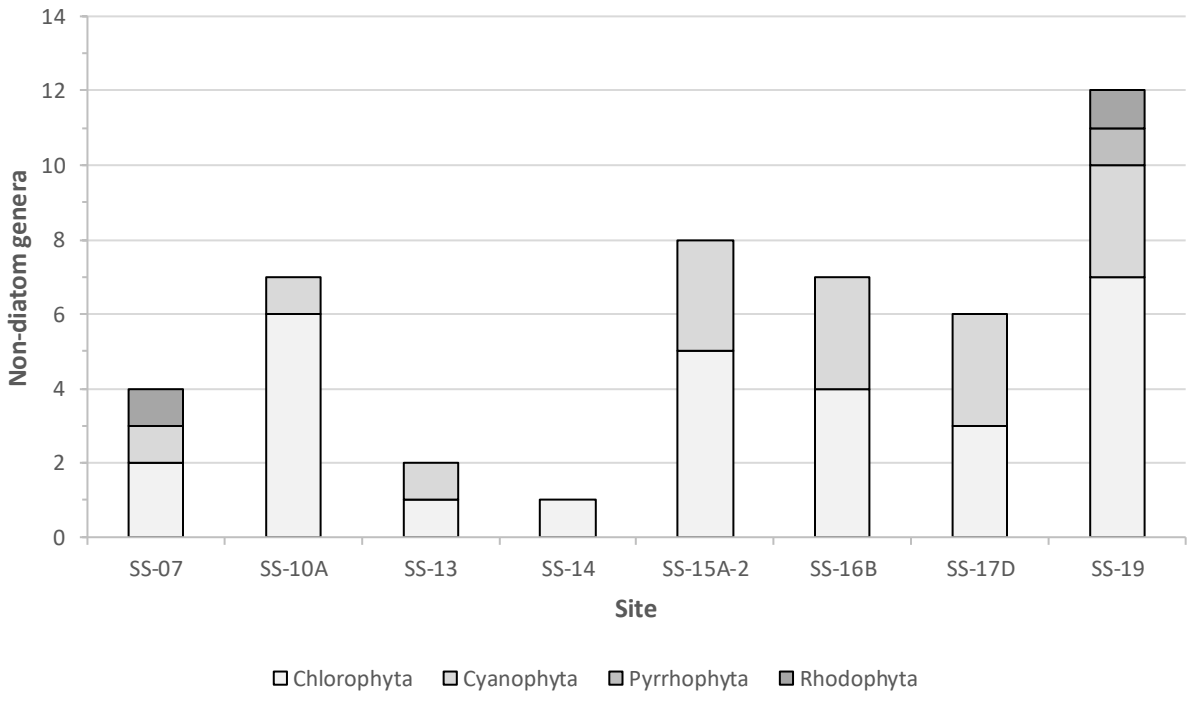


Figure 5-1. Taxonomic richness of non-diatom algae in Silver Bow Creek, 2022.

5.3.1.2 Diatoms

5.3.1.2.1 Relative Abundance

Among the eight periphyton samples collected in 2022, a total of 88 separate diatom taxa were identified. Most taxa were identified to species or subspecies (variant) level. Among the 88 diatom taxa observed, 40 genera were represented (Table 5-4). The most commonly observed genera were *Nitzschia*, *Cocconeis*, *Cyclotella*, *Eolimna*, *Planothidium*, and *Staurosirat* (Table 5-4). Relative abundance of each taxon at each site are provided in Appendix G.

Table 5-4. Average relative abundance of each diatom genera among the eight samples collected in the Streamside Tailings Operable Unit, 2022.

Genus	Relative Abundance (%)
Nitzschia	19.0
Cocconeis	18.3
Cyclotella	10.8
Eolimna	9.0
Planothidium	8.8
Staurosira	8.8
Navicula	5.3
Rhoicosphenia	2.2
Encyonema	2.1
Amphora	2.0
Fragilaria	2.0
Mayamaea	1.9
Achnanthidium	1.9
Gomphonema	1.8
Staurosirella	1.3
Caloneis	1.1
Sellaphora	0.7
Adlafia	0.6
Diatoma	0.6
Surirella	0.4
Melosira	0.3
Epithemia	0.3
Reimeria	0.2
Synedra	0.2
Parlibellus	0.1
Geissleria	0.1
Luticola	0.1
Meridion	0.1
Craticula	0.03

Genus	Relative Abundance (%)
Ctenophora	0.03
Cyclostephanos	0.03
Gomphonella	0.03
Pseudostaurosira	0.03
Ulnaria	0.03
Chamaepinnularia	0.02
Fallacia	0.02
Hippodonta	0.02
Placoneis	0.02
Punctastriata	0.02
Stephanodiscus	0.02

5.3.1.2.2 Taxa Richness

In 2022, diatom taxa richness varied between 37 and 50 taxa, with the highest count at Site SS-17D and the lowest count at Site SS-19 (Figure 5-2). Most sites were consistent with 46-50 taxa observed whereas three sites (Sites SS-15A-2, SS-16B, and SS-19) were lower and ranged from 37-40 (Figure 5-2). Spatial trends in taxa richness and Shannon diversity were generally similar but at Sites SS-07 and SS-10A, Shannon diversity was relatively low whereas taxa richness was relatively high (Figure 5-2).

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a slight declining trend in median taxa richness between the upstream-most site (Site SS-07) and the downstream-most site (Site SS-19) in the SSTOU (Figure 5-3). Median richness ranged from about 35 taxa at Site SS-19 to 55 taxa at Site SS-07 (Figure 5-3).

Diatom taxa richness results in 2022 were generally consistent with prior monitoring years at each site (Figure 5-4). Some sites appear to be potentially demonstrating increasing trends, particularly Site SS-17D (Figure 5-5).

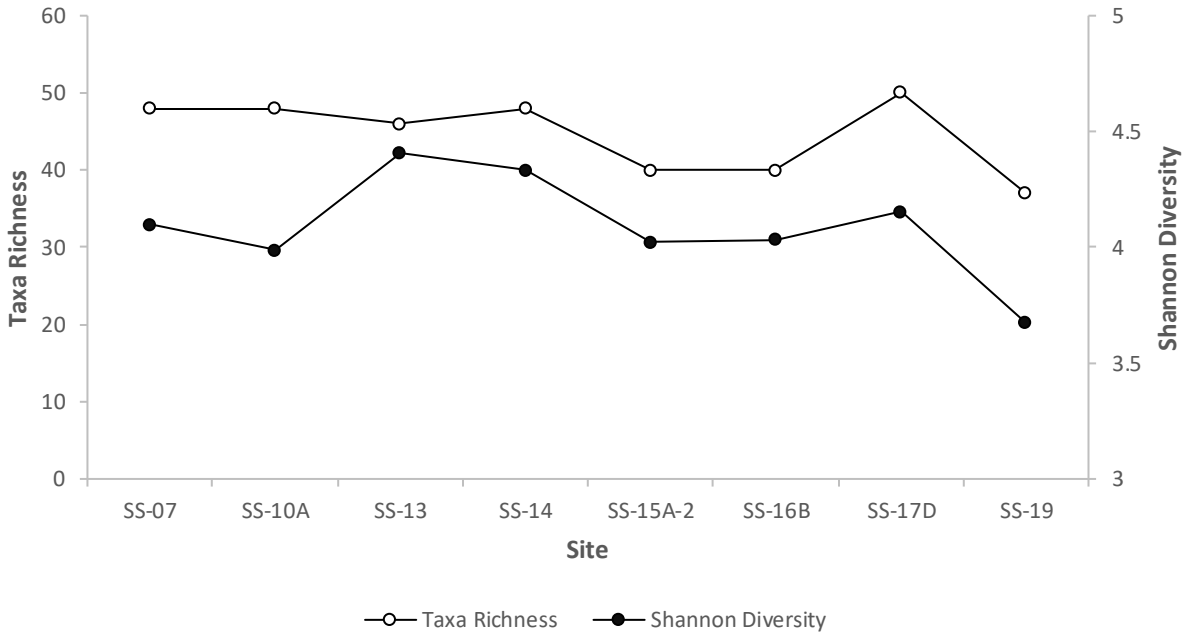


Figure 5-2. Diatom taxa richness and Shannon diversity in Silver Bow Creek, 2022.

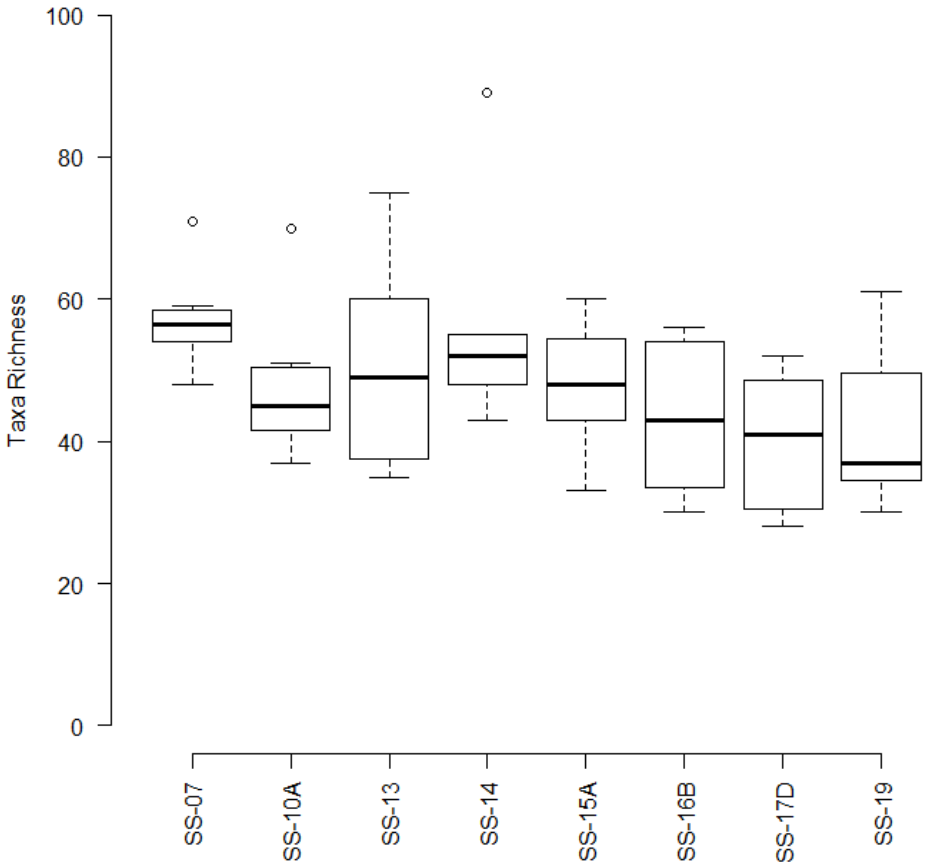


Figure 5-3. Boxplots of diatom taxa richness for diatom samples collected in Streamside Tailings Operable Unit monitoring sites, 2015-2022.

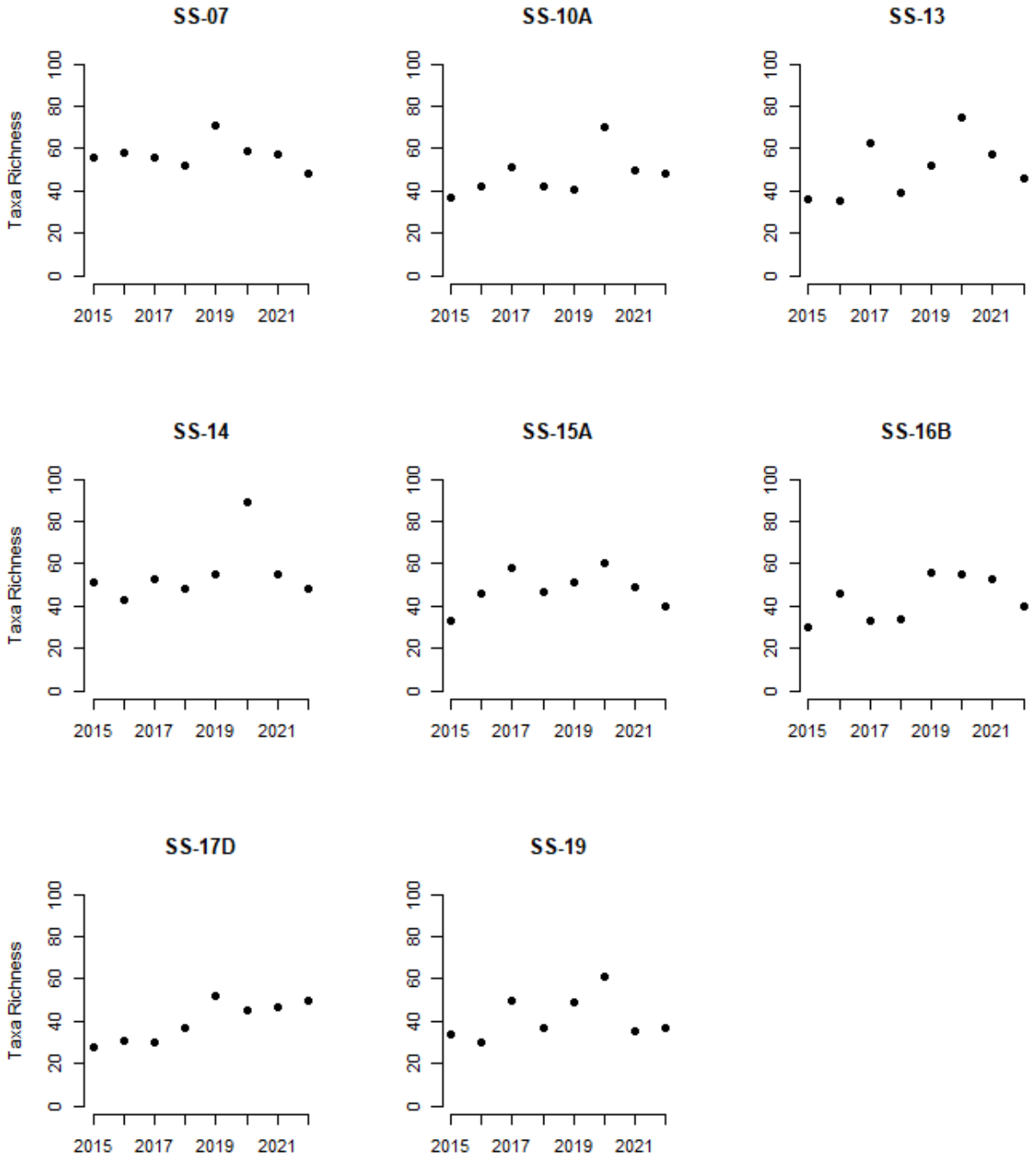


Figure 5-4. Diatom taxa richness for diatom samples collected in Streamside Tailings Operable Unit monitoring sites, 2015-2022.

5.3.1.2.3 Shannon Diversity Index

In 2022, Shannon diversity ranged from 3.67 to 4.41 with the lowest value at Site SS-19 and the highest at Site SS-13 (Figure 5-3). Most sites had Shannon diversity within a narrower range between 3.99 and 4.15; Sites SS-13 and SS-14 were slightly higher than that narrower range and Site SS-19 was lower (Figure 5-3).

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a slight declining trend in median Shannon diversity values between the upstream-most site (Site SS-07) and the downstream-most site (Site SS-19) in the SSTOU (Figure 5-5). Median Shannon diversity ranged from about 3.2 at Site SS-19 to 4.2 at Site SS-07 (Figure 5-5).

Shannon diversity values in 2022 were generally as expected based on prior monitoring years at each site (Figure 5-6). All sites appear to be demonstrating increasing trends through time (Figure 5-6).

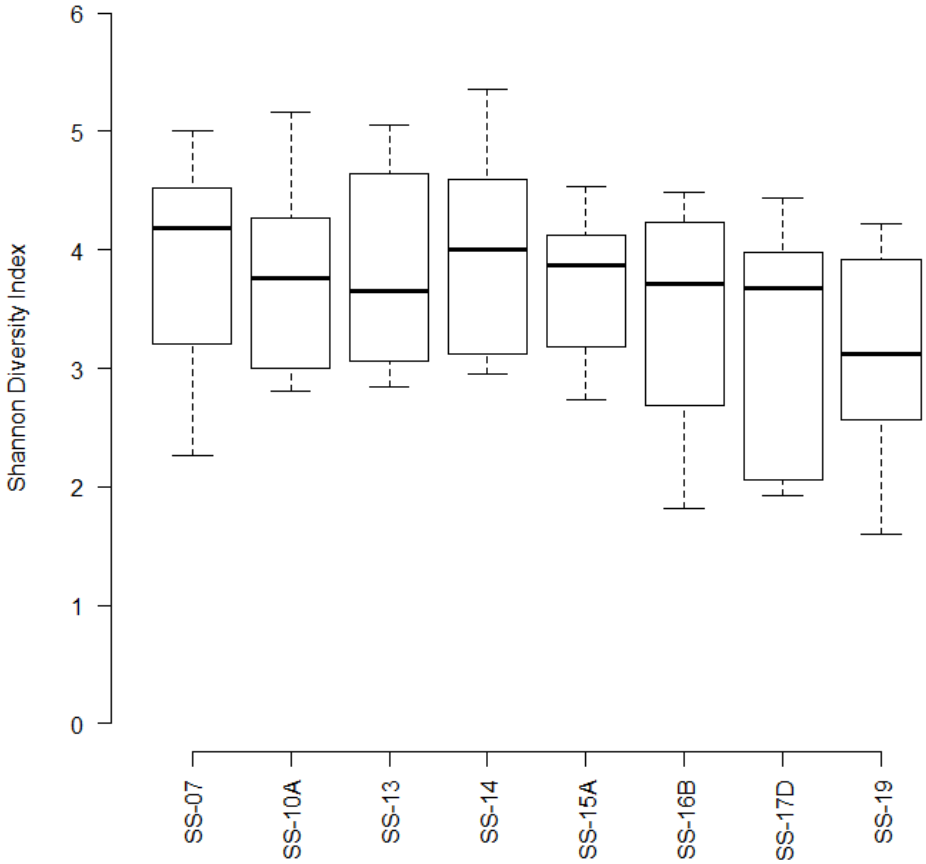


Figure 5-5. Boxplots of Shannon diversity scores for diatom assemblages at Streamside Tailings Operable Unit monitoring sites, 2015-2022.

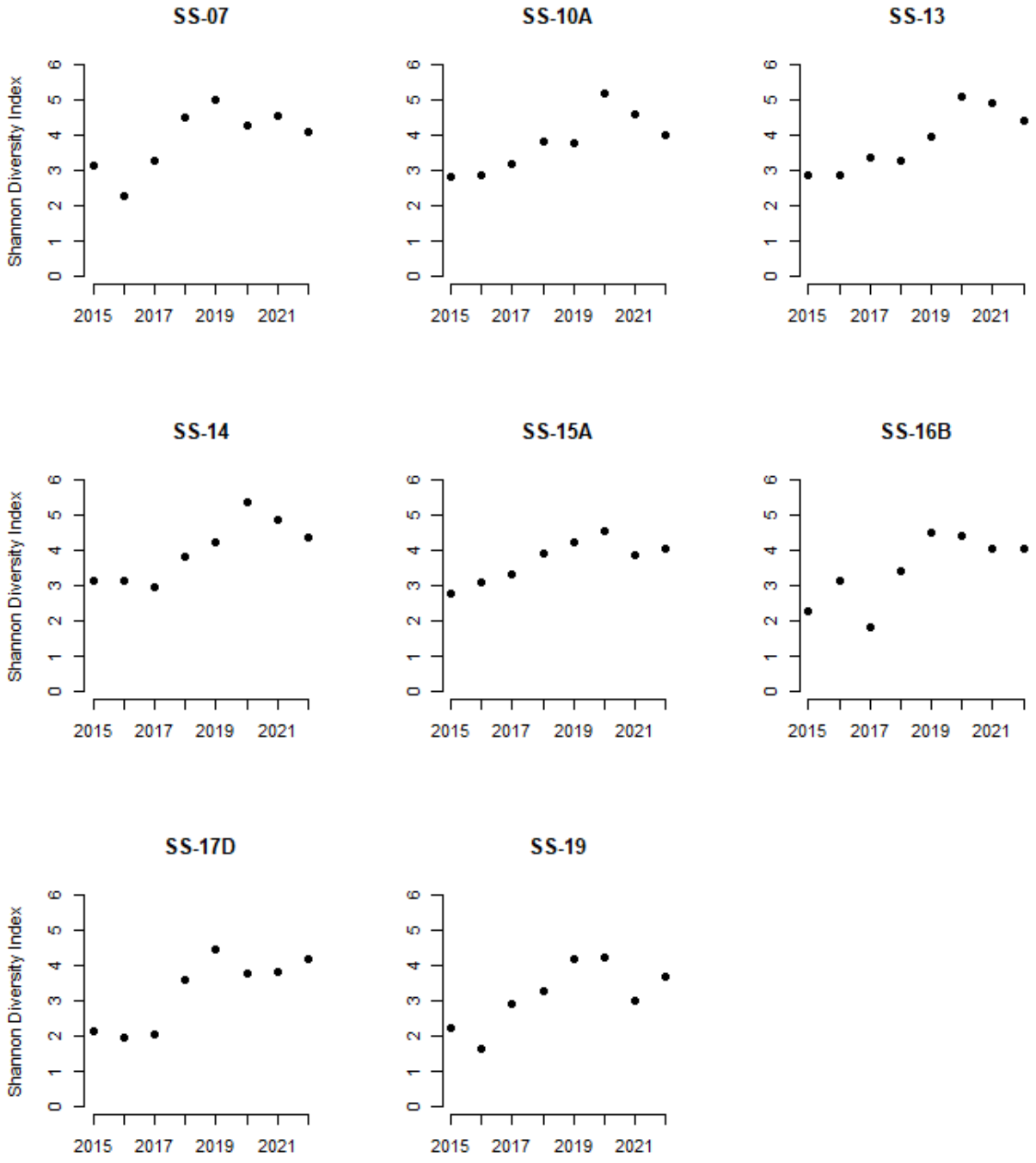


Figure 5-6. Shannon diversity scores for diatom assemblages at Streamside Tailings Operable Unit monitoring sites, 2015-2022.

5.3.2 Diatom Bioassessment Indices

5.3.2.1 Impairment Probabilities

Impairment probabilities derived from increaser taxa bioindices for 2022 are presented in Figure 5-7. All impairment probabilities are expressed as the likelihood that a given site would be impaired by the particular stressor. The probability of impairment from sediment ranged widely from 30.2 percent at Site SS-10A to 81.6 percent at Site SS-14 (Figure 5-7). Among sites, sediment impairment probability was highly variable and did not demonstrate a clear increasing or decreasing trend by stream location (Figure 5-7). The probability of impairment from nutrients ranged from 29.5 percent at Site SS-14 to 60.6 percent at Site SS-16B (Figure 5-7). Nutrient impairment probabilities were higher at the Subarea 3 and 4 sites (Sites SS-15A-2, SS-16B, SS-17D, and SS-19) compared to the upstream sites (Figure 5-7).

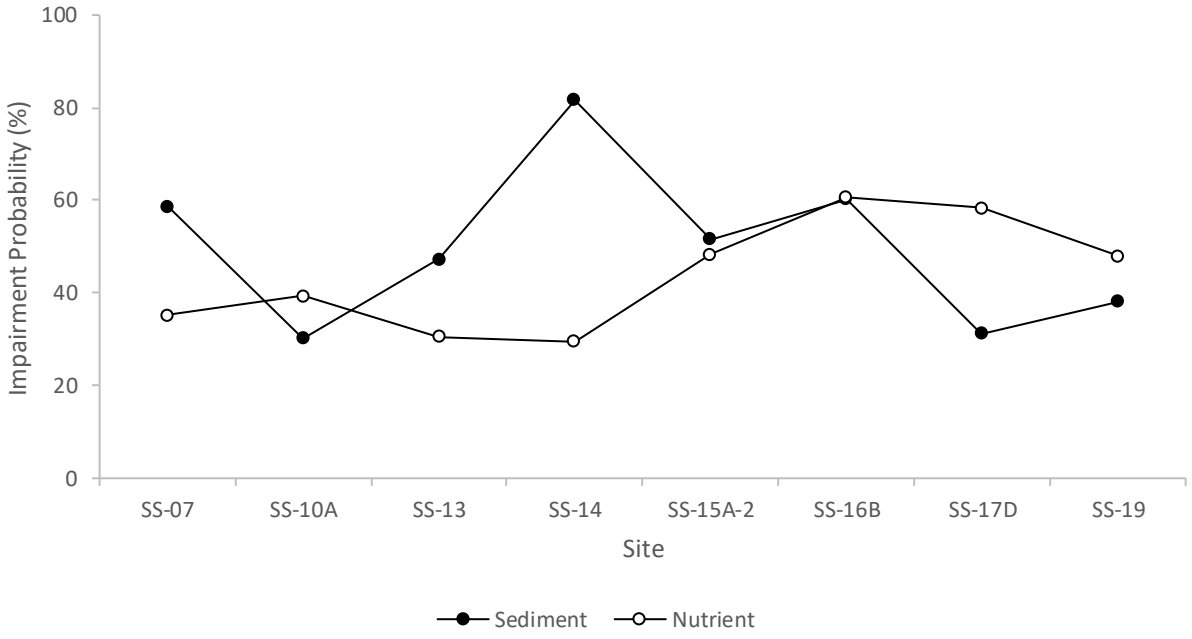


Figure 5-7. Impairment probability for sediment and nutrients in Silver Bow Creek sites based on relative abundances of specific diatom increaser taxa, 2022.

5.3.2.1.1 Sediment

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a general declining trend in sediment impairment likelihood between the upstream-most site (Site SS-07) and the downstream-most site (Site SS-19) in the SSTOU, with sites SS-10A and SS-13 representing deviations from this trend and having lower than expected impairment probabilities based on the prevailing spatial trend (Figure 5-8). Median impairment probability ranged from about 25 percent at the downstream-most sites (Sites SS-16B, SS-17D, and SS-19) to about 55 percent at Site SS-07 (Figure 5-8). Results were widely variable among years at all sites (Figure 5-8).

Sediment impairment probability results in 2022 demonstrated trends that appeared to be cyclical, with results coordinated among sites (Figure 5-9). Most sites had relatively low impairment probabilities from 2017-2019 and higher probabilities before and after those monitoring periods (Figure 5-9).

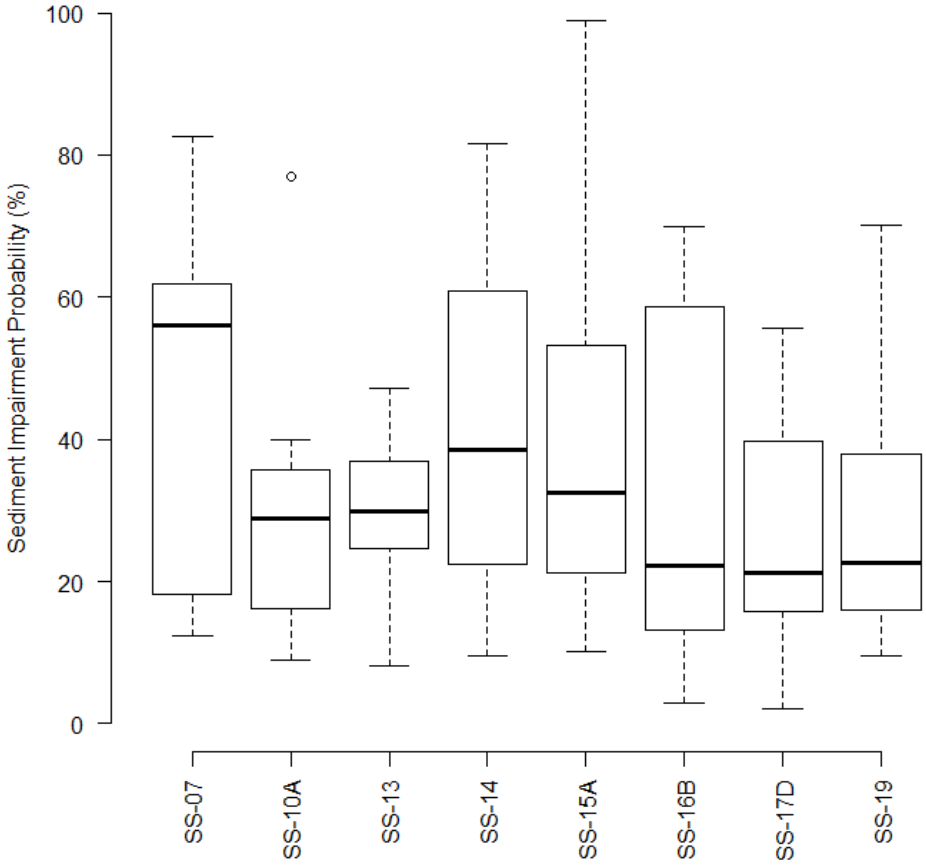


Figure 5-8. Boxplots of sediment impairment probability based on diatom assemblages for Streamside Tailings Operable Unit monitoring sites, 2015-2022.

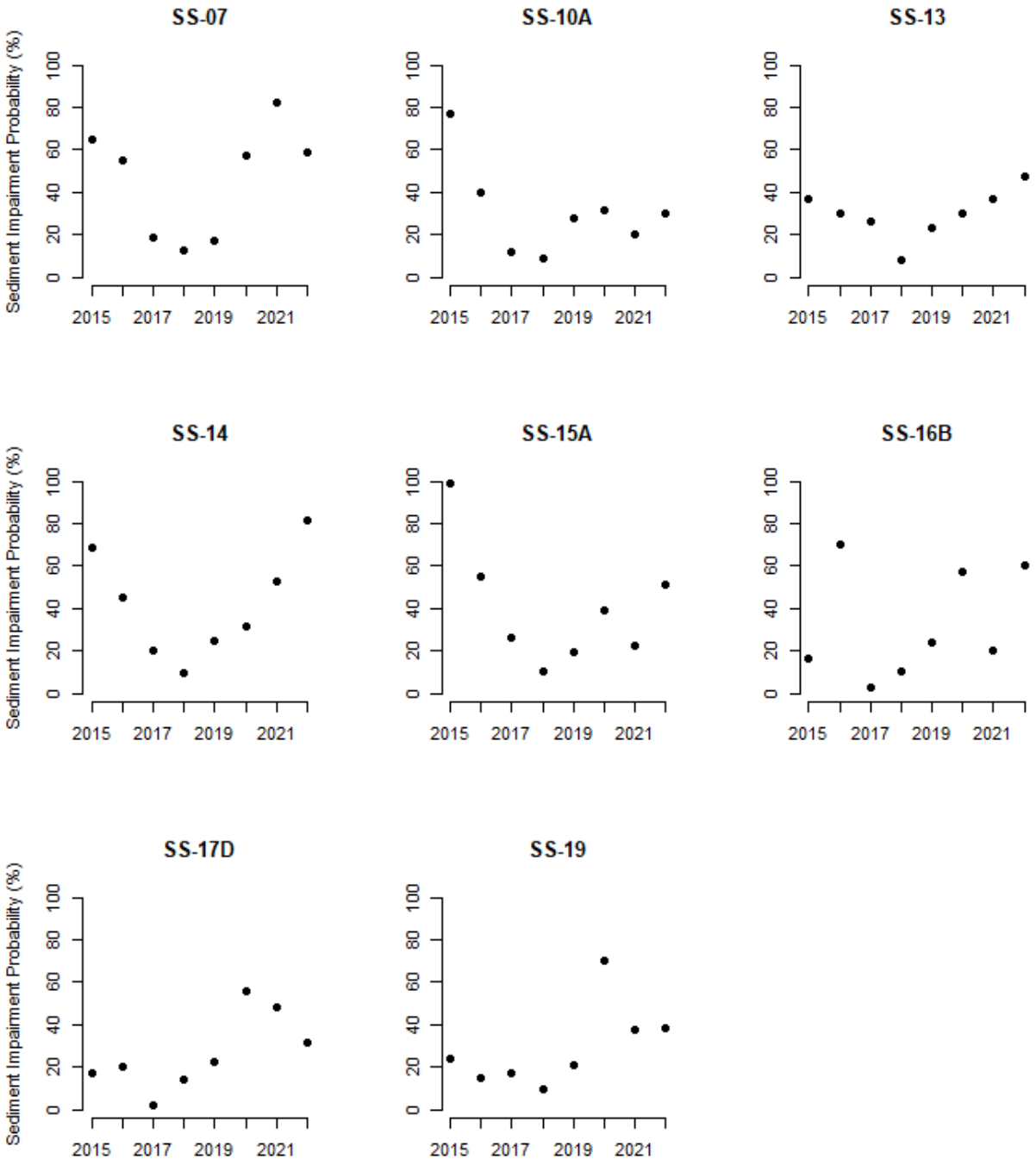


Figure 5-9. Sediment impairment probability based on diatom assemblages for Streamside Tailings Operable Unit monitoring sites, 2015-2022.

5.3.2.1.2 Nutrients

Based on the combined results from the last eight (2015-2022) monitoring years, median impairment probability from nutrients was relatively consistent at about 20 percent at most sites with the exceptions of Sites SS-16B and SS-17D which were slightly higher (Figure 5-11). Nutrient impairment probability at the three downstream-most sites (Sites SS-16B, SS-17D, and SS-19) were more highly variable compared to other sites (Figure 5-10).

As with the temporal trends for sediment impairment probability, nutrient impairment probability appeared to follow cyclical patterns which were synchronized among sites and among years. Most sites had relatively low impairment probabilities from 2017-2019 and higher probabilities before and after those monitoring periods (Figure 5-11).

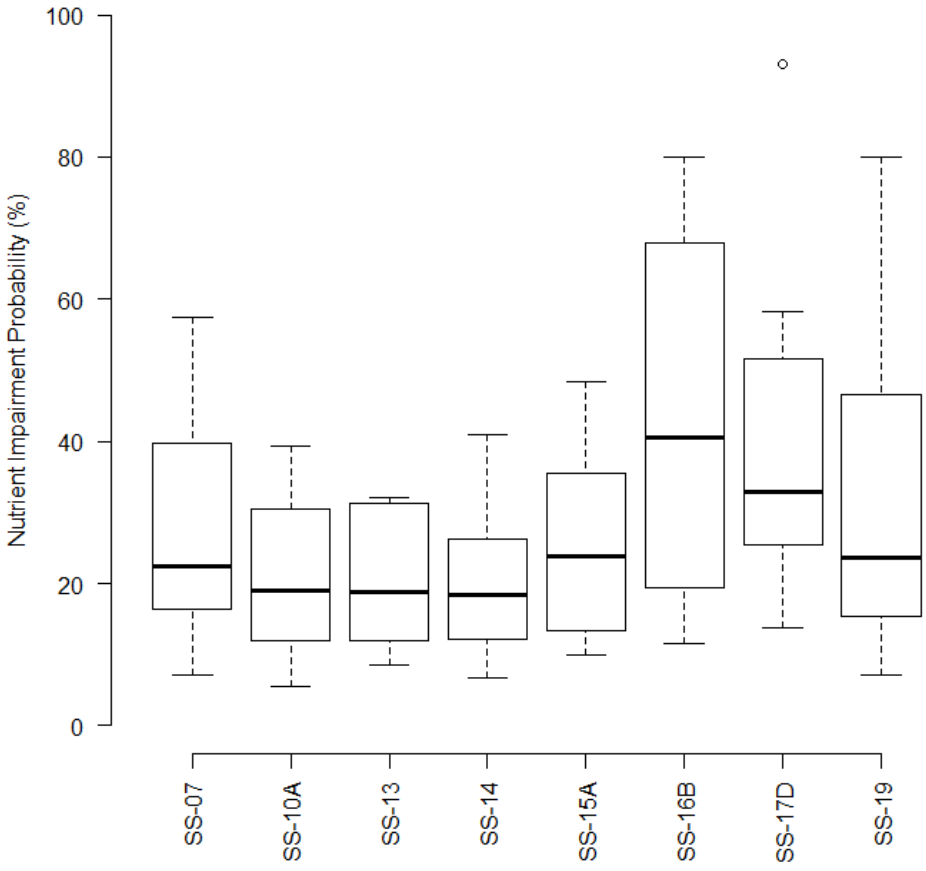


Figure 5-10. Boxplots of nutrient impairment probability based on diatom assemblages for Streamside Tailings Operable Unit monitoring sites, 2015-2022.

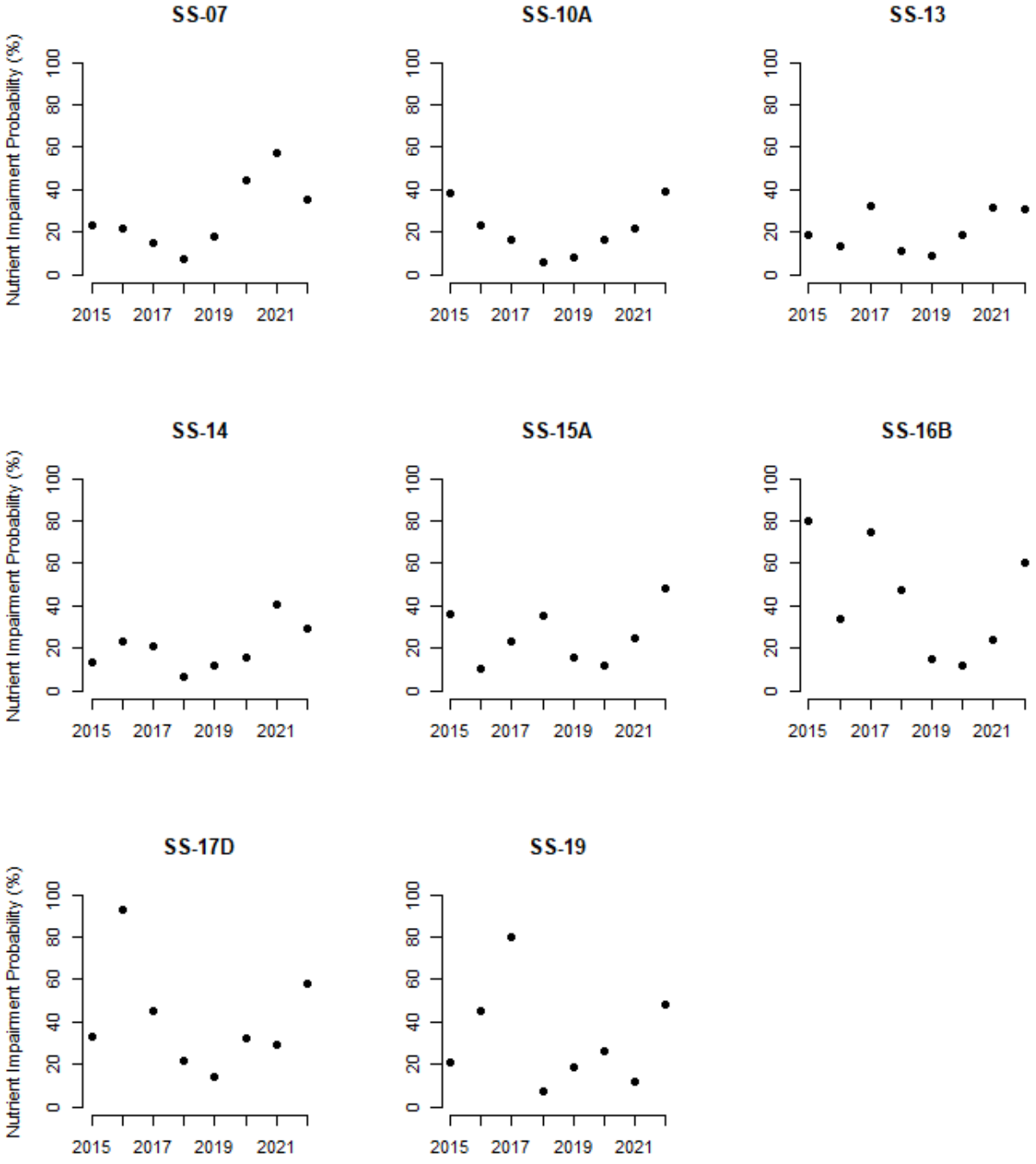


Figure 5-11. Nutrient impairment probability based on diatom assemblages for Streamside Tailings Operable Unit monitoring sites, 2015-2022.

5.3.2.2 Metrics for Montana Mountain Streams

Results for each diatom association metric and the overall biological integrity rating for each site are presented in Table 5-5. Overall, every site was rated as having "good" overall biological integrity except for Site SS-07 which was considered "excellent" (Table 5-5). The metrics which most commonly reflected impaired conditions were the pollution index and the siltation index (Table 5-5). The following sections examine temporal and spatial trends for each of these metrics at each site.

Table 5-5. Diatom association metrics, biological integrity, and impairment ratings for individual metrics and an overall score and rating for each Silver Bow Creek site, 2022.[56]

Site	Taxa Richness	Dominant Taxon (%)	Siltation Index (%)	Pollution Index	Disturbance Index (%)	Abnormal Cells (%)	Biological Integrity Score	Biological Integrity Rating
SS-07	48	19.1	32.9	2.62	8.2	0	2.83	Excellent
SS-10A	48	25.5	48.8	2.39	4.6	0	2.33	Good
SS-13	46	12.5	35.8	2.27	0.6	0	2.67	Good
SS-14	48	22.0	25.2	2.28	0.9	0	2.67	Good
SS-15A-2	40	21.6	46.9	2.16	0	0	2.50	Good
SS-16B	40	24.2	31.7	2.46	0.1	0	2.67	Good
SS-17D	50	24.8	29.6	2.35	0.5	0	2.67	Good
SS-19	37	20.2	46.2	2.29	0	0	2.33	Good

Result indicates no impairment.

Result indicates mild impairment.

Result indicates moderate impairment.

Result indicates severe impairment.

[56] Metric classifications were based on criteria in Table 6-2. Overall biological integrity scores were based on the techniques described in the methods where scores were assigned for each metric on an ordinal scale: "excellent" = 3, "good" = 2, "fair" = 1, and "poor" = 0. The mean score of the seven metrics at each site was used to assign the overall biointegrity rating: "excellent" if more than 2.7, "good" if 1.7-2.7, "fair" if 0.7-1.7, and "poor" if less than 0.7.

5.3.2.2.1 Overall Biointegrity

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a general declining trend in overall biointegrity from the upstream-most site (Site SS-07) to the downstream-most site (Site SS-19) (Figure 5-12). Median biointegrity scores at each site fell within the "mildly impaired" range (Figure 5-12). Results at the downstream-most sites (Sites SS-16B, SS-17D, and SS-19) were more variable among years compared to the upstream sites (Figure 5-12).

Overall biointegrity results appear to be increasing through time at all sites (Figure 5-13). The greatest improvements in overall biointegrity during the monitoring period have occurred at the downstream-most sites (Sites SS-16B, SS-17D, and SS-19) which have improved from "moderately impaired" to a level achieving almost "non-impaired" condition during the monitoring period (Figure 5-13).

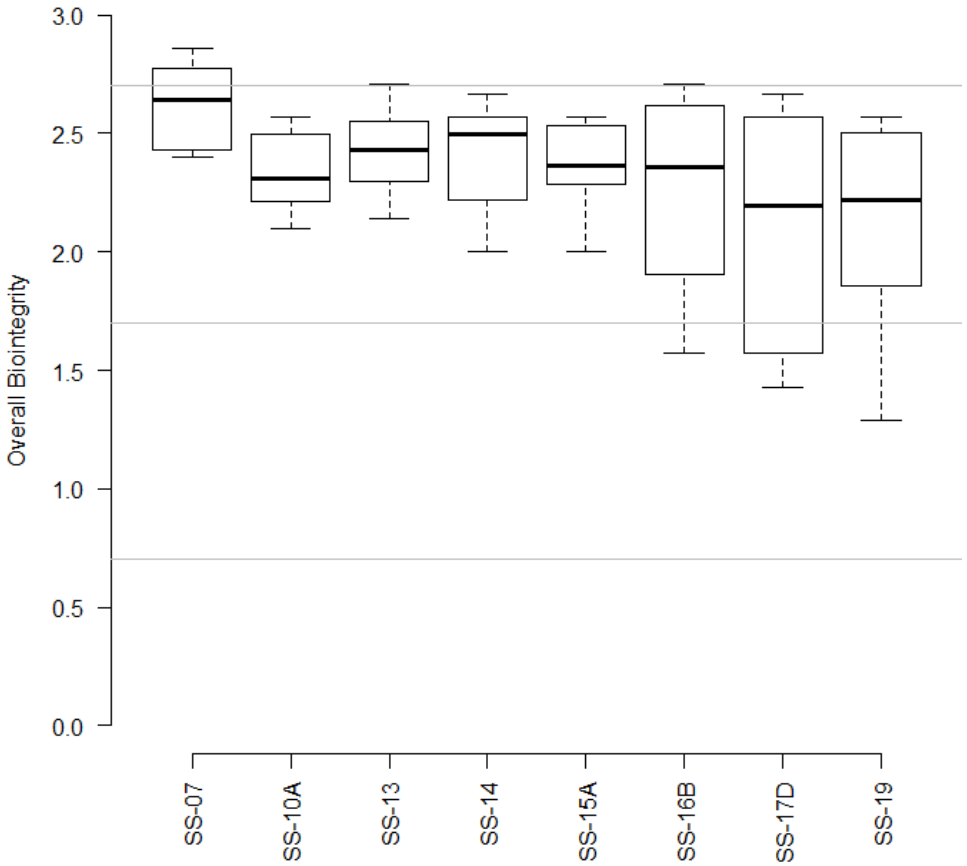


Figure 5-12. Boxplots of overall biointegrity score for diatom assemblages in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries between impairment classifications: >2.7 percent indicates no impairment, 1.7-2.7 percent indicates mild impairment, 0.7-1.7 percent indicates moderate impairment, and <0.7 percent indicates severe impairment.

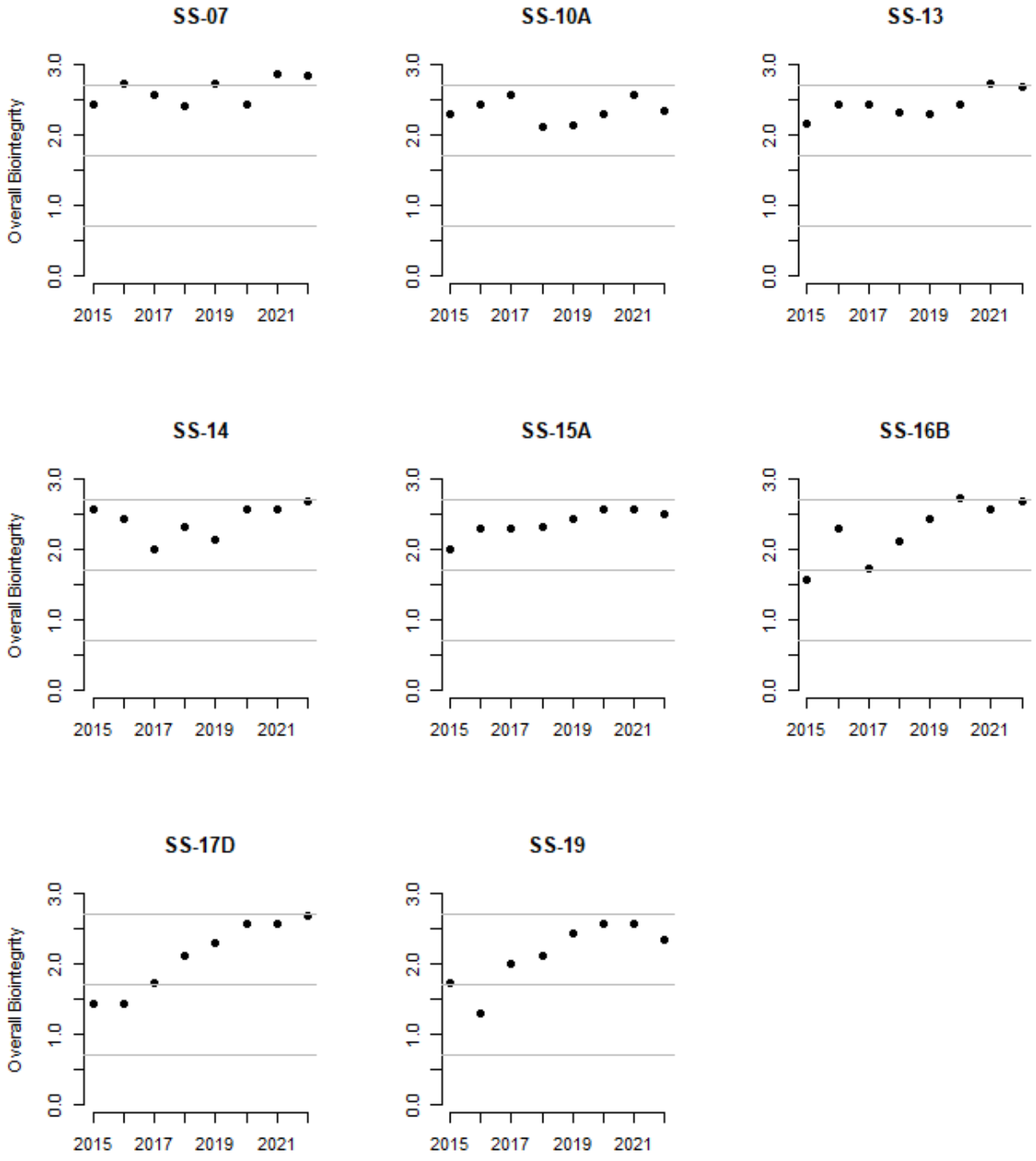


Figure 5-13. Overall biointegrity score for diatom assemblages in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries between impairment classifications: >2.7 percent indicates no impairment, 1.7-2.7 percent indicates mild impairment, 0.7-1.7 percent indicates moderate impairment, and <0.7 percent indicates severe impairment.

5.3.2.2.2 Dominant Taxon

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a general increasing trend in median dominant taxon percentage from the upstream-most site (Site SS-07) to the downstream-most site (Site SS-19) (Figure 5-14). Median results at the three downstream-most sites (Sites SS-16B, SS-17D, and SS-19) were classified as having mild impairment.

Dominant taxon percentages were fairly consistent through time at each site and did not appear to demonstrate increasing or decreasing trends (Figure 5-15). Variance in results among years was typically 40 percent or less (Figure 5-15).

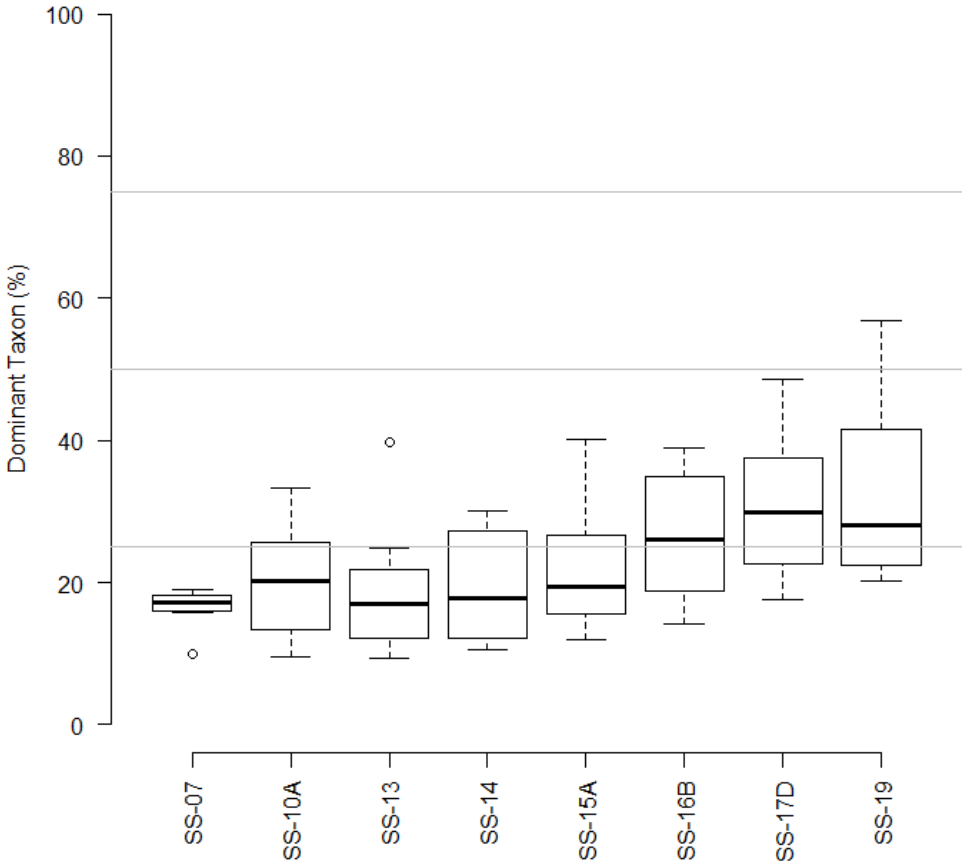


Figure 5-14. Boxplots of dominant taxon percentage for diatom assemblages in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries between impairment classifications: <25 percent indicates no impairment, 25-50 percent indicates mild impairment, 50-75 percent indicates moderate impairment, and >75 percent indicates severe impairment.

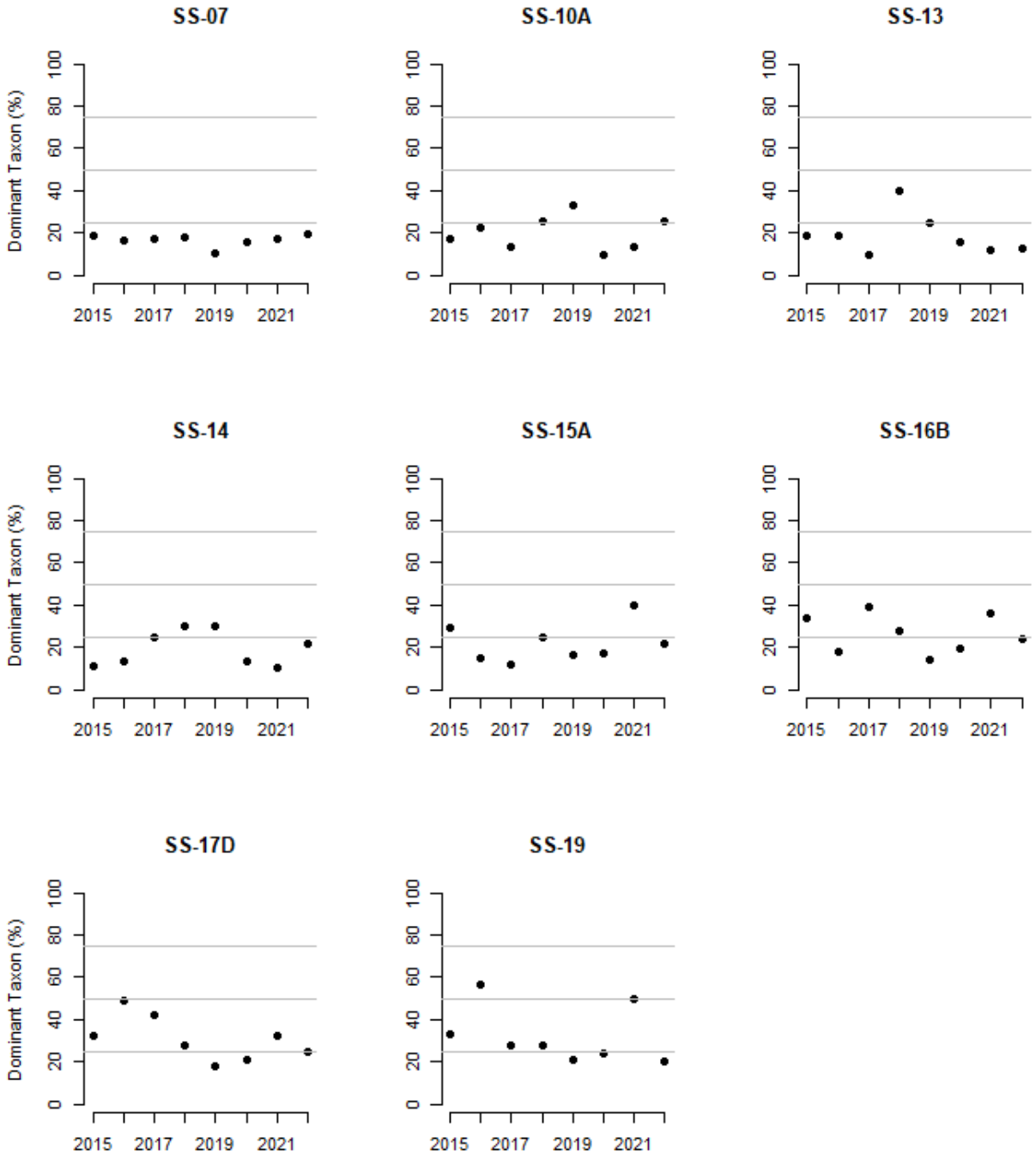


Figure 5-15. Dominant taxon percentage for diatom assemblages in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries between impairment classifications: <25 percent indicates no impairment, 25-50 percent indicates mild impairment, 50-75 percent indicates moderate impairment, and >75 percent indicates severe impairment.

5.3.2.2.3 Siltation Index

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a general increasing trend in median siltation index scores from the upstream-most site (Site SS-07) to the downstream-most site (Site SS-19) (Figure 5-16). Median results at all sites were classified as moderately impaired, with the exception of Site SS-07 which was classified as mildly impaired, and Site SS-17D which was classified as severely impaired (Figure 5-16).

Siltation index scores were highly variable among years (Figure 5-17). Despite the high degree of variability, scores appear to have declined through time at the four downstream-most sites (Sites SS-15A, SS-16B, SS-17D, and SS-19) (Figure 5-17).

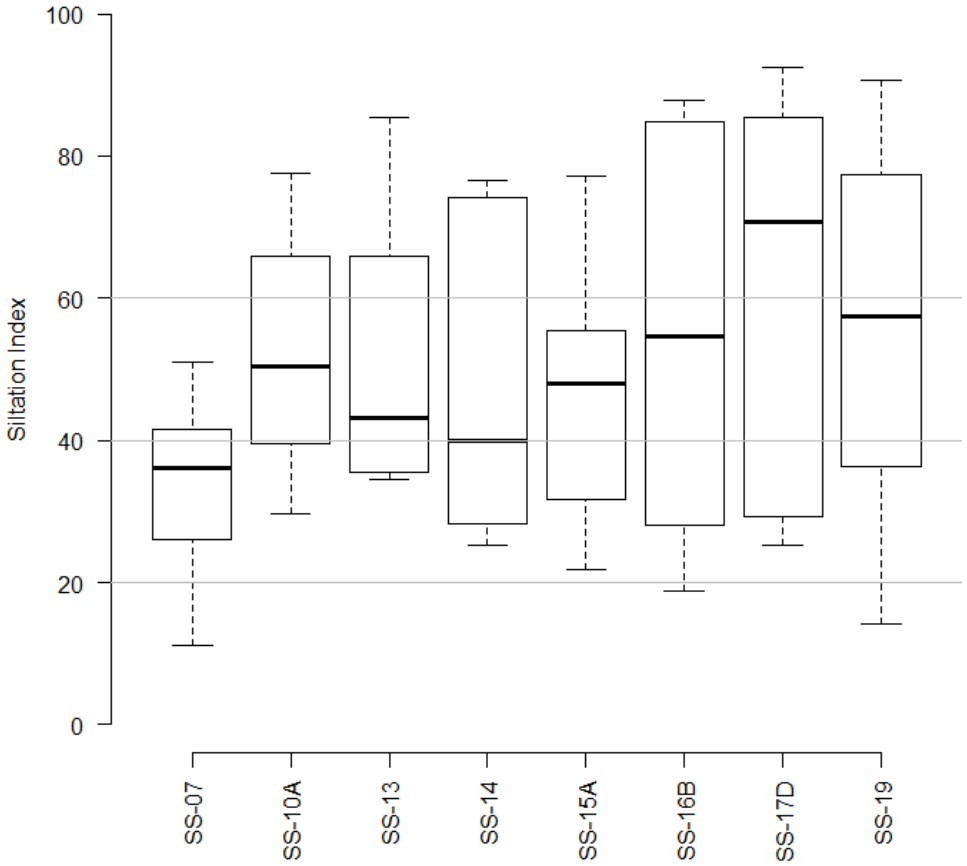


Figure 5-16. Boxplots of siltation index scores based on diatom assemblages in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries between impairment classifications: <20 indicates no impairment, 20-40 indicates mild impairment, 40-60 indicates moderate impairment, and >60 indicates severe impairment.

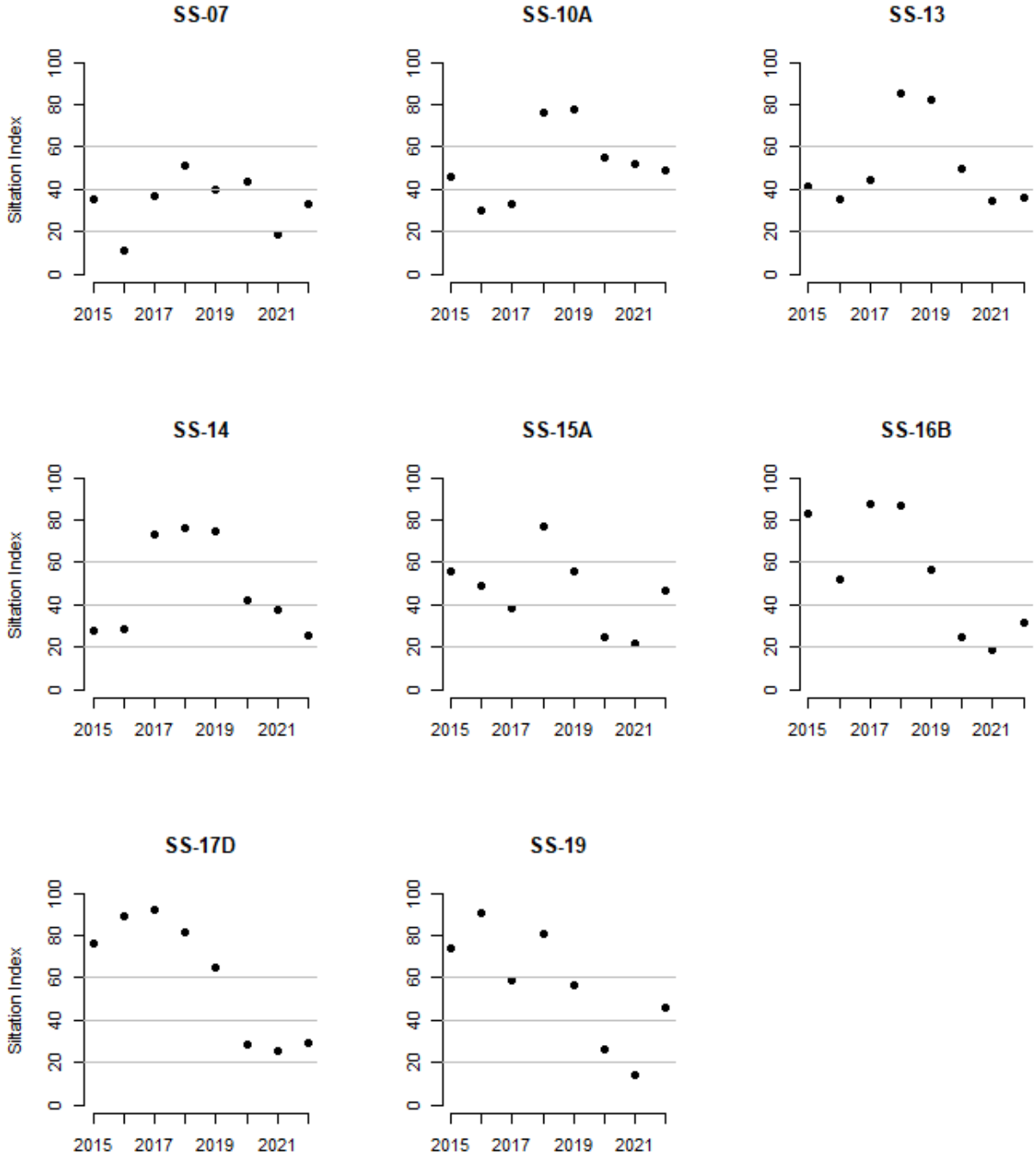


Figure 5-17. Siltation index scores based on diatom assemblages in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries between impairment classifications: <20 indicates no impairment, 20-40 indicates mild impairment, 40-60 indicates moderate impairment, and >60 indicates severe impairment.

5.3.2.2.4 Pollution Index

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a general declining trend in median pollution index scores from the upstream-most site (Site SS-07) to the downstream-most site (Site SS-19) (Figure 5-18). Median results at all sites were classified as mildly impaired (Figure 5-18).

Pollution index scores appeared to vary in a synchronized manner at each site over time. Most sites had relatively low scores from 2018-2020 and higher scores before and after that period (Figure 5-19). None of the sites appeared to demonstrate a clear increasing or decreasing trend through time (Figure 5-19).

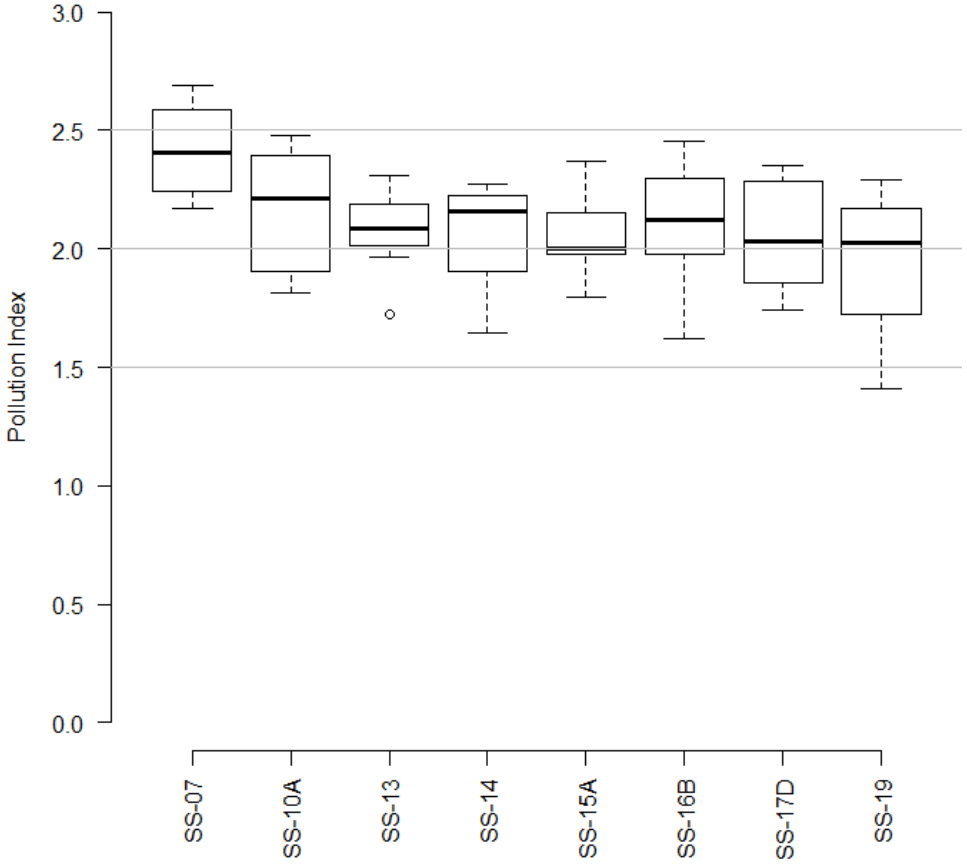


Figure 5-18. Boxplots of Pollution index scores based on diatom assemblages in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries between impairment classifications: >2.5 indicates no impairment, 2.0-2.5 indicates mild impairment, 1.5-2.0 indicates moderate impairment, and <1.5 indicates severe impairment.

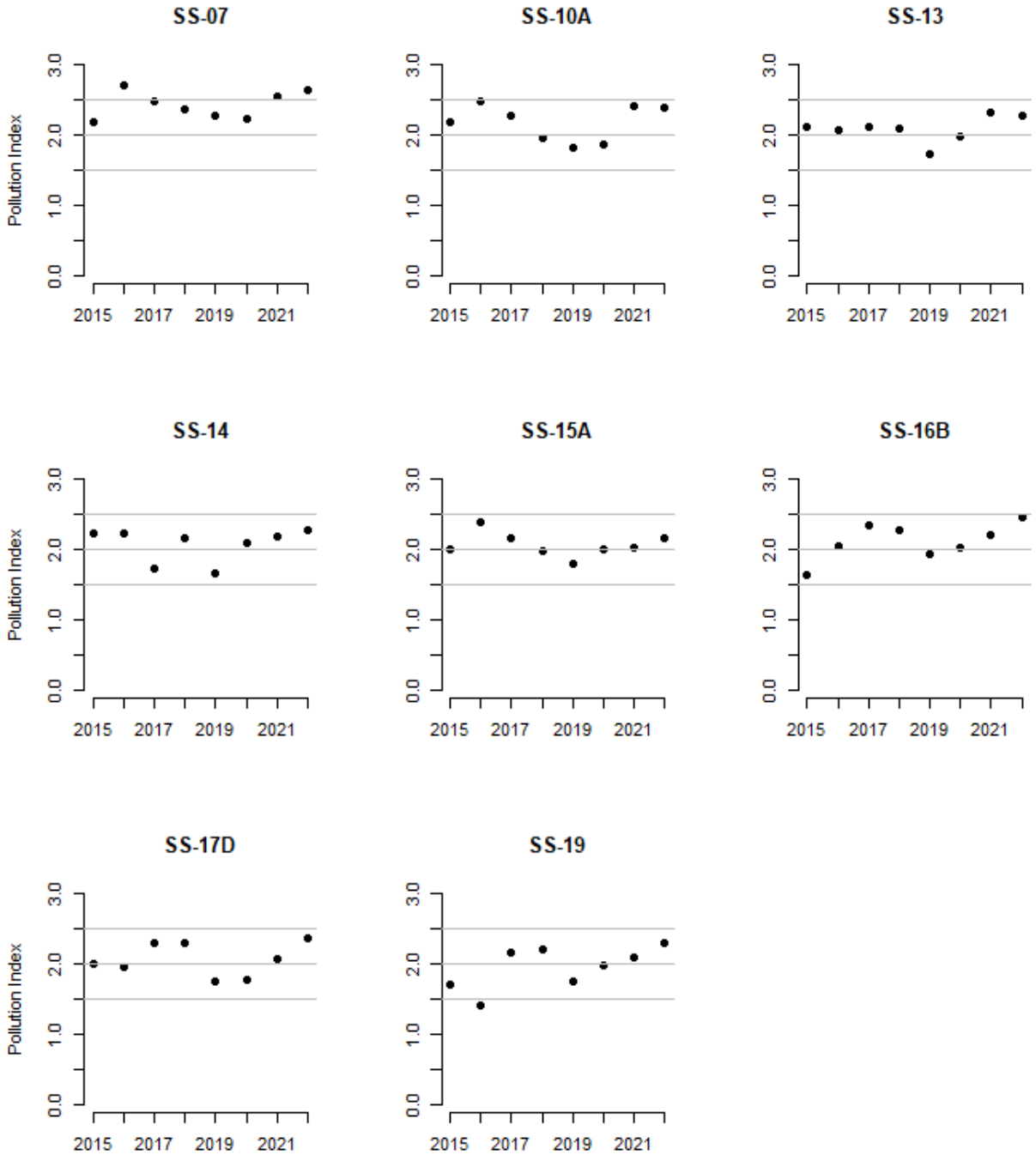


Figure 5-19. Pollution index scores based on diatom assemblages in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries between impairment classifications: >2.5 indicates no impairment, 2.0-2.5 indicates mild impairment, 1.5-2.0 indicates moderate impairment, and <1.5 indicates severe impairment.

5.3.2.2.5 Disturbance Index

No impairment has been observed in the SSTOU based on the disturbance index. Median scores were slightly higher at Site SS-07 compared to other sites (Figure 5-20), but all sites have consistently demonstrated no impairment based on that index (Figure 5-21).

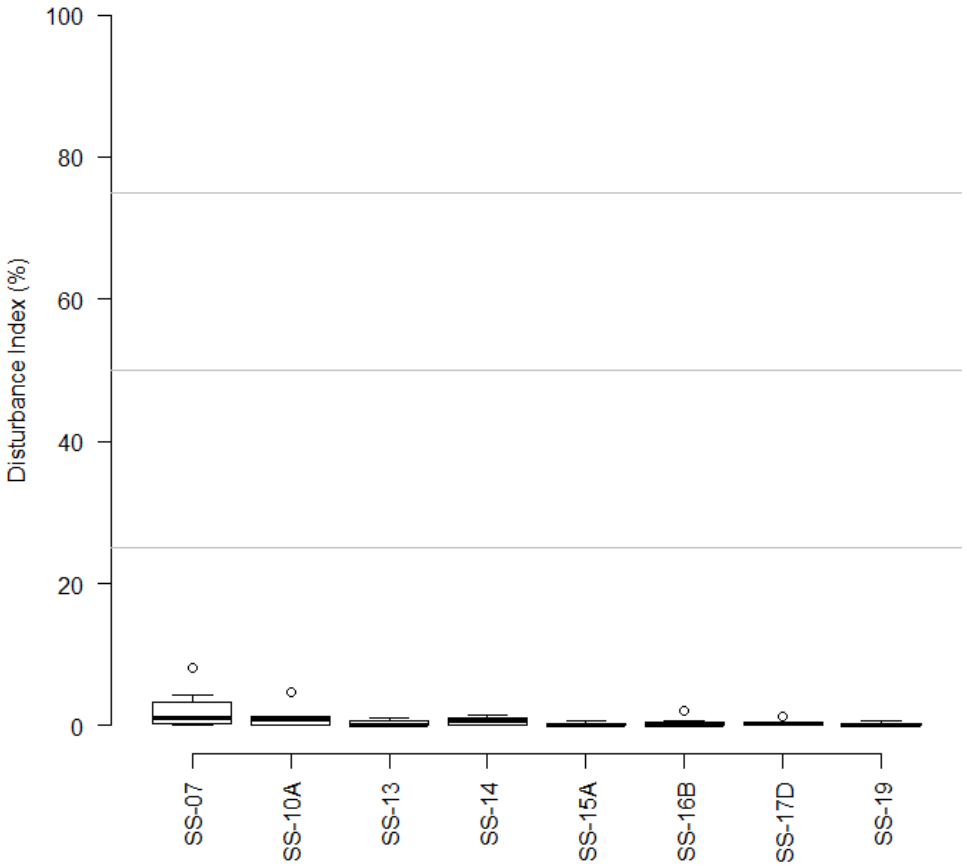


Figure 5-20. Boxplots for disturbance index results for diatom assemblages in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries between impairment classifications: <25 percent indicates no impairment, 25-50 percent indicates mild impairment, 50-75 percent indicates moderate impairment, and >75 percent indicates severe impairment.

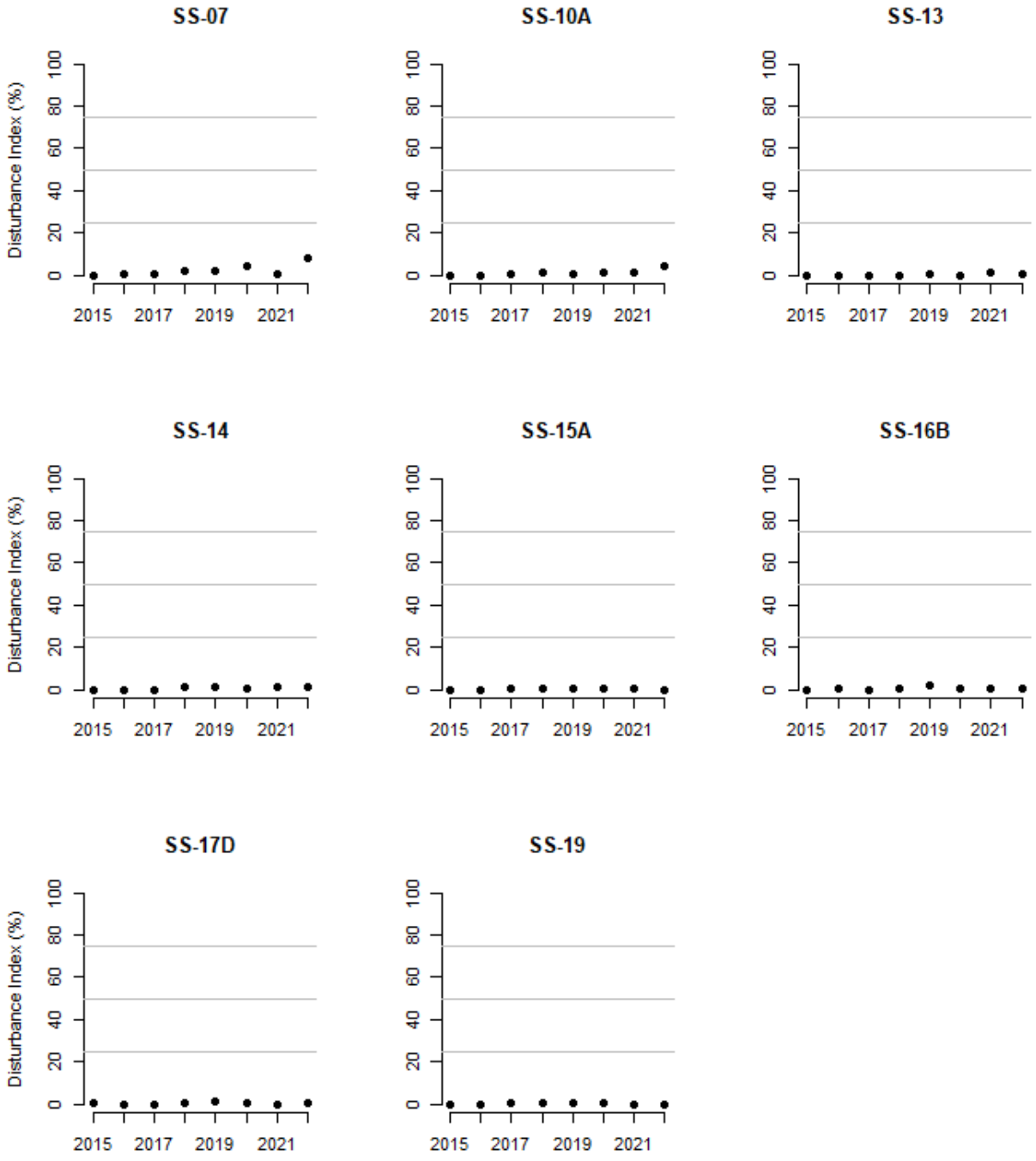


Figure 5-21. Disturbance index for diatom assemblages in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries between impairment classifications: <25 percent indicates no impairment, 25-50 percent indicates mild impairment, 50-75 percent indicates moderate impairment, and >75 percent indicates severe impairment.

5.3.2.2.6 Abnormal Cells

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a general increasing trend in the proportion of abnormal cells detected from the upstream-most site (Site SS-07) to the downstream-most site (Site SS-19), although the results were highly skewed and all sites had median portions of 0 percent suggesting non-impairment (Figure 5-22).

The proportion of abnormal cells identified was higher at all sites from 2015-2017 (Figure 5-23). During that period, taxonomic analyses were performed by RESPEC but since that time analyses have been performed by Rhithron Associates. The change in taxonomists likely explains this result. During the 2015-2017 period, when abnormal cells were commonly identified, the more downstream sites generally had higher proportions of abnormal cells (Figure 5-23).

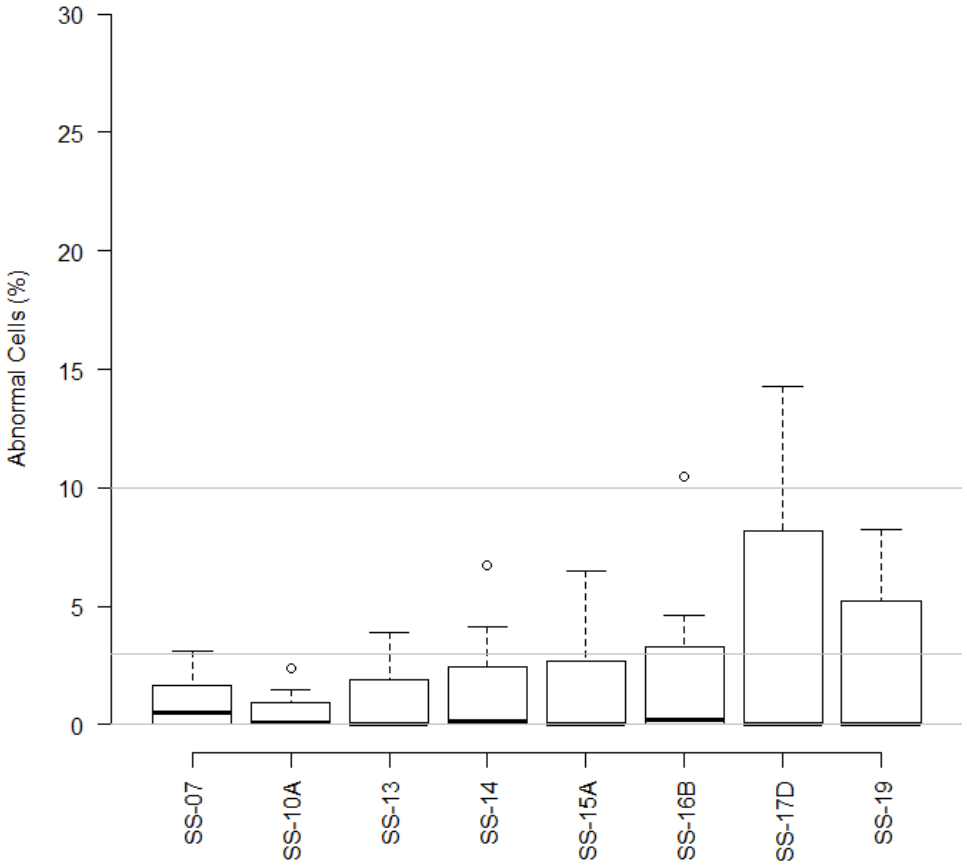


Figure 5-22. Boxplots of abnormal cell percentage for diatoms in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries of impairment classifications: 0 percent indicates no impairment, 0-3 percent indicates mild impairment, 3-10 percent indicates moderate impairment, and more than 10 percent indicates severe impairment.

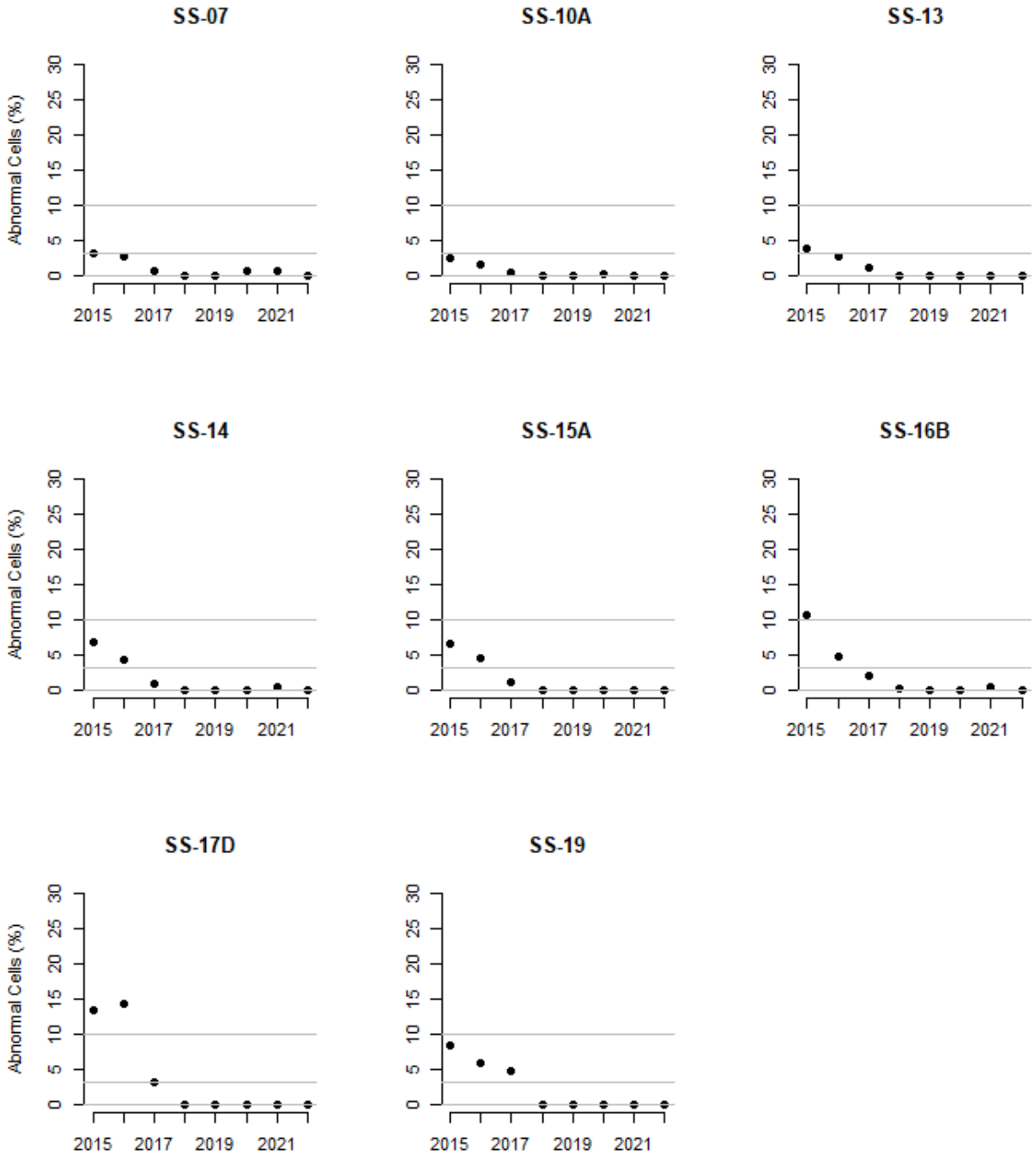


Figure 5-23. Abnormal cell percentage for diatoms in Streamside Tailings Operable Unit monitoring sites, 2015-2022. Lines represent boundaries of impairment classifications: 0 percent indicates no impairment, 0-3 percent indicates mild impairment, 3-10 percent indicates moderate impairment, and more than 10 percent indicates severe impairment.

5.3.2.3 Trophic State

The relative abundance of nitrogen-autotrophic diatoms, which are intolerant of organic nitrogen, ranged from a low of 41.2 percent at Site SS-19 to a high of 72.9 percent at Site SS-07 (Figure 5-24). The relative abundance of nitrogen-heterotrophic diatoms, which consume organic nitrogen and are thus highly tolerant of nutrient-rich conditions, ranged from a low of 3.9 percent at Site SS-07 to a high of percent 29.0 percent at Site SS-14 (Figure 5-24). Site SS-07 was distinct from other sites because that nitrogen-autotrophic diatoms were abundant and nitrogen-heterotrophic diatoms were rare. At other sites, the relative abundances of nitrogen-autotrophic and nitrogen-heterotrophic diatoms were relatively consistent with the autotrophic diatom relative abundances varying between 41.8-62.8 percent and the heterotrophic diatom relative abundance ranging between 13.2-29.0 percent (Figure 5-24).

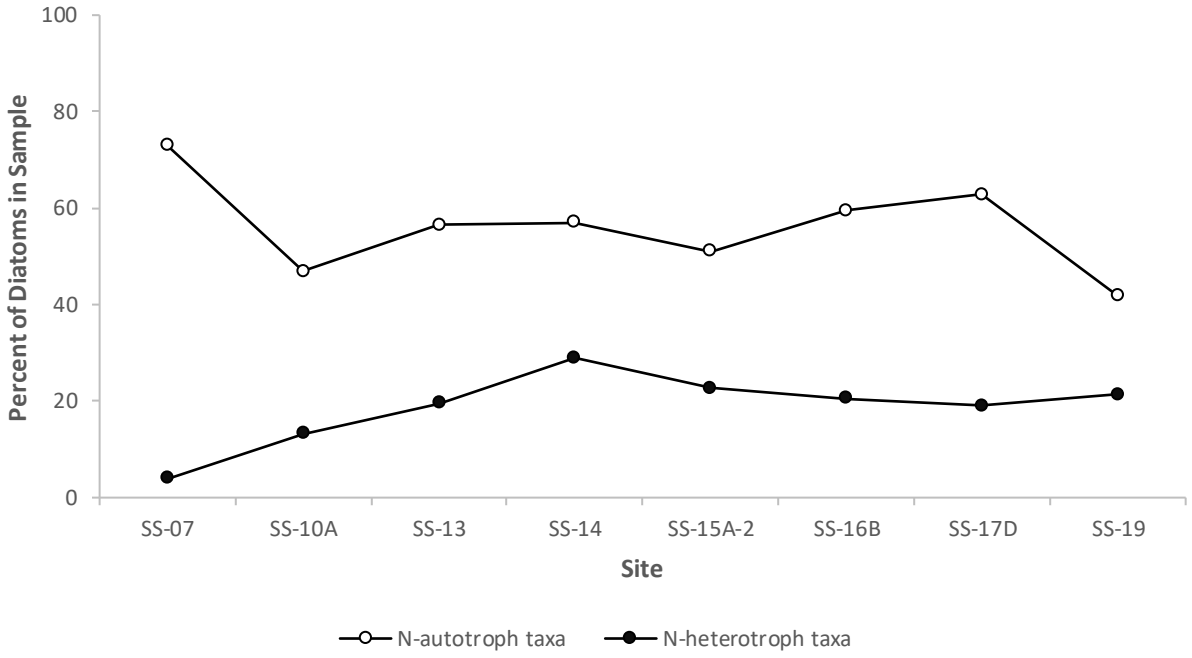


Figure 5-24. Relative abundance of diatoms classified in relation to trophic state [Van Dam et al., 1994] in the Silver Bow Creek watershed, 2022.

5.3.2.3.1 Nitrogen-autotrophs

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a general decreasing trend in the median proportion of nitrogen-autotrophic diatom taxa from the upstream-most site (Site SS-07) to the downstream-most site (Site SS-19), although the results were highly variable at all sites (Figure 5-25).

All sites demonstrated rapidly increasing proportions of nitrogen-autotroph taxa during the monitoring period (Figure 5-26). At all sites, the proportions were low (typically less than 20 percent) prior to 2018 and then increased steadily to 40 percent or more and up to nearly 80 percent since 2021 (Figure 5-26).

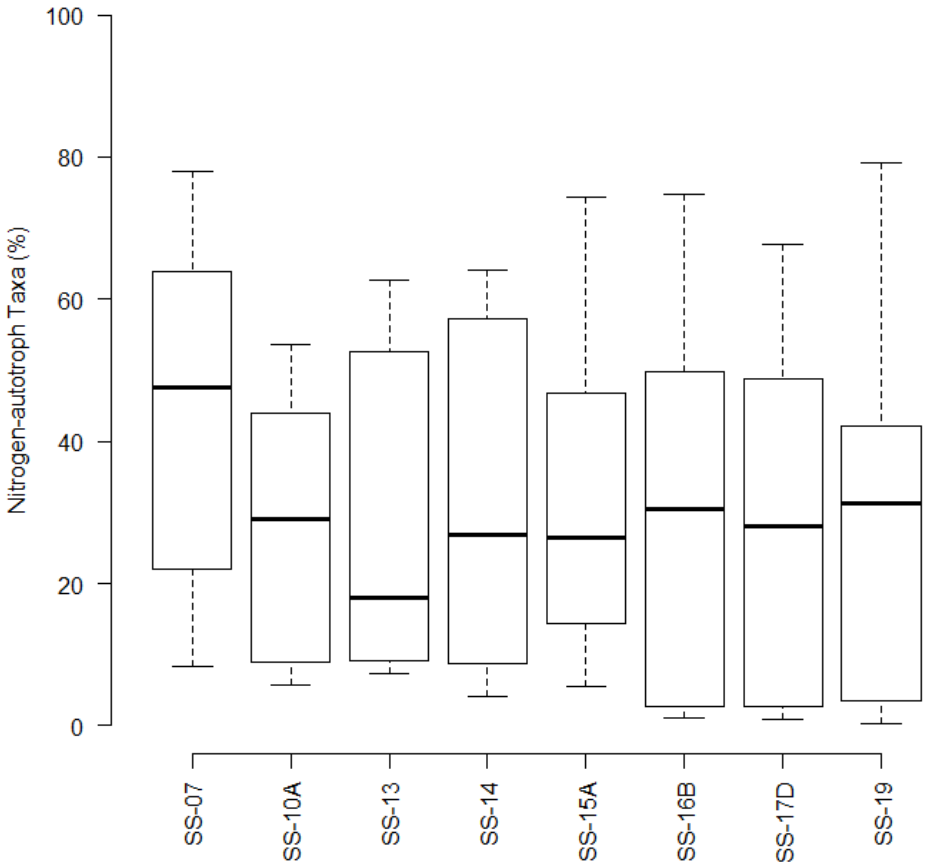


Figure 5-25. Boxplots for the proportion of sampled diatoms that are nitrogen-autotrophs for Streamside Tailings Operable Unit monitoring sites, 2015-2022.

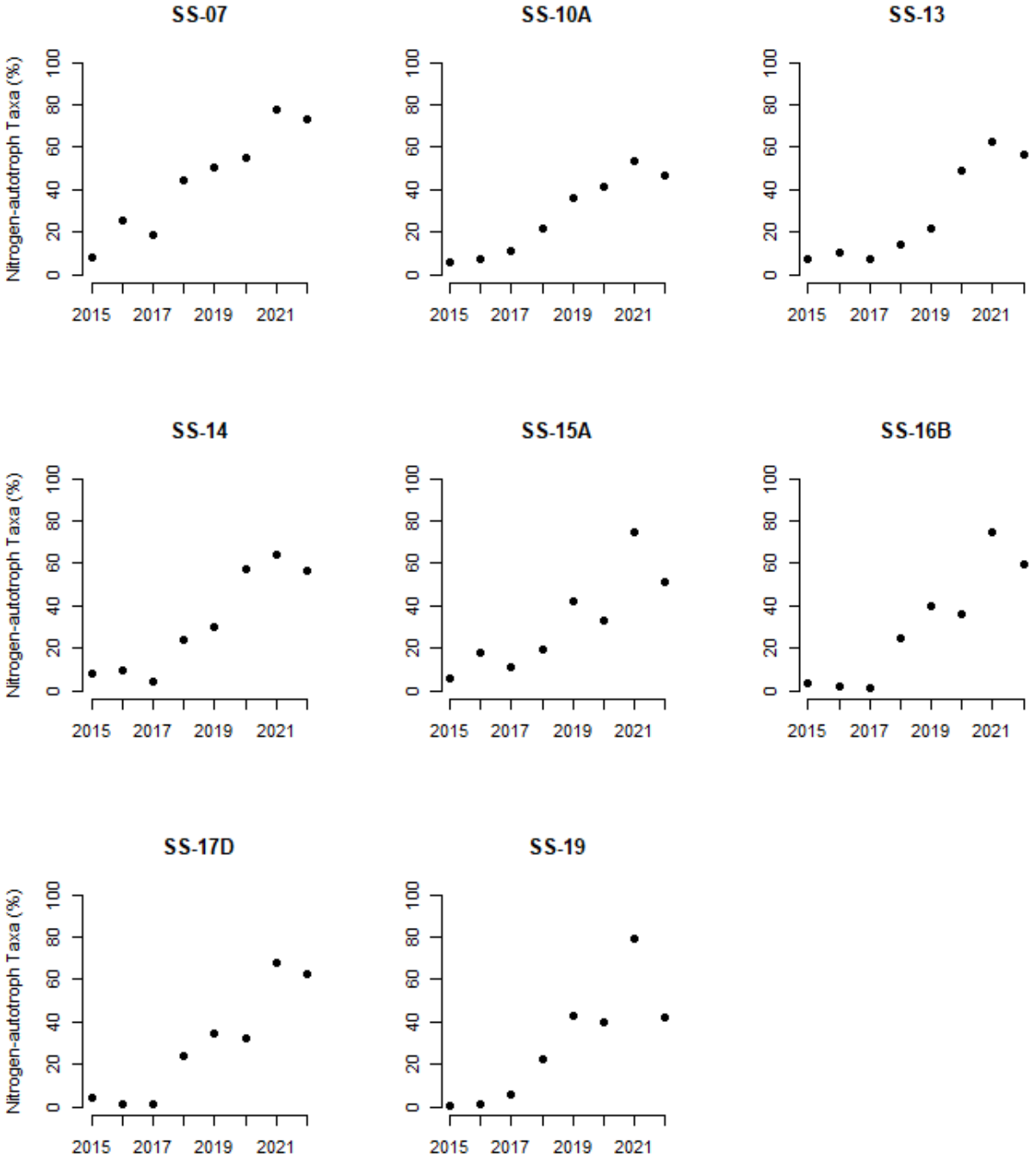


Figure 5-26. Proportion of sampled diatoms that are nitrogen-autotrophs for Streamside Tailings Operable Unit monitoring sites, 2015-2022.

5.3.2.3.2 Nitrogen-heterotrophs

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a general increasing trend in the median proportion of nitrogen-heterotrophic diatom taxa from the upstream-most site (Site SS-07) to the downstream-most site (Site SS-19), although the results were highly variable at all sites (Figure 5-27).

All sites demonstrated potentially decreasing proportions of nitrogen-heterotroph taxa during the monitoring period (Figure 5-28). Although apparent at all sites, the decline in nitrogen-heterotrophic taxa was not as stark as the increase in nitrogen-heterotrophic taxa through time (Figure 5-28).

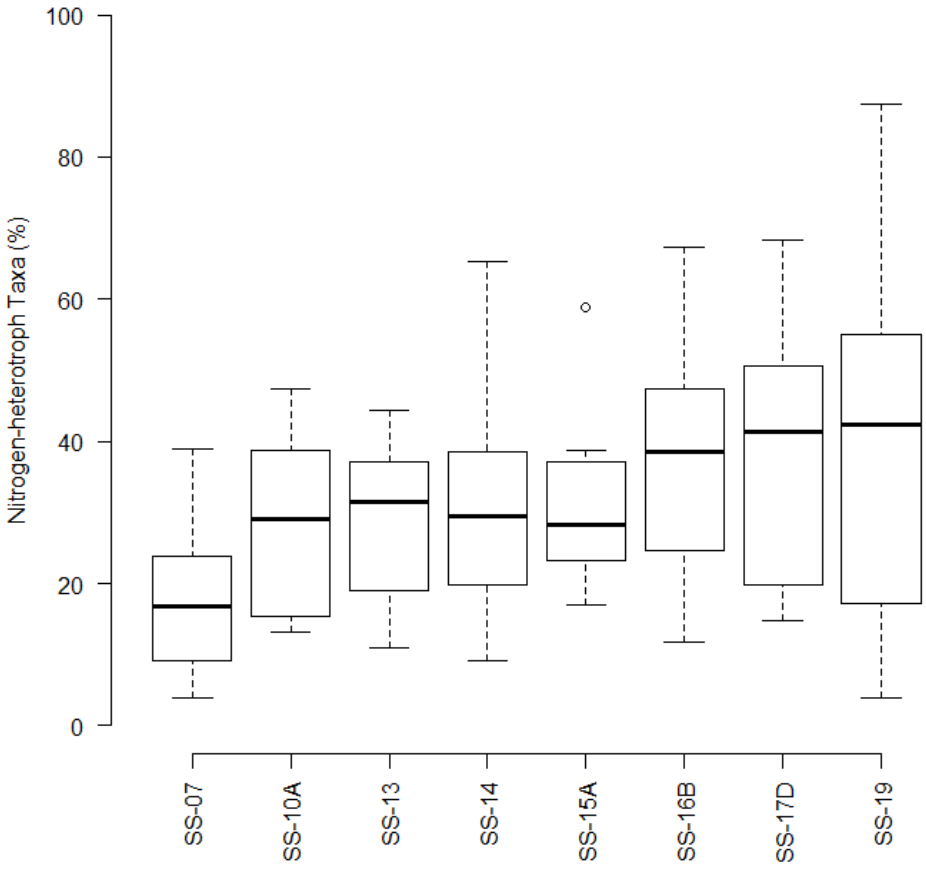


Figure 5-27. Boxplots for the proportion of sampled diatoms that are nitrogen-heterotrophs for Streamside Tailings Operable Unit monitoring sites, 2015-2022.

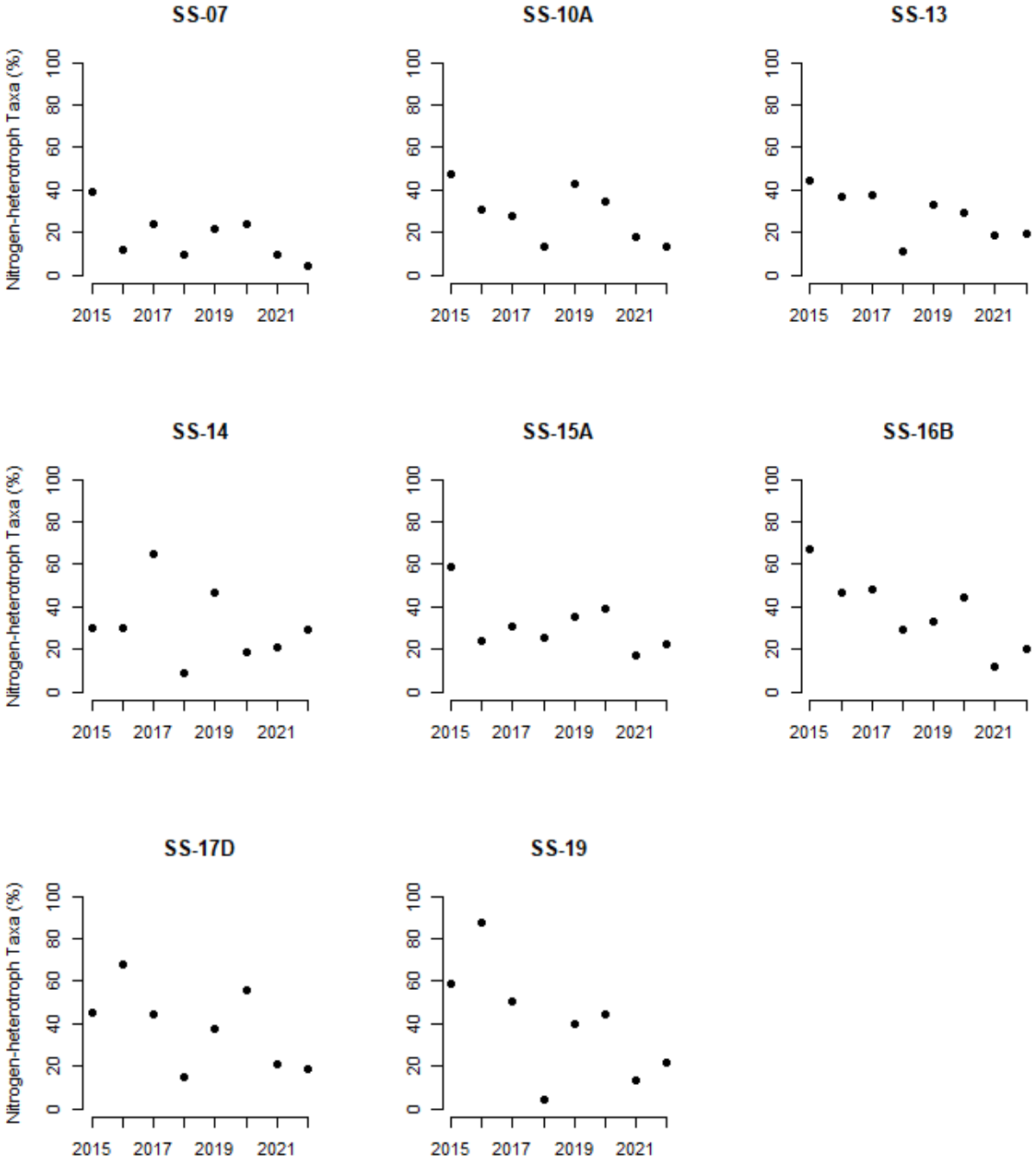


Figure 5-28. Proportion of sampled diatoms that are nitrogen-heterotrophs for Streamside Tailings Operable Unit monitoring sites, 2015-2022.

5.3.2.4 Saprobity and Hypoxia

The relative abundance of oligosaprobous or ß-mesosaprobous diatoms is likely to be correlated with stream reaches having low levels of organic decomposition and high (at least 70 percent) dissolved oxygen saturation.

In 2022, relative abundance of these species varied from a low of 28.5 percent at Site SS-19 to 50.8 percent at Site SS-07 (Figure 5-29). Relative abundance of these species was also low ranging from 30.6-33.5 percent at the four sites downstream from Site SS-07 (Sites SS-10A, SS-13, SS-14, and SS-15A-2) and relatively high (48.3 percent) at Site SS-16B (Figure 5-29).

Based on the combined results from the last eight (2015-2022) monitoring years, there appears to be a general decreasing trend in the median proportion of oligosaprobous or ß-mesosaprobous diatoms from the upstream-most site (Site SS-07) to the downstream-most site (Site SS-19) (Figure 5-30). None of the sites demonstrated clear evidence of increasing or decreasing trends through time (Figure 5-31).

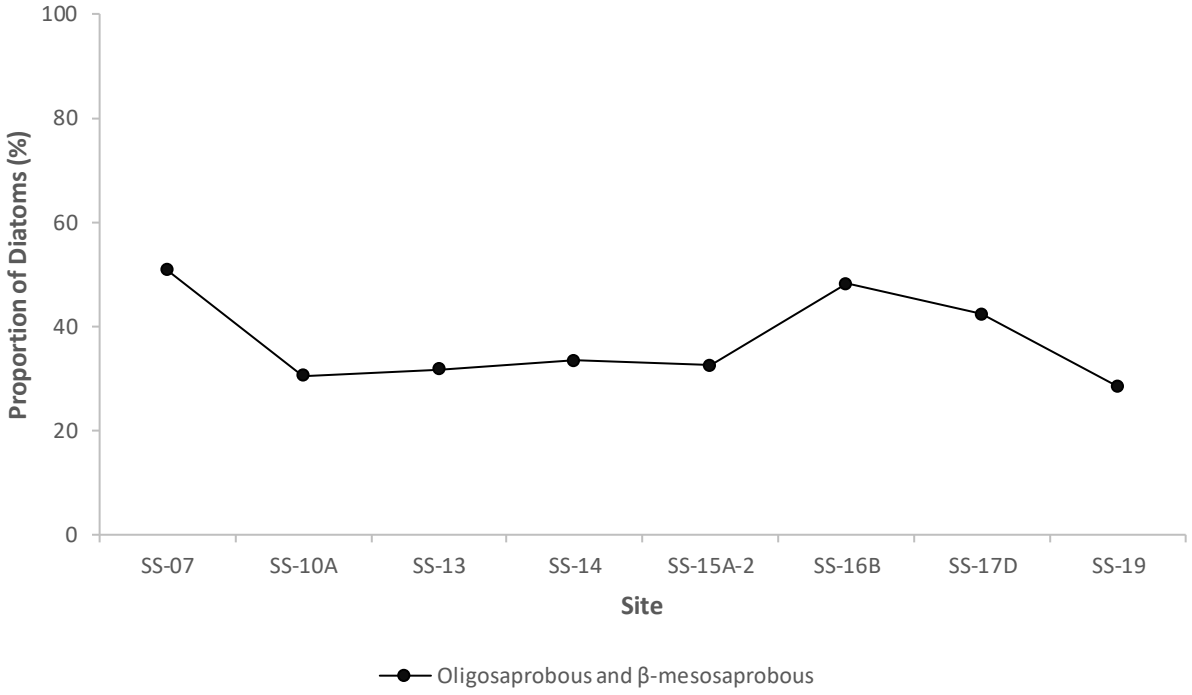


Figure 5-29. Relative abundance of oligosaprobous or ß-mesosaprobous diatoms in the Silver Bow Creek watershed, 2022.

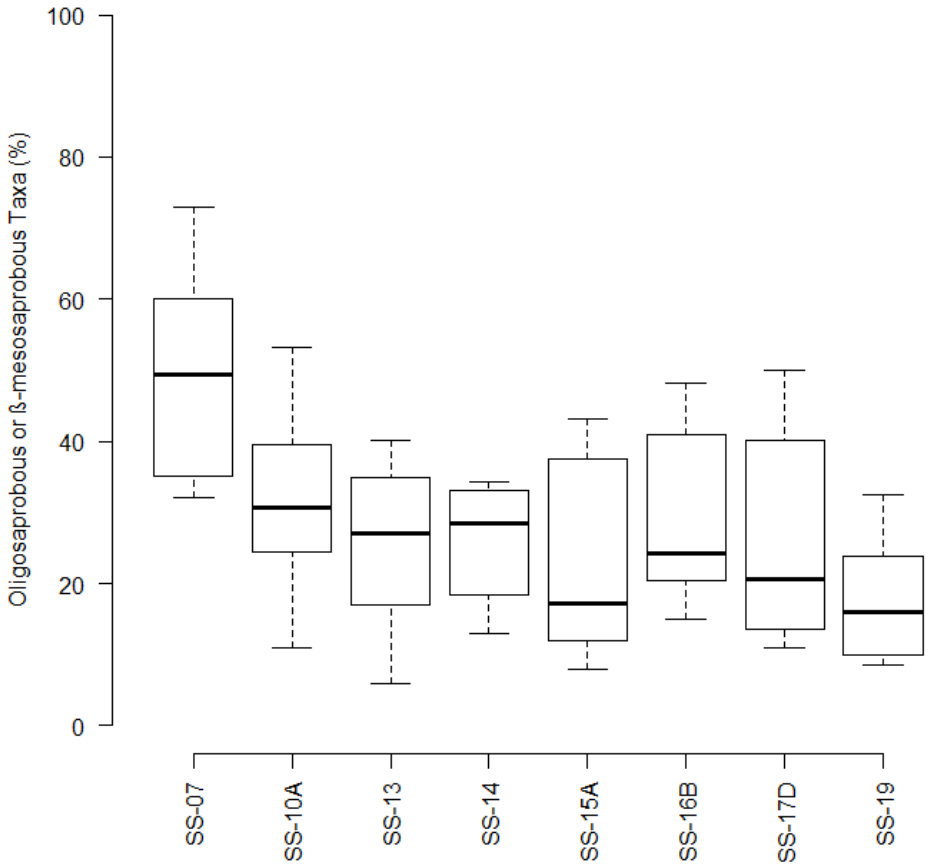


Figure 5-30. Boxplots for the proportion of sampled diatoms considered oligosaprobous or ß-mesosaprobous for Streamside Tailings Operable Unit monitoring sites, 2015-2022.

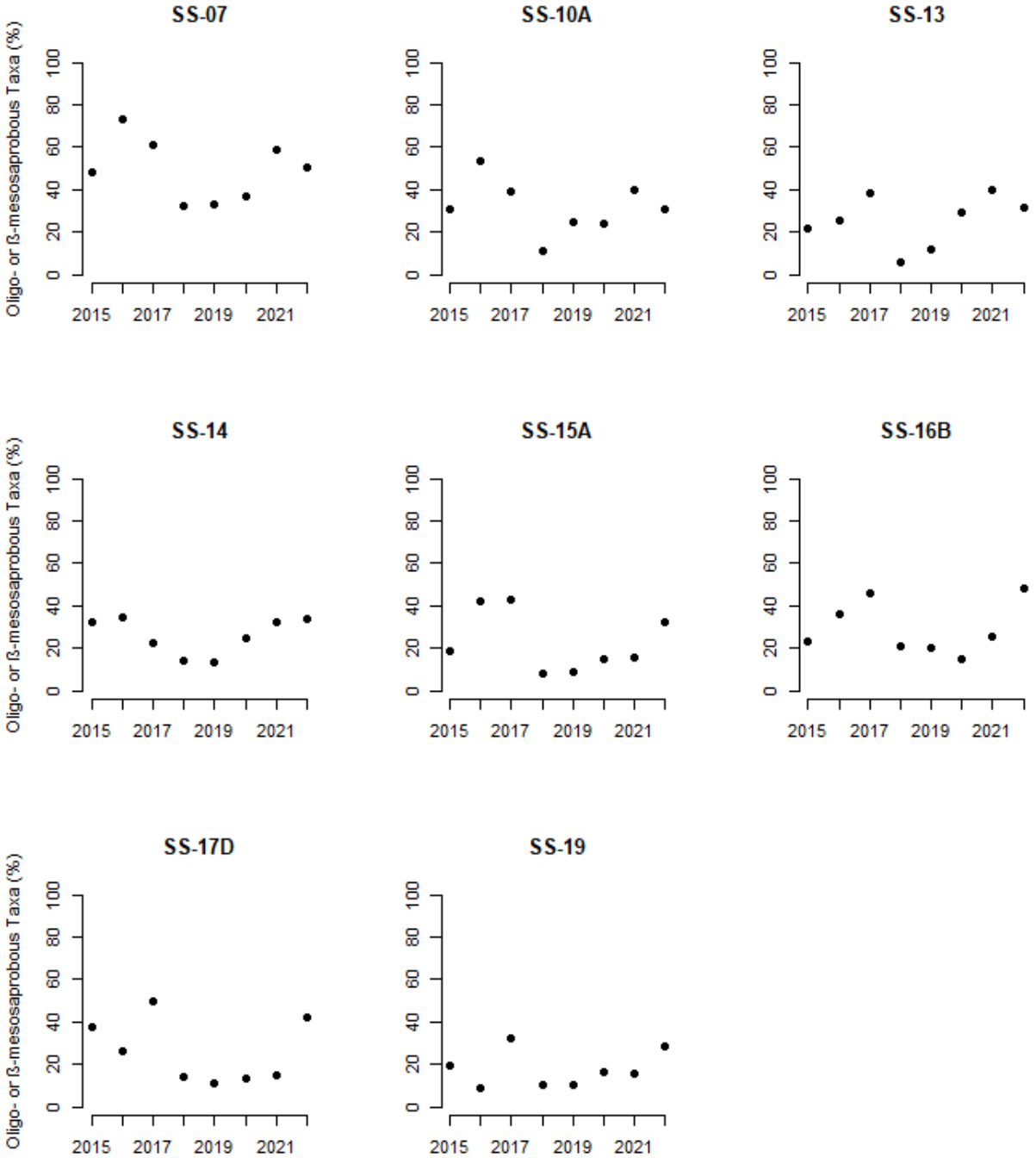


Figure 5-31. Proportion of sampled diatoms considered oligosaprobous or ß-mesosaprobous for Streamside Tailings Operable Unit monitoring sites, 2015-2022.

5.4 DISCUSSION

Algal biomass in Silver Bow Creek is extensive [Gammons et al.., 2011] and is related to the extreme levels of nutrient enrichment in the stream. The non-diatom algae comprising the greatest biovolume in the samples collected in 2022 were the blue-green algae genera *Anabaena* and *Phormidium* and the green algae genera *Mougeotia*, *Closterium*, and *Cladophora*.

The periphyton samples collected in 2022 were also monitored to investigate evidence of impairment to diatom communities from various stressors. Overall, all SSTOU sites except one were considered to be in "good" condition based on Bahls [1993] overall biological integrity index scores derived from the diatom assemblages sampled at each site. The one exception was Site SS-07, which was considered to be in "excellent" condition.

In the 2022 samples, there was evidence of stress to the diatom assemblages from several stressors including sediment and silt, nutrients, and excessive amounts of decaying organic matter. Sediment impairment probabilities at each site was estimated at 30.2-81.6 percent and siltation impairment was considered mild or moderate at all sites. Nutrient impairment probabilities at each site were estimated at 29.5-60.6 percent and up to 29 percent of the diatoms at each site were nitrogen-heterotrophic species which consume organic nitrogen and thrive in environments with high nitrogen concentrations. Oligosaprobous and ß-mesosaprobous diatom species, which are intolerant of aquatic conditions with extensive organic matter decay and hypoxia, typically comprised less than half the assemblage within each sample.

Diatom metrics demonstrated some consistent spatial trends over the last eight monitoring years. Median values for Shannon diversity, taxa richness, overall biointegrity, and the oligosaprobous and ß-mesosaprobous diatom species proportions tended to decline between the upstream-most site and the downstream-most site in the SSTOU whereas median dominant taxon proportions, siltation index, and nitrogen-heterotrophic diatom taxa proportions tended to increase. Cumulatively, these trends demonstrate progressively more impaired conditions at each downstream site in the SSTOU.

A few diatom metrics also demonstrated consistent temporal trends over the last eight monitoring years. Shannon diversity and overall biointegrity values appeared to increase over time at all sites. Additionally, despite continuing evidence of extensive nutrient pollution in 2022, conditions are apparently improving. All sites demonstrated changes in the proportions of nitrogen-autotroph taxa and nitrogen-heterotroph taxa which reflected decreased levels of nitrogen pollution. The proportion of nitrogen-autotroph taxa appears to have increased and the proportion of nitrogen-heterotroph taxa appears to have decreased at all sites over time. These results are consistent with observed decreases in bioavailable nitrogen concentrations in the SSTOU over time, particularly ammonia, with upgrades to the Butte wastewater treatment system in 2016.

6.0 MACROINVERTEBRATES[57]

6.1 INTRODUCTION

Macroinvertebrate monitoring in the Streamside Tailings Operable Unit (SSTOU) is intended to determine if aquatic fauna are responding to the remedy. Macroinvertebrate, a general term for any aquatic invertebrates that are large enough to see with the human eye without magnification, assemblages are of interest because the species composition observed at a site is assumed to reflect the quality of a given aquatic system. Certain macroinvertebrates are also generally classified as being tolerant or sensitive to specific environmental stressors and thus macroinvertebrate monitoring can be used to identify direct impacts of abiotic conditions on the biotic system.

This report describes results of macroinvertebrate monitoring in the SSTOU in 2022 and places those results in context with prior monitoring results. Results are summarized using several standard measures of biotic integrity for macroinvertebrate assemblages, including taxa richness, Shannon diversity, and a selection of biotic indices including the Montana Valley and Foothill Prairies index [Bollman, 1998], the Hilsenhoff Biotic Index [Hilsenhoff, 1987] tailored specifically to Montana waters [DEQ, 2011a; 2012], the Montana Observed:Expected index [Feldman and Jessup, 2012], and the Metals Tolerance Index (MTI) [McGuire, 2010].

6.2 METHODS

6.2.1 Monitoring Locations

Macroinvertebrates were sampled at eight SSTOU sites (Table 6-1). Sample site locations were consistent with monitoring sites for surface water, sediment, periphyton, and geomorphic monitoring. At each site, macroinvertebrate (and periphyton) assemblages were sampled along a longitudinal sample reach extending 40 times the average wetted width of the stream at each monitoring site. At most sites, stream width were about 10-12 meters wide resulting in sampled stream reaches of 400-500 m. At each reach, samples were composited from 11 sites spaced along the reach according to the protocols described in DEQ [2012].

[57] Chapter 5 was prepared by B. Kerans and W. Bollman of Rhithron Associates Inc. (Missoula, Montana) with minor editing and formatting by RESPEC.

Table 6-1. Macroinvertebrate sampling locations in the Streamside Tailings Operable Unit.

Site ID	Site Location	Location (GPS coordinates, NAD 83)	
		Latitude	Longitude
SS-07	Silver Bow Creek below Butte WWTP	45.99666	-112.56381
SS-10A	Silver Bow Creek above Sand Creek	46.00375	-112.66084
SS-13	Silver Bow Creek in Reach L	46.00647	-112.70394
SS-14	Silver Bow Creek at Miles Crossing	46.01143	-112.72229
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	46.02096	-112.78802
SS-16B	Silver Bow Creek in Reach P near Fairmont	46.05494	-112.79611
SS-17D	Silver Bow Creek below Stewart Street at Opportunity	46.10787	-112.80553
SS-19	Silver Bow Creek at Frontage Road	45.98523	-112.50772

6.2.2 Monitoring Schedule

Samples were collected at all sites in the SSTOU on August 24, 2022.

6.2.3 Monitoring Parameters

A randomly selected, representative subsample of 500 (±10 percent) organisms was obtained from each sample and all organisms within those subsamples were identified to the lowest practical taxonomic level. Taxa counts were tabulated from the taxa identifications for each subsample. Measures of diversity (i.e., taxa richness and Shannon diversity) and indices of biotic integrity were then determined based on the taxa counts within each subsample.

6.2.4 Sampling Methods

Macroinvertebrate samples were composited from 11 sites using the DEQ [2012] "traveling kick" method and a 1,000 µm mesh-size kick net. Samples were field preserved in ethanol and hand delivered to Rhithron Associates (Missoula, Montana) for analysis.

6.2.5 Laboratory Methods

Subsamples of organisms were obtained using Caton sub-sampling devices [Caton, 1991], divided into 30 grids, each approximately 6x6 cm. Each individual sample was thoroughly mixed in its jar(s), poured out and evenly spread into the Caton tray, and individual grids were randomly selected. The contents of each grid were examined under stereoscopic microscopes (Leica S6) using 10x-30x magnification. All aquatic invertebrates from each selected grid were sorted from the substrate and placed in 80 percent ethanol for subsequent identification. Grid selection, examination, and sorting continued until at least 500 (±10 percent) organisms were sorted. The final grid was completely sorted of all organisms. All unsorted sample fractions were retained and stored at the Rhithron laboratory.

Organisms were individually examined by certified taxonomists, using 10x-80x stereoscopic dissecting scopes (Leica S8E) and identified to the lowest practical level consistent with DEQ [DEQ, 2011a; 2012] data requirements, using appropriate published taxonomic references and keys. After slide-mounting, representative specimens of midges and worms were further examined at 200x-1,000x magnification using Leica DM1000 or Olympus BX 51 compound microscopes.

Identification, counts, life stages, and information about the condition of specimens were recorded on electronic bench sheets. Organisms that could not be identified to the taxonomic targets because of immaturity, poor condition, or lack of complete, current, and/or regionally-applicable published keys were left at appropriate taxonomic levels that were coarser than those specified. To obtain accuracy in richness measures, these organisms were designated as "not unique" if other specimens from the same group could be taken to target levels. Organisms designated as "unique" were those that could be definitively distinguished from other organisms in the sample. Identified organisms were preserved in 80 percent ethanol in labeled vials or, when appropriate, slide mounted and archived at the Rhithron laboratory.

6.2.6 Data Analysis Methods

Taxa lists and counts for each sample were compiled. Approximately 72 standard metric expressions of taxonomic, functional, and behavioral characteristics as well as tolerance attributes were calculated, using a customized laboratory information system application. Aquatic invertebrate metrics included the Hilsenhoff Biotic Index, with tolerance values and impact threshold modified for Montana fauna [DEQ 2011a; 2012], and the Metals Tolerance Index which was developed by McGuire [2010] for the Clark Fork River watershed. Table 5-2 shows scoring criteria applied by McGuire [2010] for these metrics.

In addition to these indices, the sites were also evaluated using the Montana Observed:Expected model where "Observed" (O) represents the taxa collected in a sample and "Expected" (E) is the probability of capture for taxa expected at a site of similar type, that has not been negatively impacted by environmental stressors. Thus, the Observed:Expected model was used to test how far a given macroinvertebrate community (O) deviates from those sampled at reference sites (E). To derive the Observed:Expected ratio, the model application R code [DEQ, 2012] was used. The Observed:Expected index varies between zero (no organisms are collected) and one (the observed number of taxa is equal to the number of taxa expected at reference sites). In Montana, the Observed:Expected index is scored as pass/fail. In montane and transition zones, an Observed:Expected score at least 0.90 is a "pass" and a score of less than 0.90 is a ""failure"" [DEQ, 2011a; 2012]. An explanation of the theory and processes of the model is included in Feldman and Jessup [2012].

A multimetric index (Montana Valley and Foothill Prairies bioassessment index) was also used to examine the data [Bollman, 1998]. Six calculated metrics (Table 6-3) are the index components. The Montana Valley and Foothill Prairies index is a quantitative measure which may be useful in assessing progress toward attainment of the general remediation goal of a "balanced,

integrated, adaptive community" of aquatic invertebrates, as envisioned by Karr and Dudley [1981]. To arrive at a Montana Valley and Foothill Prairies index score and impairment classification, each component metric value was calculated, based on the taxonomic, functional, and tolerance attributes of the aquatic invertebrate assemblage, and categorical scores were assigned to each metric. Metric scores were summed for a total score, which was expressed as a percentage of the maximum total score. The percentages were then used to classify sites into impairment categories according to the following scenario: at least 83 percent was classified as "unimpaired"; 53-83 percent was classified as "slightly impaired"; 17-53 percent was classified as "moderately impaired"; and less than 17 percent was classified as "severely impaired".

Table 6-2. Hilsenhoff Biotic Index (HBI) and Metals Tolerance Index (MTI): metrics modified and developed by McGuire [2010] for assessing biological integrity in the Clark Fork River basin.

Metric	"no impact" ----------"severe impact"						
HBI	<4.0	4.0 – 4.5	4.6 – 5.1	5.2 – 5.7	5.8 – 6.3	6.4 – 6.9	>6.9
MTI	<4.0	4.0 – 4.9	5.0 – 5.9	6.0 – 6.9	7.0 – 7.9	8.0 – 8.9	>8.9

Table 6-3. Component metrics and scoring scheme for the aquatic invertebrate-based Montana Valley and Foothill Prairies (MVFP) bioassessment index [Bollman, 1998].

Metric	Metric score			
	3	**2**	**1**	**0**
	Metric values			
Ephemeroptera richness	>5	5 – 4	3 – 2	<2
Plecoptera richness	>3	3 – 2	1	0
Trichoptera richness	>4	4 – 3	2	<2
Number of sensitive taxa	>3	3 – 2	1	0
Percent filterers	0 - 5	5 – 10	10 – 25	>25
Percent tolerant taxa	0 - 5	5 - 10	10 - 35	>35

6.2.7 Quality Control

Quality control procedures for initial sample processing and subsampling involved checking sorting efficiency. The check was conducted on one of the samples (12.5 percent) by an independent technician who microscopically re-examined 100 percent of sorted substrate from each sample.

The sample processing quality control technician poured the sorted substrate from a processed sample out into a Caton tray. Portions of substrate were systematically removed and re-examined until 100 percent of the substrate was re-sorted. All organisms that were missed were counted

and this number was added to the total number obtained in the original sort. Sorting efficiency was evaluated by applying the following calculation:

$$SE = \frac{n_1}{n_1 + n_2} \times 100$$

where: SE is the sorting efficiency (percent), n_1 is the total number of specimens in the first sort, and n_2 is the total number of specimens obtained in the second sort.

Quality control procedures for taxonomic determinations of invertebrates involved checking accuracy, precision, and enumeration. One sample (12.5 percent) was randomly selected, and all organisms re-identified and counted by an independent taxonomist. The percent taxonomic disagreement and percent difference in enumeration parameters were calculated. Routinely, discrepancies between the original identifications and the quality control identifications are discussed among the taxonomists, and necessary rectifications to the data are made. Discrepancies that cannot be rectified by discussions are routinely sent out to taxonomic specialists for identification. However, taxonomic certainty for identifications in this project was high and no external verifications were necessary.

6.3 RESULTS

6.3.1 Diversity

A total of 94 separate macroinvertebrate taxa were observed in the subsampled portions of the 2022 SSTOU samples (Table 6-4). The orders with the greatest diversity observed were midges (25 taxa), followed by caddisflies (17 taxa), true flies (7 taxa), bloodworms, mayflies, and snails (6 taxa for each) (Table 6-4).

In 2022, taxa richness in the SSTOU sites sampled ranged from 29-41 (Table 6-5). Since 2015, median taxa richness has ranged from about 30-38 with the highest median richness at Site SS-19 (Figure 6-1). Taxa richness appears to have increased between 2015-2022 at all sites, with the most striking increases at Sites SS-16B and SS-19 (Figure 6-2).

Shannon diversity index values ranged from 3.16-4.00 in 2022 (Table 6-5). Since 2015, median Shannon diversity values have ranged from about 3.1-3.8 (Figure 6-3). Shannon diversity appears to have increased between 2015-2022 at the downstream-most four sites (Sites SS-15A, SS-16B, SS-17D, and SS-19) (Figure 6-4).

Table 6-4. Macroinvertebrate taxa observed in the Streamside Tailings Operable Unit, 2022.

Common Name (Order)	Taxa	Notes
Beetles	*Cleptelmis addenda*	

Common Name (Order)	Taxa	Notes
	Microcylloepus	
	Nectoporus	
	Optioservus	
	Zaitzevia	
Bivalves (Clams)	*Pisidiidae*	*Sphaeriidae*
Bloodworms	*Alotanypus*	
	Cryptochironomus	
	Micropsectra	
	Microtendipes	
	Nanocladius	
	Orthocladius	
Caddisflies	*Amiocentrus aspilus*	
	Brachycentridae	
	Brachycentrus occidentalis	
	Cheumatopsyche	
	Glossosoma	
	Helicopsyche	
	Hydropsyche	
	Hydropsychidae	
	Hydroptila	
	Hydroptilidae	
	Lepidostoma	
	Limnephilidae	
	Nectopsyche	
	Neophylax rickeri	
	Oecetis	
	Protoptila	
	Psychoglypha	
Crane flies	*Tipula*	
Crustaceans	*Caecidotea*	
	Cladocera	Water fleas
	Copepoda	
	Hyalella	
	Ostracoda	
Dragonflies	*Gomphidae*	
	Ophiogomphus	
Flatworms	*Trepaxonemata*	
Leeches	*Helobdella stagnalis*	
	Theromyzon	

Common Name (Order)	Taxa	Notes
Mayflies	*Baetis*	
	Baetis tricaudatus	*Baetis tricaudatus* **c**omplex
	Callibaetis	
	Ephemerella	
	Iswaeon	
	Tricorythodes	
Midges	*Apsectrotanypus*	*Radotanypus*
	Ceratopogoninae	No-see-ums
	Chironomini	
	Corynoneura	
	Cricotopus (Cricotopus)	
	Cricotopus (Isocladius)	
	Dasyhelea	
	Eukiefferiella brehmi	*Eukiefferiella Brehmi* group
	Orthocladiinae	*Cricotopus / Orthocladius*
	Pagastia	
	Parametriocnemus	
	Paratendipes	
	Pentaneura	
	Phaenopsectra	
	Polypedilum	
	Procladius	
	Prodiamesa	
	Psectrocladius	
	Tanypodinae	
	Tanytarsini	
	Tanytarsus	
	Thienemanniella	
	Thienemannimyia	*Thienemannimyia* group
	Tvetenia bavarica	*Tvetenia Bavarica* group
	Tvetenia vitracies	*Tvetenia tshernovskii*
Mites	*Acari*	
Ribbon worms	*Prostoma*	
Roundworms	*Nematoda*	
Snails	*Galba*	
	Gastropoda	
	Gyraulus	
	Lymnaeidae	
	Physella	

Common Name (Order)	Taxa	Notes
	Stagnicola	
Stoneflies	*Chloroperlidae*	
	Isoperla	
True bugs	*Corixidae*	Water boatmen
True flies	*Atherix*	
	Conchapelopia	
	Hemerodromia	
	Sciomyzidae	
	Simulium	
	Stratiomyidae	
	Tabanidae	
Worms	*Enchytraeidae*	
	Naididae	
	Naididae	*Tubificinae*
	Tubificidae	

Table 6-5. Taxa richness and Shannon diversity for macroinvertebrate assemblages at Silver Bow Creek sites, 2022.

Site ID	Station name	Taxa Richness	Shannon Diversity
SS-07	Silver Bow Creek below Butte WWTP	29	3.75
SS-10A	Silver Bow Creek above Sand Creek	39	3.79
SS-13	Silver Bow Creek in Reach L	41	3.25
SS-14	Silver Bow Creek at Miles Crossing	37	3.16
SS-15A-2	Silver Bow Creek above German Gulch (Alternate Site)	32	3.52
SS-16B	Silver Bow Creek in Reach P near Fairmont	35	4.00
SS-17D	Silver Bow Creek below Stewart Street Opportunity	38	3.64
SS-19	Silver Bow Creek at Frontage Road	40	4.00

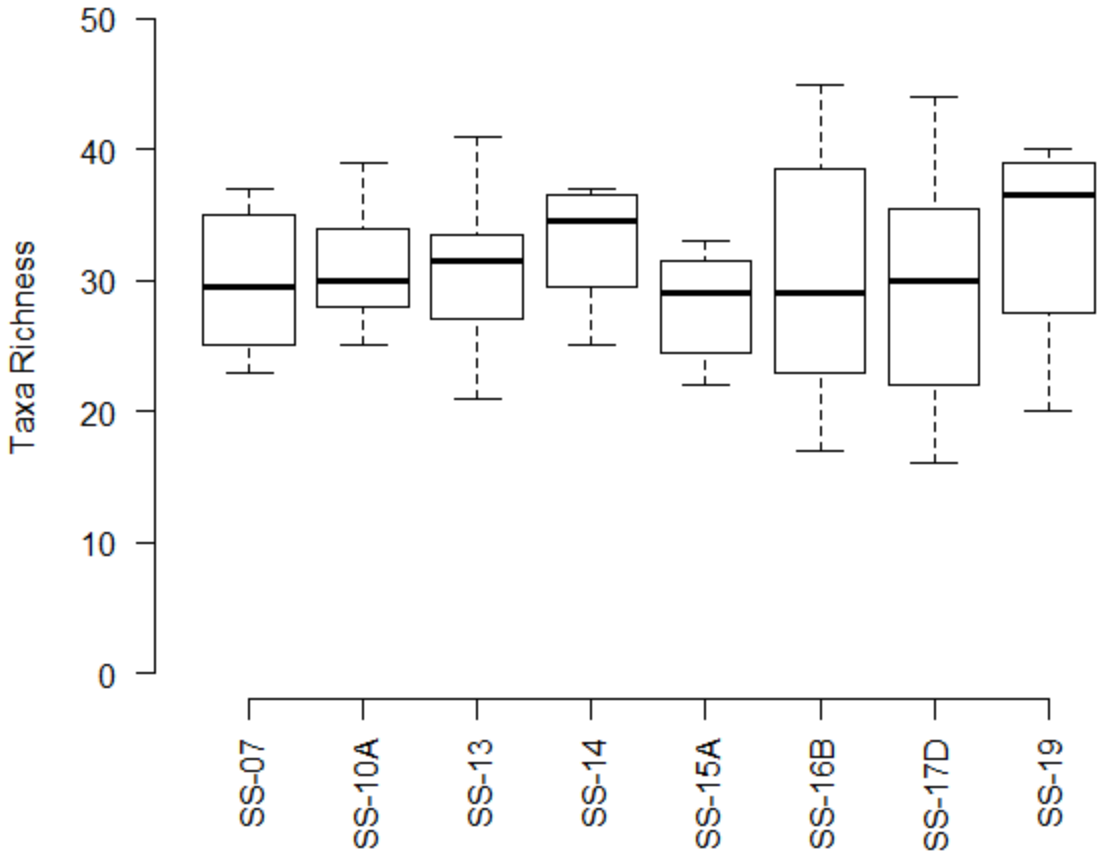


Figure 6-1. Boxplots of taxa richness for macroinvertebrate assemblages at Silver Bow Creek sites, 2015-2022.

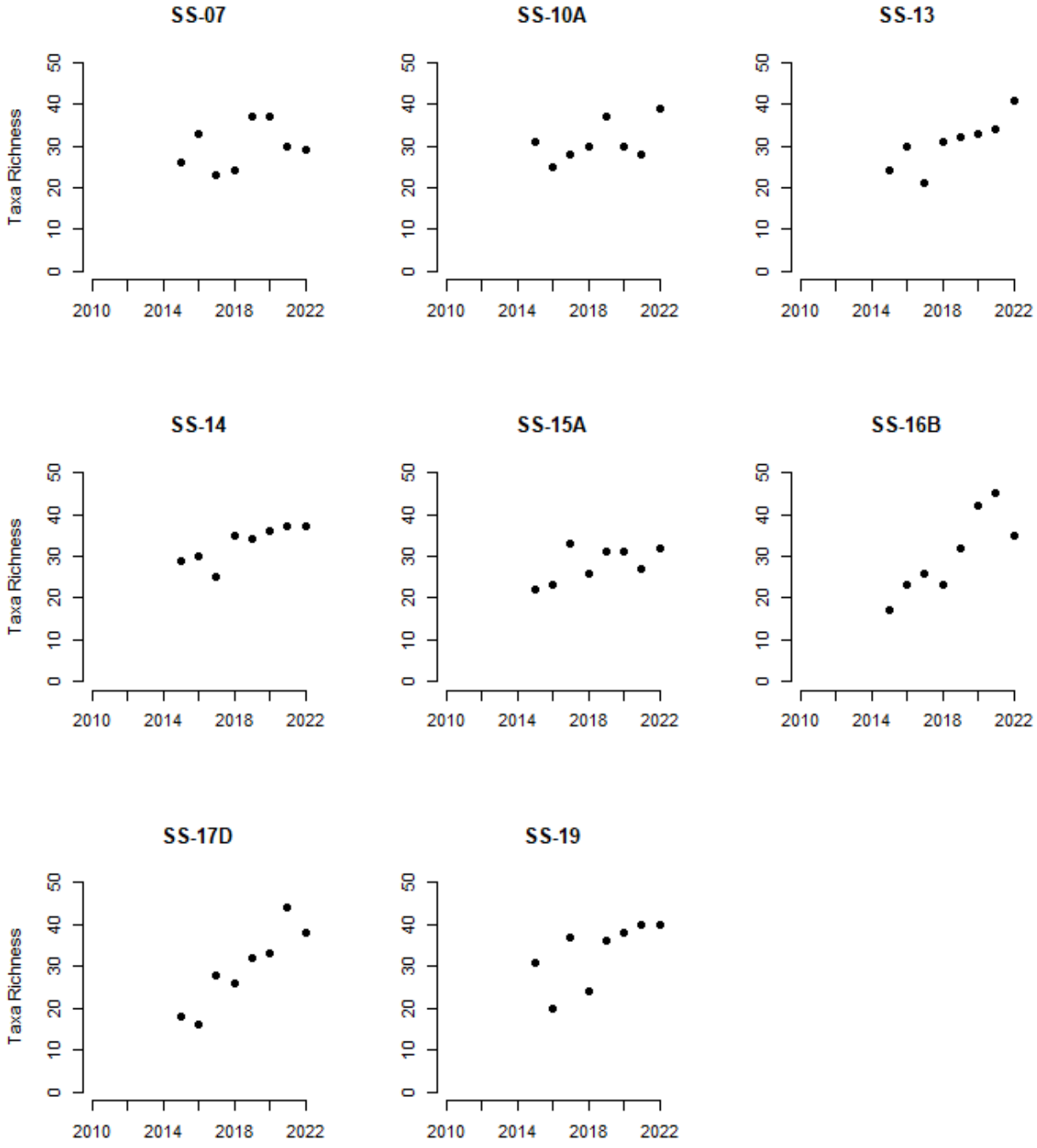


Figure 6-2. Taxa richness for macroinvertebrate assemblages at Silver Bow Creek sites, 2015-2022.

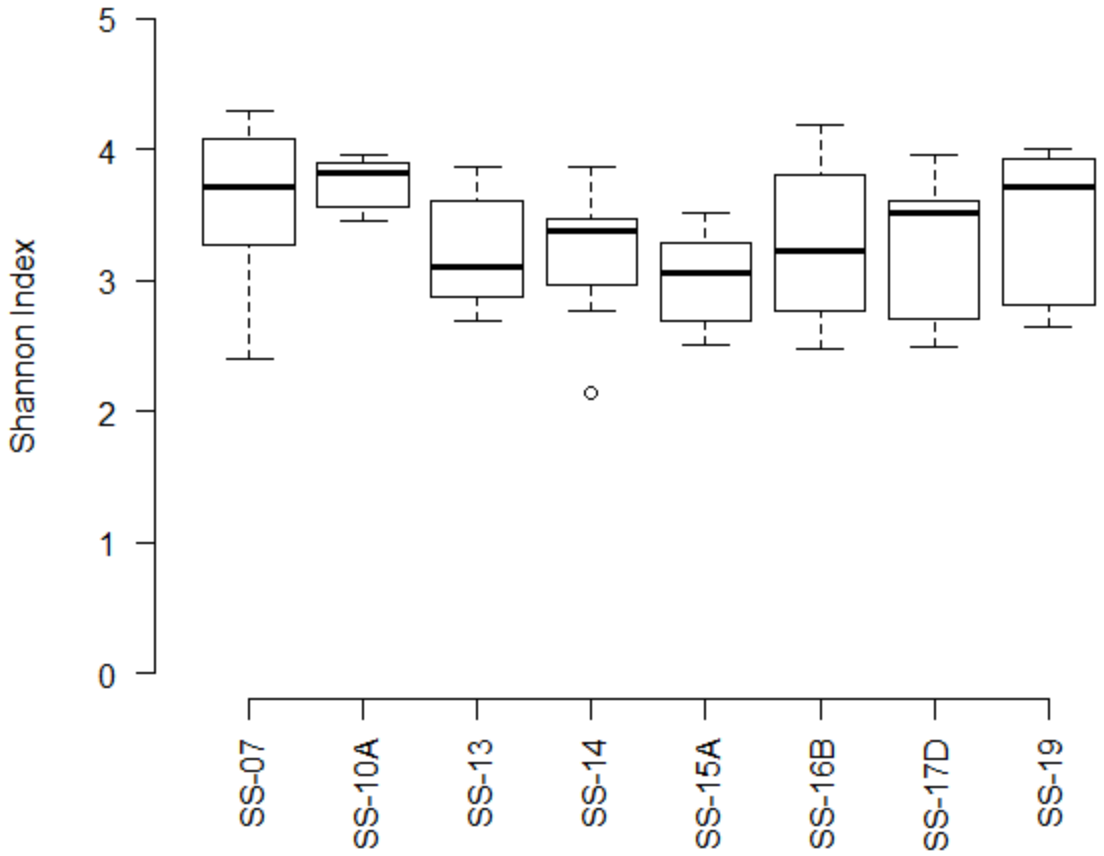


Figure 6-3. Boxplots of Shannon diversity for macroinvertebrate assemblages at Silver Bow Creek sites, 2015-2022.

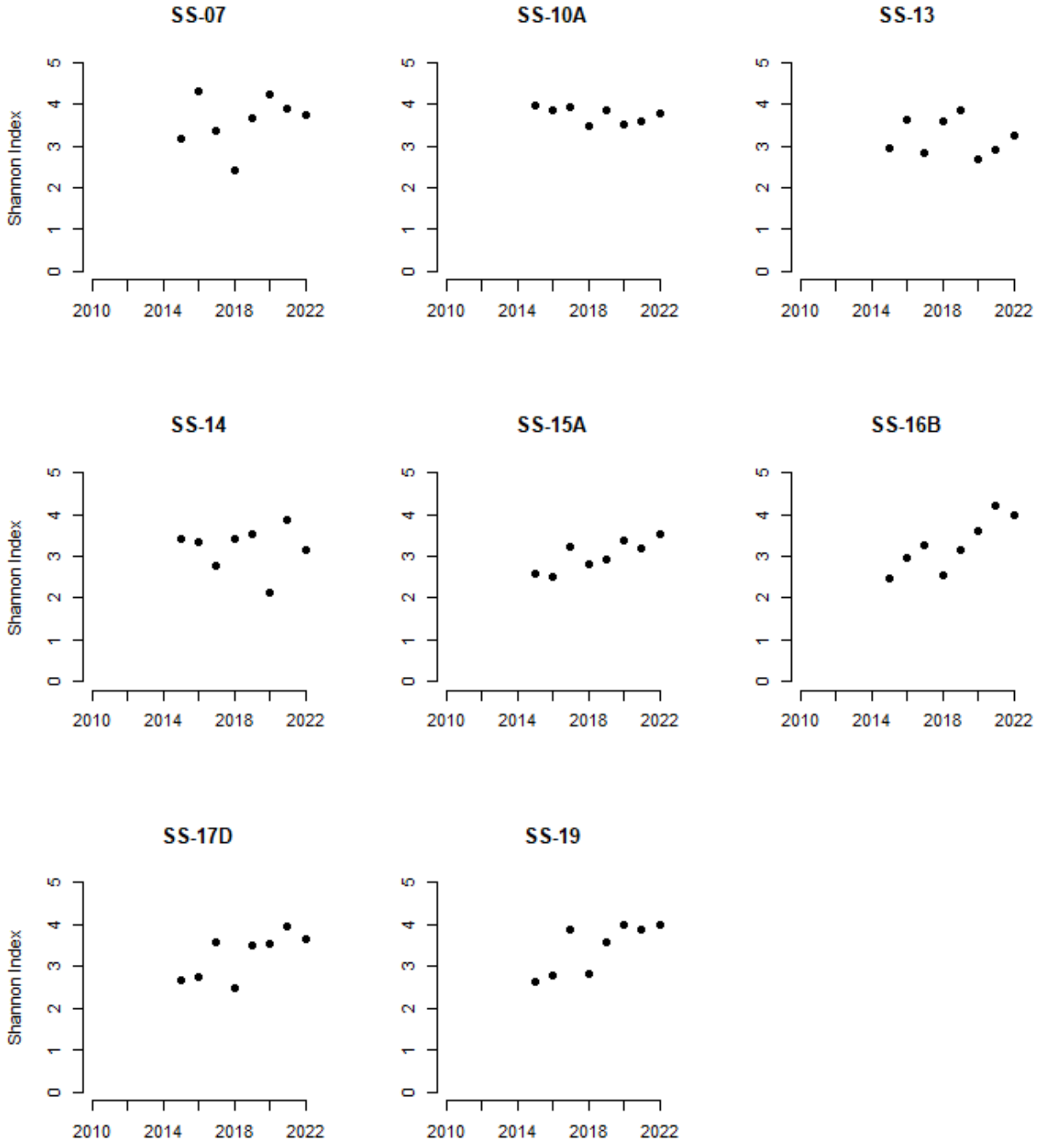


Figure 6-4. Shannon diversity for macroinvertebrate assemblages at Silver Bow Creek sites, 2015-2022.

6.3.2 Bioassessment Indices

All sites were classified as at least "mildly" impaired in 2022 for at least three of the four bioassessment indices (Table 6-6). All sites were at least moderately impaired based on the Montana Valley and Foothill Prairies and Observed:Expected indices and all but three sites were moderately disturbed based on the Hilsenhoff Biotic Index (Table 6-6). Impairment levels were lowest for the Metals Tolerance Index with half the sites achieving scores indicative of no impairment (Table 6-6).

Table 6-6. Scores and impairment classifications for four selected macroinvertebrate bioindices for each Silver Bow Creek monitoring site, 2022.

Site ID	Silver Bow Creek Site Location	Montana Valley and Foothill Prairies	Observed: Expected	Hilsenhoff Biotic Index	Metals Tolerance Index
SS-07	Below Butte WWTP	16.7	0.4	5.8	4.3
SS-10A	Above Sand Creek	27.8	0.5	5.5	3.7
SS-13	Reach L	33.3	0.6	4.7	3.5
SS-14	Miles Crossing	27.8	0.5	4.7	3.5
SS-15A-2	Above German Gulch	22.2	0.6	5.4	4.2
SS-16B	Reach P near Fairmont	33.3	0.5	5.3	3.7
SS-17D	Stewart Street at Opportunity	22.2	0.5	4.1	4.0
SS-19	Frontage Road	38.9	0.5	5.5	4.0

Result indicates no impairment.
Result indicates mild impairment.
Result indicates moderate impairment.
Result indicates severe impairment.

6.3.2.1 Montana Valley and Foothill Prairies

Median scores for the Montana Valley and Foothill Prairies index over the last 13-year period ranged from about 17-40 in the SSTOU (Table 6-6). Median scores gradually increased with downstream distance across the SSTOU between Sites SS-07 and SS-19 (Figure 6-5). Despite the variance in median scores among sites, all sites had median scores below the threshold for "mild" impairment (Figure 6-5).

Montana Valley and Foothill Prairies index scores have been in the "moderately" or "severely" impaired range at all sites since 2010 (Figure 6-6).

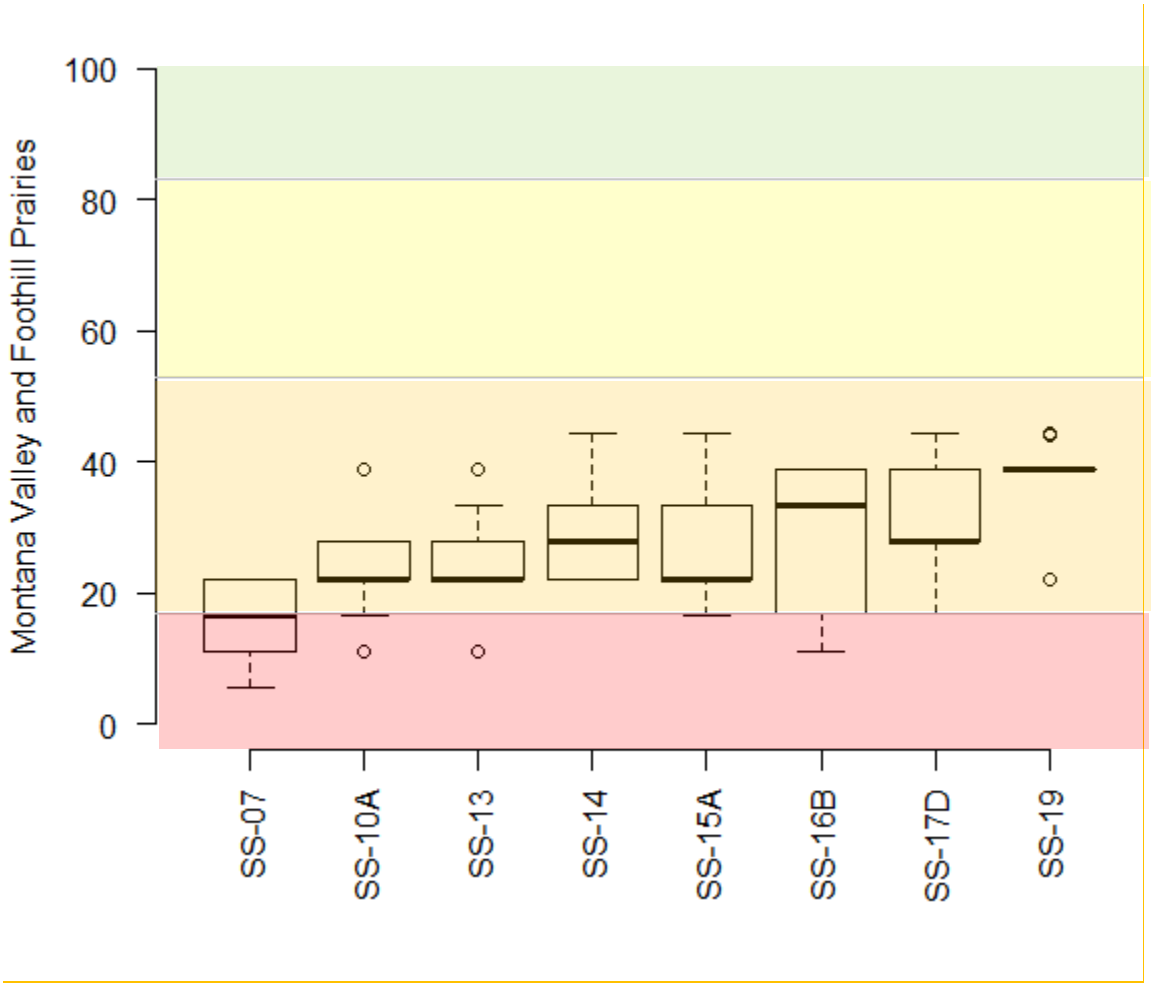


Figure 6-5. Boxplots of Montana Valley and Foothill Prairies index scores for macroinvertebrate assemblages at Silver Bow Creek sites, 2010-2022. Impairment thresholds are represented by horizontal lines: less than 17 is severely impaired, 17-53 is moderately impaired, 53-83 is mildly impaired, and more than 83 is unimpaired.

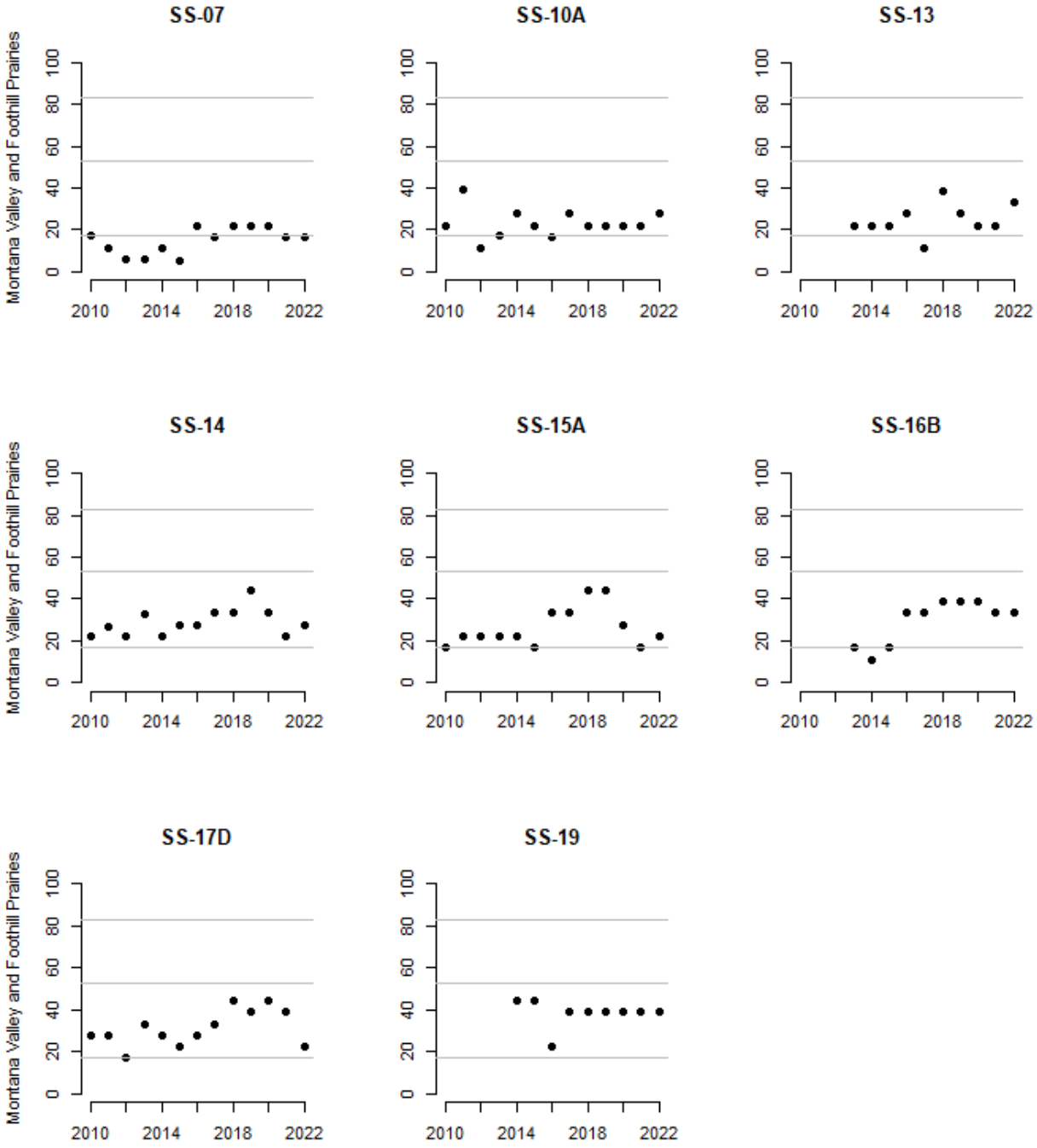


Figure 6-6. Montana Valley and Foothill Prairies index scores for macroinvertebrate assemblages at Silver Bow Creek sites, 2010-2022. Impairment thresholds are represented by horizontal lines: less than 17 is severely impaired, 17-53 is moderately impaired, 53-83 is mildly impaired, and more than 83 is unimpaired.

6.3.2.2 Observed:Expected

Median scores for the Observed:Expected index over the last 13-year period have ranged from about 0.25-0.40 in the SSTOU (Table 6-6). Median scores were similar among the sites (Figure 6-7). All median scores, and outliers, were well below the "no impairment" threshold of 0.90 (Figure 6-7).

Observed:Expected index scores appear to have increased at nearly all sites since 2018 (Figure 6-8). Prior to 2018, scores at most sites were relatively consistent (Figure 6-8). At Site SS-16B, scores increased steadily since monitoring began in 2013 (Figure 6-8).

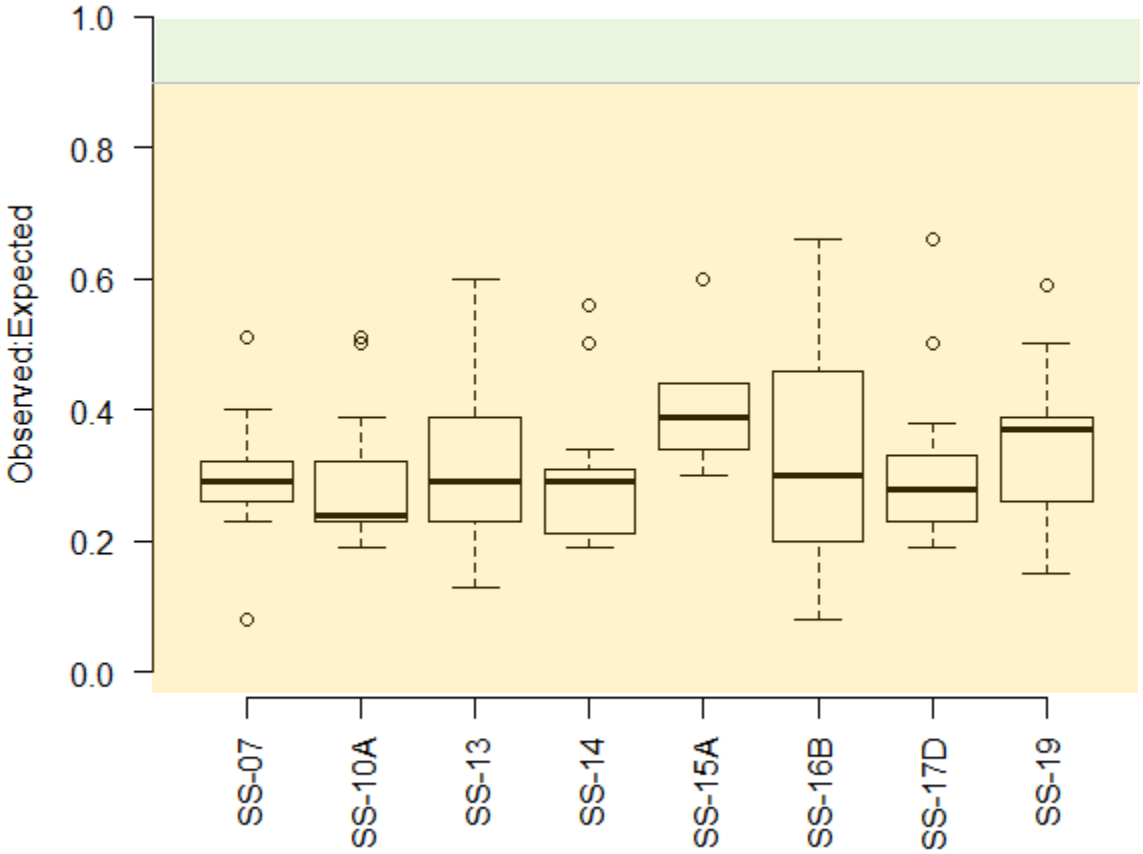


Figure 6-7. Boxplots of Observed:Expected index scores for macroinvertebrate assemblages at Silver Bow Creek sites, 2010-2022. Impairment threshold is represented by horizontal line: less than 0.9 is impaired and more than 0.9 is unimpaired.

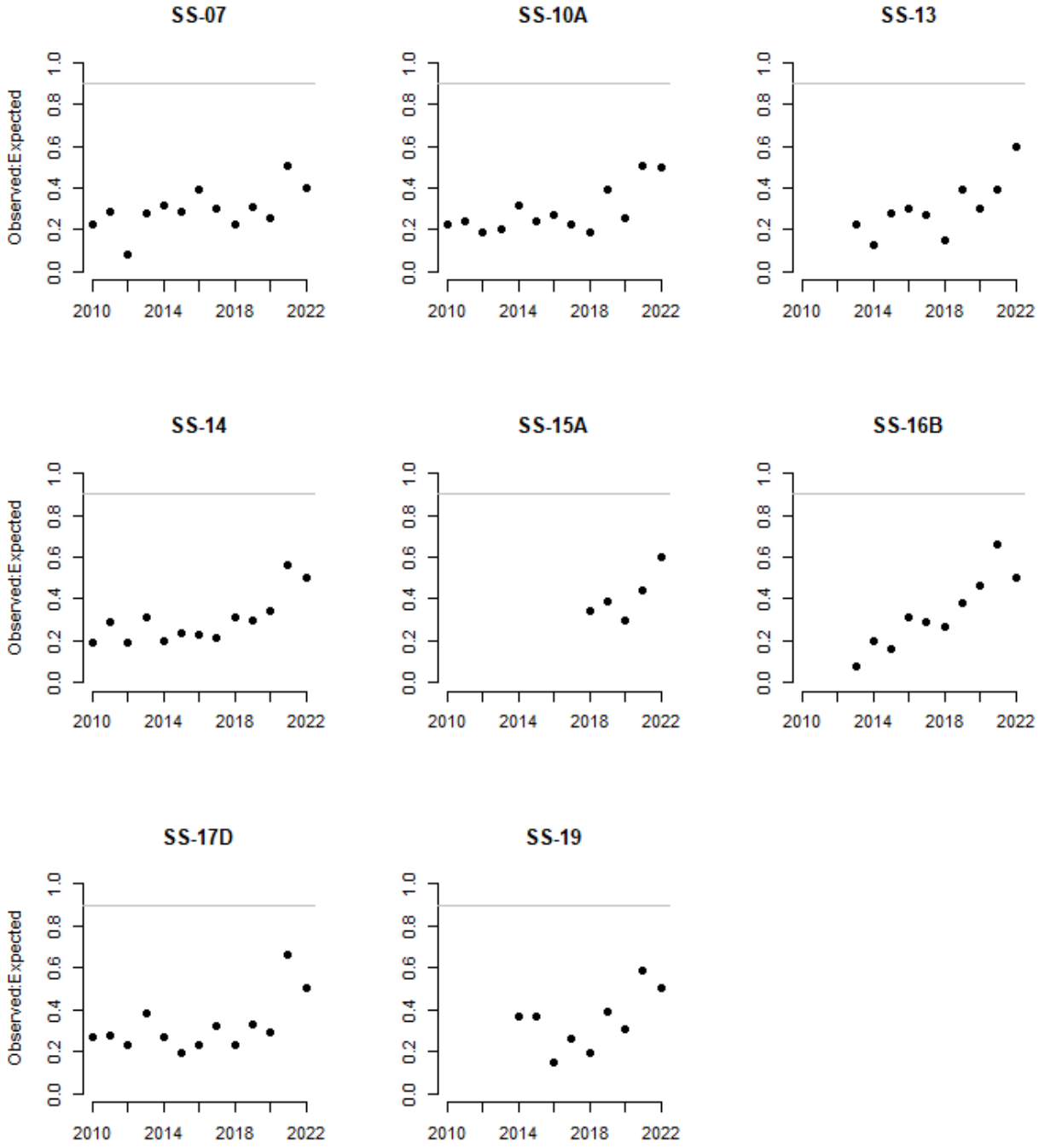


Figure 6-8. Observed:Expected index scores for macroinvertebrate assemblages at Silver Bow Creek sites, 2010-2022.[58] Impairment threshold is represented by horizontal line: less than 0.9 is impaired and more than 0.9 is unimpaired.

[58] This index was not calculated for this site prior to 2018.

6.3.2.3 Hilsenhoff Biotic index

Median scores for the Hilsenhoff Biotic Index scores over the last 13-year period have ranged from about 3.5-6.2 in the SSTOU (Table 6-6). Median scores tended to decline (i.e., conditions improved according to this index) with downstream distance across the SSTOU (Figure 6-9). Median scores were impaired at all sites except sites SS-16B and SS-17D which were below the impairment threshold (Figure 6-9).

Hilsenhoff Biotic Index scores have been variable at each site but there does not appear to be any strong evidence of increasing or decreasing trends through time (Figure 6-10). The index scores at each site do appear to be following multi-year cycles which appear synchronized among sites to a certain degree. The synchronized, multi-year trends suggest this index may be reflecting regional factors such as annual precipitation trends (Figure 6-10).

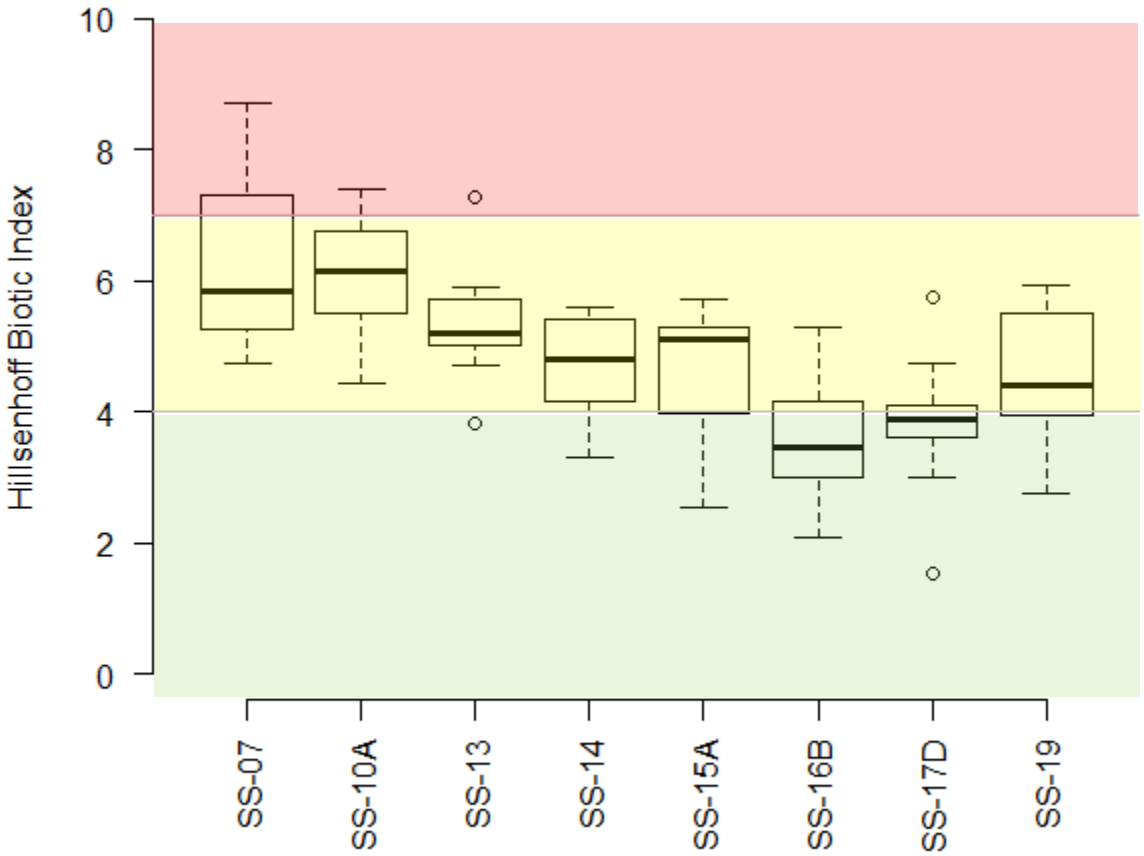


Figure 6-9. Boxplots of Hilsenhoff Biotic Index scores for macroinvertebrate assemblages at Silver Bow Creek sites, 2010-2022. Impairment thresholds are represented by horizontal lines: less than 4 is unimpaired and more than 7 is severely impaired.

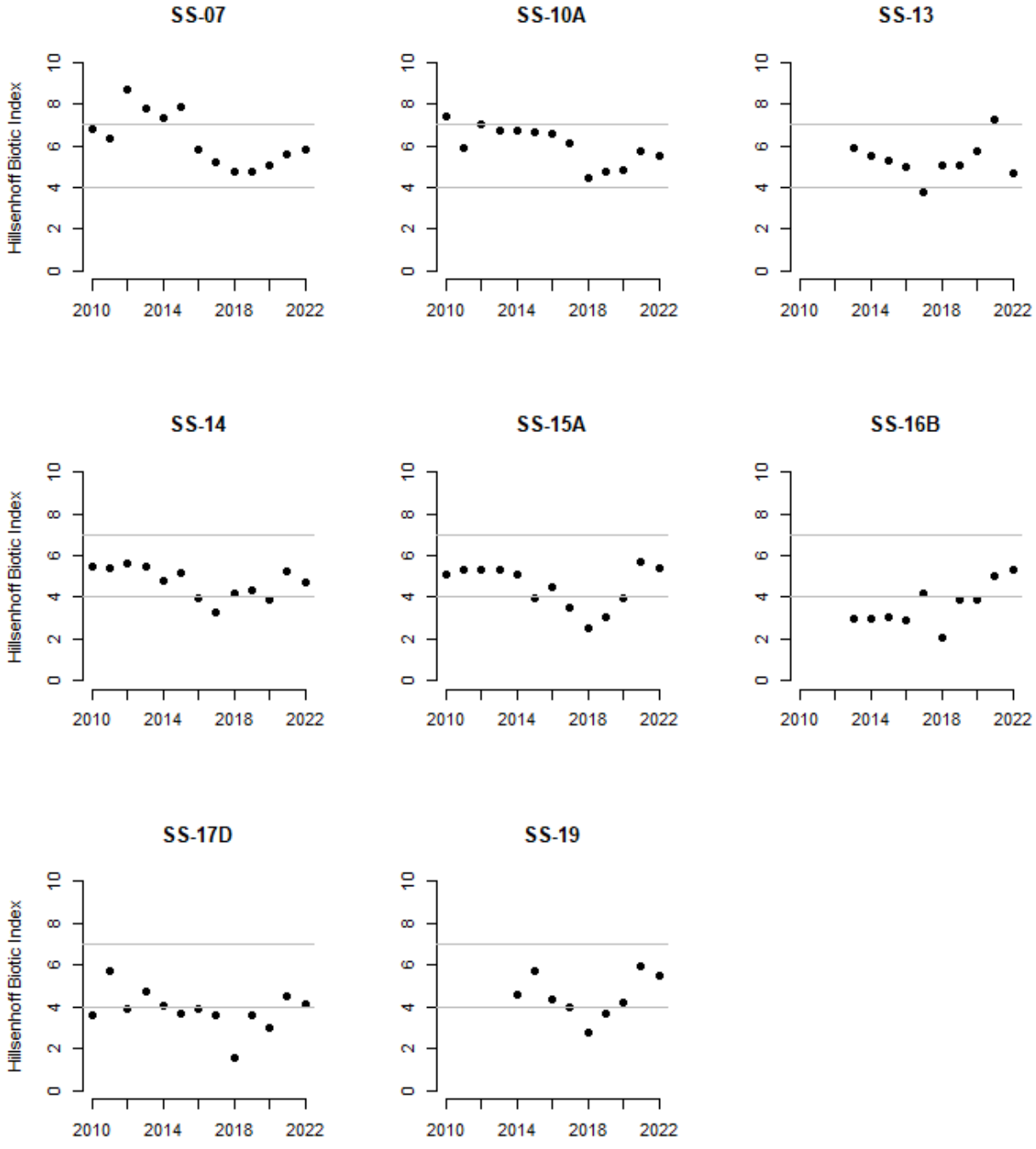


Figure 6-10. Hilsenhoff Biotic Index scores for macroinvertebrate assemblages at Silver Bow Creek sites, 2010-2022. Impairment thresholds are represented by horizontal lines: less than 4 is unimpaired and more than 7 is severely impaired.

6.3.2.4 Metals Tolerance Index

Median scores for the Metals Tolerance Index scores over the last 13-year period have ranged from about 4.5-3.5 in the SSTOU (Table 6-6). Median scores tended to decline (i.e., conditions improved according to this index) slightly with downstream distance across the SSTOU (Figure 6-11). Median scores were close to the boundary between impaired and un-impaired at all sites (Figure 6-11).

Metals Tolerance Index scores were relatively consistent through time at each site (Figure 6-12). As with the results of the Hilsenhoff Biotic Index, Metals Tolerance Index scores at certain sites (Sites SS-15A, SS-17D, and SS-19) appeared to represent a cyclical pattern extending over multiple years (Figure 6-12).

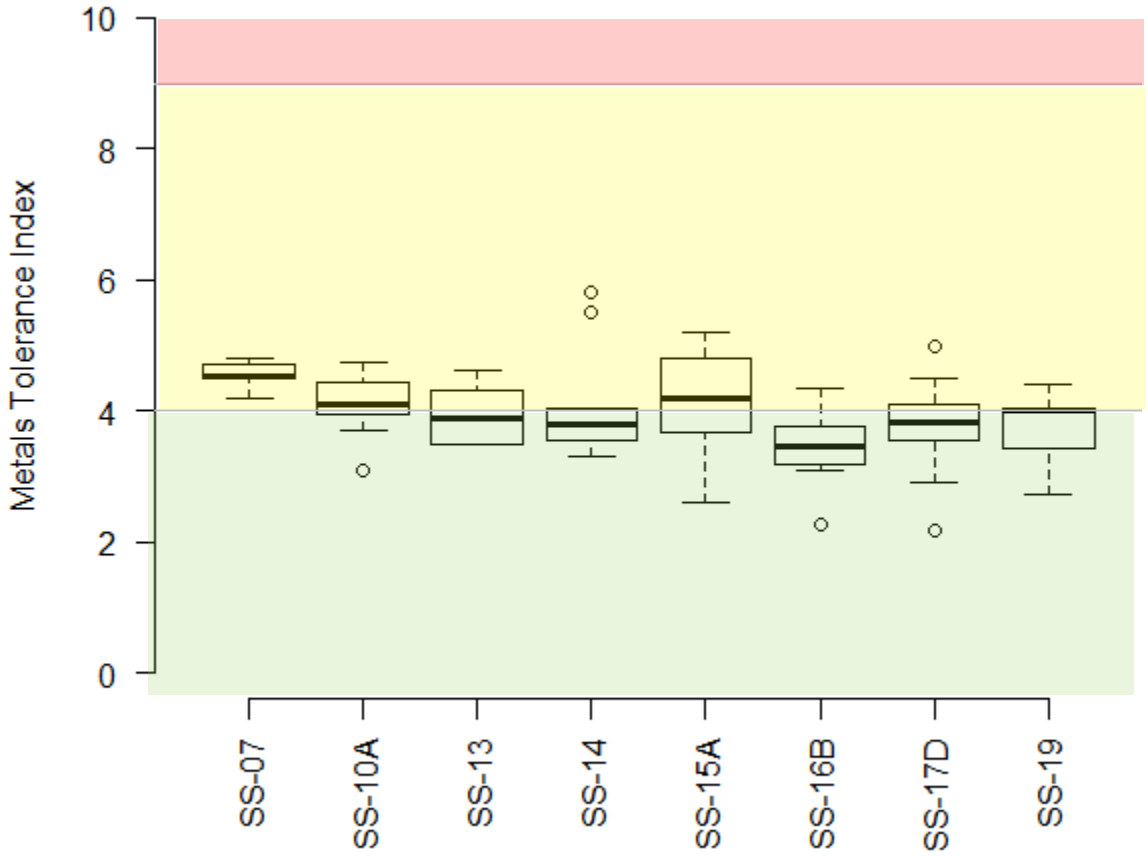


Figure 6-11. Boxplots of Metals Tolerance Index scores for macroinvertebrate assemblages at Silver Bow Creek sites, 2010-2022. Impairment thresholds are represented by horizontal lines: less than 4 is unimpaired and more than 9 is severely impaired.

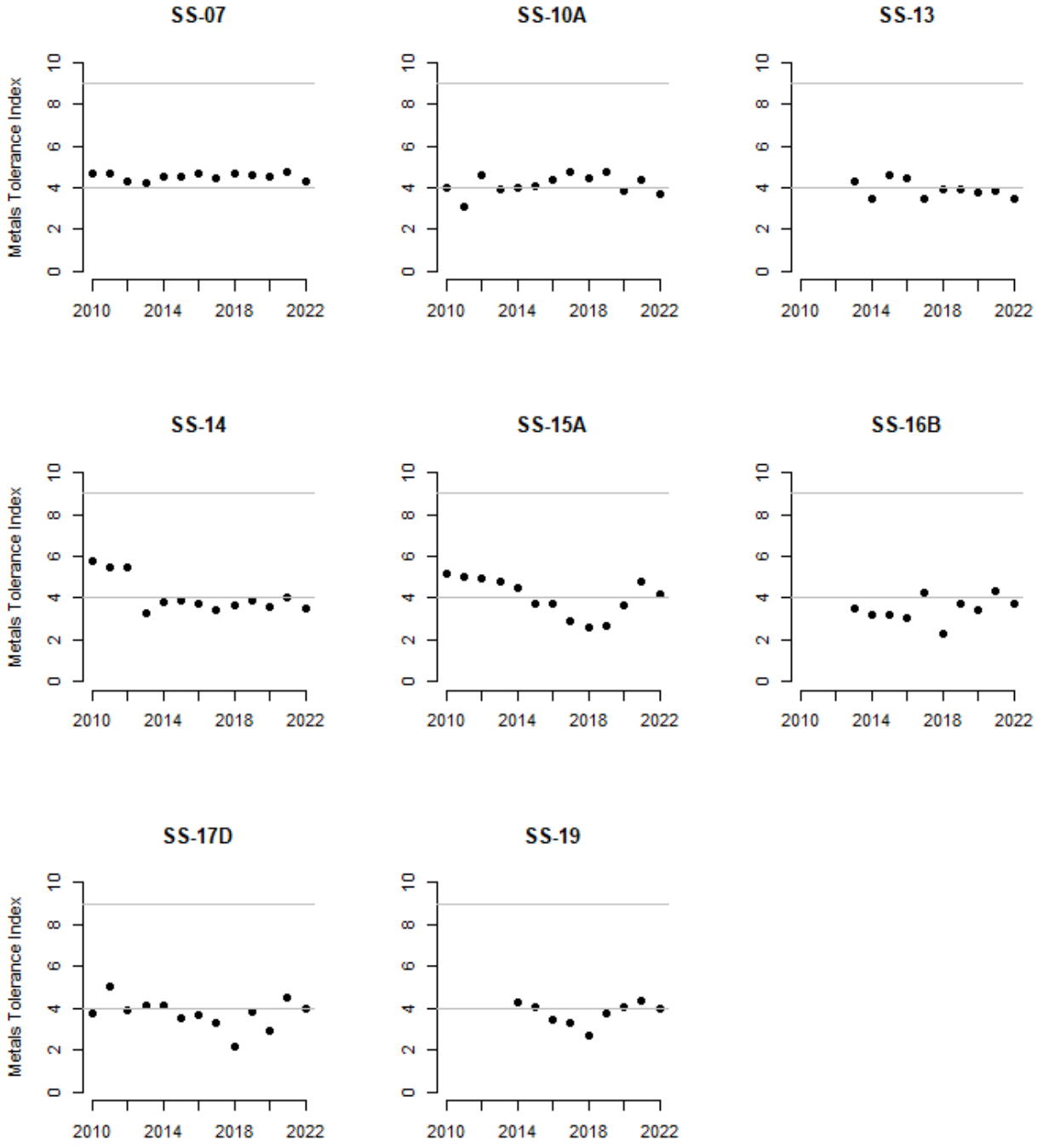


Figure 6-12. Metals Tolerance Index scores for macroinvertebrate assemblages at Silver Bow Creek sites, 2010-2022. Impairment thresholds are represented by horizontal lines: less than 4 is unimpaired and more than 9.0 is severely impaired.

6.3.1 Quality Control

The sample from Site SS-07 was randomly selected for quality control analyses in 2022. Sorting efficiency for this sample was 98.91 percent. The percent taxonomic disagreement for the sample was 3.83 percent. Percent difference in enumeration for the sample was 1.14 percent.

6.4 DISCUSSION

Biotic monitoring is intended to demonstrate ecological links to geochemical trends observed within the SSTOU monitoring program. Three predominant geochemical trends have been observed over the last decade. Each is worth considering in regard to the macroinvertebrate integrity trends over time: steadily declining metal contaminant levels as a result of the remedy, sharply reduced ammonia concentrations due to municipal wastewater treatment upgrades in 2016, and major changes the ionic composition and conductivity levels in the stream due to the input of industrial treated water from the Berkeley Pit since 2019.

Holistic measures of macroinvertebrate biological integrity indicate steadily improving conditions over time in the SSTOU, particularly in stream sections remediated more recently. These results are consistent with the steady decline in metal contaminant and nutrient levels in the stream. Taxa richness increased steadily over time at all sites. Increases in taxa richness were most pronounced in the Subarea 4 sites, which were remediated most recently. For example, in Silver Bow Creek near Fairmont (Site SS-16B), taxa richness has more than doubled from 17 taxa in 2015 to 35 taxa in 2022. Shannon diversity values also consistently increased in the more recently remediated Subarea 3 and 4 sites. For example, at the lowermost site (Site SS-19), Shannon diversity increased from 2.64 in 2015 to 4.00 in 2022.

More specific biotic integrity indices applied to the SSTOU samples over time have had more mixed results, some of which do not appear to reflect the geochemical changes in the stream over time. The Montana Valley and Foothill Prairies index, a measure of overall biointegrity, has consistently rated all sites as either "moderately" or, less commonly, "severely" impaired. Results of the Montana Valley and Foothill Prairies index show little evidence of improving conditions over time in the SSTOU.

The Observed:Expected index, which compares the species composition in a given site sample to expected composition from a theoretical reference site sample, consistently demonstrated relatively steady conditions until 2018 and then improving conditions since 2018. The timing of these changes in this index may have been influenced by the wastewater plant upgrades, the addition of treated pit water, or both. Although scores of the Observed:Expected index in the SSTOU have improved more recently, all site samples throughout the period of record have indicated "impaired" condition.

The Hilsenhoff Biotic Index and Metals Tolerance Index each demonstrated mild improvement over time at some sites, but results were not consistent throughout the SSTOU. Both indices

demonstrated mild improvement in condition with downstream distance from Butte, which is at the upstream end of the operable unit. Curiously, each of these indices also appeared to demonstrate multi-year sinusoidal patterns potentially suggesting the influence of longer-term natural climate cycles.

Quality control results were within Rhithron Associate's internal quality standards, derived from Stribling et al. [2003], and consistent with industry norms (i.e., at least 95 percent for sorting efficiency and less than 5 percent for percent taxonomic disagreement and percent differences in enumeration).

7.0 CONCLUSIONS

This chapter concludes the 2022 monitoring report and provides an evaluation of monitored conditions in relation to performance standards specified in the SSTOU ROD [DEQ and EPA, 1995]. Numeric performance standards are specified in the ROD for surface water and groundwater COC concentrations [DEQ and EPA, 1995], and therefore this chapter focuses on those media. While more stringent standards promulgated since the issuance of the ROD have not yet been formally adopted as performance standards for this operable unit, this monitoring report uses the more stringent of the ROD's Circular WQB-7 [MDHES, 1994] standards or current Circular DEQ-7 [DEQ, 2019a] standards as the goal to be attained for purposes of evaluation.

For surface water and groundwater, sample concentrations from this monitoring year are compared to performance goals at each SSTOU surface water monitoring site (Sites SS-07, SS-10A, SS-13, SS-14, SS-15A-2, SS-16B, SS-17D, and SS-19; Figure 1-2), groundwater monitoring wells in the vicinity of the Mine Waste Relocation Repository (Wells 1GW-1056, LYP-07, MW-2B, MW-2C, and MW-2D; Figure 3-1), and groundwater monitoring floodplain well clusters (Colorado Tailings, Rocker, Nissler, Silver Bow, Ramsay Flats, Miles Crossing, Fairmont, Crackerville, Stuart, and Frontage Road Clusters; Figure 3-1). A summary of performance goal exceedances are provided in Table 7-1 (surface water), Table 7-2 (groundwater in the vicinity of the Mine Waste Relocation Repository), and Table 7-3 (groundwater in the SSTOU floodplain). In addition, this chapter provides a brief comparison of COC concentrations between surface water sites and in groundwater clusters to identify potential remaining COC source areas within the SSTOU.

Major remedial work in the SSTOU was completed by the end of 2015. Cleanup consisted of excavation of tailings (mine waste containing heavy metals) and related impacted soils from the floodplain of Silver Bow Creek, reconstruction of the stream channel and floodplain, and revegetation. More recent additional repair work was completed in Subareas 1 and 2 between 2016 and 2018 to address small deposits of remaining tailings-impacted soils. These data will guide managers in identifying progress or problems in the recovery of the operable unit following implementation of those remedial actions.

Table 7-1. Attainment of surface water performance goals for contaminants of concern at sampling sites in the Streamside Tailings Operable Unit (SSTOU), 2022.

Subarea	Site ID	Site Location	Contaminant of Concern					
			Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
1	SS-07	Silver Bow Creek below Butte WWTP						
	SS-10A	Silver Bow Creek above Sand Creek						
2	SS-13	Silver Bow Creek in Reach L						
	SS-14	Silver Bow Creek at Miles Crossing						
3	SS-15A	Silver Bow Creek above German Gulch						
4	SS-16B	Silver Bow Creek in Reach P near Fairmont						
	SS-17D	Silver Bow Creek at Opportunity						
	SS-19	Silver Bow Creek at Frontage Road						

Failure to attain the performance goal during one to three quarterly monitoring periods.

Failure to attain the performance goal during all quarterly monitoring periods.

Table 7-2. Attainment of groundwater performance goals for contaminants of concern in monitoring wells of the Mine Waste Relocation Repository in the Streamside Tailings Operable Unit, 2022.

Site	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
1GW-1056						
LYP-07						
MW-2B						
MW-2C						
MW-2D						

Failure to attain the performance goal during one monitoring period.

Failure to attain the performance goal during both monitoring periods.

Table 7-3. Attainment of groundwater performance goals for contaminants of concern in floodplain monitoring wells located along Silver Bow Creek in the Streamside Tailings Operable Unit, 2022.

Cluster	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
Colorado Tailings						
Rocker						
Nissler						
Silver Bow						
Ramsay Flats						
Miles Crossing						
Fairmont						
Crackerville						
Stuart						
Frontage Road						

Failure to attain the performance goal in one monitoring well sample.

Failure to attain the performance goal in both monitoring well samples.

7.1 SUBAREA 1

Major remediation in Subarea 1 was completed between 1999-2003. Some additional remedial actions occurred in Subareas 1 and 2 recently to address some remaining COC sources in the floodplain. Surface water sites in Subarea 1 include Sites SS-07 and SS-10A (Figure 1-2). Groundwater monitoring clusters in Subarea 1 include the Colorado Tailings, Rocker, and Nissler Clusters (Figure 3-1).

7.1.1 Surface Water

7.1.1.1 Silver Bow Creek below Butte WWTP (SS-07)

Site SS-07 is located at the upstream end of Subarea 1, immediately downstream from the Butte WWTP outfall. Site SS-07 is the upstream-most site in the SSTOU. Remediation was completed at Site SS-07 in 2000. In addition to representing conditions at the upstream-most portion of the SSTOU, Site SS-07 provides an assessment of the influence of the WWTP on water chemistry and biological integrity in Silver Bow Creek. Site SS-07 is co-located with USGS Gage 12323250. No surface water performance goals were exceeded at Site SS-07 in 2022 (Table 7-1).

7.1.1.2 Silver Bow Creek above Sand Creek (SS-10A)

Site SS-10A is located at the downstream end of Subarea 1, immediately upstream from the Sand Creek confluence. Remediation at Site SS-10A was completed in 2003. Site SS-10A

represents conditions at the downstream end of Subarea 1. In 2022, performance goals were exceeded at Site SS-10A for copper and mercury (Table 7-1).

7.1.2 Groundwater

7.1.2.1 Colorado Tailings

The Colorado Tailings Cluster is located approximately one mile downstream from the upstream end of Subarea 1. In 2022, there were no performance goal exceedances in groundwater samples from the Colorado Tailings Cluster (Table 7-3).

7.1.2.2 Rocker

The Rocker Cluster is approximately two miles upstream from surface water Site SS-10A. In 2022, the performance goals were exceeded for arsenic, cadmium, and zinc in the Rocker Cluster (Table 7-3).

7.1.2.3 Nissler

The Nissler Cluster is located approximately 1.5 miles downstream from the Rocker Cluster and is also located upstream from Site SS-10A. In 2022, the performance goals were exceeded for cadmium, copper, lead, and zinc in the Nissler Cluster (Table 7-3).

7.2 SUBAREA 2

Subarea 2 includes Sites SS-13 and SS-14. Remediation in Subarea 2 was completed between 2004-2010. Some additional remedial actions occurred in Subarea 2 from 2016 through 2018 to address some remaining COC sources in the floodplain. Groundwater monitoring clusters in Subarea 2 include the Silver Bow, Ramsay Flats, and Miles Crossing Clusters (Figure 3-1).

7.2.1 Surface Water

7.2.1.1 Silver Bow Creek in Reach L (SS-13)

Site SS-13, located downstream from the Browns Gulch confluence, was remediated in 2007. Sampling was initiated at Site SS-13 in 2013. In 2022, performance goal exceedances occurred at SS-13 for mercury (Table 7-1).

7.2.1.2 Silver Bow Creek at Miles Crossing (SS-14)

Site SS-14 is located near the downstream end of Subarea 2. Remediation was completed at Site SS-14 in 2008. Site SS-14 is located in the Miles Crossing area and is approximately 1 mile

downstream from Site SS-13. In 2022, performance goal exceedances occurred at Site SS-14 for mercury (Table 7-1).

7.2.2 Groundwater

7.2.2.1 Silver Bow

The Silver Bow Cluster is located at the boundary between Subarea 1 and Subarea 2, close to surface water Site SS-10A. Surface water Site SS-10A is located approximately three miles upstream from the Browns Gulch tributary confluence with Silver Bow Creek. There are also multiple ponds in the floodplain adjacent to Silver Bow Creek downstream from the Silver Bow Creek Cluster. In 2022, the performance goals were exceeded for arsenic and cadmium in the Silver Bow Cluster (Table 7-3).

7.2.2.2 Ramsay Flats

The Ramsay Flats Cluster is located in the vicinity of the town of Ramsay, approximately a half mile upstream from the Silver Bow Creek and Browns Gulch (tributary) confluence. This well cluster is located between surface water sites SS-10A (about one mile upstream) and SS-13 (about one mile downstream) There are also multiple ponds in the floodplain between the Ramsay Flats Cluster and Site SS-10A indicating that groundwater elevation in this portion of the floodplain is high. Monitoring wells in the Ramsay Flats area were installed in the summer of 2021 and monitoring occurred for the first time in late summer 2021. In 2022, there were no performance goal exceedances in the Ramsay Flats Cluster (Table 7-3).

7.2.2.3 Miles Crossing

The Miles Crossing Cluster is located at the boundary between Subarea 2 and Subarea 3, close to surface water Site SS-14. In 2022, the performance goals were exceeded for cadmium, copper, and zinc in the Miles Crossing Cluster (Table 7-3).

7.3 SUBAREA 3

Subarea 3 includes Sites SS-15A-2. Remediation in Subarea 3 occurred from 2011 to 2015. Prior to 2014 monitoring, surface water COC concentrations tended to be the highest in the SSTOU at the Subarea 3 sites (particularly Site SS-15A). However, COC concentrations at these sites have generally been similar to concentrations in Subarea 2 since 2014. These results indicate that remedial actions in Subarea 3 upstream from these sites were largely successful at reducing surface water COC concentrations and variability.

7.3.1 Surface Water

7.3.1.1 Silver Bow Creek above German Gulch (SS-15A-2)

Site SS-15A-2 is located in Subarea 3, immediately upstream from the German Gulch confluence, and approximately 3.5 miles downstream from Site SS-14. Remediation was completed in Subarea 3 upstream from Site SS-15A-2 in 2014. In 2022, performance goal exceedances occurred at Site SS-15A-2 for copper and mercury (Table 7-1).

7.3.2 Groundwater

There were no groundwater monitoring wells located in Subarea 3 in 2022. The Miles Crossing Cluster is in Subarea 2 near the boundary with Subarea 3 and the Fairmont Cluster is in Subarea 4 near the boundary with Subarea 3.

7.4 SUBAREA 4

Subarea 4 includes Sites SS-16B, SS-17D, and SS-19. Remediation in this subarea occurred from 2004-2014. Generally, COC concentrations have continued a steady, modest decline at the Subarea 4 sites since remediation, although concentrations have rebounded somewhat more recently. Remediation was in progress in Subarea 3 upstream from Subarea 4 through 2015. A temporary sedimentation pond, used to sequester metals and sediments entrained from removal activities upstream, was removed in 2014. That pond had previously provided a buffer to water quality in Subarea 4. Groundwater monitoring clusters in Subarea 4 include the Fairmont, Crackerville, Stuart, and Frontage Road Clusters (Figure 3-1).

7.4.1 Surface Water

7.4.1.1 Silver Bow Creek in Reach P near Fairmont (SS-16B)

Site SS-16B is located at the upstream end of Subarea 4. As of 2013, remediation was completed at Site SS-16B. A sedimentation pond was removed, and a fish movement barrier was installed, between Sites SS-15A-2 and SS-16B in 2014. In addition, a major tributary to Silver Bow Creek (German Gulch), enters Silver Bow Creek between Sites SS-15A-2 and SS-16B. Site SS-16B was first sampled in this monitoring program in 2013. In 2022, performance goal exceedances occurred at Site SS-16B for copper and mercury (Table 7-1).

7.4.1.2 Silver Bow Creek below Stewart Street at Opportunity (SS-17D)

Site SS-17D is located in Subarea 4, approximately 6.9 miles downstream from Site SS-16B, and approximately 1.5 miles upstream from the point where Silver Bow Creek discharges into the Warm Springs Pond system. Site SS-17D is co-located with USGS Gage 12323600. Floodplain

remediation was completed at Site SS-17D in 2013. In 2022, performance goal exceedances occurred at Site SS-17D for copper and mercury (Table 7-1).

7.4.1.3 Silver Bow Creek at Frontage Road (SS-19)

Site SS-19 is located in Subarea 4, approximately 1.2 miles downstream from Site SS-17D, and 0.2 miles upstream from where Silver Bow Creek discharges into the Warm Springs Pond system. Site SS-19 is the downstream-most site in the SSTOU monitoring network. It provides an assessment of water quality in Silver Bow Creek at the downstream end of operable unit, as well as at the downstream end of the subarea. Sampling at Site SS-19 was initiated in 2014. In 2022, performance goal exceedances occurred at Site SS-19 for copper and mercury (Table 7-1).

7.4.2 Groundwater

7.4.2.1 Fairmont

The Fairmont Cluster is located at the upstream end of Subarea 4, between surface water Sites SS-15A-2 and SS-16B. In 2022, there were no performance goal exceedances in the Fairmont Cluster (Table 7-3).

7.4.2.2 Crackerville

The Crackerville Cluster is located between surface water Sites SS-16B and SS-17D, approximately 0.5 miles downstream from Site SS-16B. In 2022, the performance goals were exceeded for cadmium in the Crackerville Cluster (Table 7-3).

7.4.2.3 Stuart

The Stuart Cluster is located between surface water Sites SS-16B and SS-17D, approximately one mile upstream from Site SS-17D In 2022, the performance goals were exceeded for cadmium, copper, and zinc in the Stuart Cluster (Table 7-3).

7.4.2.4 Frontage Road

The Frontage Road Cluster is located near surface water Site SS-19, at the downstream end of Subarea 4, and the downstream end of the operable unit. In 2022, there were no performance goal exceedances in the Frontage Road Cluster (Table 7-3).

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APPENDIX A

Quality Assurance and Quality Control Review and Summary: Surface Water, Instream Sediment, Groundwater, and Vadose Zone Water

A.1 INTRODUCTION

Specific quality assurance and quality control (QA/QC) requirements for field measurements, sample collection, laboratory analysis, and the reporting of resulting data were established by protocols contained in the quality assurance project plan (QAPP), a component of the approved sampling and analysis plan (SAP) for the Silver Bow Creek Streamside Tailings Operable Unit (SSTOU). The following quality control checklist is a component of the Montana Department of Environmental Quality QA/QC protocols and is an initial step in the review and validation of water chemistry and related data generated under the SSTOU environmental monitoring program. This checklist provides an outline for reviewing and assessing factors potentially affecting data quality and assists in identifying data that may be invalid or require additional documentation.

A.2 QUALITY CONTROL

Work order receipt checklists were completed by Energy Labs for each batch of quarterly samples delivered. These checklists are provided in Appendix B. Specific quality control issues identified included the following:

- First Quarter (Q1): A discrepancy between the sample identification between the bottle and chain of custody (COC) form was noted for the sample from Site SS-16B. Sample collection time not on sediment sample from Site SS-13. Time from other sample bottles for site was used.
- Second Quarter (Q2): Duplicate sample sets were collected from Site SS-19 but neither set was identified as the duplicate. One set was randomly selected by the lab and designated as the duplicate. Collection times were missing for Sites LYS-06 and LYS-07. Times were noted on the COC forms and used.
- Third Quarter (Q3): Collection times were missing for Sites LYS-06 and LYS-07. Times were noted on the COC forms and used.
- Fourth Quarter (Q4): No corrective actions were needed in Q4.

A.3 SUMMARY OF QUALITY CONTROL AND ANALYSIS RESULTS

Summarized in this appendix are quality control measures performed on field and laboratory data generated from surface water, instream sediment, groundwater, and vadose zone water samples collected from the SSTOU monitoring events during the monitoring year. Assessed under the DEQ standard quality assurance and quality control protocols are data quality objectives (DQOs), including categories for: “representativeness”, “comparability”, and “completeness”. Also assessed under the DEQ standard quality assurance and quality control protocols are data quality

indicators (DQIs) including categories for: ”sensitivity”, “lab precision”, “overall precision”, and “bias and accuracy”.

Overall, DQOs and DQIs were generally met. Surface water samples were collected and analyzed for total suspended sediment, nutrients, metals (dissolved and total recoverable), and common ions at sample sites on four occasions (quarterly). Instream sediment samples were collected and analyzed for metals (total) at the sites during each quarter. Groundwater and vadose zone water samples were collected from monitoring wells and lysimeters during Q2 and Q3 and these samples were analyzed for dissolved metals and common ion concentrations.

A.3.1 Representativeness

All sampled surface water, instream sediment, vadose zone water, and groundwater monitoring sites met stated objectives for “spatial representativeness”. That is, all monitoring sites were sampled at the established locations as specified in the project SAP.

All surface water and instream sediment monitoring were conducted quarterly as specified in the project SAP. Q1 monitoring occurred during base streamflow conditions prior to the onset of spring runoff. Q2 monitoring was conducted near the peak annual streamflow the during spring snowmelt runoff period. Biological monitoring was conducted in conjunction with Q3 surface water and instream sediment sampling, during low streamflows near the seasonal minimum within the specified index period for sampling the biota. Q4 monitoring occurred during base streamflow conditions as late in the season as possible, prior to winter ice up. Sampling activities occurred during the last month of each respective quarter. Data therefore met specified SSTOU criteria for temporal representativeness.

A.3.2 Comparability

Comparability is the applicability of project data to the remedial performance goals as specified in the SAP for the various environmental media monitored under the project. The performance goal for surface water quality is for all contaminants of concern (COC) to meet the most restrictive of the state water quality standards for surface water. For instream sediment, the goal is for COC concentrations to meet the “threshold effect concentration” (TEC). Performance goals for groundwater call for COC concentrations to meet state water quality standards, federal maximum contaminant levels (MCLs), and federal non-zero MCL goals through natural attenuation. All of these standards and levels apply to human health considerations. In addition, these goals require that no groundwater discharges occur that would prevent attainment of ambient Circular DEQ-7 surface water standards or instream sediment remediation goals in the SSTOU. All data acquired by this annual monitoring program are applicable to assessing attainment of project performance goals.

A.3.3 Completeness

An overall data completeness goal of 85 percent was specified for the SSTOU project and an evaluation table for data completeness is not required if the goal is met or exceeded. Data completeness for surface water and instream sediment samples from the SSTOU monitoring sites was near 100 percent, with all chemical and physical parameters collected and analyzed during each of the four quarterly monitoring events. Water samples were collected and analyzed from all SAP-specified groundwater monitoring wells and vadose zone lysimeters during the Q2 and Q3, although the available volume of water was often limited for vadose zone water samples.

A.3.4 Sensitivity

The method detection limit (MDL) established by Energy Laboratories through laboratory blank analyses is an expression of sensitivity. The MDL documented in QA/QC summary reports that accompany each set of laboratory analytical reports was less than the project-required reporting limit (RL), and was often below detection, for all analytical methods pertaining to Silver Bow Creek SSTOU monitoring (Appendix B).

Sensitivity of field methods for surface water samples was determined through deionized water field blank analyses. Results for all metals, common ions and suspended sediment parameters in field blanks were below the analytical reporting limits for 97 percent (232 of 240) of the surface water field blank analytes. Associated results which are less than ten times the RL concentrations have been qualified in the project database. Analytes detected in surface water field blanks included the results identified in Table A-1.

Table A-1. Surface water field blank results from the Streamside Tailings Operable Unit with values above the analytical reporting limit.

Station ID	Activity Start Date	Characteristic Name	Sample Fraction	Result Value	Unit	Method Detection Limit	Lower Reporting Limit
SS-15A-2	25-Mar-21	Barium	Dissolved	0.005	mg/l	0.0002	0.003
SS-15A-2	25-Mar-21	Zinc	Dissolved	0.008	mg/l	0.001	0.008
SS-17D	9-Jun-21	Barium	Dissolved	0.006	mg/l	0.0002	0.003
SS-17D	9-Jun-21	Zinc	Dissolved	0.014	mg/l	0.001	0.008
SS-07	10-Sep-21	Barium	Dissolved	0.004	mg/l	0.0002	0.003
SS-07	10-Sep-21	Total Phosphorus	Unfiltered	0.004	mg/l	0.001	0.003
SS-16B	1-Dec-21	Zinc	Total Recv	0.010	mg/l	0.001	0.008
SS-16B	1-Dec-21	Barium	Total Recv	0.005	mg/l	0.0002	0.003

Sensitivity of field methods for groundwater samples was also determined through deionized water field blank analyses. Results for all metals and common ion parameters in field blanks were below the analytical reporting limits for 100 percent (120 of 120) of the groundwater field blank

analytes. For any field blank samples with concentrations above the reporting limit, associated results which are less than ten times the analytical reporting limit concentration, would have been qualified in the project database.

A.3.5 Precision

A.3.5.1 Laboratory

Laboratory precision was assessed by the relative percent difference (RPD) metric comparing laboratory samples with duplicates. RPD comparisons were made for all analytes measured in this program. Established criteria allow a maximum of 20 percent RPD for water sample results which are at least five times greater than the RL, and 35 percent RPD for sediment samples which are at least five times greater than the RL. Results of laboratory quality control procedures are described in Appendix B.

A.3.5.2 Overall

The overall precision of surface water, instream sediment, and groundwater sample analyses from the SSTOU was assessed with RPD comparisons between samples and paired field duplicates. Established criteria allow a maximum of 25 percent RPD for water sample results that at least five times the RL, and 40 percent RPD for sediment samples that are at least five times the RL. All associated data which exceeds these criteria have been J-flagged in the project database.

One surface water sample and duplicate pair were collected in each quarterly sampling event, and these were analyzed for dissolved and total recoverable metals, nutrients, and common ions. Results of RPD comparisons for all metal, common ion and suspended sediment parameters in the field duplicate and field sample pairs were within the established criteria in 99 percent (238 of 240) of the sample and duplicate pairs. Surface water field duplicate and field sample pairs with RPD exceeding 25 percent included:

- Total recoverable aluminum in the sample pair collected on June 9, 2021 had an RPD of 41 percent.
- Total recoverable mercury in the sample pair collected on December 1, 2021 had an RPD of 132 percent.

Groundwater and vadose zone water sample and duplicate pairs were collected during both sampling events and were analyzed for dissolved metals and common ions. Four field duplicate samples were collected and each analyte concentration in those duplicate samples was compared to the analyte concentration in the paired field sample. The RPD between each analyte pair (30 analytes per sample) was calculated for a total of 120 sample pairs. One groundwater field sample and field duplicate pair had an RPD exceeding 25 percent. Groundwater field duplicate and field sample pairs with RPD exceeding 25 percent included:

- Dissolved manganese in the sample pair collected on August 31, 2021 had an RPD of 55 percent.

One instream sediment sample and duplicate pair was collected in each quarterly sampling event, and these were analyzed for total metals in three size fractions. Among all analytes in all size fractions, 252 field sample and field duplicate results were compared and 234 (93 percent) were within the established criteria. Table A-2 presents the sediment field duplicate and field sample pairs which had RPDs greater than 40 percent.

Table A-2. Field sample and field duplicate pairs with relative percent differences greater than 40 percent in the Streamside Tailings Operable Unit, 2021.

Station ID	Date	Characteristic Name	Size Fraction	Routine Sample Result (mg/kg)	Duplicate Sample Result (mg/kg)	Reporting Limit (mg/kg)	Relative Percent Difference (%)
SS-16B	9-Jun-21	Molybdenum	<0.063 mm	34	20	5	51.9
SS-19	10-Sep-21	Arsenic	<0.063 mm	47	81	5	53.1
SS-19	10-Sep-21	Cadmium	<0.063 mm	8.5	14.2	0.2	50.2
SS-10A	25-Mar-21	Cadmium	0.063-1 mm	3.1	1.7	0.2	58.3
SS-10A	25-Mar-21	Copper	0.063-1 mm	251	152	5	49.1
SS-10A	25-Mar-21	Zinc	0.063-1 mm	443	291	5	41.4
SS-16B	9-Jun-21	Arsenic	0.063-1 mm	32	21	5	41.5
SS-19	10-Sep-21	Aluminum	0.063-1 mm	8,500	5,510	50	42.7
SS-10A	25-Mar-21	Cadmium	1-2 mm	1.2	0.7	0.2	52.6
SS-16B	9-Jun-21	Arsenic	1-2 mm	19	32	5	51.0
SS-16B	9-Jun-21	Copper	1-2 mm	167	266	5	45.7
SS-16B	9-Jun-21	Manganese	1-2 mm	729	480	5	41.2
SS-16B	9-Jun-21	Zinc	1-2 mm	559	336	5	49.8
SS-19	10-Sep-21	Cadmium	1-2 mm	0.4	1.1	0.2	93.3
SS-19	10-Sep-21	Lead	1-2 mm	17	28	5	48.9
SS-19	10-Sep-21	Manganese	1-2 mm	228	424	5	60.1
SS-19	10-Sep-21	Zinc	1-2 mm	142	374	10	89.9
SS-14	1-Dec-21	Manganese	1-2 mm	123	267	5	73.8

A.3.5.3 Bias and Accuracy

Bias is defined as directional error from the true value of individual measurements. For field measurements (water temperature, pH, specific conductance, dissolved oxygen [DO] concentration, DO percent saturation, and turbidity), potential bias was addressed through frequent calibration of field instruments documented in calibration logs, and consistent field procedures. For water chemistry and sediment results, potential bias was minimized by

adherence to approved field procedures for sample collection and handling, and decontamination of sampling equipment.

Accuracy is the combination of high precision and low bias. Accuracy of laboratory results was assessed by reviewing the analytical method controls (i.e., lab control sample, continuing calibration verification, lab fortified blank, standard reference material) and analytical batch controls (i.e., matrix spike and matrix spike duplicate). Limits established by the laboratory through control charting of each method's performance served as assessment criteria. Any analytical method controls or analytical batch controls that had values outside of the acceptable recovery range were re-analyzed, as detailed in the analytical QC summary provided by Energy Laboratories and included with each analytical summary report (Appendix B).

APPENDIX B

Analytical Laboratory Results

APPENDIX B-1

First Quarter Results

ANALYTICAL SUMMARY REPORT

April 21, 2022

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22030459 Quote ID: H1526

Project Name: Silver Bow Creek SSTOU Monitoring

Energy Laboratories Inc Helena MT received the following 37 samples for MT DEQ-Federal Superfund on 3/16/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22030459-001	SS-07	03/16/22 16:00	03/16/22	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Conductivity Mercury, Dissolved Mercury, Total Recoverable Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 Mercury Digestion by E245.1 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H22030459-002	Field Blank #1 SS-10A	03/16/22 15:00	03/16/22	Surface Water	Same As Above
H22030459-003	SS-10A	03/16/22 14:45	03/16/22	Surface Water	Same As Above
H22030459-004	SS-13	03/16/22 13:50	03/16/22	Surface Water	Same As Above
H22030459-005	SS-14	03/16/22 13:00	03/16/22	Surface Water	Same As Above
H22030459-006	SS-15A-2	03/16/22 12:00	03/16/22	Surface Water	Same As Above
H22030459-007	SS-16B	03/16/22 10:30	03/16/22	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Conductivity Mercury, Dissolved Mercury, Total Recoverable Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 Mercury Digestion by E245.1 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H22030459-008	SS-16B Duplicate	03/16/22 10:30	03/16/22	Surface Water	Same As Above
H22030459-009	SS-17D	03/16/22 9:45	03/16/22	Surface Water	Same As Above

ANALYTICAL SUMMARY REPORT

H22030459-010	SS-19	03/16/22 9:00	03/16/22	Surface Water	Same As Above
H22030459-011	SS-07 Sediment <0.063mm	03/16/22 16:00	03/16/22	Sediment	Metals by ICP/ICPMS, Total Mercury in Solid By CVAA Percent Moisture Total Metals Digestion by SW3050B Mercury Digestion by SW7471B Sieve Analysis, Wet Soil Preparation USDA1
H22030459-012	SS-07 Sediment 1mm to 0.063mm	03/16/22 16:00	03/16/22	Sediment	Metals by ICP/ICPMS, Total Mercury in Solid By CVAA Percent Moisture Total Metals Digestion by SW3050B Mercury Digestion by SW7471B Sieve Analysis, Wet
H22030459-013	SS-07 Sediment 2mm to 1mm	03/16/22 16:00	03/16/22	Sediment	Same As Above
H22030459-014	SS-10A Sediment <0.063mm	03/16/22 14:45	03/16/22	Sediment	Same As Above
H22030459-015	SS-10A Sediment 1mm to 0.063mm	03/16/22 14:45	03/16/22	Sediment	Same As Above
H22030459-016	SS-10A Sediment 2mm to 1mm	03/16/22 14:45	03/16/22	Sediment	Same As Above
H22030459-017	SS-13 Sediment <0.063mm	03/16/22 13:50	03/16/22	Sediment	Same As Above
H22030459-018	SS-13 Sediment 1mm to 0.063	03/16/22 13:50	03/16/22	Sediment	Same As Above
H22030459-019	SS-13 Sediment 2mm to 1mm	03/16/22 13:50	03/16/22	Sediment	Same As Above
H22030459-020	SS-14 Sediment <0.063mm	03/16/22 13:00	03/16/22	Sediment	Same As Above
H22030459-021	SS-14 Sediment 1mm to 0.063mm	03/16/22 13:00	03/16/22	Sediment	Same As Above
H22030459-022	SS-14 Sediment 2mm to 1mm	03/16/22 13:00	03/16/22	Sediment	Same As Above
H22030459-023	SS-15A-2 Sediment <0.063mm	03/16/22 12:00	03/16/22	Sediment	Same As Above
H22030459-024	SS-15A-2 Sediment 1mm to 0.063mm	03/16/22 12:00	03/16/22	Sediment	Same As Above
H22030459-025	SS-15A-2 Sediment 2mm to 1mm	03/16/22 12:00	03/16/22	Sediment	Same As Above
H22030459-026	SS-16B Sediment <0.063mm	03/16/22 10:30	03/16/22	Sediment	Same As Above
H22030459-027	SS-16B Sediment 1mm to 0.063mm	03/16/22 10:30	03/16/22	Sediment	Same As Above
H22030459-028	SS-16B Sediment 2mm to 1mm	03/16/22 10:30	03/16/22	Sediment	Same As Above
H22030459-029	SS-16B Duplicate <0.063mm	03/16/22 10:30	03/16/22	Sediment	Same As Above
H22030459-030	SS-17D Sediment <0.063mm	03/16/22 9:45	03/16/22	Sediment	Same As Above
H22030459-031	SS-17D Sediment 1mm to 0.063mm	03/16/22 9:45	03/16/22	Sediment	Same As Above

ANALYTICAL SUMMARY REPORT

H22030459-032	SS-17D Sediment 2mm to 1mm	03/16/22 9:45	03/16/22	Sediment	Same As Above
H22030459-033	SS-19 Sediment <0.063mm	03/16/22 9:00	03/16/22	Sediment	Same As Above
H22030459-034	SS-19 Sediment 1mm to 0.063mm	03/16/22 9:00	03/16/22	Sediment	Same As Above
H22030459-035	SS-19 Sedmient 2mm to 1mm	03/16/22 9:00	03/16/22	Sediment	Same As Above
H22030459-036	SS-16B Duplicate 1mm to 0.063mm	03/16/22 10:30	03/16/22	Sediment	Same As Above
H22030459-037	SS-16B Duplicate 2mm to 1mm	03/16/22 10:30	03/16/22	Sediment	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

CLIENT: MT DEQ-Federal Superfund
Project: Silver Bow Creek SSTOU Monitoring
Work Order: H22030459

Report Date: 04/21/22

CASE NARRATIVE

Sample for Field Blank #1 SS-10A was re-analyzed to confirm the lead detection. The results were confirmed. abc 4/21/22

All "J" qualified analyte concentrations are below the laboratory minimum recommended Reporting Limit (RL) and above the calculated method detection limit (MDL). Inorganic analytes reported with "J" qualifiers should be verified against the corresponding method blank and continuing calibration blanks. Inorganic "J" quantitations near the MDL may be suspect due to possible method background levels, sample matrix effects, and/or daily variability in instrument signal-to-noise levels.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-001
Collection Date: 03/16/22 16:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L		1	0.8	A2540 D	03/17/22 15:37 / OS			124 (14410200)_220317A	15	TSS220317A
INORGANICS												
Alkalinity, Total as CaCO3	90	mg/L		4	2	A2320 B	03/23/22 16:58 / JAR			PHSC_101-H_220323A	49	R173135
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	03/23/22 16:58 / JAR			PHSC_101-H_220323A	49	R173135
Chloride	42	mg/L		1	0.05	E300.0	03/22/22 12:31 / JAR			IC METROHM_220321A	76	R173107
Sulfate	455	mg/L		1	0.1	E300.0	03/22/22 12:31 / JAR			IC METROHM_220321A	76	R173107
Hardness as CaCO3	491	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	1	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	0.04	mg/L	J	0.05	0.03	E350.1	03/18/22 11:20 / GE			FIA203-HE_220318B	37	R173037
Nitrogen, Nitrate+Nitrite as N	1.16	mg/L		0.02	0.02	E353.2	03/21/22 13:46 / GE			FIA203-HE_220321B	50	R173081
Nitrogen, Total	1.70	mg/L		0.05	0.03	A4500 N-C	03/18/22 12:57 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	26	60530
Phosphorus, Total as P	0.042	mg/L		0.003	0.001	E365.1	03/23/22 14:00 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	21	60567
METALS, DISSOLVED												
Aluminum	0.023	mg/L		0.009	0.003	E200.8	03/25/22 02:06 / dck			ICPMS205-H_220323A	305	R173177
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Barium	0.033	mg/L		0.003	0.0002	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:06 / dck			ICPMS205-H_220323A	305	R173177
Boron	0.072	mg/L	J	0.1	0.004	E200.7	03/18/22 18:19 / sld			ICP2-HE_220318B	47	R173051
Cadmium	0.00008	mg/L		0.00003	0.00002	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Calcium	165	mg/L		1	0.1	E200.7	03/18/22 18:19 / sld			ICP2-HE_220318B	47	R173051
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Copper	0.003	mg/L		0.001	0.0001	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Iron	0.016	mg/L	J	0.02	0.004	E200.8	03/25/22 02:06 / dck			ICPMS205-H_220323A	305	R173177
Lead	0.0003	mg/L	J	0.0003	0.0001	E200.8	03/25/22 02:06 / dck			ICPMS205-H_220323A	305	R173177
Magnesium	14	mg/L		1	0.02	E200.7	03/18/22 18:19 / sld			ICP2-HE_220318B	47	R173051
Manganese	0.070	mg/L		0.001	0.0003	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	03/18/22 15:41 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	22	60537
Molybdenum	0.216	mg/L		0.005	0.0003	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Potassium	14	mg/L		1	0.06	E200.7	03/18/22 18:19 / sld			ICP2-HE_220318B	47	R173051

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-001
Collection Date: 03/16/22 16:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	0.00070	mg/L	J	0.001	0.00007	E200.8	03/25/22 02:06 / dck			ICPMS205-H_220323A	305	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Sodium	51	mg/L		1	0.02	E200.7	03/18/22 18:19 / sld			ICP2-HE_220318B	47	R173051
Uranium	0.0033	mg/L		0.0002	0.00002	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Vanadium	0.0020	mg/L	J	0.1	0.0001	E200.8	03/23/22 02:26 / dck			ICPMS205-H_220322B	100	R173122
Zinc	0.036	mg/L		0.008	0.001	E200.8	03/25/22 02:06 / dck			ICPMS205-H_220323A	305	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	0.050	mg/L		0.009	0.006	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Arsenic	0.002	mg/L		0.001	0.0001	E200.8	03/25/22 01:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	289	60569
Barium	0.034	mg/L		0.003	0.0002	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	289	60569
Boron	0.079	mg/L	J	0.1	0.007	E200.7	03/22/22 23:36 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	49	60569
Cadmium	0.00009	mg/L		0.00003	0.00002	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Calcium	173	mg/L		1	0.1	E200.7	03/22/22 23:36 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	49	60569
Chromium	ND	mg/L		0.01	0.0002	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Cobalt	ND	mg/L		0.01	0.0003	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Copper	0.005	mg/L		0.001	0.0003	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Iron	0.11	mg/L		0.02	0.009	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Lead	0.0005	mg/L		0.0003	0.0001	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Magnesium	14	mg/L		1	0.05	E200.7	03/22/22 23:36 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	49	60569
Manganese	0.076	mg/L		0.001	0.0003	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Mercury	0.005	ug/L	J	0.005	0.002	E245.1	03/18/22 15:45 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	23	60537
Molybdenum	0.214	mg/L		0.005	0.0002	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Potassium	14	mg/L		1	0.1	E200.7	03/22/22 23:36 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	49	60569
Selenium	0.0007	mg/L	J	0.001	0.0001	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Silver	ND	mg/L		0.0002	0.00006	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Sodium	50	mg/L		1	0.1	E200.7	03/22/22 23:36 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	49	60569
Uranium	0.0033	mg/L		0.0002	0.00003	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Vanadium	0.0025	mg/L	J	0.1	0.0001	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569
Zinc	0.038	mg/L		0.008	0.001	E200.8	03/24/22 09:54 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	137	60569

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Field Blank #1 SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-002
Collection Date: 03/16/22 15:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1	0.8	A2540 D	03/22/22 15:58 / OS			-124 (14410200)_220322A	3	TSS220321A
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4	2	A2320 B	03/23/22 17:10 / JAR			PHSC_101-H_220323A	53	R173135
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	03/23/22 17:10 / JAR			PHSC_101-H_220323A	53	R173135
Chloride	ND	mg/L		1	0.02	E300.0	03/22/22 12:46 / JAR			IC METROHM_220321A	77	R173107
Sulfate	ND	mg/L		1	0.06	E300.0	03/22/22 12:46 / JAR			IC METROHM_220321A	77	R173107
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	2	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	03/18/22 11:21 / GE			FIA203-HE_220318B	38	R173037
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.008	E353.2	03/21/22 13:45 / GE			FIA203-HE_220321B	49	R173081
Nitrogen, Total	ND	mg/L		0.05	0.03	A4500 N-C	03/18/22 13:03 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	31	60530
Phosphorus, Total as P	ND	mg/L		0.003	0.001	E365.1	03/23/22 14:01 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	22	60567
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	03/25/22 02:10 / dck			ICPMS205-H_220323A	306	R173177
Antimony	ND	mg/L		0.0005	0.0002	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Arsenic	ND	mg/L		0.001	0.0002	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Barium	ND	mg/L		0.003	0.0002	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:10 / dck			ICPMS205-H_220323A	306	R173177
Boron	ND	mg/L		0.1	0.004	E200.7	03/18/22 18:33 / sld			ICP2-HE_220318B	51	R173051
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Calcium	ND	mg/L		1	0.1	E200.7	03/18/22 18:33 / sld			ICP2-HE_220318B	51	R173051
Chromium	ND	mg/L		0.01	0.0001	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Copper	ND	mg/L		0.001	0.0001	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Iron	ND	mg/L		0.02	0.004	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Lead	0.0004	mg/L		0.0003	0.0001	E200.8	04/15/22 19:21 / dck			ICPMS205-H_220415B	56	R173864
Magnesium	ND	mg/L		1	0.02	E200.7	03/18/22 18:33 / sld			ICP2-HE_220318B	51	R173051
Manganese	ND	mg/L		0.001	0.0003	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Mercury	ND	ug/L		0.005	0.002	E245.1	03/18/22 15:48 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	24	60537
Molybdenum	0.0003	mg/L	J	0.005	0.0003	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Nickel	ND	mg/L		0.002	0.0002	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Potassium	ND	mg/L		1	0.06	E200.7	03/18/22 18:33 / sld			ICP2-HE_220318B	51	R173051

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Field Blank #1 SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-002
Collection Date: 03/16/22 15:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	ND	mg/L		0.001	0.00007	E200.8	03/25/22 02:10 / dck			ICPMS205-H_220323A	306	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Sodium	ND	mg/L		1	0.02	E200.7	03/18/22 18:33 / sld			ICP2-HE_220318B	51	R173051
Uranium	ND	mg/L		0.0002	0.00002	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Vanadium	ND	mg/L		0.1	0.0001	E200.8	03/23/22 02:29 / dck			ICPMS205-H_220322B	101	R173122
Zinc	ND	mg/L		0.008	0.001	E200.8	03/25/22 02:10 / dck			ICPMS205-H_220323A	306	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.009	0.006	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Antimony	ND	mg/L		0.0005	0.0002	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Arsenic	ND	mg/L		0.001	0.0001	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Barium	ND	mg/L		0.003	0.0002	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:13 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	290	60569
Boron	ND	mg/L		0.1	0.007	E200.7	03/22/22 23:40 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	50	60569
Cadmium	ND	mg/L		0.00003	0.00003	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Calcium	ND	mg/L		1	0.1	E200.7	03/22/22 23:40 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	50	60569
Chromium	ND	mg/L		0.01	0.0002	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Cobalt	ND	mg/L		0.01	0.0003	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Copper	ND	mg/L		0.001	0.0003	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Iron	ND	mg/L		0.02	0.009	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Magnesium	ND	mg/L		1	0.05	E200.7	03/22/22 23:40 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	50	60569
Manganese	ND	mg/L		0.001	0.0003	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Mercury	ND	ug/L		0.005	0.002	E245.1	03/18/22 15:51 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	25	60537
Molybdenum	ND	mg/L		0.005	0.0002	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Nickel	ND	mg/L		0.002	0.0002	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Potassium	ND	mg/L		1	0.1	E200.7	03/22/22 23:40 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	50	60569
Selenium	ND	mg/L		0.001	0.0001	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Silver	ND	mg/L		0.0002	0.00006	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Sodium	ND	mg/L		1	0.1	E200.7	03/22/22 23:40 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	50	60569
Uranium	ND	mg/L		0.0002	0.00003	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Vanadium	ND	mg/L		0.1	0.0001	E200.8	03/24/22 09:58 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	138	60569
Zinc	0.007	mg/L	J	0.008	0.006	E200.8	04/19/22 01:35 / dck	03/21/22 11:28	E200.2	ICPMS205-H_220418C	39	61007

Report Definitions:
RL - Analyte Reporting Limit
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J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-003
Collection Date: 03/16/22 14:45
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	10	mg/L		1	0.8	A2540 D	03/22/22 15:58 / OS			-124 (14410200)_220322A	4	TSS220321A
INORGANICS												
Alkalinity, Total as CaCO3	73	mg/L		4	2	A2320 B	03/23/22 17:16 / JAR			PHSC_101-H_220323A	55	R173135
Bicarbonate as HCO3	88	mg/L		4	3	A2320 B	03/23/22 17:16 / JAR			PHSC_101-H_220323A	55	R173135
Chloride	36	mg/L		1	0.05	E300.0	03/22/22 13:00 / JAR			IC METROHM_220321A	78	R173107
Sulfate	675	mg/L		1	0.1	E300.0	03/22/22 13:00 / JAR			IC METROHM_220321A	78	R173107
Hardness as CaCO3	671	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	3	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	03/18/22 11:22 / GE			FIA203-HE_220318B	39	R173037
Nitrogen, Nitrate+Nitrite as N	0.73	mg/L		0.02	0.02	E353.2	03/21/22 13:47 / GE			FIA203-HE_220321B	51	R173081
Nitrogen, Total	1.05	mg/L		0.05	0.03	A4500 N-C	03/18/22 12:58 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	27	60530
Phosphorus, Total as P	0.054	mg/L		0.003	0.001	E365.1	03/23/22 14:05 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	26	60567
METALS, DISSOLVED												
Aluminum	0.018	mg/L		0.009	0.003	E200.8	03/25/22 02:14 / dck			ICPMS205-H_220323A	307	R173177
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Barium	0.040	mg/L		0.003	0.0002	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:14 / dck			ICPMS205-H_220323A	307	R173177
Boron	0.058	mg/L	J	0.1	0.004	E200.7	03/18/22 18:37 / sld			ICP2-HE_220318B	52	R173051
Cadmium	0.00022	mg/L		0.00003	0.00002	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Calcium	234	mg/L		1	0.1	E200.7	03/18/22 18:37 / sld			ICP2-HE_220318B	52	R173051
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Copper	0.009	mg/L		0.001	0.0001	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Iron	0.02	mg/L		0.02	0.004	E200.8	03/25/22 02:14 / dck			ICPMS205-H_220323A	307	R173177
Lead	0.0009	mg/L		0.0003	0.0001	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Magnesium	14	mg/L		1	0.02	E200.7	03/18/22 18:37 / sld			ICP2-HE_220318B	52	R173051
Manganese	0.116	mg/L		0.001	0.0003	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Mercury	0.006	ug/L		0.005	0.002	E245.1	03/18/22 15:57 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	27	60537
Molybdenum	0.330	mg/L		0.005	0.0003	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Potassium	17	mg/L		1	0.06	E200.7	03/18/22 18:37 / sld			ICP2-HE_220318B	52	R173051

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-003
Collection Date: 03/16/22 14:45
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	0.001	mg/L		0.001	0.00007	E200.8	03/25/22 02:14 / dck			ICPMS205-H_220323A	307	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Sodium	55	mg/L		1	0.02	E200.7	03/18/22 18:37 / sld			ICP2-HE_220318B	52	R173051
Uranium	0.0038	mg/L		0.0002	0.00002	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Vanadium	0.0022	mg/L	J	0.1	0.0001	E200.8	03/23/22 02:32 / dck			ICPMS205-H_220322B	102	R173122
Zinc	0.048	mg/L		0.008	0.001	E200.8	03/25/22 02:14 / dck			ICPMS205-H_220323A	307	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	0.186	mg/L		0.009	0.006	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Arsenic	0.004	mg/L		0.001	0.0001	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Barium	0.042	mg/L		0.003	0.0002	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	291	60569
Boron	0.061	mg/L	J	0.1	0.007	E200.7	03/23/22 00:06 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	57	60569
Cadmium	0.00029	mg/L		0.00003	0.00002	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Calcium	245	mg/L		1	0.1	E200.7	03/23/22 00:06 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	57	60569
Chromium	0.0004	mg/L	J	0.01	0.0002	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Cobalt	ND	mg/L		0.01	0.0003	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Copper	0.022	mg/L		0.001	0.0003	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Iron	0.35	mg/L		0.02	0.009	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Lead	0.0023	mg/L		0.0003	0.0001	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Magnesium	14	mg/L		1	0.05	E200.7	03/23/22 00:06 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	57	60569
Manganese	0.141	mg/L		0.001	0.0003	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Mercury	0.015	ug/L		0.005	0.002	E245.1	03/18/22 16:07 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	30	60537
Molybdenum	0.328	mg/L		0.005	0.0002	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Potassium	16	mg/L		1	0.1	E200.7	03/23/22 00:06 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	57	60569
Selenium	0.001	mg/L		0.001	0.0001	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Silver	0.00008	mg/L	J	0.0002	0.00006	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Sodium	54	mg/L		1	0.1	E200.7	03/23/22 00:06 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	57	60569
Uranium	0.0039	mg/L		0.0002	0.00003	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Vanadium	0.0031	mg/L	J	0.1	0.0001	E200.8	03/24/22 10:02 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	139	60569
Zinc	0.066	mg/L		0.008	0.001	E200.8	04/19/22 01:38 / dck	03/21/22 11:28	E200.2	ICPMS205-H_220418C	40	61007

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-004
Collection Date: 03/16/22 13:50
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	12	mg/L		1	0.8	A2540 D	03/22/22 15:58 / OS			-124 (14410200)_220322A	5	TSS220321A
INORGANICS												
Alkalinity, Total as CaCO3	86	mg/L		4	2	A2320 B	03/23/22 17:21 / JAR			PHSC_101-H_220323A	57	R173135
Bicarbonate as HCO3	100	mg/L		4	3	A2320 B	03/23/22 17:21 / JAR			PHSC_101-H_220323A	57	R173135
Chloride	55	mg/L		1	0.05	E300.0	03/22/22 13:14 / JAR			IC METROHM_220321A	79	R173107
Sulfate	497	mg/L		1	0.1	E300.0	03/22/22 13:14 / JAR			IC METROHM_220321A	79	R173107
Hardness as CaCO3	531	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	4	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	0.06	mg/L		0.05	0.03	E350.1	03/18/22 11:23 / GE			FIA203-HE_220318B	40	R173037
Nitrogen, Nitrate+Nitrite as N	0.65	mg/L		0.02	0.008	E353.2	03/21/22 13:48 / GE			FIA203-HE_220321B	52	R173081
Nitrogen, Total	1.15	mg/L		0.05	0.03	A4500 N-C	03/18/22 12:59 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	28	60530
Phosphorus, Total as P	0.100	mg/L		0.003	0.001	E365.1	03/23/22 14:06 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	27	60567
METALS, DISSOLVED												
Aluminum	0.005	mg/L	J	0.009	0.003	E200.8	03/25/22 02:17 / dck			ICPMS205-H_220323A	308	R173177
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Barium	0.042	mg/L		0.003	0.0002	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:17 / dck			ICPMS205-H_220323A	308	R173177
Boron	0.066	mg/L	J	0.1	0.004	E200.7	03/18/22 19:19 / sld			ICP2-HE_220318B	63	R173051
Cadmium	0.00018	mg/L		0.00003	0.00002	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Calcium	188	mg/L		1	0.1	E200.7	03/18/22 19:19 / sld			ICP2-HE_220318B	63	R173051
Chromium	ND	mg/L		0.01	0.0001	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Copper	0.007	mg/L		0.001	0.0001	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Iron	0.03	mg/L		0.02	0.004	E200.8	03/25/22 02:17 / dck			ICPMS205-H_220323A	308	R173177
Lead	0.0009	mg/L		0.0003	0.0001	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Magnesium	14	mg/L		1	0.02	E200.7	03/18/22 19:19 / sld			ICP2-HE_220318B	63	R173051
Manganese	0.174	mg/L		0.001	0.0003	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Mercury	0.007	ug/L		0.005	0.002	E245.1	03/18/22 15:54 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	26	60537
Molybdenum	0.226	mg/L		0.005	0.0003	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Potassium	14	mg/L		1	0.06	E200.7	03/18/22 19:19 / sld			ICP2-HE_220318B	63	R173051

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-004
Collection Date: 03/16/22 13:50
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	0.001	mg/L		0.001	0.00007	E200.8	03/25/22 02:17 / dck			ICPMS205-H_220323A	308	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Sodium	49	mg/L		1	0.02	E200.7	03/18/22 19:19 / sld			ICP2-HE_220318B	63	R173051
Uranium	0.0038	mg/L		0.0002	0.00002	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Vanadium	0.0018	mg/L	J	0.1	0.0001	E200.8	03/23/22 02:35 / dck			ICPMS205-H_220322B	103	R173122
Zinc	0.065	mg/L		0.008	0.001	E200.8	03/25/22 02:17 / dck			ICPMS205-H_220323A	308	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	0.270	mg/L		0.009	0.006	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Arsenic	0.005	mg/L		0.001	0.0001	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Barium	0.046	mg/L		0.003	0.0002	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	292	60569
Boron	0.067	mg/L	J	0.1	0.007	E200.7	03/23/22 00:10 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	58	60569
Cadmium	0.00033	mg/L		0.00003	0.00003	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Calcium	189	mg/L		1	0.1	E200.7	03/23/22 00:10 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	58	60569
Chromium	0.0004	mg/L	J	0.01	0.0002	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Cobalt	0.0004	mg/L	J	0.01	0.0003	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Copper	0.020	mg/L		0.001	0.0003	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Iron	0.39	mg/L		0.02	0.009	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Lead	0.0020	mg/L		0.0003	0.0001	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Magnesium	14	mg/L		1	0.05	E200.7	03/23/22 00:10 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	58	60569
Manganese	0.205	mg/L		0.001	0.0003	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Mercury	0.015	ug/L		0.005	0.002	E245.1	03/18/22 16:10 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	31	60537
Molybdenum	0.222	mg/L		0.005	0.0002	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Nickel	0.0009	mg/L	J	0.002	0.0002	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Potassium	14	mg/L		1	0.1	E200.7	03/23/22 00:10 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	58	60569
Selenium	0.001	mg/L		0.001	0.0001	E200.8	03/25/22 01:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	292	60569
Silver	ND	mg/L		0.0002	0.00006	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Sodium	48	mg/L		1	0.1	E200.7	03/23/22 00:10 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	58	60569
Uranium	0.0038	mg/L		0.0002	0.00003	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Vanadium	0.0029	mg/L	J	0.1	0.0001	E200.8	03/24/22 10:05 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	140	60569
Zinc	0.085	mg/L		0.008	0.001	E200.8	04/19/22 01:40 / dck	03/21/22 11:28	E200.2	ICPMS205-H_220418C	41	61007

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-005
Collection Date: 03/16/22 13:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	16	mg/L		1	0.8	A2540 D	03/22/22 15:58 / OS			-124 (14410200)_220322A	6	TSS220321A
INORGANICS												
Alkalinity, Total as CaCO3	86	mg/L		4	2	A2320 B	03/23/22 17:27 / JAR			PHSC_101-H_220323A	59	R173135
Bicarbonate as HCO3	100	mg/L		4	3	A2320 B	03/23/22 17:27 / JAR			PHSC_101-H_220323A	59	R173135
Chloride	62	mg/L		1	0.05	E300.0	03/22/22 13:29 / JAR			IC METROHM_220321A	80	R173107
Sulfate	487	mg/L		1	0.1	E300.0	03/22/22 13:29 / JAR			IC METROHM_220321A	80	R173107
Hardness as CaCO3	529	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	5	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	0.07	mg/L		0.05	0.03	E350.1	03/18/22 11:27 / GE			FIA203-HE_220318B	43	R173037
Nitrogen, Nitrate+Nitrite as N	0.67	mg/L		0.02	0.008	E353.2	03/21/22 13:49 / GE			FIA203-HE_220321B	53	R173081
Nitrogen, Total	1.21	mg/L		0.05	0.03	A4500 N-C	03/18/22 13:06 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	34	60530
Phosphorus, Total as P	0.104	mg/L		0.003	0.001	E365.1	03/23/22 14:08 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	28	60567
METALS, DISSOLVED												
Aluminum	0.005	mg/L	J	0.009	0.003	E200.8	03/25/22 02:21 / dck			ICPMS205-H_220323A	309	R173177
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Barium	0.044	mg/L		0.003	0.0002	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:21 / dck			ICPMS205-H_220323A	309	R173177
Boron	0.076	mg/L	J	0.1	0.004	E200.7	03/18/22 19:22 / sld			ICP2-HE_220318B	64	R173051
Cadmium	0.00019	mg/L		0.00003	0.00002	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Calcium	187	mg/L		1	0.1	E200.7	03/18/22 19:22 / sld			ICP2-HE_220318B	64	R173051
Chromium	ND	mg/L		0.01	0.0001	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Copper	0.007	mg/L		0.001	0.0001	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Iron	0.03	mg/L		0.02	0.004	E200.8	03/25/22 02:21 / dck			ICPMS205-H_220323A	309	R173177
Lead	0.0009	mg/L		0.0003	0.0001	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Magnesium	15	mg/L		1	0.02	E200.7	03/18/22 19:22 / sld			ICP2-HE_220318B	64	R173051
Manganese	0.183	mg/L		0.001	0.0003	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Mercury	0.005	ug/L		0.005	0.002	E245.1	03/18/22 16:20 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	34	60537
Molybdenum	0.221	mg/L		0.005	0.0003	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Potassium	14	mg/L		1	0.06	E200.7	03/18/22 19:22 / sld			ICP2-HE_220318B	64	R173051

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-005
Collection Date: 03/16/22 13:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	0.001	mg/L		0.001	0.00007	E200.8	03/25/22 02:21 / dck			ICPMS205-H_220323A	309	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Sodium	50	mg/L		1	0.02	E200.7	03/18/22 19:22 / sld			ICP2-HE_220318B	64	R173051
Uranium	0.0038	mg/L		0.0002	0.00002	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Vanadium	0.0020	mg/L	J	0.1	0.0001	E200.8	03/23/22 02:39 / dck			ICPMS205-H_220322B	104	R173122
Zinc	0.071	mg/L		0.008	0.001	E200.8	03/25/22 02:21 / dck			ICPMS205-H_220323A	309	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	0.337	mg/L		0.009	0.006	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Barium	0.049	mg/L		0.003	0.0002	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	293	60569
Boron	0.076	mg/L	J	0.1	0.007	E200.7	03/23/22 00:13 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	59	60569
Cadmium	0.00036	mg/L		0.00003	0.00002	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Calcium	187	mg/L		1	0.1	E200.7	03/23/22 00:13 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	59	60569
Chromium	0.0005	mg/L	J	0.01	0.0002	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Cobalt	0.0004	mg/L	J	0.01	0.0003	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Copper	0.023	mg/L		0.001	0.0003	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Iron	0.49	mg/L		0.02	0.009	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Lead	0.0025	mg/L		0.0003	0.0001	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Magnesium	15	mg/L		1	0.05	E200.7	03/23/22 00:13 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	59	60569
Manganese	0.221	mg/L		0.001	0.0003	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Mercury	0.018	ug/L		0.005	0.002	E245.1	03/18/22 16:23 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	35	60537
Molybdenum	0.217	mg/L		0.005	0.0002	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Nickel	0.0010	mg/L	J	0.002	0.0002	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Potassium	14	mg/L		1	0.1	E200.7	03/23/22 00:13 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	59	60569
Selenium	0.0010	mg/L	J	0.001	0.0001	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Silver	ND	mg/L		0.0002	0.00006	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Sodium	50	mg/L		1	0.1	E200.7	03/23/22 00:13 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	59	60569
Uranium	0.0038	mg/L		0.0002	0.00003	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Vanadium	0.0031	mg/L	J	0.1	0.0001	E200.8	03/24/22 10:09 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	141	60569
Zinc	0.098	mg/L		0.008	0.001	E200.8	04/19/22 01:42 / dck	03/21/22 11:28	E200.2	ICPMS205-H_220418C	42	61007

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-006
Collection Date: 03/16/22 12:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	26	mg/L		1	0.8	A2540 D	03/22/22 15:59 / OS			-124 (14410200)_220322A	: 7	TSS220321A
INORGANICS												
Alkalinity, Total as CaCO3	92	mg/L		4	2	A2320 B	03/23/22 17:33 / JAR			PHSC_101-H_220323A	: 61	R173135
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	03/23/22 17:33 / JAR			PHSC_101-H_220323A	: 61	R173135
Chloride	71	mg/L		1	0.05	E300.0	03/22/22 14:55 / JAR			IC METROHM_220321A	: 85	R173107
Sulfate	424	mg/L		1	0.1	E300.0	03/22/22 14:55 / JAR			IC METROHM_220321A	: 85	R173107
Hardness as CaCO3	487	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	: 6	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	0.05	mg/L		0.05	0.03	E350.1	03/18/22 11:28 / GE			FIA203-HE_220318B	: 44	R173037
Nitrogen, Nitrate+Nitrite as N	0.82	mg/L		0.02	0.02	E353.2	03/21/22 13:50 / GE			FIA203-HE_220321B	: 54	R173081
Nitrogen, Total	1.36	mg/L		0.05	0.03	A4500 N-C	03/18/22 13:07 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	: 35	60530
Phosphorus, Total as P	0.115	mg/L		0.003	0.001	E365.1	03/23/22 14:09 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	: 29	60567
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	03/25/22 02:24 / dck			ICPMS205-H_220323A	: 310	R173177
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Barium	0.039	mg/L		0.003	0.0002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:24 / dck			ICPMS205-H_220323A	: 310	R173177
Boron	0.082	mg/L	J	0.1	0.004	E200.7	03/18/22 19:26 / sld			ICP2-HE_220318B	: 65	R173051
Cadmium	0.00018	mg/L		0.00003	0.00002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Calcium	170	mg/L		1	0.1	E200.7	03/18/22 19:26 / sld			ICP2-HE_220318B	: 65	R173051
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Copper	0.008	mg/L		0.001	0.0001	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Iron	0.02	mg/L		0.02	0.004	E200.8	03/25/22 02:24 / dck			ICPMS205-H_220323A	: 310	R173177
Lead	0.0009	mg/L		0.0003	0.0001	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Magnesium	15	mg/L		1	0.02	E200.7	03/18/22 19:26 / sld			ICP2-HE_220318B	: 65	R173051
Manganese	0.312	mg/L		0.001	0.0003	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Mercury	0.005	ug/L		0.005	0.002	E245.1	03/18/22 16:27 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	: 36	60537
Molybdenum	0.190	mg/L		0.005	0.0003	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Potassium	13	mg/L		1	0.06	E200.7	03/18/22 19:26 / sld			ICP2-HE_220318B	: 65	R173051

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-006
Collection Date: 03/16/22 12:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	0.00095	mg/L	J	0.001	0.00007	E200.8	03/25/22 02:24 / dck			ICPMS205-H_220323A	310	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	105	R173122
Sodium	51	mg/L		1	0.02	E200.7	03/18/22 19:26 / sld			ICP2-HE_220318B	65	R173051
Uranium	0.0041	mg/L		0.0002	0.00002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	105	R173122
Vanadium	0.0019	mg/L	J	0.1	0.0001	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	105	R173122
Zinc	0.078	mg/L		0.008	0.001	E200.8	03/25/22 02:24 / dck			ICPMS205-H_220323A	310	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	0.510	mg/L		0.009	0.006	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Barium	0.048	mg/L		0.003	0.0002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	294	60569
Boron	0.084	mg/L	J	0.1	0.007	E200.7	03/23/22 00:17 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	60	60569
Cadmium	0.00048	mg/L		0.00003	0.00002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Calcium	169	mg/L		1	0.1	E200.7	03/23/22 00:17 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	60	60569
Chromium	0.0007	mg/L	J	0.01	0.0002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Cobalt	0.0006	mg/L	J	0.01	0.0003	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Copper	0.034	mg/L		0.001	0.0003	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Iron	0.72	mg/L		0.02	0.009	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Lead	0.0042	mg/L		0.0003	0.0001	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Magnesium	15	mg/L		1	0.05	E200.7	03/23/22 00:17 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	60	60569
Manganese	0.317	mg/L		0.001	0.0003	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Mercury	0.030	ug/L		0.005	0.002	E245.1	03/18/22 16:30 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	37	60537
Molybdenum	0.188	mg/L		0.005	0.0002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Nickel	0.0011	mg/L	J	0.002	0.0002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Potassium	13	mg/L		1	0.1	E200.7	03/23/22 00:17 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	60	60569
Selenium	0.0009	mg/L	J	0.001	0.0001	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Silver	ND	mg/L		0.0002	0.00006	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Sodium	50	mg/L		1	0.1	E200.7	03/23/22 00:17 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	60	60569
Uranium	0.0042	mg/L		0.0002	0.00003	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Vanadium	0.0035	mg/L	J	0.1	0.0001	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Zinc	0.132	mg/L		0.008	0.001	E200.8	04/19/22 01:45 / dck	03/21/22 11:28	E200.2	ICPMS205-H_220418C	43	61007

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-006
Collection Date: 03/16/22 12:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	26	mg/L		1	0.8	A2540 D	03/22/22 15:59 / OS			-124 (14410200)_220322A	: 7	TSS220321A
INORGANICS												
Alkalinity, Total as CaCO3	92	mg/L		4	2	A2320 B	03/23/22 17:33 / JAR			PHSC_101-H_220323A	: 61	R173135
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	03/23/22 17:33 / JAR			PHSC_101-H_220323A	: 61	R173135
Chloride	71	mg/L		1	0.05	E300.0	03/22/22 14:55 / JAR			IC METROHM_220321A	: 85	R173107
Sulfate	424	mg/L		1	0.1	E300.0	03/22/22 14:55 / JAR			IC METROHM_220321A	: 85	R173107
Hardness as CaCO3	487	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	: 6	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	0.05	mg/L		0.05	0.03	E350.1	03/18/22 11:28 / GE			FIA203-HE_220318B	: 44	R173037
Nitrogen, Nitrate+Nitrite as N	0.82	mg/L		0.02	0.02	E353.2	03/21/22 13:50 / GE			FIA203-HE_220321B	: 54	R173081
Nitrogen, Total	1.36	mg/L		0.05	0.03	A4500 N-C	03/18/22 13:07 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	: 35	60530
Phosphorus, Total as P	0.115	mg/L		0.003	0.001	E365.1	03/23/22 14:09 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	: 29	60567
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	03/25/22 02:24 / dck			ICPMS205-H_220323A	: 310	R173177
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Barium	0.039	mg/L		0.003	0.0002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:24 / dck			ICPMS205-H_220323A	: 310	R173177
Boron	0.082	mg/L	J	0.1	0.004	E200.7	03/18/22 19:26 / sld			ICP2-HE_220318B	: 65	R173051
Cadmium	0.00018	mg/L		0.00003	0.00002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Calcium	170	mg/L		1	0.1	E200.7	03/18/22 19:26 / sld			ICP2-HE_220318B	: 65	R173051
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Copper	0.008	mg/L		0.001	0.0001	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Iron	0.02	mg/L		0.02	0.004	E200.8	03/25/22 02:24 / dck			ICPMS205-H_220323A	: 310	R173177
Lead	0.0009	mg/L		0.0003	0.0001	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Magnesium	15	mg/L		1	0.02	E200.7	03/18/22 19:26 / sld			ICP2-HE_220318B	: 65	R173051
Manganese	0.312	mg/L		0.001	0.0003	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Mercury	0.005	ug/L		0.005	0.002	E245.1	03/18/22 16:27 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	: 36	60537
Molybdenum	0.190	mg/L		0.005	0.0003	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	: 105	R173122
Potassium	13	mg/L		1	0.06	E200.7	03/18/22 19:26 / sld			ICP2-HE_220318B	: 65	R173051

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-006
Collection Date: 03/16/22 12:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	0.00095	mg/L	J	0.001	0.00007	E200.8	03/25/22 02:24 / dck			ICPMS205-H_220323A	310	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	105	R173122
Sodium	51	mg/L		1	0.02	E200.7	03/18/22 19:26 / sld			ICP2-HE_220318B	65	R173051
Uranium	0.0041	mg/L		0.0002	0.00002	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	105	R173122
Vanadium	0.0019	mg/L	J	0.1	0.0001	E200.8	03/23/22 02:42 / dck			ICPMS205-H_220322B	105	R173122
Zinc	0.078	mg/L		0.008	0.001	E200.8	03/25/22 02:24 / dck			ICPMS205-H_220323A	310	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	0.510	mg/L		0.009	0.006	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Barium	0.048	mg/L		0.003	0.0002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	294	60569
Boron	0.084	mg/L	J	0.1	0.007	E200.7	03/23/22 00:17 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	60	60569
Cadmium	0.00048	mg/L		0.00003	0.00002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Calcium	169	mg/L		1	0.1	E200.7	03/23/22 00:17 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	60	60569
Chromium	0.0007	mg/L	J	0.01	0.0002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Cobalt	0.0006	mg/L	J	0.01	0.0003	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Copper	0.034	mg/L		0.001	0.0003	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Iron	0.72	mg/L		0.02	0.009	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Lead	0.0042	mg/L		0.0003	0.0001	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Magnesium	15	mg/L		1	0.05	E200.7	03/23/22 00:17 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	60	60569
Manganese	0.317	mg/L		0.001	0.0003	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Mercury	0.030	ug/L		0.005	0.002	E245.1	03/18/22 16:30 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	37	60537
Molybdenum	0.188	mg/L		0.005	0.0002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Nickel	0.0011	mg/L	J	0.002	0.0002	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Potassium	13	mg/L		1	0.1	E200.7	03/23/22 00:17 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	60	60569
Selenium	0.0009	mg/L	J	0.001	0.0001	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Silver	ND	mg/L		0.0002	0.00006	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Sodium	50	mg/L		1	0.1	E200.7	03/23/22 00:17 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	60	60569
Uranium	0.0042	mg/L		0.0002	0.00003	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Vanadium	0.0035	mg/L	J	0.1	0.0001	E200.8	03/24/22 10:12 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	142	60569
Zinc	0.132	mg/L		0.008	0.001	E200.8	04/19/22 01:45 / dck	03/21/22 11:28	E200.2	ICPMS205-H_220418C	43	61007

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-007
Collection Date: 03/16/22 10:30
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	28	mg/L		1	0.8	A2540 D	03/22/22 15:59 / OS			-124 (14410200)_220322A	8	TSS220321A
INORGANICS												
Alkalinity, Total as CaCO3	88	mg/L		4	2	A2320 B	03/23/22 17:39 / JAR			PHSC_101-H_220323A	63	R173135
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	03/23/22 17:39 / JAR			PHSC_101-H_220323A	63	R173135
Chloride	50	mg/L		1	0.05	E300.0	03/22/22 15:10 / JAR			IC METROHM_220321A	86	R173107
Sulfate	437	mg/L		1	0.1	E300.0	03/22/22 15:10 / JAR			IC METROHM_220321A	86	R173107
Hardness as CaCO3	486	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	7	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	0.05	mg/L	J	0.05	0.03	E350.1	03/18/22 11:29 / GE			FIA203-HE_220318B	45	R173037
Nitrogen, Nitrate+Nitrite as N	0.74	mg/L		0.02	0.008	E353.2	03/21/22 13:52 / GE			FIA203-HE_220321B	55	R173081
Nitrogen, Total	1.23	mg/L		0.05	0.03	A4500 N-C	03/18/22 13:09 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	36	60530
Phosphorus, Total as P	0.118	mg/L		0.003	0.001	E365.1	03/23/22 14:10 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	30	60567
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	03/25/22 02:28 / dck			ICPMS205-H_220323A	311	R173177
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Barium	0.041	mg/L		0.003	0.0002	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:28 / dck			ICPMS205-H_220323A	311	R173177
Boron	0.060	mg/L	J	0.1	0.004	E200.7	03/18/22 19:30 / sld			ICP2-HE_220318B	66	R173051
Cadmium	0.00018	mg/L		0.00003	0.00002	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Calcium	168	mg/L		1	0.1	E200.7	03/18/22 19:30 / sld			ICP2-HE_220318B	66	R173051
Chromium	ND	mg/L		0.01	0.0001	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Copper	0.006	mg/L		0.001	0.0001	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Iron	0.020	mg/L	J	0.02	0.004	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Lead	0.0008	mg/L		0.0003	0.0001	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Magnesium	14	mg/L		1	0.02	E200.7	03/18/22 19:30 / sld			ICP2-HE_220318B	66	R173051
Manganese	0.192	mg/L		0.001	0.0003	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	03/18/22 16:33 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	38	60537
Molybdenum	0.194	mg/L		0.005	0.0003	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Potassium	12	mg/L		1	0.06	E200.7	03/18/22 19:30 / sld			ICP2-HE_220318B	66	R173051

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-007
Collection Date: 03/16/22 10:30
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	0.00096	mg/L	J	0.001	0.00007	E200.8	03/25/22 02:28 / dck			ICPMS205-H_220323A	311	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Sodium	43	mg/L		1	0.02	E200.7	03/18/22 19:30 / sld			ICP2-HE_220318B	66	R173051
Uranium	0.0036	mg/L		0.0002	0.00002	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Vanadium	0.0018	mg/L	J	0.1	0.0001	E200.8	03/23/22 02:45 / dck			ICPMS205-H_220322B	106	R173122
Zinc	0.079	mg/L		0.008	0.001	E200.8	03/25/22 02:28 / dck			ICPMS205-H_220323A	311	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	0.606	mg/L		0.009	0.006	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Barium	0.052	mg/L		0.003	0.0002	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:31 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	295	60569
Boron	0.066	mg/L	J	0.1	0.007	E200.7	03/23/22 00:21 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	61	60569
Cadmium	0.00050	mg/L		0.00003	0.00003	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Calcium	171	mg/L		1	0.1	E200.7	03/23/22 00:21 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	61	60569
Chromium	0.0007	mg/L	J	0.01	0.0002	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Cobalt	0.0007	mg/L	J	0.01	0.0003	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Copper	0.033	mg/L		0.001	0.0003	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Iron	0.78	mg/L		0.02	0.009	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Lead	0.0044	mg/L		0.0003	0.0001	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Magnesium	14	mg/L		1	0.05	E200.7	03/23/22 00:21 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	61	60569
Manganese	0.311	mg/L		0.001	0.0003	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Mercury	0.027	ug/L		0.005	0.002	E245.1	03/18/22 16:36 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	39	60537
Molybdenum	0.195	mg/L		0.005	0.0002	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Nickel	0.0011	mg/L	J	0.002	0.0002	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Potassium	13	mg/L		1	0.1	E200.7	03/23/22 00:21 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	61	60569
Selenium	0.0009	mg/L	J	0.001	0.0001	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Silver	ND	mg/L		0.0002	0.00006	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Sodium	44	mg/L		1	0.1	E200.7	03/23/22 00:21 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	61	60569
Uranium	0.0037	mg/L		0.0002	0.00003	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Vanadium	0.0035	mg/L	J	0.1	0.0001	E200.8	03/24/22 10:16 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	143	60569
Zinc	0.130	mg/L		0.008	0.001	E200.8	04/19/22 01:47 / dck	03/21/22 11:28	E200.2	ICPMS205-H_220418C	44	61007

Report Definitions:
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J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Duplicate
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-008
Collection Date: 03/16/22 10:30
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	23	mg/L		1	0.8	A2540 D	03/22/22 15:59 / OS			-124 (14410200)_220322A	9	TSS220321A
INORGANICS												
Alkalinity, Total as CaCO3	88	mg/L		4	2	A2320 B	03/23/22 17:44 / JAR			PHSC_101-H_220323A	65	R173135
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	03/23/22 17:44 / JAR			PHSC_101-H_220323A	65	R173135
Chloride	50	mg/L		1	0.05	E300.0	03/22/22 15:24 / JAR			IC METROHM_220321A	87	R173107
Sulfate	439	mg/L		1	0.1	E300.0	03/22/22 15:24 / JAR			IC METROHM_220321A	87	R173107
Hardness as CaCO3	491	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	8	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	0.04	mg/L	J	0.05	0.03	E350.1	03/18/22 11:33 / GE			FIA203-HE_220318B	48	R173037
Nitrogen, Nitrate+Nitrite as N	0.74	mg/L		0.02	0.008	E353.2	03/21/22 13:55 / GE			FIA203-HE_220321B	58	R173081
Nitrogen, Total	1.23	mg/L		0.05	0.03	A4500 N-C	03/18/22 13:10 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	37	60530
Phosphorus, Total as P	0.109	mg/L		0.003	0.001	E365.1	03/23/22 14:11 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	31	60567
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	03/25/22 02:32 / dck			ICPMS205-H_220323A	312	R173177
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Barium	0.041	mg/L		0.003	0.0002	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:32 / dck			ICPMS205-H_220323A	312	R173177
Boron	0.060	mg/L	J	0.1	0.004	E200.7	03/18/22 19:34 / sld			ICP2-HE_220318B	67	R173051
Cadmium	0.00018	mg/L		0.00003	0.00002	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Calcium	169	mg/L		1	0.1	E200.7	03/18/22 19:34 / sld			ICP2-HE_220318B	67	R173051
Chromium	ND	mg/L		0.01	0.0001	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Copper	0.006	mg/L		0.001	0.0001	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Iron	0.020	mg/L	J	0.02	0.004	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Lead	0.0008	mg/L		0.0003	0.0001	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Magnesium	14	mg/L		1	0.02	E200.7	03/18/22 19:34 / sld			ICP2-HE_220318B	67	R173051
Manganese	0.192	mg/L		0.001	0.0003	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	03/18/22 16:40 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	40	60537
Molybdenum	0.192	mg/L		0.005	0.0003	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Potassium	12	mg/L		1	0.06	E200.7	03/18/22 19:34 / sld			ICP2-HE_220318B	67	R173051

Report Definitions:
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MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Duplicate
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-008
Collection Date: 03/16/22 10:30
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	0.00091	mg/L	J	0.001	0.00007	E200.8	03/25/22 02:32 / dck			ICPMS205-H_220323A	312	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Sodium	43	mg/L		1	0.02	E200.7	03/18/22 19:34 / sld			ICP2-HE_220318B	67	R173051
Uranium	0.0036	mg/L		0.0002	0.00002	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Vanadium	0.0018	mg/L	J	0.1	0.0001	E200.8	03/23/22 02:48 / dck			ICPMS205-H_220322B	107	R173122
Zinc	0.080	mg/L		0.008	0.001	E200.8	03/25/22 02:32 / dck			ICPMS205-H_220323A	312	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	0.535	mg/L		0.009	0.006	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Barium	0.050	mg/L		0.003	0.0002	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:34 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	296	60569
Boron	0.066	mg/L	J	0.1	0.007	E200.7	03/23/22 00:25 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	62	60569
Cadmium	0.00043	mg/L		0.00003	0.00002	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Calcium	174	mg/L		1	0.1	E200.7	03/23/22 00:25 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	62	60569
Chromium	0.0007	mg/L	J	0.01	0.0002	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Cobalt	0.0006	mg/L	J	0.01	0.0003	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Copper	0.031	mg/L		0.001	0.0003	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Iron	0.70	mg/L		0.02	0.009	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Lead	0.0038	mg/L		0.0003	0.0001	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Magnesium	14	mg/L		1	0.05	E200.7	03/23/22 00:25 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	62	60569
Manganese	0.297	mg/L		0.001	0.0003	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Mercury	0.022	ug/L		0.005	0.002	E245.1	03/18/22 16:43 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	41	60537
Molybdenum	0.193	mg/L		0.005	0.0002	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Nickel	0.0012	mg/L	J	0.002	0.0002	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Potassium	12	mg/L		1	0.1	E200.7	03/23/22 00:25 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	62	60569
Selenium	0.0010	mg/L	J	0.001	0.0001	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Silver	ND	mg/L		0.0002	0.00006	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Sodium	43	mg/L		1	0.1	E200.7	03/23/22 00:25 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	62	60569
Uranium	0.0037	mg/L		0.0002	0.00003	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Vanadium	0.0033	mg/L	J	0.1	0.0001	E200.8	03/24/22 10:20 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	144	60569
Zinc	0.124	mg/L		0.008	0.001	E200.8	04/19/22 01:49 / dck	03/21/22 11:28	E200.2	ICPMS205-H_220418C	45	61007

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-009
Collection Date: 03/16/22 09:45
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	24	mg/L		1	0.8	A2540 D	03/22/22 15:59 / OS			124 (14410200)_220322A	10	TSS220321A
INORGANICS												
Alkalinity, Total as CaCO3	89	mg/L		4	2	A2320 B	03/23/22 17:50 / JAR			PHSC_101-H_220323A	67	R173135
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	03/23/22 17:50 / JAR			PHSC_101-H_220323A	67	R173135
Chloride	38	mg/L		1	0.05	E300.0	03/22/22 15:38 / JAR			IC METROHM_220321A	88	R173107
Sulfate	377	mg/L		1	0.1	E300.0	03/22/22 15:38 / JAR			IC METROHM_220321A	88	R173107
Hardness as CaCO3	423	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	9	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	0.10	mg/L		0.05	0.03	E350.1	03/18/22 11:34 / GE			FIA203-HE_220318B	49	R173037
Nitrogen, Nitrate+Nitrite as N	0.53	mg/L		0.02	0.008	E353.2	03/21/22 13:56 / GE			FIA203-HE_220321B	59	R173081
Nitrogen, Total	1.06	mg/L		0.05	0.03	A4500 N-C	03/18/22 13:11 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	38	60530
Phosphorus, Total as P	0.115	mg/L		0.003	0.001	E365.1	03/23/22 14:12 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	32	60567
METALS, DISSOLVED												
Aluminum	0.045	mg/L		0.009	0.003	E200.8	03/25/22 02:35 / dck			ICPMS205-H_220323A	313	R173177
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Barium	0.038	mg/L		0.003	0.0002	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:35 / dck			ICPMS205-H_220323A	313	R173177
Boron	0.049	mg/L	J	0.1	0.004	E200.7	03/18/22 19:37 / sld			ICP2-HE_220318B	68	R173051
Cadmium	0.00034	mg/L		0.00003	0.00002	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Calcium	145	mg/L		1	0.1	E200.7	03/18/22 19:37 / sld			ICP2-HE_220318B	68	R173051
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Copper	0.013	mg/L		0.001	0.0001	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Iron	0.09	mg/L		0.02	0.004	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Lead	0.0015	mg/L		0.0003	0.0001	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Magnesium	11	mg/L		1	0.02	E200.7	03/18/22 19:37 / sld			ICP2-HE_220318B	68	R173051
Manganese	0.188	mg/L		0.001	0.0003	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Mercury	0.008	ug/L		0.005	0.002	E245.1	03/18/22 16:53 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	44	60537
Molybdenum	0.162	mg/L		0.005	0.0003	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Potassium	11	mg/L		1	0.06	E200.7	03/18/22 19:37 / sld			ICP2-HE_220318B	68	R173051

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-009
Collection Date: 03/16/22 09:45
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	0.00080	mg/L	J	0.001	0.00007	E200.8	03/25/22 02:35 / dck			ICPMS205-H_220323A	313	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Sodium	37	mg/L		1	0.02	E200.7	03/18/22 19:37 / sld			ICP2-HE_220318B	68	R173051
Uranium	0.0036	mg/L		0.0002	0.00002	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Vanadium	0.0018	mg/L	J	0.1	0.0001	E200.8	03/23/22 02:51 / dck			ICPMS205-H_220322B	108	R173122
Zinc	0.114	mg/L		0.008	0.001	E200.8	03/25/22 02:35 / dck			ICPMS205-H_220323A	313	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	0.515	mg/L		0.009	0.006	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Barium	0.046	mg/L		0.003	0.0002	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:38 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	297	60569
Boron	0.050	mg/L	J	0.1	0.007	E200.7	03/23/22 00:28 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	63	60569
Cadmium	0.00061	mg/L		0.00003	0.00003	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Calcium	150	mg/L		1	0.1	E200.7	03/23/22 00:28 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	63	60569
Chromium	0.0007	mg/L	J	0.01	0.0002	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Cobalt	0.0006	mg/L	J	0.01	0.0003	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Copper	0.033	mg/L		0.001	0.0003	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Iron	0.72	mg/L		0.02	0.009	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Lead	0.0038	mg/L		0.0003	0.0001	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Magnesium	12	mg/L		1	0.05	E200.7	03/23/22 00:28 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	63	60569
Manganese	0.317	mg/L		0.001	0.0003	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Mercury	0.026	ug/L		0.005	0.002	E245.1	03/18/22 16:56 / cfg	03/18/22 12:37	E245.1	HGCV203-H_220318A	45	60537
Molybdenum	0.162	mg/L		0.005	0.0002	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Nickel	0.0012	mg/L	J	0.002	0.0002	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Potassium	11	mg/L		1	0.1	E200.7	03/23/22 00:28 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	63	60569
Selenium	0.0008	mg/L	J	0.001	0.0001	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Silver	0.00007	mg/L	J	0.0002	0.00006	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Sodium	38	mg/L		1	0.1	E200.7	03/23/22 00:28 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	63	60569
Uranium	0.0037	mg/L		0.0002	0.00003	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Vanadium	0.0035	mg/L	J	0.1	0.0001	E200.8	03/24/22 10:23 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	145	60569
Zinc	0.156	mg/L		0.008	0.001	E200.8	04/19/22 01:52 / dck	03/21/22 11:28	E200.2	ICPMS205-H_220418C	46	61007

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-010
Collection Date: 03/16/22 09:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	26	mg/L	D	2	0.8	A2540 D	03/22/22 16:00 / OS			124 (14410200)_220322A	11	TSS220321A
INORGANICS												
Alkalinity, Total as CaCO3	89	mg/L		4	2	A2320 B	03/23/22 17:56 / JAR			PHSC_101-H_220323A	69	R173135
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	03/23/22 17:56 / JAR			PHSC_101-H_220323A	69	R173135
Chloride	34	mg/L		1	0.05	E300.0	03/22/22 15:53 / JAR			IC METROHM_220321A	89	R173107
Sulfate	386	mg/L		1	0.1	E300.0	03/22/22 15:53 / JAR			IC METROHM_220321A	89	R173107
Hardness as CaCO3	439	mg/L		1	1	A2340 B	03/25/22 10:19 / sld			WATERCALC_220325A	10	R173235
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	03/18/22 11:35 / GE			FIA203-HE_220318B	50	R173037
Nitrogen, Nitrate+Nitrite as N	0.53	mg/L		0.02	0.008	E353.2	03/21/22 13:58 / GE			FIA203-HE_220321B	60	R173081
Nitrogen, Total	1.06	mg/L		0.05	0.03	A4500 N-C	03/18/22 13:12 / GE	03/18/22 08:32	A4500 N-	FIA203-HE_220318C	39	60530
Phosphorus, Total as P	0.116	mg/L		0.003	0.001	E365.1	03/23/22 14:13 / GE	03/21/22 17:03	E365.1	SEAL AA500_220323A	33	60567
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	03/25/22 02:39 / dck			ICPMS205-H_220323A	314	R173177
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Barium	0.040	mg/L		0.003	0.0002	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 02:39 / dck			ICPMS205-H_220323A	314	R173177
Boron	0.046	mg/L	J	0.1	0.004	E200.7	03/18/22 19:41 / sld			ICP2-HE_220318B	69	R173051
Cadmium	0.00032	mg/L		0.00003	0.00002	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Calcium	147	mg/L		1	0.1	E200.7	03/18/22 19:41 / sld			ICP2-HE_220318B	69	R173051
Chromium	ND	mg/L		0.01	0.0001	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Cobalt	ND	mg/L		0.01	0.001	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Copper	0.009	mg/L		0.001	0.0001	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Iron	0.03	mg/L		0.02	0.004	E200.8	03/25/22 02:39 / dck			ICPMS205-H_220323A	314	R173177
Lead	0.0008	mg/L		0.0003	0.0001	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Magnesium	12	mg/L		1	0.02	E200.7	03/18/22 19:41 / sld			ICP2-HE_220318B	69	R173051
Manganese	0.163	mg/L		0.001	0.0003	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Mercury	0.005	ug/L	J	0.005	0.002	E245.1	03/18/22 17:06 / cfg	03/18/22 12:38	E245.1	HGCV203-H_220318A	48	60538
Molybdenum	0.166	mg/L		0.005	0.0003	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Potassium	11	mg/L		1	0.06	E200.7	03/18/22 19:41 / sld			ICP2-HE_220318B	69	R173051

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22030459-010
Collection Date: 03/16/22 09:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Selenium	0.00080	mg/L	J	0.001	0.00007	E200.8	03/25/22 02:39 / dck			ICPMS205-H_220323A	314	R173177
Silver	ND	mg/L		0.0002	0.00008	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Sodium	39	mg/L		1	0.02	E200.7	03/18/22 19:41 / sld			ICP2-HE_220318B	69	R173051
Uranium	0.0038	mg/L		0.0002	0.00002	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Vanadium	0.0019	mg/L	J	0.1	0.0001	E200.8	03/23/22 02:54 / dck			ICPMS205-H_220322B	109	R173122
Zinc	0.114	mg/L		0.008	0.001	E200.8	03/25/22 02:39 / dck			ICPMS205-H_220323A	314	R173177
METALS, TOTAL RECOVERABLE												
Aluminum	0.585	mg/L		0.009	0.006	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Barium	0.051	mg/L		0.003	0.0002	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	03/25/22 01:41 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	298	60569
Boron	0.050	mg/L	J	0.1	0.007	E200.7	03/23/22 00:40 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	66	60569
Cadmium	0.00060	mg/L		0.00003	0.00003	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Calcium	156	mg/L		1	0.1	E200.7	03/23/22 00:40 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	66	60569
Chromium	0.0006	mg/L	J	0.01	0.0002	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Cobalt	0.0007	mg/L	J	0.01	0.0003	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Copper	0.034	mg/L		0.001	0.0003	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Iron	0.78	mg/L		0.02	0.009	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Lead	0.0041	mg/L		0.0003	0.0001	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Magnesium	12	mg/L		1	0.05	E200.7	03/23/22 00:40 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	66	60569
Manganese	0.326	mg/L		0.001	0.0003	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Mercury	0.026	ug/L		0.005	0.002	E245.1	03/18/22 17:15 / cfg	03/18/22 12:38	E245.1	HGCV203-H_220318A	51	60538
Molybdenum	0.165	mg/L		0.005	0.0002	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Nickel	0.0012	mg/L	J	0.002	0.0002	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Potassium	11	mg/L		1	0.1	E200.7	03/23/22 00:40 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	66	60569
Selenium	0.0008	mg/L	J	0.001	0.0001	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Silver	ND	mg/L		0.0002	0.00006	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Sodium	38	mg/L		1	0.1	E200.7	03/23/22 00:40 / sld	03/22/22 08:33	E200.2	ICP2-HE_220322A	66	60569
Uranium	0.0040	mg/L		0.0002	0.00003	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Vanadium	0.0038	mg/L	J	0.1	0.0001	E200.8	03/24/22 10:27 / dck	03/22/22 08:33	E200.2	ICPMS205-H_220323A	146	60569
Zinc	0.174	mg/L		0.008	0.002	E200.8	04/19/22 01:54 / dck	03/21/22 11:28	E200.2	ICPMS205-H_220418C	47	61007

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-011
Collection Date: 03/16/22 16:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	64.7	wt%		0.2	0.02	D2974	04/04/22 13:06 / jjp			RYING OVEN 2_220405A	37	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	5.3	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	1	R173702
3050 EXTRACTABLE METALS												
Aluminum	19700	mg/kg-dry	D	50	50	SW6010B	03/30/22 20:24 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	79	60672
Antimony	ND	mg/kg-dry		5	4	SW6020	04/01/22 23:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220401D	23	60672
Arsenic	115	mg/kg-dry		5	1	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Barium	263	mg/kg-dry		5	2	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Beryllium	ND	mg/kg-dry		5	3	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Boron	13	mg/kg-dry		5	4	SW6010B	03/31/22 17:25 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220331A	62	60672
Cadmium	6.4	mg/kg-dry		0.3	0.3	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Chromium	68	mg/kg-dry		9	9	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Cobalt	17	mg/kg-dry		5	5	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Copper	856	mg/kg-dry		10	10	SW6010B	03/30/22 20:24 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	79	60672
Iron	38000	mg/kg-dry	D	300	300	SW6010B	03/30/22 20:24 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	79	60672
Lead	402	mg/kg-dry		5	4	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Manganese	4780	mg/kg-dry		5	5	SW6010B	03/30/22 20:24 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	79	60672
Molybdenum	102	mg/kg-dry		5	2	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Nickel	34	mg/kg-dry		5	3	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Selenium	2.9	mg/kg-dry	J	5	0.9	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Silver	6	mg/kg-dry		5	5	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Uranium	7	mg/kg-dry		5	0.1	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Vanadium	106	mg/kg-dry		2	2	SW6020	03/30/22 13:44 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	27	60672
Zinc	1750	mg/kg-dry		10	10	SW6010B	03/30/22 20:24 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	79	60672
METALS, TOTAL												
Mercury	1.0	mg/kg-dry		0.10	0.012	SW7471B	03/28/22 11:23 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	50	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-012
Collection Date: 03/16/22 16:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	20.9	wt%		0.2	0.02	D2974	04/04/22 13:06 / jjp			RYING OVEN 2_220405A	39	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	34.3	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	2	R173702
3050 EXTRACTABLE METALS												
Aluminum	5500	mg/kg-dry	D	20	20	SW6010B	03/30/22 22:08 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	107	60673
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 01:37 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	58	60673
Arsenic	25	mg/kg-dry		5	0.5	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Barium	89	mg/kg-dry		5	0.9	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Boron	4	mg/kg-dry	J	5	2	SW6010B	03/31/22 19:09 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220331A	90	60673
Cadmium	1.2	mg/kg-dry		0.2	0.1	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Chromium	14	mg/kg-dry		5	4	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Cobalt	7	mg/kg-dry		5	2	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Copper	157	mg/kg-dry		6	6	SW6010B	03/30/22 22:08 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	107	60673
Iron	19500	mg/kg-dry	D	100	100	SW6010B	03/30/22 22:08 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	107	60673
Lead	71	mg/kg-dry		5	2	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Manganese	1360	mg/kg-dry		5	2	SW6010B	03/30/22 22:08 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	107	60673
Molybdenum	18	mg/kg-dry		5	0.8	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Nickel	6	mg/kg-dry		5	2	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Selenium	0.4	mg/kg-dry	J	5	0.4	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Uranium	1.8	mg/kg-dry	J	5	0.07	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Vanadium	42	mg/kg-dry		1	1	SW6020	03/30/22 14:57 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	47	60673
Zinc	578	mg/kg-dry		7	7	SW6010B	03/30/22 22:08 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	107	60673
METALS, TOTAL												
Mercury	0.17	mg/kg-dry		0.10	0.0055	SW7471B	03/28/22 11:31 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	54	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-013
Collection Date: 03/16/22 16:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	19.3	wt%		0.2	0.02	D2974	04/04/22 13:06 / jjp			RYING OVEN 2_220405A	41	PMOIST_220404_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	16.8	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	3	R173702
3050 EXTRACTABLE METALS												
Aluminum	2650	mg/kg-dry	D	9	9	SW6010B	03/30/22 23:14 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	125	60674
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 03:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	93	60674
Arsenic	22	mg/kg-dry		5	0.5	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Barium	61	mg/kg-dry		5	0.9	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Boron	3	mg/kg-dry	J	5	2	SW6010B	03/30/22 23:14 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	125	60674
Cadmium	0.7	mg/kg-dry		0.2	0.1	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Chromium	6	mg/kg-dry		5	4	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Cobalt	3	mg/kg-dry	J	5	2	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Copper	87	mg/kg-dry		5	2	SW6010B	03/30/22 23:14 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	125	60674
Iron	5800	mg/kg-dry	D	50	50	SW6010B	03/30/22 23:14 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	125	60674
Lead	57	mg/kg-dry		5	2	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Manganese	1280	mg/kg-dry		5	0.9	SW6010B	03/30/22 23:14 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	125	60674
Molybdenum	21	mg/kg-dry		5	0.7	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Nickel	3	mg/kg-dry	J	5	2	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Selenium	ND	mg/kg-dry		5	0.4	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Uranium	1.7	mg/kg-dry	J	5	0.07	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Vanadium	14	mg/kg-dry		1	1	SW6020	03/30/22 20:21 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	101	60674
Zinc	230	mg/kg-dry		5	3	SW6010B	03/30/22 23:14 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	125	60674
METALS, TOTAL												
Mercury	0.13	mg/kg-dry		0.10	0.0055	SW7471B	03/28/22 11:33 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	55	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-014
Collection Date: 03/16/22 14:45
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	62.2	wt%		0.2	0.02	D2974	04/04/22 13:06 / jjp			RYING OVEN 2_220405A	43	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	8.7	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	4	R173702
3050 EXTRACTABLE METALS												
Aluminum	23200	mg/kg-dry	D	50	50	SW6010B	03/30/22 20:27 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	80	60672
Antimony	ND	mg/kg-dry		5	4	SW6020	04/01/22 23:38 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220401D	25	60672
Arsenic	36	mg/kg-dry		5	1	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Barium	253	mg/kg-dry		5	2	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Beryllium	ND	mg/kg-dry		5	3	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Boron	11	mg/kg-dry		5	4	SW6010B	03/31/22 17:29 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220331A	63	60672
Cadmium	7.4	mg/kg-dry		0.2	0.2	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Chromium	29	mg/kg-dry		8	8	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Cobalt	10	mg/kg-dry		5	5	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Copper	616	mg/kg-dry		10	10	SW6010B	03/30/22 20:27 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	80	60672
Iron	26000	mg/kg-dry	D	300	300	SW6010B	03/30/22 20:27 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	80	60672
Lead	151	mg/kg-dry		5	3	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Manganese	1730	mg/kg-dry		5	5	SW6010B	03/30/22 20:27 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	80	60672
Molybdenum	28	mg/kg-dry		5	2	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Nickel	15	mg/kg-dry		5	3	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Selenium	1.4	mg/kg-dry	J	5	0.9	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Silver	ND	mg/kg-dry		5	5	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Uranium	2.8	mg/kg-dry	J	5	0.1	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Vanadium	61	mg/kg-dry		2	2	SW6020	03/30/22 13:48 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	28	60672
Zinc	1180	mg/kg-dry		10	10	SW6010B	03/30/22 20:27 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	80	60672
METALS, TOTAL												
Mercury	0.56	mg/kg-dry		0.10	0.012	SW7471B	03/28/22 11:35 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	56	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-015
Collection Date: 03/16/22 14:45
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	31.8	wt%		0.2	0.02	D2974	04/04/22 13:07 / jjp			RYING OVEN 2_220405A	45	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	24.4	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	5	R173702
3050 EXTRACTABLE METALS												
Aluminum	10200	mg/kg-dry	D	30	30	SW6010B	03/30/22 22:11 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	108	60673
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 01:44 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	60	60673
Arsenic	13	mg/kg-dry		5	0.6	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Barium	160	mg/kg-dry		5	1	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Beryllium	ND	mg/kg-dry		5	2	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Boron	3	mg/kg-dry	J	5	2	SW6010B	03/31/22 19:12 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220331A	91	60673
Cadmium	2.1	mg/kg-dry		0.2	0.1	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Chromium	8	mg/kg-dry		5	4	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Cobalt	6	mg/kg-dry		5	3	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Copper	180	mg/kg-dry		7	7	SW6010B	03/30/22 22:11 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	108	60673
Iron	15000	mg/kg-dry	D	200	200	SW6010B	03/30/22 22:11 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	108	60673
Lead	57	mg/kg-dry		5	2	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Manganese	1280	mg/kg-dry		5	3	SW6010B	03/30/22 22:11 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	108	60673
Molybdenum	12	mg/kg-dry		5	0.9	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Nickel	4	mg/kg-dry	J	5	2	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Silver	ND	mg/kg-dry		5	3	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Uranium	1.6	mg/kg-dry	J	5	0.08	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Vanadium	32	mg/kg-dry		1	1	SW6020	03/30/22 15:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	48	60673
Zinc	429	mg/kg-dry		8	8	SW6010B	03/30/22 22:11 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	108	60673
METALS, TOTAL												
Mercury	0.26	mg/kg-dry		0.10	0.0063	SW7471B	03/28/22 11:37 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	57	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-016
Collection Date: 03/16/22 14:45
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	26.8	wt%		0.2	0.02	D2974	04/04/22 13:07 / jjp			RYING OVEN 2_220405A	47	PMOIST_220404_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	19.9	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	6	R173702
3050 EXTRACTABLE METALS												
Aluminum	8470	mg/kg-dry	D	9	9	SW6010B	03/30/22 23:18 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	126	60674
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 03:50 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	95	60674
Arsenic	17	mg/kg-dry		5	0.5	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Barium	161	mg/kg-dry		5	0.9	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Boron	2	mg/kg-dry	J	5	2	SW6010B	03/30/22 23:18 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	126	60674
Cadmium	0.9	mg/kg-dry		0.2	0.1	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Chromium	4	mg/kg-dry	J	5	4	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Cobalt	7	mg/kg-dry		5	2	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Copper	130	mg/kg-dry		5	3	SW6010B	03/30/22 23:18 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	126	60674
Iron	10200	mg/kg-dry	D	60	60	SW6010B	03/30/22 23:18 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	126	60674
Lead	36	mg/kg-dry		5	2	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Manganese	2130	mg/kg-dry		5	1	SW6010B	03/30/22 23:18 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	126	60674
Molybdenum	18	mg/kg-dry		5	0.8	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Nickel	3	mg/kg-dry	J	5	2	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Uranium	1.0	mg/kg-dry	J	5	0.07	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Vanadium	17	mg/kg-dry		1	1	SW6020	03/30/22 20:24 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	102	60674
Zinc	290	mg/kg-dry		5	3	SW6010B	03/30/22 23:18 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	126	60674
METALS, TOTAL												
Mercury	0.13	mg/kg-dry		0.10	0.0058	SW7471B	03/28/22 11:39 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	58	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-017
Collection Date: 03/16/22 13:50
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	75.1	wt%		0.2	0.02	D2974	04/04/22 13:07 / jjp			RYING OVEN 2_220405A	49	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	6.5	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	7	R173702
3050 EXTRACTABLE METALS												
Aluminum	20700	mg/kg-dry	D	70	70	SW6010B	03/30/22 20:31 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	81	60672
Antimony	ND	mg/kg-dry		6	6	SW6020	04/01/22 23:45 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220401D	27	60672
Arsenic	37	mg/kg-dry		5	2	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Barium	189	mg/kg-dry		5	3	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Beryllium	ND	mg/kg-dry		5	4	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Boron	13	mg/kg-dry		6	6	SW6010B	03/31/22 17:32 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220331A	64	60672
Cadmium	8.9	mg/kg-dry		0.4	0.4	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Chromium	31	mg/kg-dry		10	10	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Cobalt	9	mg/kg-dry		7	7	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Copper	821	mg/kg-dry		20	20	SW6010B	03/30/22 20:31 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	81	60672
Iron	22200	mg/kg-dry	D	400	400	SW6010B	03/30/22 20:31 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	81	60672
Lead	130	mg/kg-dry		5	5	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Manganese	1640	mg/kg-dry		7	7	SW6010B	03/30/22 20:31 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	81	60672
Molybdenum	36	mg/kg-dry		5	2	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Nickel	16	mg/kg-dry		5	5	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Selenium	3	mg/kg-dry	J	5	1	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Silver	ND	mg/kg-dry		7	7	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Uranium	2.9	mg/kg-dry	J	5	0.2	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Vanadium	54	mg/kg-dry		3	3	SW6020	03/30/22 13:52 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	29	60672
Zinc	1420	mg/kg-dry		20	20	SW6010B	03/30/22 20:31 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	81	60672
METALS, TOTAL												
Mercury	0.60	mg/kg-dry		0.10	0.018	SW7471B	03/28/22 11:41 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	59	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13 Sediment 1mm to 0.063
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-018
Collection Date: 03/16/22 13:50
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	30.9	wt%		0.2	0.02	D2974	04/04/22 13:07 / jjp			RYING OVEN 2_220405A	51	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	25.8	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	8	R173702
3050 EXTRACTABLE METALS												
Aluminum	7610	mg/kg-dry	D	30	30	SW6010B	03/30/22 22:15 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	109	60673
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 01:52 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	62	60673
Arsenic	10	mg/kg-dry		5	0.6	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Barium	161	mg/kg-dry		5	1	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Beryllium	ND	mg/kg-dry		5	2	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Boron	3	mg/kg-dry	J	5	2	SW6010B	03/31/22 19:16 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220331A	92	60673
Cadmium	1.7	mg/kg-dry		0.2	0.1	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Chromium	14	mg/kg-dry		5	4	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Cobalt	4	mg/kg-dry	J	5	3	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Copper	102	mg/kg-dry		7	7	SW6010B	03/30/22 22:15 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	109	60673
Iron	13900	mg/kg-dry	D	200	200	SW6010B	03/30/22 22:15 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	109	60673
Lead	22	mg/kg-dry		5	2	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Manganese	688	mg/kg-dry		5	3	SW6010B	03/30/22 22:15 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	109	60673
Molybdenum	9	mg/kg-dry		5	0.9	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Nickel	6	mg/kg-dry		5	2	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Silver	ND	mg/kg-dry		5	3	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Uranium	6	mg/kg-dry		5	0.08	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Vanadium	37	mg/kg-dry		1	1	SW6020	03/30/22 15:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	49	60673
Zinc	264	mg/kg-dry		7	7	SW6010B	03/30/22 22:15 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	109	60673
METALS, TOTAL												
Mercury	0.07	mg/kg-dry	J	0.10	0.0064	SW7471B	03/28/22 11:43 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	60	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13 Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-019
Collection Date: 03/16/22 13:50
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	26.2	wt%		0.2	0.02	D2974	04/04/22 13:07 / jjp			RYING OVEN 2_220405A	53	PMOIST_220404_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	17.1	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	9	R173702
3050 EXTRACTABLE METALS												
Aluminum	4720	mg/kg-dry	D	9	9	SW6010B	03/30/22 23:21 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	127	60674
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 03:58 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	97	60674
Arsenic	7	mg/kg-dry		5	0.5	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Barium	119	mg/kg-dry		5	0.9	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Boron	ND	mg/kg-dry		5	2	SW6010B	03/30/22 23:21 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	127	60674
Cadmium	0.8	mg/kg-dry		0.2	0.1	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Chromium	12	mg/kg-dry		5	4	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Cobalt	4	mg/kg-dry	J	5	2	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Copper	59	mg/kg-dry		5	3	SW6010B	03/30/22 23:21 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	127	60674
Iron	7640	mg/kg-dry	D	60	60	SW6010B	03/30/22 23:21 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	127	60674
Lead	19	mg/kg-dry		5	2	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Manganese	637	mg/kg-dry		5	1	SW6010B	03/30/22 23:21 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	127	60674
Molybdenum	8	mg/kg-dry		5	0.8	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Nickel	6	mg/kg-dry		5	2	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Uranium	1.2	mg/kg-dry	J	5	0.07	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Vanadium	20	mg/kg-dry		1	1	SW6020	03/30/22 20:28 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	103	60674
Zinc	169	mg/kg-dry		5	3	SW6010B	03/30/22 23:21 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	127	60674
METALS, TOTAL												
Mercury	0.02	mg/kg-dry	J	0.10	0.0060	SW7471B	03/28/22 11:45 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	61	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-020
Collection Date: 03/16/22 13:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	76.0	wt%		0.2	0.02	D2974	04/04/22 13:07 / jjp			RYING OVEN 2_220405A	55	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	22.6	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	10	R173702
3050 EXTRACTABLE METALS												
Aluminum	26600	mg/kg-dry	D	70	70	SW6010B	03/30/22 20:35 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	82	60672
Antimony	ND	mg/kg-dry		7	7	SW6020	04/01/22 23:53 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220401D	29	60672
Arsenic	72	mg/kg-dry		5	2	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Barium	270	mg/kg-dry		5	3	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Beryllium	ND	mg/kg-dry		5	5	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Boron	15	mg/kg-dry		6	6	SW6010B	03/31/22 17:36 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220331A	65	60672
Cadmium	11.8	mg/kg-dry		0.4	0.4	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Chromium	44	mg/kg-dry		10	10	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Cobalt	16	mg/kg-dry		8	8	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Copper	857	mg/kg-dry		20	20	SW6010B	03/30/22 20:35 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	82	60672
Iron	24200	mg/kg-dry	D	500	500	SW6010B	03/30/22 20:35 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	82	60672
Lead	156	mg/kg-dry		5	5	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Manganese	1940	mg/kg-dry		8	8	SW6010B	03/30/22 20:35 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	82	60672
Molybdenum	66	mg/kg-dry		5	2	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Nickel	24	mg/kg-dry		5	5	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Selenium	3	mg/kg-dry	J	5	1	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Silver	ND	mg/kg-dry		8	8	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Uranium	6	mg/kg-dry		5	0.2	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Vanadium	67	mg/kg-dry		3	3	SW6020	03/30/22 14:10 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	34	60672
Zinc	2230	mg/kg-dry		20	20	SW6010B	03/30/22 20:35 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	82	60672
METALS, TOTAL												
Mercury	0.62	mg/kg-dry		0.10	0.018	SW7471B	03/28/22 11:47 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	62	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-021
Collection Date: 03/16/22 13:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	30.8	wt%		0.2	0.02	D2974	04/04/22 13:08 / jjp			RYING OVEN 2_220405A	59	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	40.2	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	11	R173702
3050 EXTRACTABLE METALS												
Aluminum	6020	mg/kg-dry	D	20	20	SW6010B	03/30/22 22:33 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	114	60673
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 02:35 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	74	60673
Arsenic	7	mg/kg-dry		5	0.5	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Barium	142	mg/kg-dry		5	1	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Beryllium	ND	mg/kg-dry		5	2	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Boron	ND	mg/kg-dry		5	2	SW6010B	03/31/22 19:34 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220331A	97	60673
Cadmium	1.0	mg/kg-dry		0.2	0.1	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Chromium	12	mg/kg-dry		5	4	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Cobalt	4	mg/kg-dry	J	5	3	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Copper	75	mg/kg-dry		7	7	SW6010B	03/30/22 22:33 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	114	60673
Iron	12300	mg/kg-dry	D	200	200	SW6010B	03/30/22 22:33 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	114	60673
Lead	14	mg/kg-dry		5	2	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Manganese	301	mg/kg-dry		5	3	SW6010B	03/30/22 22:33 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	114	60673
Molybdenum	7	mg/kg-dry		5	0.8	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Nickel	6	mg/kg-dry		5	2	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Silver	ND	mg/kg-dry		5	3	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Uranium	1.1	mg/kg-dry	J	5	0.07	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Vanadium	30	mg/kg-dry		1	1	SW6020	03/30/22 15:36 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	58	60673
Zinc	210	mg/kg-dry		7	7	SW6010B	03/30/22 22:33 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	114	60673
METALS, TOTAL												
Mercury	0.06	mg/kg-dry	J	0.10	0.0061	SW7471B	03/28/22 12:03 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	69	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-022
Collection Date: 03/16/22 13:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	26.0	wt%		0.2	0.02	D2974	04/04/22 13:08 / jjp			RYING OVEN 2_220405A	61	PMOIST_220404_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	17.3	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	12	R173702
3050 EXTRACTABLE METALS												
Aluminum	4240	mg/kg-dry	D	9	9	SW6010B	03/30/22 23:47 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	134	60674
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 04:41 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	109	60674
Arsenic	10	mg/kg-dry		5	0.5	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Barium	110	mg/kg-dry		5	0.9	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Boron	ND	mg/kg-dry		5	2	SW6010B	03/30/22 23:47 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	134	60674
Cadmium	0.8	mg/kg-dry		0.2	0.1	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Chromium	11	mg/kg-dry		5	4	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Cobalt	3	mg/kg-dry	J	5	2	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Copper	56	mg/kg-dry		5	3	SW6010B	03/30/22 23:47 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	134	60674
Iron	7930	mg/kg-dry	D	60	60	SW6010B	03/30/22 23:47 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	134	60674
Lead	16	mg/kg-dry		5	2	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Manganese	232	mg/kg-dry		5	1	SW6010B	03/30/22 23:47 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	134	60674
Molybdenum	6	mg/kg-dry		5	0.8	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Nickel	6	mg/kg-dry		5	2	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Uranium	0.83	mg/kg-dry	J	5	0.07	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Vanadium	18	mg/kg-dry		1	1	SW6020	03/30/22 21:00 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	112	60674
Zinc	148	mg/kg-dry		5	3	SW6010B	03/30/22 23:47 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	134	60674
METALS, TOTAL												
Mercury	0.04	mg/kg-dry	J	0.10	0.0059	SW7471B	03/28/22 12:05 / cfg	03/28/22 08:53	SW7471B	HGCV203-H_220328A	70	60653

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-023
Collection Date: 03/16/22 12:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	69.5	wt%		0.2	0.02	D2974	04/04/22 13:08 / jjp			RYING OVEN 2_220405A	: 63	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	7.1	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	: 13	R173702
3050 EXTRACTABLE METALS												
Aluminum	18400	mg/kg-dry	D	60	60	SW6010B	03/30/22 21:31 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	: 97	60672
Antimony	ND	mg/kg-dry		5	5	SW6020	04/02/22 00:36 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220401D	: 41	60672
Arsenic	41	mg/kg-dry		5	1	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Barium	207	mg/kg-dry		5	2	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Beryllium	ND	mg/kg-dry		5	4	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Boron	12	mg/kg-dry		5	5	SW6010B	03/31/22 18:32 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220331A	: 80	60672
Cadmium	9.0	mg/kg-dry		0.3	0.3	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Chromium	24	mg/kg-dry		10	10	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Cobalt	12	mg/kg-dry		6	6	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Copper	790	mg/kg-dry		20	20	SW6010B	03/30/22 21:31 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	: 97	60672
Iron	21500	mg/kg-dry	D	400	400	SW6010B	03/30/22 21:31 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	: 97	60672
Lead	126	mg/kg-dry		5	4	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Manganese	3660	mg/kg-dry		6	6	SW6010B	03/30/22 21:31 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	: 97	60672
Molybdenum	27	mg/kg-dry		5	2	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Nickel	15	mg/kg-dry		5	4	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Selenium	2	mg/kg-dry	J	5	1	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Silver	ND	mg/kg-dry		6	6	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Uranium	2.4	mg/kg-dry	J	5	0.2	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Vanadium	50	mg/kg-dry		3	3	SW6020	03/30/22 14:17 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 36	60672
Zinc	1460	mg/kg-dry		20	20	SW6010B	03/30/22 21:31 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	: 97	60672
METALS, TOTAL												
Mercury	0.72	mg/kg-dry		0.10	0.014	SW7471B	03/30/22 16:46 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	: 13	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-024
Collection Date: 03/16/22 12:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	39.6	wt%		0.2	0.02	D2974	04/04/22 13:08 / jjp			RYING OVEN 2_220405A	65	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	22.4	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	14	R173702
3050 EXTRACTABLE METALS												
Aluminum	8300	mg/kg-dry	D	30	30	SW6010B	03/30/22 22:37 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	115	60673
Antimony	ND	mg/kg-dry		5	3	SW6020	04/02/22 02:42 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	76	60673
Arsenic	29	mg/kg-dry		5	0.6	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Barium	181	mg/kg-dry		5	1	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Beryllium	ND	mg/kg-dry		5	2	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Boron	3	mg/kg-dry	J	5	2	SW6010B	03/31/22 19:45 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220331A	100	60673
Cadmium	4.8	mg/kg-dry		0.2	0.1	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Chromium	14	mg/kg-dry		5	5	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Cobalt	6	mg/kg-dry		5	3	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Copper	241	mg/kg-dry		8	8	SW6010B	03/30/22 22:37 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	115	60673
Iron	21700	mg/kg-dry	D	200	200	SW6010B	03/30/22 22:37 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	115	60673
Lead	59	mg/kg-dry		5	2	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Manganese	1510	mg/kg-dry		5	3	SW6010B	03/30/22 22:37 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	115	60673
Molybdenum	8	mg/kg-dry		5	1	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Nickel	6	mg/kg-dry		5	2	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Selenium	ND	mg/kg-dry		5	0.6	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Silver	ND	mg/kg-dry		5	3	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Uranium	2.2	mg/kg-dry	J	5	0.09	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Vanadium	52	mg/kg-dry		1	1	SW6020	03/30/22 15:40 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	59	60673
Zinc	1190	mg/kg-dry		9	9	SW6010B	03/30/22 22:37 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	115	60673
METALS, TOTAL												
Mercury	0.21	mg/kg-dry		0.10	0.0070	SW7471B	03/30/22 16:55 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	17	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2 Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-025
Collection Date: 03/16/22 12:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	27.4	wt%		0.2	0.02	D2974	04/04/22 13:08 / jjp			RYING OVEN 2_220405A	67	PMOIST_220404_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	10.7	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	15	R173702
3050 EXTRACTABLE METALS												
Aluminum	4070	mg/kg-dry	D	10	10	SW6010B	03/30/22 23:50 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	135	60674
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 04:48 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	111	60674
Arsenic	26	mg/kg-dry		5	0.5	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Barium	154	mg/kg-dry		5	0.9	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Beryllium	ND	mg/kg-dry		5	2	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Boron	ND	mg/kg-dry		5	2	SW6010B	03/30/22 23:50 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	135	60674
Cadmium	1.2	mg/kg-dry		0.2	0.1	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Chromium	7	mg/kg-dry		5	4	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Cobalt	3	mg/kg-dry	J	5	3	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Copper	135	mg/kg-dry		5	3	SW6010B	03/30/22 23:50 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	135	60674
Iron	8060	mg/kg-dry	D	60	60	SW6010B	03/30/22 23:50 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	135	60674
Lead	184	mg/kg-dry		5	2	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Manganese	3130	mg/kg-dry		5	1	SW6010B	03/30/22 23:50 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	135	60674
Molybdenum	4.6	mg/kg-dry	J	5	0.8	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Nickel	4	mg/kg-dry	J	5	2	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Uranium	1.7	mg/kg-dry	J	5	0.07	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Vanadium	18	mg/kg-dry		1	1	SW6020	03/30/22 21:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	113	60674
Zinc	285	mg/kg-dry		5	3	SW6010B	03/30/22 23:50 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	135	60674
METALS, TOTAL												
Mercury	0.17	mg/kg-dry		0.10	0.0059	SW7471B	03/30/22 16:57 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	18	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-026
Collection Date: 03/16/22 10:30
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	74.6	wt%		0.2	0.02	D2974	04/04/22 13:09 / jjp			RYING OVEN 2_220405A	69	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	15.1	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	16	R173702
3050 EXTRACTABLE METALS												
Aluminum	24100	mg/kg-dry	D	70	70	SW6010B	03/30/22 21:35 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	98	60672
Antimony	ND	mg/kg-dry		6	6	SW6020	04/02/22 00:43 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220401D	43	60672
Arsenic	54	mg/kg-dry		5	1	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Barium	262	mg/kg-dry		5	3	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Beryllium	ND	mg/kg-dry		5	4	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Boron	15	mg/kg-dry		6	6	SW6010B	03/31/22 18:36 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220331A	81	60672
Cadmium	9.3	mg/kg-dry		0.3	0.3	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Chromium	46	mg/kg-dry		10	10	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Cobalt	13	mg/kg-dry		7	7	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Copper	638	mg/kg-dry		20	20	SW6010B	03/30/22 21:35 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	98	60672
Iron	26300	mg/kg-dry	D	400	400	SW6010B	03/30/22 21:35 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	98	60672
Lead	189	mg/kg-dry		5	5	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Manganese	3470	mg/kg-dry		7	7	SW6010B	03/30/22 21:35 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	98	60672
Molybdenum	29	mg/kg-dry		5	2	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Nickel	26	mg/kg-dry		5	5	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Selenium	2	mg/kg-dry	J	5	1	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Silver	ND	mg/kg-dry		7	7	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Uranium	2.4	mg/kg-dry	J	5	0.2	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Vanadium	53	mg/kg-dry		3	3	SW6020	03/30/22 14:21 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	37	60672
Zinc	1760	mg/kg-dry		20	20	SW6010B	03/30/22 21:35 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	98	60672
METALS, TOTAL												
Mercury	0.88	mg/kg-dry		0.10	0.017	SW7471B	03/30/22 16:59 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	19	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-027
Collection Date: 03/16/22 10:30
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	25.6	wt%		0.2	0.02	D2974	04/04/22 13:09 / jjp			RYING OVEN 2_220405A	73	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	41.0	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	17	R173702
3050 EXTRACTABLE METALS												
Aluminum	7510	mg/kg-dry	D	20	20	SW6010B	03/30/22 22:48 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	118	60673
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 02:49 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	78	60673
Arsenic	19	mg/kg-dry		5	0.5	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Barium	146	mg/kg-dry		5	0.9	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Boron	2	mg/kg-dry	J	5	2	SW6010B	03/31/22 19:49 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220331A	101	60673
Cadmium	1.4	mg/kg-dry		0.2	0.1	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Chromium	10	mg/kg-dry		5	4	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Cobalt	4	mg/kg-dry	J	5	2	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Copper	141	mg/kg-dry		6	6	SW6010B	03/30/22 22:48 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	118	60673
Iron	13500	mg/kg-dry	D	100	100	SW6010B	03/30/22 22:48 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	118	60673
Lead	44	mg/kg-dry		5	2	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Manganese	529	mg/kg-dry		5	3	SW6010B	03/30/22 22:48 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	118	60673
Molybdenum	3.2	mg/kg-dry	J	5	0.8	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Nickel	6	mg/kg-dry		5	2	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Uranium	1.4	mg/kg-dry	J	5	0.07	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Vanadium	30	mg/kg-dry		1	1	SW6020	03/30/22 15:43 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	60	60673
Zinc	487	mg/kg-dry		7	7	SW6010B	03/30/22 22:48 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	118	60673
METALS, TOTAL												
Mercury	0.20	mg/kg-dry		0.10	0.0059	SW7471B	03/30/22 17:01 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	20	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-028
Collection Date: 03/16/22 10:30
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	29.7	wt%		0.2	0.02	D2974	04/04/22 13:09 / jjp			RYING OVEN 2_220405A	75	PMOIST_220404_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	14.1	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	18	R173702
3050 EXTRACTABLE METALS												
Aluminum	7870	mg/kg-dry	D	10	10	SW6010B	03/30/22 23:54 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	136	60674
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 04:55 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	113	60674
Arsenic	20	mg/kg-dry		5	0.5	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Barium	185	mg/kg-dry		5	0.9	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Beryllium	ND	mg/kg-dry		5	2	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Boron	2	mg/kg-dry	J	5	2	SW6010B	03/30/22 23:54 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	136	60674
Cadmium	0.5	mg/kg-dry		0.2	0.1	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Chromium	7	mg/kg-dry		5	4	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Cobalt	3	mg/kg-dry	J	5	3	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Copper	92	mg/kg-dry		5	3	SW6010B	03/30/22 23:54 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	136	60674
Iron	8660	mg/kg-dry	D	60	60	SW6010B	03/30/22 23:54 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	136	60674
Lead	47	mg/kg-dry		5	2	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Manganese	500	mg/kg-dry		5	1	SW6010B	03/30/22 23:54 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	136	60674
Molybdenum	2.9	mg/kg-dry	J	5	0.8	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Nickel	5	mg/kg-dry	J	5	2	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Uranium	1.4	mg/kg-dry	J	5	0.07	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Vanadium	14	mg/kg-dry		1	1	SW6020	03/30/22 21:07 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	114	60674
Zinc	229	mg/kg-dry		5	3	SW6010B	03/30/22 23:54 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	136	60674
METALS, TOTAL												
Mercury	0.10	mg/kg-dry		0.10	0.0060	SW7471B	03/30/22 17:03 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	21	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Duplicate <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-029
Collection Date: 03/16/22 10:30
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	67.0	wt%		0.2	0.02	D2974	04/04/22 13:09 / jjp			RYING OVEN 2_220405A	: 77	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	7.2	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	: 19	R173702
3050 EXTRACTABLE METALS												
Aluminum	17200	mg/kg-dry	D	50	50	SW6010B	03/30/22 21:38 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	: 99	60672
Antimony	ND	mg/kg-dry		5	5	SW6020	04/02/22 00:50 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220401D	: 45	60672
Arsenic	36	mg/kg-dry		5	1	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Barium	181	mg/kg-dry		5	2	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Beryllium	ND	mg/kg-dry		5	3	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Boron	10	mg/kg-dry		5	5	SW6010B	03/31/22 18:39 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220331A	: 82	60672
Cadmium	7.1	mg/kg-dry		0.3	0.3	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Chromium	19	mg/kg-dry		9	9	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Cobalt	9	mg/kg-dry		5	5	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Copper	528	mg/kg-dry		10	10	SW6010B	03/30/22 21:38 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	: 99	60672
Iron	18100	mg/kg-dry	D	300	300	SW6010B	03/30/22 21:38 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	: 99	60672
Lead	114	mg/kg-dry		5	4	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Manganese	2500	mg/kg-dry		6	6	SW6010B	03/30/22 21:38 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	: 99	60672
Molybdenum	22	mg/kg-dry		5	2	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Nickel	12	mg/kg-dry		5	4	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Selenium	2	mg/kg-dry	J	5	1	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Silver	ND	mg/kg-dry		5	5	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Uranium	1.8	mg/kg-dry	J	5	0.2	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Vanadium	41	mg/kg-dry		2	2	SW6020	03/30/22 14:24 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	: 38	60672
Zinc	1270	mg/kg-dry		20	20	SW6010B	03/30/22 21:38 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	: 99	60672
METALS, TOTAL												
Mercury	0.62	mg/kg-dry		0.10	0.013	SW7471B	03/30/22 17:05 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	: 22	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-030
Collection Date: 03/16/22 09:45
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	67.6	wt%		0.2	0.02	D2974	04/04/22 13:09 / jjp			RYING OVEN 2_220405A	79	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	1.3	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	20	R173702
3050 EXTRACTABLE METALS												
Aluminum	21600	mg/kg-dry	D	50	50	SW6010B	03/30/22 21:42 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	100	60672
Antimony	ND	mg/kg-dry		5	5	SW6020	04/02/22 00:57 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220401D	47	60672
Arsenic	47	mg/kg-dry		5	1	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Barium	327	mg/kg-dry		5	2	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Beryllium	ND	mg/kg-dry		5	3	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Boron	11	mg/kg-dry		5	5	SW6010B	03/31/22 18:43 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220331A	83	60672
Cadmium	11.4	mg/kg-dry		0.3	0.3	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Chromium	37	mg/kg-dry		9	9	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Cobalt	14	mg/kg-dry		6	6	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Copper	639	mg/kg-dry		10	10	SW6010B	03/30/22 21:42 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	100	60672
Iron	26900	mg/kg-dry	D	300	300	SW6010B	03/30/22 21:42 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	100	60672
Lead	128	mg/kg-dry		5	4	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Manganese	3940	mg/kg-dry		6	6	SW6010B	03/30/22 21:42 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	100	60672
Molybdenum	25	mg/kg-dry		5	2	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Nickel	22	mg/kg-dry		5	4	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Selenium	2	mg/kg-dry	J	5	1	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Silver	ND	mg/kg-dry		6	6	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Uranium	2.7	mg/kg-dry	J	5	0.2	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Vanadium	65	mg/kg-dry		2	2	SW6020	03/30/22 14:28 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	39	60672
Zinc	1650	mg/kg-dry		20	20	SW6010B	03/30/22 21:42 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	100	60672
METALS, TOTAL												
Mercury	0.62	mg/kg-dry		0.10	0.013	SW7471B	03/30/22 17:08 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	23	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-031
Collection Date: 03/16/22 09:45
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	23.4	wt%		0.2	0.02	D2974	04/04/22 13:09 / jjp			RYING OVEN 2_220405A	81	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	16.8	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	21	R173702
3050 EXTRACTABLE METALS												
Aluminum	5050	mg/kg-dry	D	20	20	SW6010B	03/30/22 22:52 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	119	60673
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 02:56 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	80	60673
Arsenic	18	mg/kg-dry		5	0.5	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Barium	105	mg/kg-dry		5	0.9	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Boron	ND	mg/kg-dry		5	2	SW6010B	03/31/22 19:52 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220331A	102	60673
Cadmium	1.5	mg/kg-dry		0.2	0.1	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Chromium	17	mg/kg-dry		5	4	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Cobalt	4	mg/kg-dry	J	5	2	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Copper	99	mg/kg-dry		6	6	SW6010B	03/30/22 22:52 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	119	60673
Iron	23300	mg/kg-dry	D	100	100	SW6010B	03/30/22 22:52 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	119	60673
Lead	31	mg/kg-dry		5	2	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Manganese	812	mg/kg-dry		5	2	SW6010B	03/30/22 22:52 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	119	60673
Molybdenum	4.6	mg/kg-dry	J	5	0.8	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Nickel	5	mg/kg-dry		5	2	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Selenium	ND	mg/kg-dry		5	0.4	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Uranium	3.8	mg/kg-dry	J	5	0.07	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Vanadium	70	mg/kg-dry		1	1	SW6020	03/30/22 15:47 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	61	60673
Zinc	405	mg/kg-dry		7	7	SW6010B	03/30/22 22:52 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	119	60673
METALS, TOTAL												
Mercury	0.07	mg/kg-dry	J	0.10	0.0057	SW7471B	03/30/22 17:10 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	24	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-032
Collection Date: 03/16/22 09:45
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	21.9	wt%		0.2	0.02	D2974	04/04/22 13:10 / jjp			RYING OVEN 2_220405A	: 83	PMOIST_220404_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	11.3	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	: 22	R173702
3050 EXTRACTABLE METALS												
Aluminum	2860	mg/kg-dry	D	9	9	SW6010B	03/30/22 23:58 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 137	60674
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 05:03 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	: 115	60674
Arsenic	16	mg/kg-dry		5	0.5	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Barium	57	mg/kg-dry		5	0.8	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Boron	ND	mg/kg-dry		5	2	SW6010B	03/30/22 23:58 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 137	60674
Cadmium	0.5	mg/kg-dry		0.2	0.1	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Chromium	6	mg/kg-dry		5	4	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Cobalt	3	mg/kg-dry	J	5	2	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Copper	60	mg/kg-dry		5	2	SW6010B	03/30/22 23:58 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 137	60674
Iron	7310	mg/kg-dry	D	50	50	SW6010B	03/30/22 23:58 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 137	60674
Lead	22	mg/kg-dry		5	2	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Manganese	456	mg/kg-dry		5	0.9	SW6010B	03/30/22 23:58 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 137	60674
Molybdenum	3.1	mg/kg-dry	J	5	0.7	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Nickel	3	mg/kg-dry	J	5	2	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Selenium	ND	mg/kg-dry		5	0.4	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Uranium	1.4	mg/kg-dry	J	5	0.07	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Vanadium	15	mg/kg-dry		1	1	SW6020	03/30/22 21:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 115	60674
Zinc	251	mg/kg-dry		5	3	SW6010B	03/30/22 23:58 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 137	60674
METALS, TOTAL												
Mercury	0.18	mg/kg-dry		0.10	0.0056	SW7471B	03/30/22 17:12 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	: 25	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-033
Collection Date: 03/16/22 09:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	57.1	wt%		0.2	0.02	D2974	04/04/22 13:10 / jjp			RYING OVEN 2_220405A	85	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	7.8	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	23	R173702
3050 EXTRACTABLE METALS												
Aluminum	20900	mg/kg-dry	D	40	40	SW6010B	03/30/22 21:46 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	101	60672
Antimony	ND	mg/kg-dry		5	4	SW6020	04/02/22 01:05 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220401D	49	60672
Arsenic	53	mg/kg-dry		5	0.9	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Barium	212	mg/kg-dry		5	2	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Beryllium	ND	mg/kg-dry		5	3	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Boron	8	mg/kg-dry		5	3	SW6010B	03/31/22 18:47 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220331A	84	60672
Cadmium	5.5	mg/kg-dry		0.2	0.2	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Chromium	38	mg/kg-dry		7	7	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Cobalt	9	mg/kg-dry		5	4	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Copper	364	mg/kg-dry		10	10	SW6010B	03/30/22 21:46 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	101	60672
Iron	24100	mg/kg-dry	D	300	300	SW6010B	03/30/22 21:46 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	101	60672
Lead	134	mg/kg-dry		5	3	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Manganese	765	mg/kg-dry		5	4	SW6010B	03/30/22 21:46 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	101	60672
Molybdenum	15	mg/kg-dry		5	1	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Nickel	20	mg/kg-dry		5	3	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Selenium	1.7	mg/kg-dry	J	5	0.8	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Silver	ND	mg/kg-dry		5	4	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Uranium	7	mg/kg-dry		5	0.1	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Vanadium	56	mg/kg-dry		2	2	SW6020	03/30/22 14:31 / sld	03/29/22 08:26	SW3050 B	ICPMS205-H_220330C	40	60672
Zinc	1570	mg/kg-dry		10	10	SW6010B	03/30/22 21:46 / sld	03/29/22 08:26	SW3050 B	ICP2-HE_220330A	101	60672
METALS, TOTAL												
Mercury	0.64	mg/kg-dry		0.10	0.010	SW7471B	03/30/22 17:18 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	28	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-034
Collection Date: 03/16/22 09:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	23.9	wt%		0.2	0.02	D2974	04/04/22 13:10 / jjp			RYING OVEN 2_220405A	89	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	46.5	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	24	R173702
3050 EXTRACTABLE METALS												
Aluminum	6470	mg/kg-dry	D	20	20	SW6010B	03/30/22 22:56 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	120	60673
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 03:04 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	82	60673
Arsenic	9	mg/kg-dry		5	0.5	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Barium	144	mg/kg-dry		5	0.9	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Boron	ND	mg/kg-dry		5	2	SW6010B	03/31/22 19:56 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220331A	103	60673
Cadmium	1.1	mg/kg-dry		0.2	0.1	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Chromium	13	mg/kg-dry		5	4	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Cobalt	5	mg/kg-dry	J	5	2	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Copper	67	mg/kg-dry		6	6	SW6010B	03/30/22 22:56 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	120	60673
Iron	16100	mg/kg-dry	D	100	100	SW6010B	03/30/22 22:56 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	120	60673
Lead	26	mg/kg-dry		5	2	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Manganese	239	mg/kg-dry		5	2	SW6010B	03/30/22 22:56 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	120	60673
Molybdenum	2.3	mg/kg-dry	J	5	0.8	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Nickel	7	mg/kg-dry		5	2	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Uranium	2.4	mg/kg-dry	J	5	0.07	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Vanadium	43	mg/kg-dry		1	1	SW6020	03/30/22 15:51 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	62	60673
Zinc	418	mg/kg-dry		7	7	SW6010B	03/30/22 22:56 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	120	60673
METALS, TOTAL												
Mercury	0.09	mg/kg-dry	J	0.10	0.0056	SW7471B	03/30/22 17:26 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	32	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Sedmient 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-035
Collection Date: 03/16/22 09:00
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	24.5	wt%		0.2	0.02	D2974	04/04/22 13:10 / jjp			RYING OVEN 2_220405A	: 91	PMOIST_220404_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	7.2	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	: 25	R173702
3050 EXTRACTABLE METALS												
Aluminum	3490	mg/kg-dry	D	9	9	SW6010B	03/31/22 00:01 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 138	60674
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 05:10 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	: 117	60674
Arsenic	12	mg/kg-dry		5	0.5	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Barium	90	mg/kg-dry		5	0.9	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Boron	ND	mg/kg-dry		5	2	SW6010B	03/31/22 00:01 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 138	60674
Cadmium	0.6	mg/kg-dry		0.2	0.1	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Chromium	8	mg/kg-dry		5	4	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Cobalt	3	mg/kg-dry	J	5	2	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Copper	47	mg/kg-dry		5	3	SW6010B	03/31/22 00:01 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 138	60674
Iron	6600	mg/kg-dry	D	60	60	SW6010B	03/31/22 00:01 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 138	60674
Lead	15	mg/kg-dry		5	2	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Manganese	193	mg/kg-dry		5	1	SW6010B	03/31/22 00:01 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 138	60674
Molybdenum	3.1	mg/kg-dry	J	5	0.8	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Nickel	4	mg/kg-dry	J	5	2	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Selenium	ND	mg/kg-dry		5	0.4	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Uranium	3.4	mg/kg-dry	J	5	0.07	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Vanadium	17	mg/kg-dry		1	1	SW6020	03/30/22 21:15 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	: 116	60674
Zinc	256	mg/kg-dry		5	3	SW6010B	03/31/22 00:01 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	: 138	60674
METALS, TOTAL												
Mercury	0.22	mg/kg-dry		0.10	0.0058	SW7471B	03/30/22 17:28 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	: 33	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Duplicate 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-036
Collection Date: 03/16/22 10:30
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	29.3	wt%		0.2	0.02	D2974	04/04/22 13:10 / jjp			RYING OVEN 2_220405A	93	PMOIST_220404_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	43.4	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	26	R173702
3050 EXTRACTABLE METALS												
Aluminum	7630	mg/kg-dry	D	20	20	SW6010B	03/30/22 22:59 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	121	60673
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 03:11 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	84	60673
Arsenic	19	mg/kg-dry		5	0.5	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Barium	150	mg/kg-dry		5	0.9	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Beryllium	ND	mg/kg-dry		5	1	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Boron	2	mg/kg-dry	J	5	2	SW6010B	03/31/22 20:00 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220331A	104	60673
Cadmium	1.3	mg/kg-dry		0.2	0.1	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Chromium	8	mg/kg-dry		5	4	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Cobalt	4	mg/kg-dry	J	5	2	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Copper	171	mg/kg-dry		7	7	SW6010B	03/30/22 22:59 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	121	60673
Iron	12200	mg/kg-dry	D	100	100	SW6010B	03/30/22 22:59 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	121	60673
Lead	41	mg/kg-dry		5	2	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Manganese	728	mg/kg-dry		5	3	SW6010B	03/30/22 22:59 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	121	60673
Molybdenum	3.4	mg/kg-dry	J	5	0.8	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Nickel	5	mg/kg-dry	J	5	2	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Uranium	1.4	mg/kg-dry	J	5	0.07	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Vanadium	22	mg/kg-dry		1	1	SW6020	03/30/22 15:54 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	63	60673
Zinc	332	mg/kg-dry		7	7	SW6010B	03/30/22 22:59 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	121	60673
METALS, TOTAL												
Mercury	0.13	mg/kg-dry		0.10	0.0060	SW7471B	03/30/22 17:30 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	34	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Duplicate 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22030459-037
Collection Date: 03/16/22 10:30
DateReceived: 03/16/22
Report Date: 04/21/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	26.8	wt%		0.2	0.02	D2974	04/04/22 13:11 / jjp			RYING OVEN 2_220405A	95	PMOIST_220404_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	15.4	wt%-wet		0.1		SSSA 15-2	04/12/22 12:06 / jjp			MISC SOILS_220412A	27	R173702
3050 EXTRACTABLE METALS												
Aluminum	7280	mg/kg-dry	D	10	10	SW6010B	03/31/22 00:05 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	139	60674
Antimony	ND	mg/kg-dry		5	2	SW6020	04/02/22 05:17 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220401D	119	60674
Arsenic	26	mg/kg-dry		5	0.5	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Barium	158	mg/kg-dry		5	0.9	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Beryllium	ND	mg/kg-dry		5	2	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Boron	2	mg/kg-dry	J	5	2	SW6010B	03/31/22 00:05 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	139	60674
Cadmium	0.7	mg/kg-dry		0.2	0.1	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Chromium	10	mg/kg-dry		5	4	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Cobalt	4	mg/kg-dry	J	5	2	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Copper	114	mg/kg-dry		5	3	SW6010B	03/31/22 00:05 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	139	60674
Iron	9980	mg/kg-dry	D	60	60	SW6010B	03/31/22 00:05 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	139	60674
Lead	34	mg/kg-dry		5	2	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Manganese	535	mg/kg-dry		5	1	SW6010B	03/31/22 00:05 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	139	60674
Molybdenum	3.0	mg/kg-dry	J	5	0.8	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Nickel	5	mg/kg-dry		5	2	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Selenium	ND	mg/kg-dry		5	0.5	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Silver	ND	mg/kg-dry		5	2	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Uranium	1.5	mg/kg-dry	J	5	0.07	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Vanadium	17	mg/kg-dry		1	1	SW6020	03/30/22 21:18 / sld	03/29/22 08:27	SW3050 B	ICPMS205-H_220330C	117	60674
Zinc	256	mg/kg-dry		5	3	SW6010B	03/31/22 00:05 / sld	03/29/22 08:27	SW3050 B	ICP2-HE_220330A	139	60674
METALS, TOTAL												
Mercury	0.07	mg/kg-dry	J	0.10	0.0059	SW7471B	03/30/22 17:32 / cfg	03/30/22 09:47	SW7471B	HGCV203-H_220330B	35	60689

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22030459
BatchID: 220318waLL-hg203
Date: *21-Apr-22*

Run ID :Run Order: **HGCV203-H_220318A: 10** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**
Analysis Date: **03/18/22 14:56** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0915	0.0050	0.1	0	91	90	110				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **HGCV203-H_220318A: 11** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV1** Method: **E245.1**
Analysis Date: **03/18/22 14:59** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.100	0.0050	0.1	0	100	95	105				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **HGCV203-H_220318A: 28** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E245.1**
Analysis Date: **03/18/22 16:01** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.101	0.0050	0.1	0	101	90	110				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 220328sa-hg203** **Date:** *21-Apr-22*

Run ID :Run Order: **HGCV203-H_220328A: 7** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW7471B**

Analysis Date: **03/28/22 09:02** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00096	0.50	0.001	0	**96**	90	110				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Run ID :Run Order: **HGCV203-H_220328A: 22** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW7471B**

Analysis Date: **03/28/22 10:23** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0027	0.50	0.0025	0	**108**	90	110				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Run ID :Run Order: **HGCV203-H_220328A: 63** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW7471B**

Analysis Date: **03/28/22 11:49** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0025	0.50	0.0025	0	**101**	90	110				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: 220330sa-hg203
Date: *21-Apr-22*

Run ID :Run Order: **HGCV203-H_220330B: 7** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW7471B**

Analysis Date: **03/30/22 16:27** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00095	0.50	0.001	0	**95**	90	110				

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **HGCV203-H_220330B: 8** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW7471B**

Analysis Date: **03/30/22 16:29** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0025	0.50	0.0025	0	**101**	90	110				

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **HGCV203-H_220330B: 26** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW7471B**

Analysis Date: **03/30/22 17:14** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0026	0.50	0.0025	0	**103**	90	110				

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: 42595
Date: *21-Apr-22*

Run ID :Run Order: **SEAL AA500_220323A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **03/23/22 13:52** Units: **mg/L** **Prep Info:** Prep Date: **8/7/2018** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.241	0.010	0.25	0	96	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: 50868
Date: *21-Apr-22*

Run ID :Run Order: **FIA203-HE_220318C: 10** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **03/18/22 12:38** Units: **mg/L** **Prep Info:** Prep Date: **4/8/2020** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.504	0.10	0.5	0	101	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **FIA203-HE_220318C: 29** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **03/18/22 13:00** Units: **mg/L** **Prep Info:** Prep Date: **4/8/2020** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.505	0.10	0.5	0	101	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60530** **Date:** *21-Apr-22*

Run ID :Run Order: **FIA203-HE_220318C: 11** SampType: **Method Blank** Lab ID: **MB-60530** Method: **A4500 N-C**
Analysis Date: **03/18/22 12:39** Units: **mg/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.03									

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **FIA203-HE_220318C: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-60530** Method: **A4500 N-C**
Analysis Date: **03/18/22 12:41** Units: **mg/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	11.2	0.30	11.2	0	100	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **FIA203-HE_220318C: 15** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60530** Method: **A4500 N-C**
Analysis Date: **03/18/22 12:44** Units: **mg/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.03	0.10	1	0	103	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **FIA203-HE_220318C: 32** SampType: **Sample Matrix Spike** Lab ID: **H22030459-002AMS** Method: **A4500 N-C**
Analysis Date: **03/18/22 13:04** Units: **mg/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.05	0.10	1	0	105	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **FIA203-HE_220318C: 33** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-002AMSD** Method: **A4500 N-C**
Analysis Date: **03/18/22 13:05** Units: **mg/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.07	0.10	1	0	107	90	110	1.049	1.5	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: 60530
Date: *21-Apr-22*

Run ID :Run Order: **FIA203-HE_220318C: 33** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-002AMSD** Method: **A4500 N-C**

Analysis Date: **03/18/22 13:05** Units: **mg/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **FIA203-HE_220318C: 46** SampType: **Sample Matrix Spike** Lab ID: **H22030470-001AMS** Method: **A4500 N-C**

Analysis Date: **03/18/22 13:20** Units: **mg/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.06	0.10	1	0	**106**	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **FIA203-HE_220318C: 47** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030470-001AMSD** Method: **A4500 N-C**

Analysis Date: **03/18/22 13:22** Units: **mg/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.07	0.10	1	0	**107**	90	110	1.064	**0.3**	20	

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: 60537
Date: *21-Apr-22*

Run ID :Run Order: **HGCV203-H_220318A: 16** SampType: **Method Blank** Lab ID: **MB-60537** Method: **E245.1**

Analysis Date: **03/18/22 15:22** Units: **ug/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.002									

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C**

Run ID :Run Order: **HGCV203-H_220318A: 17** SampType: **Laboratory Control Sample** Lab ID: **LCS-60537** Method: **E245.1**

Analysis Date: **03/18/22 15:25** Units: **ug/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0472	0.0050	0.05	0	94	90	110				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C**

Run ID :Run Order: **HGCV203-H_220318A: 20** SampType: **Sample Matrix Spike** Lab ID: **H22030235-001CMS** Method: **E245.1**

Analysis Date: **03/18/22 15:35** Units: **ug/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0494	0.0050	0.05	0.00412	91	70	130				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C**

Run ID :Run Order: **HGCV203-H_220318A: 21** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030235-001CMSD** Method: **E245.1**

Analysis Date: **03/18/22 15:38** Units: **ug/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0495	0.0050	0.05	0.00412	91	70	130	0.04942	0.1	20	

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60537** **Date:** *21-Apr-22*

Run ID :Run Order: **HGCV203-H_220318A: 32** SampType: **Sample Matrix Spike** Lab ID: **H22030459-004CMS** Method: **E245.1**

Analysis Date: **03/18/22 16:14** Units: **ug/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0607	0.0050	0.05	0.01472	**92**	70	130				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C**

Run ID :Run Order: **HGCV203-H_220318A: 33** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-004CMSD** Method: **E245.1**

Analysis Date: **03/18/22 16:17** Units: **ug/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0600	0.0050	0.05	0.01472	**91**	70	130	0.06067	**1.1**	20	

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60538** **Date:** *21-Apr-22*

Run ID :Run Order: **HGCV203-H_220318A: 46** SampType: **Method Blank** Lab ID: **MB-60538** Method: **E245.1**
Analysis Date: **03/18/22 16:59** Units: **ug/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.002									

Associated samples: **H22030459-010B, H22030459-010C**

Run ID :Run Order: **HGCV203-H_220318A: 47** SampType: **Laboratory Control Sample** Lab ID: **LCS-60538** Method: **E245.1**
Analysis Date: **03/18/22 17:02** Units: **ug/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0478	0.0050	0.05	0	96	90	110				

Associated samples: **H22030459-010B, H22030459-010C**

Run ID :Run Order: **HGCV203-H_220318A: 49** SampType: **Sample Matrix Spike** Lab ID: **H22030459-010BMS** Method: **E245.1**
Analysis Date: **03/18/22 17:09** Units: **ug/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0513	0.0050	0.05	0.00482	93	70	130				

Associated samples: **H22030459-010B, H22030459-010C**

Run ID :Run Order: **HGCV203-H_220318A: 50** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-010BMSD** Method: **E245.1**
Analysis Date: **03/18/22 17:12** Units: **ug/L** **Prep Info:** Prep Date: **3/18/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0513	0.0050	0.05	0.00482	93	70	130	0.05134	0.1	20	

Associated samples: **H22030459-010B, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID:** 60567 **Date:** *21-Apr-22*

Run ID :Run Order: **SEAL AA500_220323A: 16** SampType: **Method Blank** Lab ID: **MB-60567** Method: **E365.1**

Analysis Date: **03/23/22 13:55** Units: **mg/L** **Prep Info:** Prep Date: **3/21/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.001									

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **SEAL AA500_220323A: 18** SampType: **Laboratory Control Sample** Lab ID: **LCS-60567** Method: **E365.1**

Analysis Date: **03/23/22 13:57** Units: **mg/L** **Prep Info:** Prep Date: **3/21/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.425	0.010	0.4	0	106	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **SEAL AA500_220323A: 23** SampType: **Sample Matrix Spike** Lab ID: **H22030459-002DMS** Method: **E365.1**

Analysis Date: **03/23/22 14:02** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.212	0.010	0.2	0	106	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **SEAL AA500_220323A: 24** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-002DMSD** Method: **E365.1**

Analysis Date: **03/23/22 14:03** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.211	0.010	0.2	0	105	90	110	0.2118	0.4	20	

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **SEAL AA500_220323A: 38** SampType: **Sample Matrix Spike** Lab ID: **H22030470-001DMS** Method: **E365.1**

Analysis Date: **03/23/22 14:21** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.222	0.010	0.2	0.0026	110	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60567** **Date:** *21-Apr-22*

Run ID :Run Order: **SEAL AA500_220323A: 38** SampType: **Sample Matrix Spike** Lab ID: **H22030470-001DMS** Method: **E365.1**

Analysis Date: **03/23/22 14:21** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **SEAL AA500_220323A: 39** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030470-001DMSD** Method: **E365.1**

Analysis Date: **03/23/22 14:22** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.208	0.010	0.2	0.0026	**103**	90	110	0.2218	**6.4**	20	

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60569** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220322A: 42** SampType: **Method Blank** Lab ID: **MB-60569** Method: **E200.7**

Analysis Date: **03/22/22 23:09** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.007									
Calcium	ND	0.1									
Magnesium	ND	0.05									
Potassium	ND	0.1									
Sodium	ND	0.1									

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICP2-HE_220322A: 43** SampType: **Laboratory Control Sample** Lab ID: **LCS-60569** Method: **E200.7**

Analysis Date: **03/22/22 23:13** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.476	0.050	0.5	0	**95**	85	115				
Calcium	24.0	1.0	25	0	**96**	85	115				
Magnesium	24.1	1.0	25	0	**96**	85	115				
Potassium	25.2	1.0	25	0	**101**	85	115				
Sodium	25.2	1.0	25	0	**101**	85	115				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICP2-HE_220322A: 51** SampType: **Serial Dilution** Lab ID: **H22030459-002CDIL** Method: **E200.7**

Analysis Date: **03/22/22 23:44** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.050		0		0	0	0		10	
Calcium	ND	1.0		0		0	0	0		10	
Magnesium	ND	1.0		0		0	0	0		10	
Potassium	ND	1.0		0		0	0	0		10	
Sodium	ND	1.0		0		0	0	0		10	

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60569** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220322A: 55** SampType: **Sample Matrix Spike** Lab ID: **H22030459-002CMS3** Method: **E200.7**

Analysis Date: **03/22/22 23:58** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.481	0.050	0.5	0	96	70	130				
Calcium	24.2	1.0	25	0	97	70	130				
Magnesium	24.4	1.0	25	0	98	70	130				
Potassium	24.4	1.0	25	0	98	70	130				
Sodium	24.3	1.0	25	0	97	70	130				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICP2-HE_220322A: 56** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-002CMSD3** Method: **E200.7**

Analysis Date: **03/23/22 00:02** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.487	0.050	0.5	0	97	70	130	0.4808	1.3	20	
Calcium	24.8	1.0	25	0	99	70	130	24.22	2.2	20	
Magnesium	24.4	1.0	25	0	98	70	130	24.41	0.1	20	
Potassium	25.0	1.0	25	0	100	70	130	24.42	2.4	20	
Sodium	24.9	1.0	25	0	100	70	130	24.33	2.4	20	

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICP2-HE_220322A: 70** SampType: **Sample Matrix Spike** Lab ID: **H22030506-001AMS3** Method: **E200.7**

Analysis Date: **03/23/22 00:54** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.541	0.050	0.5	0.0493	98	70	130				
Calcium	99.4	1.0	25	75.57	95	70	130				
Magnesium	84.8	1.0	25	59.64	101	70	130				
Potassium	30.5	1.0	25	4.688	103	70	130				
Sodium	52.2	1.0	25	25.29	108	70	130				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60569** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220322A: 71** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030506-001AMSD3** Method: **E200.7**

Analysis Date: **03/23/22 00:58** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.542	0.050	0.5	0.0493	**99**	70	130	0.5406	**0.3**	20	
Calcium	99.4	1.0	25	75.57	**95**	70	130	99.37	**0**	20	
Magnesium	83.9	1.0	25	59.64	**97**	70	130	84.81	**1.1**	20	
Potassium	29.1	1.0	25	4.688	**98**	70	130	30.46	**4.7**	20	
Sodium	49.5	1.0	25	25.29	**97**	70	130	52.2	**5.4**	20	

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60569** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 136** SampType: **Method Blank** Lab ID: **MB-60569** Method: **E200.8**

Analysis Date: **03/24/22 09:51** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.006									
Antimony	ND	0.0002									
Arsenic	0.0001	0.0001									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00003									
Chromium	ND	0.0002									
Cobalt	ND	0.0003									
Copper	ND	0.0003									
Iron	ND	0.009									
Lead	ND	0.0001									
Manganese	ND	0.0003									
Molybdenum	ND	0.0002									
Nickel	ND	0.0002									
Selenium	ND	0.0001									
Silver	ND	0.00006									
Uranium	ND	0.00003									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 148** SampType: **Sample Matrix Spike** Lab ID: **H22030459-002CMS3** Method: **E200.8**

Analysis Date: **03/24/22 10:34** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.21	0.030	2.5	0	89	70	130				
Antimony	0.496	0.0010	0.5	0	99	70	130				
Arsenic	0.475	0.0010	0.5	0	95	70	130				
Barium	0.490	0.050	0.5	0	98	70	130				
Beryllium	0.226	0.0010	0.25	0	90	70	130				
Cadmium	0.240	0.0010	0.25	0	96	70	130				
Chromium	0.476	0.0050	0.5	0	95	70	130				
Cobalt	0.477	0.0050	0.5	0	95	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60569** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 148** SampType: **Sample Matrix Spike** Lab ID: **H22030459-002CMS3** Method: **E200.8**

Analysis Date: **03/24/22 10:34** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.480	0.0050	0.5	0	96	70	130				
Iron	2.40	0.020	2.5	0	96	70	130				
Lead	0.492	0.0010	0.5	0	98	70	130				
Manganese	2.41	0.0010	2.5	0	96	70	130				
Molybdenum	0.467	0.0010	0.5	0	93	70	130				
Nickel	0.477	0.0050	0.5	0	95	70	130				
Selenium	0.475	0.0010	0.5	0	95	70	130				
Silver	0.0486	0.0010	0.05	0	97	70	130				
Uranium	0.486	0.00030	0.5	0	97	70	130				
Vanadium	0.474	0.010	0.5	0	95	70	130				
Zinc	0.483	0.010	0.5	0.02099	92	70	130				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 149** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-002CMSD3** Method: **E200.8**

Analysis Date: **03/24/22 10:38** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.21	0.030	2.5	0	88	70	130	2.213	0.1	20	
Antimony	0.490	0.0010	0.5	0	98	70	130	0.4956	1.1	20	
Arsenic	0.478	0.0010	0.5	0	96	70	130	0.4753	0.5	20	
Barium	0.490	0.050	0.5	0	98	70	130	0.4901	0.1	20	
Beryllium	0.227	0.0010	0.25	0	91	70	130	0.2255	0.8	20	
Cadmium	0.240	0.0010	0.25	0	96	70	130	0.2405	0	20	
Chromium	0.479	0.0050	0.5	0	96	70	130	0.4764	0.5	20	
Cobalt	0.476	0.0050	0.5	0	95	70	130	0.4768	0.1	20	
Copper	0.480	0.0050	0.5	0	96	70	130	0.4802	0	20	
Iron	2.39	0.020	2.5	0	96	70	130	2.395	0	20	
Lead	0.492	0.0010	0.5	0	98	70	130	0.4918	0.1	20	
Manganese	2.42	0.0010	2.5	0	97	70	130	2.406	0.5	20	
Molybdenum	0.464	0.0010	0.5	0	93	70	130	0.4671	0.6	20	
Nickel	0.478	0.0050	0.5	0	96	70	130	0.4771	0.1	20	
Selenium	0.475	0.0010	0.5	0	95	70	130	0.4754	0.1	20	
Silver	0.0484	0.0010	0.05	0	97	70	130	0.04856	0.4	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60569** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 149** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-002CMSD3** Method: **E200.8**

Analysis Date: **03/24/22 10:38** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	0.492	0.00030	0.5	0	98	70	130	0.4865	1.1	20	
Vanadium	0.473	0.010	0.5	0	95	70	130	0.4739	0.2	20	
Zinc	0.482	0.010	0.5	0.02099	92	70	130	0.4828	0.2	20	

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 299** SampType: **Laboratory Control Sample** Lab ID: **LCS-60569** Method: **E200.8**

Analysis Date: **03/25/22 01:45** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.47	0.030	2.5	0	99	85	115				
Antimony	0.512	0.0010	0.5	0	102	85	115				
Arsenic	0.480	0.0010	0.5	0	96	85	115				
Barium	0.501	0.050	0.5	0	100	85	115				
Beryllium	0.243	0.0010	0.25	0	97	85	115				
Cadmium	0.246	0.0010	0.25	0	98	85	115				
Chromium	0.483	0.0050	0.5	0	97	85	115				
Cobalt	0.478	0.0050	0.5	0	96	85	115				
Copper	0.477	0.0050	0.5	0	95	85	115				
Iron	2.41	0.020	2.5	0	96	85	115				
Lead	0.495	0.0010	0.5	0	99	85	115				
Manganese	2.43	0.0010	2.5	0	97	85	115				
Molybdenum	0.473	0.0010	0.5	0	95	85	115				
Nickel	0.480	0.0050	0.5	0	96	85	115				
Selenium	0.476	0.0010	0.5	0	95	85	115				
Silver	0.0496	0.0010	0.05	0	99	85	115				
Uranium	0.495	0.00030	0.5	0	99	85	115				
Vanadium	0.474	0.010	0.5	0	95	85	115				
Zinc	0.485	0.010	0.5	0	97	85	115				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60569** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 300** SampType: **Sample Matrix Spike** Lab ID: **H22030459-002CMS3** Method: **E200.8**

Analysis Date: **03/25/22 01:48** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.47	0.030	2.5	0	99	70	130				
Antimony	0.507	0.0010	0.5	0	101	70	130				
Arsenic	0.480	0.0010	0.5	0	96	70	130				
Barium	0.501	0.050	0.5	0	100	70	130				
Beryllium	0.241	0.0010	0.25	0	96	70	130				
Cadmium	0.246	0.0010	0.25	0	99	70	130				
Chromium	0.482	0.0050	0.5	0	96	70	130				
Cobalt	0.477	0.0050	0.5	0	95	70	130				
Copper	0.475	0.0050	0.5	0	95	70	130				
Iron	2.39	0.020	2.5	0	96	70	130				
Lead	0.500	0.0010	0.5	0	100	70	130				
Manganese	2.41	0.0010	2.5	0	97	70	130				
Molybdenum	0.472	0.0010	0.5	0	94	70	130				
Nickel	0.475	0.0050	0.5	0	95	70	130				
Selenium	0.487	0.0010	0.5	0	97	70	130				
Silver	0.0495	0.0010	0.05	0.004633	90	70	130				
Uranium	0.494	0.00030	0.5	0	99	70	130				
Vanadium	0.474	0.010	0.5	0	95	70	130				
Zinc	0.485	0.010	0.5	0.02144	93	70	130				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 301** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-002CMSD3** Method: **E200.8**

Analysis Date: **03/25/22 01:52** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.46	0.030	2.5	0	98	70	130	2.47	0.4	20	
Antimony	0.510	0.0010	0.5	0	102	70	130	0.5068	0.6	20	
Arsenic	0.487	0.0010	0.5	0	97	70	130	0.4805	1.4	20	
Barium	0.504	0.050	0.5	0	101	70	130	0.5011	0.6	20	
Beryllium	0.238	0.0010	0.25	0	95	70	130	0.2408	1.0	20	
Cadmium	0.249	0.0010	0.25	0	100	70	130	0.2464	1.0	20	
Chromium	0.483	0.0050	0.5	0	97	70	130	0.4821	0.1	20	
Cobalt	0.476	0.0050	0.5	0	95	70	130	0.4769	0.1	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60569** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 301** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-002CMSD3** Method: **E200.8**

Analysis Date: **03/25/22 01:52** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.477	0.0050	0.5	0	**95**	70	130	0.475	**0.4**	20	
Iron	2.43	0.020	2.5	0	**97**	70	130	2.392	**1.7**	20	
Lead	0.499	0.0010	0.5	0	**100**	70	130	0.5004	**0.3**	20	
Manganese	2.42	0.0010	2.5	0	**97**	70	130	2.414	**0.5**	20	
Molybdenum	0.478	0.0010	0.5	0	**96**	70	130	0.4719	**1.2**	20	
Nickel	0.475	0.0050	0.5	0	**95**	70	130	0.4753	**0.1**	20	
Selenium	0.488	0.0010	0.5	0	**98**	70	130	0.4873	**0.1**	20	
Silver	0.0499	0.0010	0.05	0.004633	**90**	70	130	0.04951	**0.7**	20	
Uranium	0.496	0.00030	0.5	0	**99**	70	130	0.4937	**0.4**	20	
Vanadium	0.475	0.010	0.5	0	**95**	70	130	0.4744	**0.1**	20	
Zinc	0.488	0.010	0.5	0.02144	**93**	70	130	0.4853	**0.6**	20	

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60653** **Date:** *21-Apr-22*

Run ID :Run Order: **HGCV203-H_220328A: 47** SampType: **Method Blank** Lab ID: **MB-60653** Method: **SW7471B**

Analysis Date: **03/28/22 11:17** Units: **mg/kg** **Prep Info:** Prep Date: **3/28/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.004									

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Run ID :Run Order: **HGCV203-H_220328A: 48** SampType: **Laboratory Control Sample** Lab ID: **LCS-60653** Method: **SW7471B**

Analysis Date: **03/28/22 11:19** Units: **mg/kg** **Prep Info:** Prep Date: **3/28/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	6.0	0.50	5	0	119	71	126.4				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Run ID :Run Order: **HGCV203-H_220328A: 49** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60653** Method: **SW7471B**

Analysis Date: **03/28/22 11:21** Units: **mg/kg** **Prep Info:** Prep Date: **3/28/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.21	0.50	0.2	0	106	80	120				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Run ID :Run Order: **HGCV203-H_220328A: 51** SampType: **Serial Dilution** Lab ID: **H22030459-011ADIL** Method: **SW7471B**

Analysis Date: **03/28/22 11:25** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/28/2022** Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.99	0.50		0		0	0	1.025	3.1	10	

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Run ID :Run Order: **HGCV203-H_220328A: 52** SampType: **Sample Matrix Spike** Lab ID: **H22030459-011AMS** Method: **SW7471B**

Analysis Date: **03/28/22 11:27** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/28/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.6	0.50	0.5607	1.025	106	80	120				E

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60653** **Date:** *21-Apr-22*

Run ID :Run Order: **HGCV203-H_220328A: 52** SampType: **Sample Matrix Spike** Lab ID: **H22030459-011AMS** Method: **SW7471B**

Analysis Date: **03/28/22 11:27** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/28/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Run ID :Run Order: **HGCV203-H_220328A: 53** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-011AMSD** Method: **SW7471B**

Analysis Date: **03/28/22 11:29** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/28/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.7	0.50	0.5607	1.025	**114**	80	120	1.619	**2.8**	20	E

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Run ID :Run Order: **HGCV203-H_220328A: 71** SampType: **Serial Dilution** Lab ID: **H22030459-022ADIL** Method: **SW7471B**

Analysis Date: **03/28/22 12:07** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/28/2022** Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.50		0		0	0	0.04144		10	

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Run ID :Run Order: **HGCV203-H_220328A: 72** SampType: **Sample Matrix Spike** Lab ID: **H22030459-022AMS** Method: **SW7471B**

Analysis Date: **03/28/22 12:09** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/28/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.31	0.50	0.2701	0.04144	**101**	80	120				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Run ID :Run Order: **HGCV203-H_220328A: 73** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-022AMSD** Method: **SW7471B**

Analysis Date: **03/28/22 12:12** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/28/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.31	0.050	0.2674	0.04144	**102**	80	120	0.313	**0**	20	

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60672** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220330A: 76** SampType: **Method Blank** Lab ID: **MB-60672** Method: **SW6010B**

Analysis Date: **03/30/22 20:13** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.8									
Copper	ND	1									
Iron	ND	20									
Manganese	ND	0.4									
Zinc	ND	1									

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICP2-HE_220330A: 77** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60672** Method: **SW6010B**

Analysis Date: **03/30/22 20:17** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	269	5.0	249.5	0	108	80	120				
Boron	50.8	1.0	49.9	0	102	80	120				
Copper	52.7	1.0	49.9	0	106	80	120				
Iron	246	22	249.5	0	99	80	120				
Manganese	240	1.0	249.5	0	96	80	120				
Zinc	48.9	1.0	49.9	0	98	80	120				

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICP2-HE_220330A: 78** SampType: **Laboratory Control Sample** Lab ID: **LCS-60672** Method: **SW6010B**

Analysis Date: **03/30/22 20:20** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8560	18	9830	0	87	46.3	130.2				
Boron	96.5	3.8	129	0	75	59.5	106.2				
Copper	116	4.8	137	0	85	76.6	108.8				
Iron	11900	110	16300	0	73	51.7	131.9				
Manganese	394	1.9	434	0	91	81.1	116.6				
Zinc	206	5.2	231	0	89	75.3	111.7				

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60672** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220330A: 83** SampType: **Serial Dilution** Lab ID: **H22030459-020ADIL** Method: **SW6010B**

Analysis Date: **03/30/22 20:38** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	27100	370		0		0	0	26580	**2.1**	10	
Boron	ND	79		0		0	0	0		10	
Copper	867	100		0		0	0	857.2		10	N
Iron	25100	2300		0		0	0	24160	**4.0**	10	
Manganese	1990	39		0		0	0	1942	**2.4**	10	
Zinc	2440	110		0		0	0	2228	**9.1**	10	

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICP2-HE_220330A: 84** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22030459-020APDS** Method: **SW6010B**

Analysis Date: **03/30/22 20:42** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	34000	76	5324	26580		75	125				A
Boron	959	16	1065	0	**90**	75	125				
Copper	1990	21	1065	857.2	**106**	75	125				
Iron	30200	470	5324	24160		75	125				A
Manganese	7010	8.1	5324	1942	**95**	75	125				
Zinc	3110	22	1065	2228	**83**	75	125				

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICP2-HE_220330A: 95** SampType: **Sample Matrix Spike** Lab ID: **H22030459-020AMS** Method: **SW6010B**

Analysis Date: **03/30/22 21:24** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	36100	72	1013	26580		75	125				A
Boron	214	15	202.6	0	**106**	75	125				
Copper	1160	20	202.6	857.2		75	125				A
Iron	31000	450	1013	24160		75	125				A
Manganese	3260	7.7	1013	1942	**130**	75	125				S
Zinc	2830	21	202.6	2228		75	125				A

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: 60672
Date: *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220330A: 96** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-020AMSD** Method: **SW6010B**

Analysis Date: **03/30/22 21:27** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	32100	73	1032	26580		75	125	36130	12	20	A
Boron	222	16	206.3	0	107	75	125	213.9	3.5	20	
Copper	1040	20	206.3	857.2		75	125	1158	11	20	A
Iron	27900	460	1032	24160		75	125	31040	11	20	A
Manganese	3100	7.8	1032	1942	112	75	125	3263	5.2	20	
Zinc	2550	22	206.3	2228		75	125	2832	11	20	A

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICP2-HE_220331A: 59** SampType: **Method Blank** Lab ID: **MB-60672** Method: **SW6010B**

Analysis Date: **03/31/22 17:14** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 7	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.8									
Copper	ND	1									
Iron	ND	20									
Manganese	ND	0.4									
Zinc	ND	1									
Iron as Fe2O3	ND	30									

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60672** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 26** SampType: **Method Blank** Lab ID: **MB-60672** Method: **SW6020**

Analysis Date: **03/30/22 13:41** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	3									
Arsenic	ND	0.2									
Barium	ND	0.3									
Beryllium	ND	0.4									
Cadmium	ND	0.04									
Chromium	ND	1									
Cobalt	ND	0.7									
Lead	ND	0.5									
Molybdenum	ND	0.2									
Nickel	ND	0.5									
Selenium	ND	0.1									
Silver	ND	0.7									
Uranium	ND	0.02									
Vanadium	ND	0.3									

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICPMS205-H_220330C: 30** SampType: **Laboratory Control Sample** Lab ID: **LCS-60672** Method: **SW6020**

Analysis Date: **03/30/22 13:55** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	46.4	7.8	240	0	19	0	92.9				
Arsenic	150	1.0	196	0	76	71.4	105.1				
Barium	174	1.0	187	0	93	78.6	112.8				
Beryllium	68.1	1.1	83.6	0	81	76.2	108				
Cadmium	91.5	1.0	99	0	92	73.9	106.1				
Chromium	100	3.1	117	0	86	73.5	108.5				
Cobalt	99.9	1.8	108	0	92	74.2	105.6				
Lead	97.7	1.3	105	0	93	74.4	108.6				
Molybdenum	109	1.0	127	0	86	66.5	103.1				
Nickel	76.8	1.2	86.2	0	89	72.3	105				
Selenium	169	1.0	205	0	82	71.2	110.2				
Silver	38.7	1.8	42.1	0	92	70.8	111.9				
Uranium	92.7	1.0	99.9	0	93	80.1	120.1				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22030459 **BatchID: 60672** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 30** SampType: **Laboratory Control Sample** Lab ID: **LCS-60672** Method: **SW6020**
Analysis Date: **03/30/22 13:55** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	93.8	1.0	114	0	**82**	67	107				

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICPMS205-H_220330C: 31** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60672** Method: **SW6020**
Analysis Date: **03/30/22 13:59** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	51.1	7.9	49.9	0	**103**	80	120				
Arsenic	51.3	1.0	49.9	0	**103**	80	120				
Barium	51.5	1.0	49.9	0	**103**	80	120				
Beryllium	24.6	1.1	24.95	0	**99**	80	120				
Cadmium	25.8	1.0	24.95	0	**104**	80	120				
Chromium	51.5	3.1	49.9	0	**103**	80	120				
Cobalt	50.6	1.8	49.9	0	**101**	80	120				
Lead	52.1	1.3	49.9	0	**104**	80	120				
Molybdenum	50.4	1.0	49.9	0	**101**	80	120				
Nickel	52.3	1.2	49.9	0	**105**	80	120				
Selenium	46.7	1.0	49.9	0	**94**	80	120				
Silver	26.5	1.8	24.95	0	**106**	80	120				
Uranium	52.3	1.0	49.9	0	**105**	80	120				
Vanadium	50.3	1.0	49.9	0	**101**	80	120				

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICPMS205-H_220330C: 35** SampType: **Serial Dilution** Lab ID: **H22030459-020ADIL** Method: **SW6020**
Analysis Date: **03/30/22 14:13** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	160		0		0	0	0		10	
Arsenic	67.9	8.1		0		0	0	71.58		10	N
Barium	248	14		0		0	0	269.6	**8.2**	10	
Beryllium	ND	23		0		0	0	0		10	
Cadmium	11.1	1.9		0		0	0	11.82		10	N
Chromium	ND	64		0		0	0	43.81		10	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60672** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 35** SampType: **Serial Dilution** Lab ID: **H22030459-020ADIL** Method: **SW6020**

Analysis Date: **03/30/22 14:13** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	38		0		0	0	15.72		10	
Lead	141	27		0		0	0	155.6		10	N
Molybdenum	59.8	12		0		0	0	66.22		10	N
Nickel	ND	26		0		0	0	24.39		10	
Selenium	ND	7.1		0		0	0	2.834		10	
Silver	ND	38		0		0	0	0		10	
Uranium	5.53	1.1		0		0	0	6.187		10	N
Vanadium	61.7	17		0		0	0	67.45		10	N

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICPMS205-H_220330C: 41** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22030459-020APDS1** Method: **SW6020**

Analysis Date: **03/30/22 14:35** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.8	33	51.69	0	102	75	125				
Arsenic	121	1.6	51.69	71.58	95	75	125				
Barium	325	2.9	51.69	269.6		75	125				A
Beryllium	54.1	4.6	51.69	0	105	75	125				
Cadmium	64.1	1.0	51.69	11.82	101	75	125				
Chromium	95.6	13	51.69	43.81	100	75	125				
Cobalt	68.3	7.6	51.69	15.72	102	75	125				
Lead	209	5.3	51.69	155.6	104	75	125				
Molybdenum	120	2.5	51.69	66.22	103	75	125				
Nickel	76.4	5.2	51.69	24.39	101	75	125				
Selenium	53.2	1.4	51.69	2.834	97	75	125				
Silver	24.0	7.5	20.68	0	116	75	125				
Uranium	57.9	1.0	51.69	6.187	100	75	125				
Vanadium	117	3.4	51.69	67.45	95	75	125				

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60672** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 42** SampType: **Sample Matrix Spike** Lab ID: **H22030459-020AMS** Method: **SW6020**

Analysis Date: **03/30/22 14:39** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	103	32	202.6	0	51	75	125				S
Arsenic	283	1.6	202.6	71.58	104	75	125				
Barium	528	2.8	202.6	269.6	127	75	125				S
Beryllium	102	4.5	101.3	0	101	75	125				
Cadmium	117	1.0	101.3	11.82	104	75	125				
Chromium	257	13	202.6	43.81	105	75	125				
Cobalt	218	7.4	202.6	15.72	100	75	125				
Lead	383	5.2	202.6	155.6	112	75	125				
Molybdenum	274	2.4	202.6	66.22	103	75	125				
Nickel	234	5.1	202.6	24.39	103	75	125				
Selenium	199	1.4	202.6	2.834	97	75	125				
Silver	108	7.4	101.3	0	106	75	125				E
Uranium	214	1.0	202.6	6.187	103	75	125				
Vanadium	277	3.3	202.6	67.45	104	75	125				

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICPMS205-H_220330C: 43** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-020AMSD** Method: **SW6020**

Analysis Date: **03/30/22 14:42** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	119	33	206.3	0	58	75	125	103.4	14	20	S
Arsenic	282	1.6	206.3	71.58	102	75	125	282.5	0.1	20	
Barium	508	2.8	206.3	269.6	115	75	125	527.6	3.8	20	
Beryllium	99.2	4.6	103.2	0	96	75	125	102.2	3.0	20	
Cadmium	119	1.0	103.2	11.82	104	75	125	117.4	1.6	20	
Chromium	259	13	206.3	43.81	104	75	125	256.9	1.0	20	
Cobalt	224	7.6	206.3	15.72	101	75	125	218.5	2.4	20	
Lead	372	5.3	206.3	155.6	105	75	125	382.9	3.0	20	
Molybdenum	276	2.5	206.3	66.22	101	75	125	274	0.6	20	
Nickel	239	5.1	206.3	24.39	104	75	125	234	2.3	20	
Selenium	194	1.4	206.3	2.834	93	75	125	199	2.6	20	
Silver	112	7.5	103.2	0	109	75	125	107.9	4.2	20	E
Uranium	223	1.0	206.3	6.187	105	75	125	214.1	3.9	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60672** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 43** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-020AMSD** Method: **SW6020**

Analysis Date: **03/30/22 14:42** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	278	3.4	206.3	67.45	**102**	75	125	277.1	**0.2**	20	

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Run ID :Run Order: **ICPMS205-H_220401D: 22** SampType: **Method Blank** Lab ID: **MB-60672** Method: **SW6020**

Analysis Date: **04/01/22 23:27** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2									
Arsenic	ND	0.08									
Barium	ND	0.1									
Beryllium	ND	0.2									
Cadmium	ND	0.02									
Chromium	ND	0.6									
Cobalt	ND	0.4									
Lead	ND	0.3									
Molybdenum	ND	0.1									
Nickel	ND	0.2									
Selenium	ND	0.07									
Silver	ND	0.4									
Uranium	ND	0.01									
Vanadium	ND	0.2									

Associated samples: **H22030459-011A, H22030459-014A, H22030459-017A, H22030459-020A, H22030459-023A, H22030459-026A, H22030459-029A, H22030459-030A, H22030459-033A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60673** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220330A: 102** SampType: **Method Blank** Lab ID: **MB-60673** Method: **SW6010B**

Analysis Date: **03/30/22 21:49** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.7									
Copper	ND	0.9									
Iron	ND	20									
Manganese	ND	0.4									
Zinc	ND	1									

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICP2-HE_220330A: 103** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60673** Method: **SW6010B**

Analysis Date: **03/30/22 21:53** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	245	5.0	248	0	99	80	120				
Boron	50.2	1.0	49.6	0	101	80	120				
Copper	49.5	1.0	49.6	0	100	80	120				
Iron	247	22	248	0	100	80	120				
Manganese	245	1.0	248	0	99	80	120				
Zinc	49.9	1.0	49.6	0	101	80	120				

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICP2-HE_220330A: 106** SampType: **Laboratory Control Sample** Lab ID: **LCS-60673** Method: **SW6010B**

Analysis Date: **03/30/22 22:04** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9180	18	9830	0	93	46.3	130.2				
Boron	108	3.8	129	0	84	59.5	106.2				
Copper	116	4.8	137	0	85	76.6	108.8				
Iron	14000	110	16300	0	86	51.7	131.9				
Manganese	392	1.9	434	0	90	81.1	116.6				
Zinc	228	5.2	231	0	99	75.3	111.7				

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60673** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220331A: 85** SampType: **Method Blank** Lab ID: **MB-60673** Method: **SW6010B**

Analysis Date: **03/31/22 18:50** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.7									
Copper	ND	0.9									
Iron	ND	20									
Manganese	ND	0.4									
Zinc	ND	1									

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICP2-HE_220331A: 93** SampType: **Serial Dilution** Lab ID: **H22030459-018ADIL** Method: **SW6010B**

Analysis Date: **03/31/22 19:20** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	7480	50		0		0	0	6970	7.1	10	
Boron	ND	11		0		0	0	2.538		10	
Copper	102	14		0		0	0	92.81		10	N
Iron	13800	310		0		0	0	12260	12	10	R
Manganese	724	5.4		0		0	0	654.8	10	10	R
Zinc	278	15		0		0	0	254	9.1	10	

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICP2-HE_220331A: 94** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22030459-018APDS** Method: **SW6010B**

Analysis Date: **03/31/22 19:23** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	7760	10	727.5	6970		75	125				A
Boron	133	2.2	145.5	2.538	90	75	125				
Copper	221	2.8	145.5	92.81	88	75	125				
Iron	12800	64	727.5	12260		75	125				A
Manganese	1280	1.1	727.5	654.8	86	75	125				
Zinc	384	3.0	145.5	254	90	75	125				

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60673** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220331A: 95** SampType: **Sample Matrix Spike** Lab ID: **H22030459-018AMS** Method: **SW6010B**

Analysis Date: **03/31/22 19:27** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9080	10	360.8	6970		75	125				A
Boron	72.0	2.2	72.15	2.538	96	75	125				
Copper	178	2.8	72.15	92.81	118	75	125				
Iron	13200	64	360.8	12260		75	125				A
Manganese	972	1.1	360.8	654.8	88	75	125				
Zinc	332	3.0	72.15	254	108	75	125				

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICP2-HE_220331A: 96** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-018AMSD** Method: **SW6010B**

Analysis Date: **03/31/22 19:30** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8800	9.8	343.8	6970		75	125	9078	3.1	20	A
Boron	69.2	2.1	68.75	2.538	97	75	125	72.02	4.0	20	
Copper	169	2.7	68.75	92.81	110	75	125	178.1	5.5	20	
Iron	13400	61	343.8	12260		75	125	13160	1.9	20	A
Manganese	910	1.0	343.8	654.8	74	75	125	972.3	6.6	20	S
Zinc	324	2.9	68.75	254	102	75	125	332.1	2.4	20	

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22030459 **BatchID: 60673** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 46** SampType: **Method Blank** Lab ID: **MB-60673** Method: **SW6020**
Analysis Date: **03/30/22 14:53** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	3									
Arsenic	ND	0.2									
Barium	ND	0.3									
Beryllium	ND	0.4									
Cadmium	ND	0.04									
Chromium	ND	1									
Cobalt	ND	0.7									
Lead	ND	0.5									
Molybdenum	ND	0.2									
Nickel	ND	0.5									
Selenium	ND	0.1									
Silver	ND	0.7									
Uranium	ND	0.02									
Vanadium	ND	0.3									

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICPMS205-H_220330C: 50** SampType: **Serial Dilution** Lab ID: **H22030459-018ADIL** Method: **SW6020**
Analysis Date: **03/30/22 15:07** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	56		0		0	0	0		10	
Arsenic	9.70	2.8		0		0	0	9.889		10	N
Barium	156	4.9		0		0	0	160.5	**2.8**	10	
Beryllium	ND	7.8		0		0	0	0		10	
Cadmium	1.59	1.0		0		0	0	1.687		10	N
Chromium	ND	22		0		0	0	13.92		10	
Cobalt	ND	13		0		0	0	4.415		10	
Lead	21.2	9.1		0		0	0	22.04		10	N
Molybdenum	8.68	4.3		0		0	0	9.115		10	N
Nickel	ND	8.8		0		0	0	6.304		10	
Selenium	ND	2.4		0		0	0	0		10	
Silver	ND	13		0		0	0	0		10	
Uranium	5.73	1.0		0		0	0	5.94	**3.6**	10	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60673** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 50** SampType: **Serial Dilution** Lab ID: **H22030459-018ADIL** Method: **SW6020**

Analysis Date: **03/30/22 15:07** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	36.9	5.8		0		0	0	37.44		10	N

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICPMS205-H_220330C: 51** SampType: **Laboratory Control Sample** Lab ID: **LCS-60673** Method: **SW6020**

Analysis Date: **03/30/22 15:11** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.1	7.9	240	0	20	0	92.9				
Arsenic	158	1.0	196	0	81	71.4	105.1				
Barium	177	1.0	187	0	94	78.6	112.8				
Beryllium	71.5	1.1	83.6	0	86	76.2	108				
Cadmium	93.8	1.0	99	0	95	73.9	106.1				
Chromium	104	3.1	117	0	89	73.5	108.5				
Cobalt	101	1.8	108	0	94	74.2	105.6				
Lead	101	1.3	105	0	96	74.4	108.6				
Molybdenum	113	1.0	127	0	89	66.5	103.1				
Nickel	77.0	1.2	86.2	0	89	72.3	105				
Selenium	178	1.0	205	0	87	71.2	110.2				
Silver	41.1	1.8	42.1	0	98	70.8	111.9				
Uranium	94.5	1.0	99.9	0	95	80.1	120.1				
Vanadium	99.8	1.0	114	0	88	67	107				

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICPMS205-H_220330C: 52** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60673** Method: **SW6020**

Analysis Date: **03/30/22 15:15** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	51.3	7.8	49.6	0	103	80	120				
Arsenic	52.0	1.0	49.6	0	105	80	120				
Barium	51.5	1.0	49.6	0	104	80	120				
Beryllium	24.9	1.1	24.8	0	100	80	120				
Cadmium	26.1	1.0	24.8	0	105	80	120				
Chromium	52.1	3.1	49.6	0	105	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60673** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 52** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60673** Method: **SW6020**

Analysis Date: **03/30/22 15:15** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	51.1	1.8	49.6	0	103	80	120				
Lead	51.2	1.3	49.6	0	103	80	120				
Molybdenum	50.7	1.0	49.6	0	102	80	120				
Nickel	52.8	1.2	49.6	0	106	80	120				
Selenium	48.2	1.0	49.6	0	97	80	120				
Silver	26.5	1.8	24.8	0	107	80	120				
Uranium	52.2	1.0	49.6	0	105	80	120				
Vanadium	50.5	1.0	49.6	0	102	80	120				

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICPMS205-H_220330C: 53** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22030459-018APDS1** Method: **SW6020**

Analysis Date: **03/30/22 15:18** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.9	11	17.66	0	102	75	125				
Arsenic	26.8	1.0	17.66	9.889	96	75	125				
Barium	181	1.0	17.66	160.5		75	125				A
Beryllium	17.2	1.6	17.66	0	98	75	125				
Cadmium	19.6	1.0	17.66	1.687	102	75	125				
Chromium	31.8	4.4	17.66	13.92	101	75	125				
Cobalt	22.2	2.6	17.66	4.415	101	75	125				
Lead	40.1	1.8	17.66	22.04	102	75	125				
Molybdenum	27.2	1.0	17.66	9.115	103	75	125				
Nickel	24.0	1.8	17.66	6.304	100	75	125				
Selenium	17.2	1.0	17.66	0	97	75	125				
Silver	7.70	2.6	7.063	0	109	75	125				
Uranium	23.9	1.0	17.66	5.94	102	75	125				
Vanadium	54.7	1.2	17.66	37.44	98	75	125				

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60673** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 54** SampType: **Sample Matrix Spike** Lab ID: **H22030459-018AMS** Method: **SW6020**

Analysis Date: **03/30/22 15:22** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	40.0	11	72.15	0	55	75	125				S
Arsenic	85.7	1.0	72.15	9.889	105	75	125				
Barium	240	1.0	72.15	160.5	111	75	125				
Beryllium	34.5	1.6	36.08	0	96	75	125				
Cadmium	39.7	1.0	36.08	1.687	105	75	125				
Chromium	89.2	4.5	72.15	13.92	104	75	125				
Cobalt	77.5	2.6	72.15	4.415	101	75	125				
Lead	98.6	1.9	72.15	22.04	106	75	125				
Molybdenum	82.0	1.0	72.15	9.115	101	75	125				
Nickel	82.0	1.8	72.15	6.304	105	75	125				
Selenium	68.2	1.0	72.15	0	94	75	125				
Silver	38.9	2.6	36.08	0	108	75	125				E
Uranium	78.2	1.0	72.15	5.94	100	75	125				
Vanadium	111	1.2	72.15	37.44	103	75	125				

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICPMS205-H_220330C: 55** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-018AMSD** Method: **SW6020**

Analysis Date: **03/30/22 15:25** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	38.9	11	68.75	0	57	75	125	40.04	2.8	20	S
Arsenic	79.3	1.0	68.75	9.889	101	75	125	85.7	7.8	20	
Barium	214	1.0	68.75	160.5	78	75	125	240.4	12	20	
Beryllium	33.3	1.5	34.38	0	97	75	125	34.53	3.8	20	
Cadmium	37.4	1.0	34.38	1.687	104	75	125	39.72	5.9	20	
Chromium	86.8	4.3	68.75	13.92	106	75	125	89.2	2.7	20	
Cobalt	73.9	2.5	68.75	4.415	101	75	125	77.49	4.7	20	
Lead	94.9	1.8	68.75	22.04	106	75	125	98.61	3.9	20	
Molybdenum	76.0	1.0	68.75	9.115	97	75	125	81.99	7.5	20	
Nickel	78.1	1.7	68.75	6.304	104	75	125	81.99	4.9	20	
Selenium	65.0	1.0	68.75	0	95	75	125	68.15	4.7	20	
Silver	36.5	2.5	34.38	0	106	75	125	38.92	6.3	20	E
Uranium	74.5	1.0	68.75	5.94	100	75	125	78.21	4.9	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: 60673
Date: *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 55** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-018AMSD** Method: **SW6020**

Analysis Date: **03/30/22 15:25** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	110	1.1	68.75	37.44	**105**	75	125	111.4	**1.5**	20	

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICPMS205-H_220401D: 57** SampType: **Method Blank** Lab ID: **MB-60673** Method: **SW6020**

Analysis Date: **04/02/22 01:33** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2									
Arsenic	ND	0.08									
Barium	ND	0.1									
Beryllium	ND	0.2									
Cadmium	ND	0.02									
Chromium	ND	0.6									
Cobalt	ND	0.4									
Lead	ND	0.3									
Molybdenum	ND	0.1									
Nickel	ND	0.2									
Selenium	ND	0.07									
Silver	ND	0.4									
Uranium	ND	0.01									
Vanadium	ND	0.2									

Associated samples: **H22030459-012A, H22030459-015A, H22030459-018A, H22030459-021A, H22030459-024A, H22030459-027A, H22030459-031A, H22030459-034A, H22030459-036A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60674** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220330A: 122** SampType: **Method Blank** Lab ID: **MB-60674** Method: **SW6010B**

Analysis Date: **03/30/22 23:03** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.8									
Copper	ND	1									
Iron	ND	20									
Manganese	ND	0.4									
Zinc	ND	1									

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Run ID :Run Order: **ICP2-HE_220330A: 123** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60674** Method: **SW6010B**

Analysis Date: **03/30/22 23:07** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	253	5.0	249.5	0	**101**	80	120				
Boron	50.9	1.0	49.9	0	**102**	80	120				
Copper	50.3	1.0	49.9	0	**101**	80	120				
Iron	252	22	249.5	0	**101**	80	120				
Manganese	249	1.0	249.5	0	**100**	80	120				
Zinc	50.5	1.0	49.9	0	**101**	80	120				

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Run ID :Run Order: **ICP2-HE_220330A: 124** SampType: **Laboratory Control Sample** Lab ID: **LCS-60674** Method: **SW6010B**

Analysis Date: **03/30/22 23:10** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8150	7.1	9830	0	**83**	46.3	130.2				
Boron	99.8	1.5	129	0	**77**	59.5	106.2				
Copper	108	1.9	137	0	**79**	76.6	108.8				
Iron	12900	44	16300	0	**79**	51.7	131.9				
Manganese	370	1.0	434	0	**85**	81.1	116.6				
Zinc	215	2.1	231	0	**93**	75.3	111.7				

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60674** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220330A: 130** SampType: **Serial Dilution** Lab ID: **H22030459-019ADIL** Method: **SW6010B**

Analysis Date: **03/30/22 23:32** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4950	47		0		0	0	4723	4.7	10	
Boron	ND	10		0		0	0	0		10	
Copper	61.6	13		0		0	0	59.29		10	N
Iron	8170	290		0		0	0	7637	6.7	10	
Manganese	679	5.0		0		0	0	637.3	6.3	10	
Zinc	180	14		0		0	0	169.3	6.1	10	

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Run ID :Run Order: **ICP2-HE_220330A: 131** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22030459-019APDS** Method: **SW6010B**

Analysis Date: **03/30/22 23:36** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5410	9.6	675.9	4723		75	125				A
Boron	127	2.1	135.2	0	94	75	125				
Copper	183	2.6	135.2	59.29	92	75	125				
Iron	8160	60	675.9	7637		75	125				A
Manganese	1240	1.0	675.9	637.3	89	75	125				
Zinc	292	2.8	135.2	169.3	91	75	125				

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Run ID :Run Order: **ICP2-HE_220330A: 132** SampType: **Sample Matrix Spike** Lab ID: **H22030459-019AMS** Method: **SW6010B**

Analysis Date: **03/30/22 23:40** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5540	9.4	330.1	4723		75	125				A
Boron	62.7	2.0	66.02	0	95	75	125				
Copper	107	2.6	66.02	59.29	72	75	125				S
Iron	8670	58	330.1	7637		75	125				A
Manganese	891	1.0	330.1	637.3	77	75	125				
Zinc	216	2.8	66.02	169.3	71	75	125				S

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22030459
BatchID: 60674
Date: *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220330A: 133** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-019AMSD** Method: **SW6010B**

Analysis Date: **03/30/22 23:43** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	6100	9.4	330.1	4723		75	125	5535	**9.7**	20	A
Boron	64.7	2.0	66.02	0	**98**	75	125	62.71	**3.2**	20	
Copper	105	2.6	66.02	59.29	**69**	75	125	106.7	**1.6**	20	S
Iron	8250	58	330.1	7637		75	125	8670	**4.9**	20	A
Manganese	927	1.0	330.1	637.3	**88**	75	125	891.5	**3.9**	20	
Zinc	222	2.8	66.02	169.3	**80**	75	125	216.4	**2.6**	20	

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22030459 **BatchID: 60674** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 100** SampType: **Method Blank** Lab ID: **MB-60674** Method: **SW6020**
Analysis Date: **03/30/22 20:17** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	3									
Arsenic	ND	0.2									
Barium	ND	0.3									
Beryllium	ND	0.4									
Cadmium	ND	0.04									
Chromium	ND	1									
Cobalt	ND	0.7									
Lead	ND	0.5									
Molybdenum	ND	0.2									
Nickel	ND	0.5									
Selenium	ND	0.1									
Silver	ND	0.7									
Uranium	ND	0.02									
Vanadium	ND	0.3									

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220330C: 104** SampType: **Serial Dilution** Lab ID: **H22030459-019ADIL** Method: **SW6020**
Analysis Date: **03/30/22 20:31** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	52		0		0	0	0		10	
Arsenic	7.01	2.6		0		0	0	6.529		10	N
Barium	118	4.5		0		0	0	118.6	0.4	10	
Beryllium	ND	7.2		0		0	0	0		10	
Cadmium	0.898	1.0		0		0	0	0.7631		10	N
Chromium	ND	20		0		0	0	12.03		10	
Cobalt	ND	12		0		0	0	3.616		10	
Lead	19.4	8.4		0		0	0	19.13		10	N
Molybdenum	8.03	4.0		0		0	0	7.838		10	N
Nickel	ND	8.2		0		0	0	6.335		10	
Selenium	ND	2.3		0		0	0	0		10	
Silver	ND	12		0		0	0	0		10	
Uranium	1.27	1.0		0		0	0	1.249		10	N

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID:** 60674 **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 104** SampType: **Serial Dilution** Lab ID: **H22030459-019ADIL** Method: **SW6020**

Analysis Date: **03/30/22 20:31** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	19.5	5.4		0		0	0	19.9		10	N

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220330C: 105** SampType: **Laboratory Control Sample** Lab ID: **LCS-60674** Method: **SW6020**

Analysis Date: **03/30/22 20:35** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	56.0	7.9	240	0	**23**	0	92.9				
Arsenic	167	1.0	196	0	**85**	71.4	105.1				
Barium	194	1.0	187	0	**104**	78.6	112.8				
Beryllium	71.7	1.1	83.6	0	**86**	76.2	108				
Cadmium	101	1.0	99	0	**102**	73.9	106.1				
Chromium	109	3.1	117	0	**93**	73.5	108.5				
Cobalt	107	1.8	108	0	**99**	74.2	105.6				
Lead	113	1.3	105	0	**108**	74.4	108.6				
Molybdenum	121	1.0	127	0	**95**	66.5	103.1				
Nickel	81.0	1.2	86.2	0	**94**	72.3	105				
Selenium	182	1.0	205	0	**89**	71.2	110.2				
Silver	43.0	1.8	42.1	0	**102**	70.8	111.9				
Uranium	101	1.0	99.9	0	**101**	80.1	120.1				
Vanadium	106	1.0	114	0	**93**	67	107				

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220330C: 106** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60674** Method: **SW6020**

Analysis Date: **03/30/22 20:39** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	54.2	7.9	49.9	0	**109**	80	120				
Arsenic	52.0	1.0	49.9	0	**104**	80	120				
Barium	53.5	1.0	49.9	0	**107**	80	120				
Beryllium	24.7	1.1	24.95	0	**99**	80	120				
Cadmium	26.7	1.0	24.95	0	**107**	80	120				
Chromium	51.8	3.1	49.9	0	**104**	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60674** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 106** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60674** Method: **SW6020**

Analysis Date: **03/30/22 20:39** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	51.2	1.8	49.9	0	**103**	80	120				
Lead	53.7	1.3	49.9	0	**108**	80	120				
Molybdenum	51.2	1.0	49.9	0	**103**	80	120				
Nickel	52.2	1.2	49.9	0	**105**	80	120				
Selenium	48.0	1.0	49.9	0	**96**	80	120				
Silver	26.8	1.8	24.95	0	**107**	80	120				
Uranium	52.6	1.0	49.9	0	**105**	80	120				
Vanadium	50.7	1.0	49.9	0	**102**	80	120				

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220330C: 107** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22030459-019APDS1** Method: **SW6020**

Analysis Date: **03/30/22 20:42** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.6	10	16.4	0	**107**	75	125				
Arsenic	22.9	1.0	16.4	6.529	**100**	75	125				
Barium	134	1.0	16.4	118.6		75	125				A
Beryllium	15.2	1.4	16.4	0	**93**	75	125				
Cadmium	17.8	1.0	16.4	0.7631	**104**	75	125				
Chromium	28.4	4.1	16.4	12.03	**100**	75	125				
Cobalt	20.3	2.4	16.4	3.616	**102**	75	125				
Lead	35.8	1.7	16.4	19.13	**102**	75	125				
Molybdenum	24.9	1.0	16.4	7.838	**104**	75	125				
Nickel	23.2	1.6	16.4	6.335	**103**	75	125				
Selenium	15.8	1.0	16.4	0	**96**	75	125				
Silver	7.08	2.4	6.562	0	**108**	75	125				
Uranium	17.7	1.0	16.4	1.249	**100**	75	125				
Vanadium	36.0	1.1	16.4	19.9	**98**	75	125				

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60674** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 108** SampType: **Sample Matrix Spike** Lab ID: **H22030459-019AMS** Method: **SW6020**

Analysis Date: **03/30/22 20:46** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	43.5	10	66.02	0	66	75	125				S
Arsenic	73.3	1.0	66.02	6.529	101	75	125				
Barium	181	1.0	66.02	118.6	94	75	125				
Beryllium	29.9	1.5	33.01	0	91	75	125				
Cadmium	35.5	1.0	33.01	0.7631	105	75	125				
Chromium	77.1	4.1	66.02	12.03	99	75	125				
Cobalt	68.7	2.4	66.02	3.616	99	75	125				
Lead	83.5	1.7	66.02	19.13	97	75	125				
Molybdenum	72.9	1.0	66.02	7.838	99	75	125				
Nickel	72.2	1.6	66.02	6.335	100	75	125				
Selenium	61.0	1.0	66.02	0	92	75	125				
Silver	34.9	2.4	33.01	0	106	75	125				E
Uranium	69.3	1.0	66.02	1.249	103	75	125				
Vanadium	87.6	1.1	66.02	19.9	103	75	125				

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220330C: 109** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-019AMSD** Method: **SW6020**

Analysis Date: **03/30/22 20:49** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.6	10	66.02	0	72	75	125	43.54	8.8	20	S
Arsenic	75.4	1.0	66.02	6.529	104	75	125	73.25	2.9	20	
Barium	196	1.0	66.02	118.6	117	75	125	180.6	8.0	20	
Beryllium	31.4	1.5	33.01	0	95	75	125	29.92	4.9	20	
Cadmium	36.8	1.0	33.01	0.7631	109	75	125	35.46	3.7	20	
Chromium	80.1	4.1	66.02	12.03	103	75	125	77.08	3.8	20	
Cobalt	70.8	2.4	66.02	3.616	102	75	125	68.73	3.0	20	
Lead	85.8	1.7	66.02	19.13	101	75	125	83.46	2.7	20	
Molybdenum	76.7	1.0	66.02	7.838	104	75	125	72.92	5.0	20	
Nickel	74.8	1.6	66.02	6.335	104	75	125	72.2	3.5	20	
Selenium	63.2	1.0	66.02	0	96	75	125	61.04	3.5	20	
Silver	36.0	2.4	33.01	0	109	75	125	34.86	3.1	20	E
Uranium	71.6	1.0	66.02	1.249	107	75	125	69.26	3.3	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22030459
BatchID: 60674
Date: *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 109** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-019AMSD** Method: **SW6020**
Analysis Date: **03/30/22 20:49** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	87.3	1.1	66.02	19.9	102	75	125	87.62	0.3	20	

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220401D: 92** SampType: **Method Blank** Lab ID: **MB-60674** Method: **SW6020**
Analysis Date: **04/02/22 03:40** Units: **mg/kg** **Prep Info:** Prep Date: **3/29/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2									
Arsenic	ND	0.08									
Barium	ND	0.1									
Beryllium	ND	0.2									
Cadmium	ND	0.02									
Chromium	ND	0.6									
Cobalt	ND	0.4									
Lead	ND	0.3									
Molybdenum	ND	0.1									
Nickel	ND	0.2									
Selenium	ND	0.07									
Silver	ND	0.4									
Uranium	ND	0.01									
Vanadium	ND	0.2									

Associated samples: **H22030459-013A, H22030459-016A, H22030459-019A, H22030459-022A, H22030459-025A, H22030459-028A, H22030459-032A, H22030459-035A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID:** 60689 **Date:** *21-Apr-22*

Run ID :Run Order: **HGCV203-H_220330B: 10** SampType: **Method Blank** Lab ID: **MB-60689** Method: **SW7471B**

Analysis Date: **03/30/22 16:40** Units: **mg/kg** **Prep Info:** Prep Date: **3/30/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.004									

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **HGCV203-H_220330B: 11** SampType: **Laboratory Control Sample** Lab ID: **LCS-60689** Method: **SW7471B**

Analysis Date: **03/30/22 16:42** Units: **mg/kg** **Prep Info:** Prep Date: **3/30/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.5	0.50	5	0	110	71	126.4				

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **HGCV203-H_220330B: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-60689** Method: **SW7471B**

Analysis Date: **03/30/22 16:44** Units: **mg/kg** **Prep Info:** Prep Date: **3/30/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.20	0.50	0.198	0	101	80	120				

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **HGCV203-H_220330B: 14** SampType: **Serial Dilution** Lab ID: **H22030459-023ADIL** Method: **SW7471B**

Analysis Date: **03/30/22 16:48** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/30/2022** Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.67	0.50		0		0	0	0.7217	7.9	10	

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **HGCV203-H_220330B: 15** SampType: **Sample Matrix Spike** Lab ID: **H22030459-023AMS** Method: **SW7471B**

Analysis Date: **03/30/22 16:50** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/30/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.3	0.50	0.6232	0.7217	99	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 60689** **Date:** *21-Apr-22*

Run ID :Run Order: **HGCV203-H_220330B: 15** SampType: **Sample Matrix Spike** Lab ID: **H22030459-023AMS** Method: **SW7471B**

Analysis Date: **03/30/22 16:50** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/30/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **HGCV203-H_220330B: 16** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-023AMSD** Method: **SW7471B**

Analysis Date: **03/30/22 16:53** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/30/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.3	0.50	0.6363	0.7217	95	80	120	1.338	1.1	20	

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **HGCV203-H_220330B: 29** SampType: **Serial Dilution** Lab ID: **H22030459-033ADIL** Method: **SW7471B**

Analysis Date: **03/30/22 17:20** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/30/2022** Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.62	0.50		0		0	0	0.643	4.4	10	

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **HGCV203-H_220330B: 30** SampType: **Sample Matrix Spike** Lab ID: **H22030459-033AMS** Method: **SW7471B**

Analysis Date: **03/30/22 17:22** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/30/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.0	0.50	0.4567	0.643	80	80	120				

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **HGCV203-H_220330B: 31** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-033AMSD** Method: **SW7471B**

Analysis Date: **03/30/22 17:24** Units: **mg/kg-dry** **Prep Info:** Prep Date: **3/30/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.1	0.50	0.4473	0.643	91	80	120	1.009	4.1	20	E

Associated samples: **H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: 61007** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220418C: 37** SampType: **Method Blank** Lab ID: **MB-61007** Method: **E200.8**

Analysis Date: **04/19/22 01:31** Units: **mg/L** **Prep Info:** Prep Date: **4/18/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	ND	0.001									

Associated samples: **H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220418C: 48** SampType: **Laboratory Control Sample** Lab ID: **LCS-61007** Method: **E200.8**

Analysis Date: **04/19/22 01:56** Units: **mg/L** **Prep Info:** Prep Date: **4/18/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.490	0.010	0.5	0	98	85	115				

Associated samples: **H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220418C: 49** SampType: **Sample Matrix Spike** Lab ID: **H22030459-010CMS3** Method: **E200.8**

Analysis Date: **04/19/22 01:59** Units: **mg/L** **Prep Info:** Prep Date: **4/18/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	1.12	0.010	1	0.1743	95	70	130				

Associated samples: **H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220418C: 50** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-010CMSD3** Method: **E200.8**

Analysis Date: **04/19/22 02:01** Units: **mg/L** **Prep Info:** Prep Date: **4/18/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	1.12	0.010	1	0.1743	94	70	130	1.124	0.7	20	

Associated samples: **H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID:** PMOIST_220404_A **Date:** *21-Apr-22*

Run ID :Run Order: **SOIL DRYING OVEN 2_220405A: 5** SampType: **Sample Duplicate** Lab ID: **H22030459-020A DUP** Method: **D2974**

Analysis Date: **04/04/22 13:08** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	67.9	0.20		0				76.01	**11**	20	

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **SOIL DRYING OVEN 2_220405A: 7** SampType: **Sample Duplicate** Lab ID: **H22030459-026A DUP** Method: **D2974**

Analysis Date: **04/04/22 13:09** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	64.6	0.20		0				74.6	**14**	20	

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **SOIL DRYING OVEN 2_220405A: 8** SampType: **Sample Duplicate** Lab ID: **H22030459-033A DUP** Method: **D2974**

Analysis Date: **04/04/22 13:10** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	57.2	0.20		0				57.08	**0.2**	20	

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173037
Date: *21-Apr-22*

Run ID :Run Order: **FIA203-HE_220318B: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E350.1**

Analysis Date: **03/18/22 10:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	1.03	0.050	1	0	103	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220318B: 10** SampType: **Method Blank** Lab ID: **MBLK** Method: **E350.1**

Analysis Date: **03/18/22 10:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	ND	0.03									

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220318B: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E350.1**

Analysis Date: **03/18/22 10:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	1.02	0.050	1	0	102	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220318B: 27** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E350.1**

Analysis Date: **03/18/22 11:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.494	0.050	0.5	0	99	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220318B: 33** SampType: **Sample Matrix Spike** Lab ID: **H22030398-001CMS** Method: **E350.1**

Analysis Date: **03/18/22 11:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.864	0.050	1	0	86	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID:** R173037 **Date:** *21-Apr-22*

Run ID :Run Order: **FIA203-HE_220318B: 33** SampType: **Sample Matrix Spike** Lab ID: **H22030398-001CMS** Method: **E350.1**

Analysis Date: **03/18/22 11:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220318B: 34** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030398-001CMSD** Method: **E350.1**

Analysis Date: **03/18/22 11:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.839	0.050	1	0	84	80	120	0.8638	2.9	10	

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220318B: 41** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E350.1**

Analysis Date: **03/18/22 11:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.486	0.050	0.5	0	97	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220318B: 46** SampType: **Sample Matrix Spike** Lab ID: **H22030459-007DMS** Method: **E350.1**

Analysis Date: **03/18/22 11:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	1.00	0.050	1	0.0473	95	80	120				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220318B: 47** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-007DMSD** Method: **E350.1**

Analysis Date: **03/18/22 11:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.965	0.050	1	0.0473	92	80	120	1	3.6	10	

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173045
Date: *21-Apr-22*

Run ID :Run Order: **FIA203-HE_220318C: 9** SampType: **Initial Calibration Blank, Instrument Blank** Lab ID: **ICB** Method: **A4500 N-C**

Analysis Date: **03/18/22 12:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	-0.00190	0.10		0		0	0				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173051
Date: *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220318B: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **03/18/22 14:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.809	0.10	0.8	0	101	95	105				
Calcium	40.7	1.0	40	0	102	95	105				
Magnesium	39.5	1.0	40	0	99	95	105				
Potassium	39.8	1.0	40	0	100	95	105				
Sodium	39.8	1.0	40	0	100	95	105				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICP2-HE_220318B: 7** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **03/18/22 14:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.48	0.10	2.5	0	99	95	105				
Calcium	25.0	1.0	25	0	100	95	105				
Magnesium	24.8	1.0	25	0	99	95	105				
Potassium	24.7	1.0	25	0	99	95	105				
Sodium	24.7	1.0	25	0	99	95	105				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICP2-HE_220318B: 10** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.7**

Analysis Date: **03/18/22 15:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	-0.00792	0.10		0		0	0				
Calcium	471	1.0	500	0	94	80	120				
Magnesium	435	1.0	500	0	87	80	120				
Potassium	0.0107	1.0		0		0	0				
Sodium	0.0544	1.0		0		0	0				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173051** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220318B: 11** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.7**

Analysis Date: **03/18/22 15:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.00	0.10	1	0	100	80	120				
Calcium	469	1.0	500	0	94	80	120				
Magnesium	441	1.0	500	0	88	80	120				
Potassium	19.6	1.0	20	0	98	80	120				
Sodium	19.5	1.0	20	0	97	80	120				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICP2-HE_220318B: 13** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**

Analysis Date: **03/18/22 15:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.004									
Calcium	ND	0.1									
Magnesium	ND	0.02									
Potassium	ND	0.06									
Sodium	ND	0.02									

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICP2-HE_220318B: 14** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**

Analysis Date: **03/18/22 15:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.965	0.10	1	0	97	85	115				
Calcium	49.6	1.0	50	0	99	85	115				
Magnesium	50.9	1.0	50	0	102	85	115				
Potassium	50.5	1.0	50	0	101	85	115				
Sodium	50.5	1.0	50	0	101	85	115				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173051** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220318B: 41** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **03/18/22 17:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.47	0.10	2.5	0	**99**	90	110				
Calcium	24.2	1.0	25	0	**97**	90	110				
Magnesium	25.3	1.0	25	0	**101**	90	110				
Potassium	23.6	1.0	25	0	**95**	90	110				
Sodium	23.3	1.0	25	0	**93**	90	110				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICP2-HE_220318B: 45** SampType: **Sample Matrix Spike** Lab ID: **H22030465-001BMS2** Method: **E200.7**

Analysis Date: **03/18/22 18:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.985	0.10	1	0.02773	**96**	70	130				
Calcium	50.0	1.0	50	0	**100**	70	130				
Magnesium	52.5	1.0	50	0	**105**	70	130				
Potassium	52.3	1.0	50	0.505	**104**	70	130				
Sodium	156	1.0	50	103.8	**105**	70	130				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICP2-HE_220318B: 46** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030465-001BMSD2** Method: **E200.7**

Analysis Date: **03/18/22 18:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.00	0.10	1	0.02773	**97**	70	130	0.9846	**1.8**	20	
Calcium	50.9	1.0	50	0	**102**	70	130	50.03	**1.8**	20	
Magnesium	52.5	1.0	50	0	**105**	70	130	52.47	**0.1**	20	
Potassium	50.2	1.0	50	0.505	**99**	70	130	52.33	**4.1**	20	
Sodium	143	1.0	50	103.8	**79**	70	130	156.5	**8.7**	20	

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173051** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220318B: 49** SampType: **Sample Matrix Spike** Lab ID: **H22030459-001BMS2** Method: **E200.7**

Analysis Date: **03/18/22 18:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.06	0.050	1	0.07239	98	70	130				
Calcium	214	1.0	50	164.9	98	70	130				
Magnesium	66.2	1.0	50	14.14	104	70	130				
Potassium	63.0	1.0	50	13.94	98	70	130				
Sodium	97.3	1.0	50	50.57	93	70	130				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICP2-HE_220318B: 50** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-001BMSD2** Method: **E200.7**

Analysis Date: **03/18/22 18:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.06	0.050	1	0.07239	99	70	130	1.056	0.7	20	
Calcium	211	1.0	50	164.9	93	70	130	214	1.3	20	
Magnesium	66.7	1.0	50	14.14	105	70	130	66.19	0.7	20	
Potassium	64.8	1.0	50	13.94	102	70	130	63.02	2.8	20	
Sodium	99.5	1.0	50	50.57	98	70	130	97.26	2.3	20	

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICP2-HE_220318B: 60** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **03/18/22 19:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.42	0.10	2.5	0	97	90	110				
Calcium	24.6	1.0	25	0	98	90	110				
Magnesium	25.0	1.0	25	0	100	90	110				
Potassium	25.2	1.0	25	0	101	90	110				
Sodium	25.2	1.0	25	0	101	90	110				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173051** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220318B: 74** SampType: **Sample Matrix Spike** Lab ID: **H22030470-001BMS2** Method: **E200.7**

Analysis Date: **03/18/22 20:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.922	0.050	1	0	**92**	70	130				
Calcium	50.0	1.0	50	0	**100**	70	130				
Magnesium	50.7	1.0	50	0	**101**	70	130				
Potassium	52.5	1.0	50	0	**105**	70	130				
Sodium	52.2	1.0	50	0	**104**	70	130				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICP2-HE_220318B: 75** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030470-001BMSD2** Method: **E200.7**

Analysis Date: **03/18/22 20:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.964	0.050	1	0	**96**	70	130	0.9221	**4.4**	20	
Calcium	51.3	1.0	50	0	**103**	70	130	50.05	**2.6**	20	
Magnesium	51.4	1.0	50	0	**103**	70	130	50.66	**1.4**	20	
Potassium	51.1	1.0	50	0	**102**	70	130	52.48	**2.6**	20	
Sodium	50.7	1.0	50	0	**101**	70	130	52.24	**2.9**	20	

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173081
Date: *21-Apr-22*

Run ID :Run Order: **FIA203-HE_220321B: 10** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E353.2**

Analysis Date: **03/21/22 11:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.992	0.010	1	0	99	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220321B: 11** SampType: **Method Blank** Lab ID: **MBLK** Method: **E353.2**

Analysis Date: **03/21/22 11:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	ND	0.008									

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220321B: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E353.2**

Analysis Date: **03/21/22 11:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.958	0.011	1	0	96	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220321B: 41** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **03/21/22 13:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.471	0.010	0.5	0	94	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220321B: 45** SampType: **Sample Matrix Spike** Lab ID: **H22030441-012CMS** Method: **E353.2**

Analysis Date: **03/21/22 13:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.950	0.011	1	0	95	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID:** R173081 **Date:** *21-Apr-22*

Run ID :Run Order: **FIA203-HE_220321B: 45** SampType: **Sample Matrix Spike** Lab ID: **H22030441-012CMS** Method: **E353.2**

Analysis Date: **03/21/22 13:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220321B: 46** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030441-012CMSD** Method: **E353.2**

Analysis Date: **03/21/22 13:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.960	0.011	1	0	96	90	110	0.9496	1.1	10	

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220321B: 56** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **03/21/22 13:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.469	0.010	0.5	0	94	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220321B: 65** SampType: **Sample Matrix Spike** Lab ID: **H22030467-001AMS** Method: **E353.2**

Analysis Date: **03/21/22 14:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.08	0.011	1	0.1307	95	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220321B: 66** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030467-001AMSD** Method: **E353.2**

Analysis Date: **03/21/22 14:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.10	0.011	1	0.1307	97	90	110	1.083	1.2	10	

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173081
Date: *21-Apr-22*

Run ID :Run Order: **FIA203-HE_220321B: 84** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **03/21/22 14:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.465	0.010	0.5	0	93	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220321B: 89** SampType: **Sample Matrix Spike** Lab ID: **H22030500-006AMS** Method: **E353.2**

Analysis Date: **03/21/22 14:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.05	0.011	1	0.1029	95	90	110				

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Run ID :Run Order: **FIA203-HE_220321B: 90** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030500-006AMSD** Method: **E353.2**

Analysis Date: **03/21/22 14:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.05	0.011	1	0.1029	94	90	110	1.052	0.6	10	

Associated samples: **H22030459-001D, H22030459-002D, H22030459-003D, H22030459-004D, H22030459-005D, H22030459-006D, H22030459-007D, H22030459-008D, H22030459-009D, H22030459-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173107** **Date:** *21-Apr-22*

Run ID :Run Order: **IC METROHM_220321A: 2** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **03/21/22 13:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.06									

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **IC METROHM_220321A: 3** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **03/21/22 13:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	101	1.0	100	0	**101**	90	110				
Sulfate	401	1.0	400	0	**100**	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **IC METROHM_220321A: 4** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **03/21/22 14:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.2	1.0	25	0	**97**	90	110				
Sulfate	101	1.0	100	0	**101**	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **IC METROHM_220321A: 69** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **03/22/22 10:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	50.5	1.0	50	0	**101**	90	110				
Sulfate	203	1.0	200	0	**102**	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173107** **Date:** *21-Apr-22*

Run ID :Run Order: **IC METROHM_220321A: 81** SampType: **Sample Matrix Spike** Lab ID: **H22030459-005AMS** Method: **E300.0**

Analysis Date: **03/22/22 13:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	110	1.0	50	61.65	97	90	110				
Sulfate	682	1.0	200	486.5	98	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **IC METROHM_220321A: 82** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-005AMSD** Method: **E300.0**

Analysis Date: **03/22/22 13:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	110	1.0	50	61.65	97	90	110	110.4	0.1	20	
Sulfate	683	1.0	200	486.5	98	90	110	681.9	0.2	20	

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **IC METROHM_220321A: 83** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **03/22/22 14:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	50.4	1.0	50	0	101	90	110				
Sulfate	208	1.0	200	0	104	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **IC METROHM_220321A: 95** SampType: **Sample Matrix Spike** Lab ID: **H22030470-005AMS** Method: **E300.0**

Analysis Date: **03/22/22 17:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	37.8	1.0	25	12.48	101	90	110				
Sulfate	232	1.0	100	130.4	102	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173107
Date: *21-Apr-22*

Run ID :Run Order: **IC METROHM_220321A: 96** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030470-005AMSD** Method: **E300.0**

Analysis Date: **03/22/22 17:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	37.9	1.0	25	12.48	**102**	90	110	37.84	**0.1**	20	
Sulfate	234	1.0	100	130.4	**103**	90	110	232.2	**0.6**	20	

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173122** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220322B: 13** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/22/22 09:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0575	0.050	0.06	0	**96**	90	110				
Arsenic	0.0614	0.0050	0.06	0	**102**	90	110				
Barium	0.0587	0.10	0.06	0	**98**	90	110				
Cadmium	0.0316	0.0010	0.03	0	**105**	90	110				
Chromium	0.0591	0.010	0.06	0	**98**	90	110				
Cobalt	0.0582	0.010	0.06	0	**97**	90	110				
Copper	0.0609	0.010	0.06	0	**102**	90	110				
Lead	0.0580	0.010	0.06	0	**97**	90	110				
Manganese	0.296	0.010	0.3	0	**99**	90	110				
Molybdenum	0.0560	0.0050	0.06	0	**93**	90	110				
Nickel	0.0596	0.010	0.06	0	**99**	90	110				
Silver	0.0310	0.0050	0.03	0	**104**	90	110				
Uranium	0.0567	0.00030	0.06	0	**95**	90	110				
Vanadium	0.0569	0.10	0.06	0	**95**	90	110				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220322B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/22/22 09:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000738	0.050		0							
Arsenic	0.0000972	0.0050		0							
Barium	-0.0000423	0.10		0							
Cadmium	0.000821	0.0010		0							
Chromium	0.000857	0.010		0							
Cobalt	0.000392	0.010		0							
Copper	0.00154	0.010		0							
Lead	0.000118	0.010		0							
Manganese	0.000304	0.010		0							
Molybdenum	0.817	0.0050	0.8	0	**102**	70	130				
Nickel	0.00244	0.010		0							
Silver	0.0000138	0.0050		0							
Uranium	0.0000301	0.00030		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173122** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220322B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/22/22 09:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	0.000228	0.10		0							

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220322B: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/22/22 09:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000584	0.050		0		0	0				
Arsenic	0.00989	0.0050	0.01	0	99	70	130				
Barium	-0.0000378	0.10		0		0	0				
Cadmium	0.0105	0.0010	0.01	0	105	70	130				
Chromium	0.0206	0.010	0.02	0	103	70	130				
Cobalt	0.0198	0.010	0.02	0	99	70	130				
Copper	0.0200	0.010	0.02	0	100	70	130				
Lead	0.000104	0.010		0		0	0				
Manganese	0.0200	0.010	0.02	0	100	70	130				
Molybdenum	0.818	0.0050	0.8	0	102	70	130				
Nickel	0.0212	0.010	0.02	0	106	70	130				
Silver	0.0195	0.0050	0.02	0	98	70	130				
Uranium	0.0000268	0.00030		0		0	0				
Vanadium	0.0203	0.10	0.02	0	102	70	130				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220322B: 89** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/23/22 01:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0559	0.050	0.06	0	93	90	110				
Arsenic	0.0633	0.0050	0.06	0	106	90	110				
Barium	0.0609	0.10	0.06	0	101	90	110				
Cadmium	0.0309	0.0010	0.03	0	103	90	110				
Chromium	0.0605	0.010	0.06	0	101	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22030459
BatchID: R173122
Date: *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220322B: 89** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **03/23/22 01:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	0.0590	0.010	0.06	0	**98**	90	110				
Copper	0.0603	0.010	0.06	0	**101**	90	110				
Iron	0.295	0.020	0.3	0	**98**	90	110				
Lead	0.0595	0.010	0.06	0	**99**	90	110				
Manganese	0.301	0.010	0.3	0	**100**	90	110				
Molybdenum	0.0578	0.0050	0.06	0	**96**	90	110				
Nickel	0.0597	0.010	0.06	0	**100**	90	110				
Silver	0.0308	0.0050	0.03	0	**103**	90	110				
Uranium	0.0590	0.00030	0.06	0	**98**	90	110				
Vanadium	0.0588	0.10	0.06	0	**98**	90	110				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220322B: 91** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**
Analysis Date: **03/23/22 01:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000728	0.050		0							
Arsenic	0.0000707	0.0050		0							
Barium	-1.55E-06	0.10		0							
Cadmium	0.000122	0.0010		0							
Chromium	0.00182	0.010		0							
Cobalt	0.000104	0.010		0							
Copper	-0.0000507	0.010		0							
Iron	101	0.020	100	0	**101**	70	130				
Lead	0.000466	0.010		0							
Manganese	0.000328	0.010		0							
Molybdenum	0.844	0.0050	0.8	0	**106**	70	130				
Nickel	0.000151	0.010		0							
Silver	0.0000153	0.0050		0							
Uranium	0.0000289	0.00030		0							
Vanadium	-0.000174	0.10		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173122** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220322B: 91** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/23/22 01:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220322B: 93** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/23/22 02:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000472	0.050		0		0	0				
Arsenic	0.0106	0.0050	0.01	0	105	70	130				
Barium	-1.12E-06	0.10		0		0	0				
Cadmium	0.0104	0.0010	0.01	0	104	70	130				
Chromium	0.0222	0.010	0.02	0	111	70	130				
Cobalt	0.0208	0.010	0.02	0	104	70	130				
Copper	0.0200	0.010	0.02	0	100	70	130				
Iron	102	0.020	100	0	102	70	130				
Lead	0.000574	0.010		0		0	0				
Manganese	0.0210	0.010	0.02	0	105	70	130				
Molybdenum	0.852	0.0050	0.8	0	107	70	130				
Nickel	0.0206	0.010	0.02	0	103	70	130				
Silver	0.0206	0.0050	0.02	0	103	70	130				
Uranium	0.0000246	0.00030		0		0	0				
Vanadium	0.0205	0.10	0.02	0	102	70	130				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220322B: 97** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **03/23/22 02:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0002									
Arsenic	ND	0.0002									
Barium	ND	0.0002									
Cadmium	ND	0.00002									
Chromium	ND	0.0001									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173122** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220322B: 97** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **03/23/22 02:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	0.001									
Copper	ND	0.0001									
Iron	0.006	0.004									
Lead	ND	0.0001									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Nickel	ND	0.0002									
Silver	ND	0.00008									
Uranium	ND	0.00002									
Vanadium	ND	0.0001									

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220322B: 98** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **03/23/22 02:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0484	0.050	0.05	0	**97**	85	115				
Arsenic	0.0490	0.0050	0.05	0	**98**	85	115				
Barium	0.0485	0.10	0.05	0	**97**	85	115				
Cadmium	0.0491	0.0010	0.05	0	**98**	85	115				
Chromium	0.0487	0.010	0.05	0	**97**	85	115				
Cobalt	0.0492	0.010	0.05	0	**98**	85	115				
Copper	0.0498	0.010	0.05	0	**100**	85	115				
Iron	0.152	0.020	0.15	0	**101**	85	115				
Lead	0.0491	0.010	0.05	0	**98**	85	115				
Manganese	0.0494	0.010	0.05	0	**99**	85	115				
Molybdenum	0.0489	0.0050	0.05	0	**98**	85	115				
Nickel	0.0497	0.010	0.05	0	**99**	85	115				
Silver	0.0199	0.0050	0.02	0	**99**	85	115				
Uranium	0.0463	0.00030	0.05	0	**93**	85	115				
Vanadium	0.0481	0.10	0.05	0	**96**	85	115				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173122
Date: *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220322B: 98** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **03/23/22 02:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220322B: 110** SampType: **Sample Matrix Spike** Lab ID: **H22030459-008BMS** Method: **E200.8**

Analysis Date: **03/23/22 02:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0491	0.0010	0.05	0.0002655	98	70	130				
Arsenic	0.0552	0.0010	0.05	0.004369	102	70	130				
Barium	0.0893	0.050	0.05	0.04095	97	70	130				
Cadmium	0.0492	0.0010	0.05	0.0001785	98	70	130				
Chromium	0.0492	0.0050	0.05	0	98	70	130				
Cobalt	0.0493	0.0050	0.05	0	99	70	130				
Copper	0.0552	0.0050	0.05	0.006418	97	70	130				
Iron	0.160	0.020	0.15	0.01982	93	70	130				
Lead	0.0488	0.0010	0.05	0.0007893	96	70	130				
Manganese	0.241	0.0010	0.05	0.1923	97	70	130				
Molybdenum	0.242	0.0010	0.05	0.1917	100	70	130				
Nickel	0.0499	0.0050	0.05	0.0006941	98	70	130				
Silver	0.0155	0.0010	0.02	0	78	70	130				
Uranium	0.0516	0.00030	0.05	0.003583	96	70	130				
Vanadium	0.0505	0.010	0.05	0.001766	97	70	130				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220322B: 111** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-008BMSD** Method: **E200.8**

Analysis Date: **03/23/22 03:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0508	0.0010	0.05	0.0002655	101	70	130	0.04906	3.4	20	
Arsenic	0.0559	0.0010	0.05	0.004369	103	70	130	0.0552	1.3	20	
Barium	0.0918	0.050	0.05	0.04095	102	70	130	0.08929	2.7	20	
Cadmium	0.0510	0.0010	0.05	0.0001785	102	70	130	0.04921	3.7	20	
Chromium	0.0499	0.0050	0.05	0	100	70	130	0.04916	1.5	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173122
Date: *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220322B: 111** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-008BMSD** Method: **E200.8**

Analysis Date: **03/23/22 03:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	0.0501	0.0050	0.05	0	**100**	70	130	0.04934	**1.5**	20	
Copper	0.0559	0.0050	0.05	0.006418	**99**	70	130	0.05516	**1.3**	20	
Iron	0.162	0.020	0.15	0.01982	**94**	70	130	0.1595	**1.2**	20	
Lead	0.0512	0.0010	0.05	0.0007893	**101**	70	130	0.04883	**4.7**	20	
Manganese	0.241	0.0010	0.05	0.1923	**98**	70	130	0.241	**0.2**	20	
Molybdenum	0.250	0.0010	0.05	0.1917	**117**	70	130	0.2418	**3.5**	20	
Nickel	0.0497	0.0050	0.05	0.0006941	**98**	70	130	0.04986	**0.3**	20	
Silver	0.0143	0.0010	0.02	0	**72**	70	130	0.01552	**8.0**	20	
Uranium	0.0539	0.00030	0.05	0.003583	**101**	70	130	0.05159	**4.4**	20	
Vanadium	0.0515	0.010	0.05	0.001766	**100**	70	130	0.05049	**2.0**	20	

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173126
Date: *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220322A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **03/22/22 10:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.790	0.10	0.8	0	99	95	105				
Calcium	39.0	1.0	40	0	97	95	105				
Magnesium	39.6	1.0	40	0	99	95	105				
Potassium	39.1	1.0	40	0	98	95	105				
Sodium	39.1	1.0	40	0	98	95	105				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICP2-HE_220322A: 7** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **03/22/22 10:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.45	0.10	2.5	0	98	95	105				
Calcium	24.1	1.0	25	0	97	95	105				
Magnesium	25.0	1.0	25	0	100	95	105				
Potassium	25.5	1.0	25	0	102	95	105				
Sodium	25.6	1.0	25	0	102	95	105				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICP2-HE_220322A: 10** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.7**

Analysis Date: **03/22/22 10:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	-0.0131	0.10		0		0	0				
Calcium	445	1.0	500	0	89	80	120				
Magnesium	428	1.0	500	0	86	80	120				
Potassium	0.00355	1.0		0		0	0				
Sodium	0.0618	1.0		0		0	0				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173126** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220322A: 11** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.7**

Analysis Date: **03/22/22 10:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.974	0.10	1	0	97	80	120				
Calcium	461	1.0	500	0	92	80	120				
Magnesium	429	1.0	500	0	86	80	120				
Potassium	19.1	1.0	20	0	96	80	120				
Sodium	19.1	1.0	20	0	95	80	120				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICP2-HE_220322A: 40** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **03/22/22 23:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.51	0.10	2.5	0	100	90	110				
Calcium	25.1	1.0	25	0	101	90	110				
Magnesium	24.8	1.0	25	0	99	90	110				
Potassium	25.3	1.0	25	0	101	90	110				
Sodium	25.4	1.0	25	0	102	90	110				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICP2-HE_220322A: 52** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **03/22/22 23:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.49	0.10	2.5	0	100	90	110				
Calcium	25.0	1.0	25	0	100	90	110				
Magnesium	24.8	1.0	25	0	99	90	110				
Potassium	24.4	1.0	25	0	97	90	110				
Sodium	24.2	1.0	25	0	97	90	110				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173126
Date: *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220322A: 64** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **03/23/22 00:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.50	0.10	2.5	0	**100**	90	110				
Calcium	25.3	1.0	25	0	**101**	90	110				
Magnesium	24.9	1.0	25	0	**99**	90	110				
Potassium	23.8	1.0	25	0	**95**	90	110				
Sodium	23.5	1.0	25	0	**94**	90	110				

Associated samples: **H22030459-001C, H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173135** **Date:** *21-Apr-22*

Run ID :Run Order: **PHSC_101-H_220323A: 47** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **03/23/22 16:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **PHSC_101-H_220323A: 48** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **03/23/22 16:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	610	4.0	600	0	**101**	90	110				

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **PHSC_101-H_220323A: 51** SampType: **Sample Duplicate** Lab ID: **H22030459-001ADUP** Method: **A2320 B**

Analysis Date: **03/23/22 17:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	91	4.0		0				89.75	**1.4**	10	
Bicarbonate as HCO3	110	4.0		0				108.9	**1.4**	10	

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **PHSC_101-H_220323A: 75** SampType: **Sample Duplicate** Lab ID: **H22030470-002ADUP** Method: **A2320 B**

Analysis Date: **03/23/22 18:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	140	4.0		0				138.2	**0.7**	10	
Bicarbonate as HCO3	170	4.0		0				168	**0.7**	10	

Associated samples: **H22030459-001A, H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173177** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/23/22 20:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.306	0.10	0.3	0	**102**	90	110				
Antimony	0.0553	0.050	0.06	0	**92**	90	110				
Arsenic	0.0614	0.0050	0.06	0	**102**	90	110				
Barium	0.0596	0.10	0.06	0	**99**	90	110				
Beryllium	0.0306	0.0010	0.03	0	**102**	90	110				
Cadmium	0.0305	0.0010	0.03	0	**102**	90	110				
Chromium	0.0599	0.010	0.06	0	**100**	90	110				
Cobalt	0.0589	0.010	0.06	0	**98**	90	110				
Copper	0.0613	0.010	0.06	0	**102**	90	110				
Iron	0.291	0.020	0.3	0	**97**	90	110				
Lead	0.0591	0.010	0.06	0	**98**	90	110				
Manganese	0.298	0.010	0.3	0	**99**	90	110				
Molybdenum	0.0575	0.0050	0.06	0	**96**	90	110				
Nickel	0.0606	0.010	0.06	0	**101**	90	110				
Selenium	0.0623	0.0050	0.06	0	**104**	90	110				
Silver	0.0310	0.0050	0.03	0	**103**	90	110				
Uranium	0.0586	0.00030	0.06	0	**98**	90	110				
Vanadium	0.0583	0.10	0.06	0	**97**	90	110				
Zinc	0.0608	0.010	0.06	0	**101**	90	110				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/23/22 20:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	44.2	0.10	40	0	**110**	70	130				
Antimony	-1.74E-06	0.050		0							
Arsenic	-0.0000409	0.0050		0							
Barium	-0.0000990	0.10		0							
Beryllium	-0.0000366	0.0010		0							
Cadmium	0.000102	0.0010		0							
Chromium	0.00192	0.010		0							

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173177** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/23/22 20:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	0.0000482	0.010		0							
Copper	-0.0000108	0.010		0							
Iron	103	0.020	100	0	103	70	130				
Lead	0.000476	0.010		0							
Manganese	0.0000689	0.010		0							
Molybdenum	0.849	0.0050	0.8	0	106	70	130				
Nickel	0.0000653	0.010		0							
Selenium	0.000119	0.0050		0							
Silver	5.75E-06	0.0050		0							
Uranium	-0.0000186	0.00030		0							
Vanadium	-0.000132	0.10		0							
Zinc	0.000163	0.010		0							

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/23/22 20:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	43.4	0.10	40	0	109	70	130				
Antimony	-0.0000107	0.050		0		0	0				
Arsenic	0.0103	0.0050	0.01	0	103	70	130				
Barium	-0.000115	0.10		0		0	0				
Beryllium	-0.0000313	0.0010		0		0	0				
Cadmium	0.0105	0.0010	0.01	0	105	70	130				
Chromium	0.0220	0.010	0.02	0	110	70	130				
Cobalt	0.0205	0.010	0.02	0	103	70	130				
Copper	0.0203	0.010	0.02	0	102	70	130				
Iron	102	0.020	100	0	102	70	130				
Lead	0.000369	0.010		0		0	0				
Manganese	0.0208	0.010	0.02	0	104	70	130				
Molybdenum	0.858	0.0050	0.8	0	107	70	130				
Nickel	0.0201	0.010	0.02	0	101	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173177** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/23/22 20:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.0101	0.0050	0.01	0	**101**	70	130				
Silver	0.0211	0.0050	0.02	0	**105**	70	130				
Uranium	-0.0000252	0.00030		0		0	0				
Vanadium	0.0207	0.10	0.02	0	**104**	70	130				
Zinc	0.0103	0.010	0.01	0	**103**	70	130				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 47** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/24/22 00:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.282	0.10	0.3	0	**94**	90	110				
Antimony	0.0552	0.050	0.06	0	**92**	90	110				
Arsenic	0.0624	0.0050	0.06	0	**104**	90	110				
Barium	0.0602	0.10	0.06	0	**100**	90	110				
Beryllium	0.0304	0.0010	0.03	0	**101**	90	110				
Cadmium	0.0304	0.0010	0.03	0	**101**	90	110				
Chromium	0.0607	0.010	0.06	0	**101**	90	110				
Cobalt	0.0597	0.010	0.06	0	**99**	90	110				
Copper	0.0613	0.010	0.06	0	**102**	90	110				
Iron	0.295	0.020	0.3	0	**98**	90	110				
Lead	0.0594	0.010	0.06	0	**99**	90	110				
Manganese	0.307	0.010	0.3	0	**102**	90	110				
Molybdenum	0.0570	0.0050	0.06	0	**95**	90	110				
Nickel	0.0614	0.010	0.06	0	**102**	90	110				
Selenium	0.0615	0.0050	0.06	0	**102**	90	110				
Silver	0.0305	0.0050	0.03	0	**102**	90	110				
Uranium	0.0582	0.00030	0.06	0	**97**	90	110				
Vanadium	0.0598	0.10	0.06	0	**100**	90	110				
Zinc	0.0624	0.010	0.06	0	**104**	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173177
Date: *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 47** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/24/22 00:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 49** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/24/22 01:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.5	0.10	40	0	104	70	130				
Antimony	0.0000881	0.050		0							
Arsenic	0.0000321	0.0050		0							
Barium	-0.0000185	0.10		0							
Beryllium	0.0000385	0.0010		0							
Cadmium	0.000124	0.0010		0							
Chromium	0.00190	0.010		0							
Cobalt	0.000125	0.010		0							
Copper	0.000183	0.010		0							
Iron	104	0.020	100	0	104	70	130				
Lead	0.000648	0.010		0							
Manganese	0.000314	0.010		0							
Molybdenum	0.843	0.0050	0.8	0	105	70	130				
Nickel	0.000104	0.010		0							
Selenium	0.000121	0.0050		0							
Silver	0.0000143	0.0050		0							
Uranium	0.0000247	0.00030		0							
Vanadium	-0.0000698	0.10		0							
Zinc	0.000495	0.010		0							

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID:** R173177 **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 51** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/24/22 01:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.6	0.10	40	0	104	70	130				
Antimony	0.0000444	0.050		0		0	0				
Arsenic	0.0106	0.0050	0.01	0	106	70	130				
Barium	-1.04E-06	0.10		0		0	0				
Beryllium	0.0000314	0.0010		0		0	0				
Cadmium	0.0107	0.0010	0.01	0	107	70	130				
Chromium	0.0231	0.010	0.02	0	116	70	130				
Cobalt	0.0215	0.010	0.02	0	107	70	130				
Copper	0.0210	0.010	0.02	0	105	70	130				
Iron	106	0.020	100	0	106	70	130				
Lead	0.000609	0.010		0		0	0				
Manganese	0.0221	0.010	0.02	0	111	70	130				
Molybdenum	0.851	0.0050	0.8	0	106	70	130				
Nickel	0.0211	0.010	0.02	0	106	70	130				
Selenium	0.0101	0.0050	0.01	0	101	70	130				
Silver	0.0207	0.0050	0.02	0	103	70	130				
Uranium	0.0000211	0.00030		0		0	0				
Vanadium	0.0214	0.10	0.02	0	107	70	130				
Zinc	0.0102	0.010	0.01	0	102	70	130				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 129** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/24/22 09:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.6	0.10	40	0	101	70	130				
Antimony	0.0000370	0.050		0		0	0				
Arsenic	0.0106	0.0050	0.01	0	106	70	130				
Barium	-0.0000619	0.10		0		0	0				
Beryllium	-0.0000131	0.0010		0		0	0				
Cadmium	0.0106	0.0010	0.01	0	106	70	130				
Chromium	0.0230	0.010	0.02	0	115	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173177** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 129** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/24/22 09:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	0.0214	0.010	0.02	0	107	70	130				
Copper	0.0211	0.010	0.02	0	106	70	130				
Iron	106	0.020	100	0	106	70	130				
Lead	0.000235	0.010		0		0	0				
Manganese	0.0215	0.010	0.02	0	108	70	130				
Molybdenum	0.869	0.0050	0.8	0	109	70	130				
Nickel	0.0214	0.010	0.02	0	107	70	130				
Selenium	0.0100	0.0050	0.01	0	101	70	130				
Silver	0.0210	0.0050	0.02	0	105	70	130				
Uranium	0.0000212	0.00030		0		0	0				
Vanadium	0.0212	0.10	0.02	0	106	70	130				
Zinc	0.0105	0.010	0.01	0	105	70	130				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 134** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/24/22 09:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.6	0.10	40	0	99	70	130				
Antimony	0.0000465	0.050		0							
Arsenic	0.000135	0.0050		0							
Barium	-0.0000135	0.10		0							
Beryllium	-6.30E-06	0.0010		0							
Cadmium	0.000127	0.0010		0							
Chromium	0.00199	0.010		0							
Cobalt	0.000117	0.010		0							
Copper	0.000210	0.010		0							
Iron	106	0.020	100	0	106	70	130				
Lead	0.000239	0.010		0							
Manganese	0.000332	0.010		0							
Molybdenum	0.859	0.0050	0.8	0	107	70	130				
Nickel	0.000113	0.010		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173177** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 134** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/24/22 09:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.000103	0.0050		0							
Silver	0.0000111	0.0050		0							
Uranium	0.0000200	0.00030		0							
Vanadium	-0.0000755	0.10		0							
Zinc	0.000374	0.010		0							

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 238** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/24/22 21:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.323	0.10	0.3	0	**108**	90	110				
Antimony	0.0591	0.050	0.06	0	**98**	90	110				
Arsenic	0.0661	0.0050	0.06	0	**110**	90	110				
Barium	0.0643	0.10	0.06	0	**107**	90	110				
Beryllium	0.0327	0.0010	0.03	0	**109**	90	110				
Cadmium	0.0322	0.0010	0.03	0	**107**	90	110				
Chromium	0.0641	0.010	0.06	0	**107**	90	110				
Cobalt	0.0627	0.010	0.06	0	**105**	90	110				
Copper	0.0640	0.010	0.06	0	**107**	90	110				
Iron	0.314	0.020	0.3	0	**105**	90	110				
Lead	0.0629	0.010	0.06	0	**105**	90	110				
Manganese	0.319	0.010	0.3	0	**106**	90	110				
Molybdenum	0.0610	0.0050	0.06	0	**102**	90	110				
Nickel	0.0640	0.010	0.06	0	**107**	90	110				
Selenium	0.0642	0.0050	0.06	0	**107**	90	110				
Silver	0.0324	0.0050	0.03	0	**108**	90	110				
Uranium	0.0626	0.00030	0.06	0	**104**	90	110				
Vanadium	0.0626	0.10	0.06	0	**104**	90	110				
Zinc	0.0638	0.010	0.06	0	**106**	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173177
Date: *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 238** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/24/22 21:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 240** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/24/22 22:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	46.8	0.10	40	0	**117**	70	130				
Antimony	0.0000745	0.050		0							
Arsenic	0.0000516	0.0050		0							
Barium	0.0000500	0.10		0							
Beryllium	-0.0000676	0.0010		0							
Cadmium	0.000132	0.0010		0							
Chromium	0.00195	0.010		0							
Cobalt	0.000189	0.010		0							
Copper	0.0000484	0.010		0							
Iron	109	0.020	100	0	**109**	70	130				
Lead	0.000442	0.010		0							
Manganese	0.000489	0.010		0							
Molybdenum	0.894	0.0050	0.8	0	**112**	70	130				
Nickel	0.0000608	0.010		0							
Selenium	0.000274	0.0050		0							
Silver	7.62E-07	0.0050		0							
Uranium	0.0000239	0.00030		0							
Vanadium	-0.000147	0.10		0							
Zinc	-0.0000728	0.010		0							

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173177** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 242** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/24/22 22:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	47.1	0.10	40	0	118	70	130				
Antimony	0.0000418	0.050		0		0	0				
Arsenic	0.0108	0.0050	0.01	0	108	70	130				
Barium	-0.0000172	0.10		0		0	0				
Beryllium	-0.000107	0.0010		0		0	0				
Cadmium	0.0111	0.0010	0.01	0	111	70	130				
Chromium	0.0236	0.010	0.02	0	118	70	130				
Cobalt	0.0221	0.010	0.02	0	110	70	130				
Copper	0.0213	0.010	0.02	0	106	70	130				
Iron	110	0.020	100	0	110	70	130				
Lead	0.000373	0.010		0		0	0				
Manganese	0.0225	0.010	0.02	0	113	70	130				
Molybdenum	0.893	0.0050	0.8	0	112	70	130				
Nickel	0.0219	0.010	0.02	0	110	70	130				
Selenium	0.0109	0.0050	0.01	0	109	70	130				
Silver	0.0218	0.0050	0.02	0	109	70	130				
Uranium	0.0000211	0.00030		0		0	0				
Vanadium	0.0221	0.10	0.02	0	110	70	130				
Zinc	0.0106	0.010	0.01	0	106	70	130				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 246** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **03/24/22 22:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Beryllium	ND	0.0002									
Iron	ND	0.004									
Lead	ND	0.0001									
Selenium	ND	0.00007									
Zinc	ND	0.001									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173177
Date: *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 246** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **03/24/22 22:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220323A: 247** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **03/24/22 22:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0499	0.10	0.05	0	100	85	115				
Beryllium	0.0493	0.0010	0.05	0	99	85	115				
Iron	0.147	0.020	0.15	0	98	85	115				
Lead	0.0497	0.010	0.05	0	99	85	115				
Selenium	0.0509	0.0050	0.05	0	102	85	115				
Zinc	0.0527	0.010	0.05	0	105	85	115				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220323A: 315** SampType: **Sample Matrix Spike** Lab ID: **H22030459-001BMS** Method: **E200.8**

Analysis Date: **03/25/22 02:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0726	0.030	0.05	0.02279	100	70	130				
Beryllium	0.0477	0.0010	0.05	0	95	70	130				
Iron	0.160	0.020	0.15	0.01622	96	70	130				
Lead	0.0493	0.0010	0.05	0.0002763	98	70	130				
Selenium	0.0529	0.0010	0.05	0.0007009	104	70	130				
Zinc	0.0857	0.010	0.05	0.03568	100	70	130				

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220323A: 316** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-001BMSD** Method: **E200.8**

Analysis Date: **03/25/22 02:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0734	0.030	0.05	0.02279	101	70	130	0.07259	1.1	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173177** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 316** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030459-001BMSD** Method: **E200.8**

Analysis Date: **03/25/22 02:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	0.0480	0.0010	0.05	0	**96**	70	130	0.0477	**0.6**	20	
Iron	0.161	0.020	0.15	0.01622	**97**	70	130	0.1604	**0.6**	20	
Lead	0.0494	0.0010	0.05	0.0002763	**98**	70	130	0.0493	**0.2**	20	
Selenium	0.0543	0.0010	0.05	0.0007009	**107**	70	130	0.05289	**2.7**	20	
Zinc	0.0875	0.010	0.05	0.03568	**104**	70	130	0.08571	**2.1**	20	

Associated samples: **H22030459-001B, H22030459-002B, H22030459-003B, H22030459-004B, H22030459-005B, H22030459-006B, H22030459-007B, H22030459-008B, H22030459-009B, H22030459-010B**

Run ID :Run Order: **ICPMS205-H_220323A: 359** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/25/22 10:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	47.8	0.10	40	0	**119**	70	130				
Antimony	0.0000192	0.050		0							
Arsenic	0.0000164	0.0050		0							
Barium	7.39E-06	0.10		0							
Beryllium	-0.000151	0.0010		0							
Cadmium	0.000135	0.0010		0							
Chromium	0.00203	0.010		0							
Cobalt	0.000133	0.010		0							
Copper	-0.000214	0.010		0							
Iron	112	0.020	100	0	**112**	70	130				
Lead	0.000215	0.010		0							
Manganese	0.000296	0.010		0							
Molybdenum	0.871	0.0050	0.8	0	**109**	70	130				
Nickel	0.0000630	0.010		0							
Selenium	0.000259	0.0050		0							
Silver	3.67E-06	0.0050		0							
Uranium	0.0000199	0.00030		0							
Vanadium	-0.000130	0.10		0							
Zinc	-0.000273	0.010		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173177** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220323A: 359** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **03/25/22 10:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220323A: 361** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/25/22 10:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	47.9	0.10	40	0	120	70	130				
Antimony	0.0000237	0.050		0		0	0				
Arsenic	0.0107	0.0050	0.01	0	107	70	130				
Barium	-0.0000373	0.10		0		0	0				
Beryllium	-0.000133	0.0010		0		0	0				
Cadmium	0.0108	0.0010	0.01	0	108	70	130				
Chromium	0.0229	0.010	0.02	0	115	70	130				
Cobalt	0.0214	0.010	0.02	0	107	70	130				
Copper	0.0200	0.010	0.02	0	100	70	130				
Iron	111	0.020	100	0	111	70	130				
Lead	0.000171	0.010		0		0	0				
Manganese	0.0224	0.010	0.02	0	112	70	130				
Molybdenum	0.876	0.0050	0.8	0	110	70	130				
Nickel	0.0205	0.010	0.02	0	103	70	130				
Selenium	0.0107	0.0050	0.01	0	107	70	130				
Silver	0.0212	0.0050	0.02	0	106	70	130				
Uranium	0.0000188	0.00030		0		0	0				
Vanadium	0.0215	0.10	0.02	0	108	70	130				
Zinc	0.0101	0.010	0.01	0	101	70	130				

Associated samples: **H22030459-001B, H22030459-001C, H22030459-002B, H22030459-002C, H22030459-003B, H22030459-003C, H22030459-004B, H22030459-004C, H22030459-005B, H22030459-005C, H22030459-006B, H22030459-006C, H22030459-007B, H22030459-007C, H22030459-008B, H22030459-008C, H22030459-009B, H22030459-009C, H22030459-010B, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173365** **Date:** *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220330A: 7** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6010B**

Analysis Date: **03/30/22 12:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.99	0.10	4	0	**100**	90	110				
Boron	0.808	0.10	0.8	0	**101**	90	110				
Copper	0.800	0.012	0.8	0	**100**	90	110				
Iron	3.92	0.030	4	0	**98**	90	110				
Manganese	3.96	0.010	4	0	**99**	90	110				
Zinc	0.805	0.010	0.8	0	**101**	90	110				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **ICP2-HE_220330A: 11** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6010B**

Analysis Date: **03/30/22 12:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	517	0.10	500	0	**103**	80	120				
Boron	-0.00798	0.10		0		0	0				
Copper	0.000760	0.012		0		0	0				
Iron	181	0.030	200	0	**90**	80	120				
Manganese	-0.0101	0.010		0		0	0				
Zinc	0.00325	0.010		0		0	0				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **ICP2-HE_220330A: 12** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6010B**

Analysis Date: **03/30/22 12:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	524	0.10	500	0	**105**	80	120				
Boron	1.01	0.10	1	0	**101**	80	120				
Copper	0.520	0.012	0.5	0	**104**	80	120				
Iron	179	0.030	200	0	**89**	80	120				
Manganese	0.464	0.010	0.5	0	**93**	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limit; N - Analyte concentration was not sufficiently high to calculate RPD
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173365
Date: *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220330A: 12** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6010B**

Analysis Date: **03/30/22 12:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	1.01	0.010	1	0	101	80	120				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: **R173393**
Date: *21-Apr-22*

Run ID :Run Order: **ICP2-HE_220331A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6010B**

Analysis Date: **03/31/22 13:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.794	0.10	0.8	0	99	90	110				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-014A, H22030459-015A, H22030459-017A, H22030459-018A, H22030459-020A, H22030459-021A, H22030459-023A, H22030459-024A, H22030459-026A, H22030459-027A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-033A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICP2-HE_220331A: 10** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6010B**

Analysis Date: **03/31/22 14:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	-0.00717	0.10		0		0	0				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-014A, H22030459-015A, H22030459-017A, H22030459-018A, H22030459-020A, H22030459-021A, H22030459-023A, H22030459-024A, H22030459-026A, H22030459-027A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-033A, H22030459-034A, H22030459-036A**

Run ID :Run Order: **ICP2-HE_220331A: 11** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6010B**

Analysis Date: **03/31/22 14:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.996	0.10	1	0	100	80	120				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-014A, H22030459-015A, H22030459-017A, H22030459-018A, H22030459-020A, H22030459-021A, H22030459-023A, H22030459-024A, H22030459-026A, H22030459-027A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-033A, H22030459-034A, H22030459-036A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173410** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**

Analysis Date: **03/30/22 12:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 13	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0611	0.0010	0.06	0	102	90	110				
Barium	0.0599	0.0010	0.06	0	100	90	110				
Beryllium	0.0297	0.0010	0.03	0	99	90	110				
Cadmium	0.0305	0.0010	0.03	0	102	90	110				
Chromium	0.0592	0.0010	0.06	0	99	90	110				
Cobalt	0.0583	0.0011	0.06	0	97	90	110				
Lead	0.0584	0.0010	0.06	0	97	90	110				
Molybdenum	0.0566	0.0010	0.06	0	94	90	110				
Nickel	0.0600	0.0010	0.06	0	100	90	110				
Selenium	0.0607	0.0010	0.06	0	101	90	110				
Silver	0.0300	0.0010	0.03	0	100	90	110				
Uranium	0.0589	0.00030	0.06	0	98	90	110				
Vanadium	0.0583	0.0010	0.06	0	97	90	110				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220330C: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **03/30/22 13:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 13	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0000330	0.0010		0							
Barium	-0.0000994	0.0010		0							
Beryllium	-0.0000414	0.0010		0							
Cadmium	0.000119	0.0010		0							
Chromium	0.00180	0.0010		0							
Cobalt	0.000122	0.0011		0							
Lead	0.000546	0.0010		0							
Molybdenum	0.777	0.0010	0.8	0	97	70	130				
Nickel	0.000116	0.0010		0		0	0				
Selenium	0.000156	0.0010		0							
Silver	0.0000144	0.0010		0							
Uranium	0.0000209	0.00030		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173410** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **03/30/22 13:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 13	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	-0.0000700	0.0010		0		0	0				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220330C: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **03/30/22 13:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 13	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.00926	0.0010	0.01	0	93	70	130				
Barium	-0.000104	0.0010		0		0	0				
Beryllium	-0.0000542	0.0010		0		0	0				
Cadmium	0.00970	0.0010	0.01	0	97	70	130				
Chromium	0.0200	0.0010	0.02	0	100	70	130				
Cobalt	0.0188	0.0011	0.02	0	94	70	130				
Lead	0.000644	0.0010		0		0	0				
Molybdenum	0.786	0.0010	0.8	0	98	70	130				
Nickel	0.0187	0.0010	0.02	0	94	70	130				
Selenium	0.00954	0.0010	0.01	0	95	70	130				
Silver	0.0190	0.0010	0.02	0	95	70	130				
Uranium	0.0000190	0.00030		0		0	0				
Vanadium	0.0187	0.0010	0.02	0	94	70	130				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220330C: 82** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**

Analysis Date: **03/30/22 17:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 13	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0608	0.0010	0.06	0	101	90	110				
Barium	0.0602	0.0010	0.06	0	100	90	110				
Beryllium	0.0297	0.0010	0.03	0	99	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limit; R - RPD outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173410** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 82** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**

Analysis Date: **03/30/22 17:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 13	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0305	0.0010	0.03	0	102	90	110				
Chromium	0.0587	0.0010	0.06	0	98	90	110				
Cobalt	0.0581	0.0011	0.06	0	97	90	110				
Lead	0.0596	0.0010	0.06	0	99	90	110				
Molybdenum	0.0576	0.0010	0.06	0	96	90	110				
Nickel	0.0590	0.0010	0.06	0	98	90	110				
Selenium	0.0607	0.0010	0.06	0	101	90	110				
Silver	0.0300	0.0010	0.03	0	100	90	110				
Uranium	0.0585	0.00030	0.06	0	97	90	110				
Vanadium	0.0583	0.0010	0.06	0	97	90	110				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220330C: 85** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **03/30/22 17:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 13	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0000241	0.0010		0							
Barium	0.000196	0.0010		0							
Beryllium	0.0000191	0.0010		0							
Cadmium	0.000108	0.0010		0							
Chromium	0.00190	0.0010		0							
Cobalt	0.000116	0.0011		0							
Lead	0.000518	0.0010		0							
Molybdenum	0.806	0.0010	0.8	0	101	70	130				
Nickel	0.000112	0.0010		0		0	0				
Selenium	0.0000984	0.0010		0							
Silver	0.0000164	0.0010		0							
Uranium	0.0000312	0.00030		0							
Vanadium	-0.0000582	0.0010		0		0	0				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173410** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220330C: 85** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **03/30/22 17:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 13	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220330C: 87** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **03/30/22 17:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 13	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.00965	0.0010	0.01	0	96	70	130				
Barium	0.000184	0.0010		0		0	0				
Beryllium	0.0000150	0.0010		0		0	0				
Cadmium	0.0102	0.0010	0.01	0	102	70	130				
Chromium	0.0205	0.0010	0.02	0	103	70	130				
Cobalt	0.0193	0.0011	0.02	0	97	70	130				
Lead	0.000660	0.0010		0		0	0				
Molybdenum	0.798	0.0010	0.8	0	100	70	130				
Nickel	0.0189	0.0010	0.02	0	94	70	130				
Selenium	0.00972	0.0010	0.01	0	97	70	130				
Silver	0.0194	0.0010	0.02	0	97	70	130				
Uranium	0.0000305	0.00030		0		0	0				
Vanadium	0.0194	0.0010	0.02	0	97	70	130				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173447
Date: *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220401D: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**

Analysis Date: **04/01/22 22:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0561	0.0010	0.06	0	93	90	110				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220401D: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **04/01/22 23:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000686	0.0010		0							

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Run ID :Run Order: **ICPMS205-H_220401D: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **04/01/22 23:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000493	0.0010		0		0	0				

Associated samples: **H22030459-011A, H22030459-012A, H22030459-013A, H22030459-014A, H22030459-015A, H22030459-016A, H22030459-017A, H22030459-018A, H22030459-019A, H22030459-020A, H22030459-021A, H22030459-022A, H22030459-023A, H22030459-024A, H22030459-025A, H22030459-026A, H22030459-027A, H22030459-028A, H22030459-029A, H22030459-030A, H22030459-031A, H22030459-032A, H22030459-033A, H22030459-034A, H22030459-035A, H22030459-036A, H22030459-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173864** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220415B: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **04/15/22 17:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0583	0.010	0.06	0	97	90	110				

Associated samples: **H22030459-002B**

Run ID :Run Order: **ICPMS205-H_220415B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**
Analysis Date: **04/15/22 17:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.000178	0.010		0							

Associated samples: **H22030459-002B**

Run ID :Run Order: **ICPMS205-H_220415B: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**
Analysis Date: **04/15/22 17:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.000182	0.010		0		0	0				

Associated samples: **H22030459-002B**

Run ID :Run Order: **ICPMS205-H_220415B: 23** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **04/15/22 17:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.0001									

Associated samples: **H22030459-002B**

Run ID :Run Order: **ICPMS205-H_220415B: 24** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**
Analysis Date: **04/15/22 17:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0505	0.010	0.05	0	101	85	115				

Associated samples: **H22030459-002B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: R173864** **Date:** *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220415B: 39** SampType: **Sample Matrix Spike** Lab ID: **H22030717-004EMS** Method: **E200.8**

Analysis Date: **04/15/22 18:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0501	0.0010	0.05	0	**100**	70	130				

Associated samples: **H22030459-002B**

Run ID :Run Order: **ICPMS205-H_220415B: 41** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22030717-004EMSD** Method: **E200.8**

Analysis Date: **04/15/22 18:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0500	0.0010	0.05	0	**100**	70	130	0.05007	**0.1**	20	

Associated samples: **H22030459-002B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: R173889
Date: *21-Apr-22*

Run ID :Run Order: **ICPMS205-H_220418C: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **04/19/22 00:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.0615	0.010	0.06	0	103	90	110				

Associated samples: **H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220418C: 14** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **04/19/22 00:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.000878	0.010		0							

Associated samples: **H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Run ID :Run Order: **ICPMS205-H_220418C: 16** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **04/19/22 00:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.0105	0.010	0.01	0	105	70	130				

Associated samples: **H22030459-002C, H22030459-003C, H22030459-004C, H22030459-005C, H22030459-006C, H22030459-007C, H22030459-008C, H22030459-009C, H22030459-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459
BatchID: **TSS220317A**
Date: *21-Apr-22*

Run ID :Run Order: **ACCU-124 (14410200)_220317A: 5** SampType: **Sample Duplicate** Lab ID: **H22030401-001B DUP** Method: **A2540 D**

Analysis Date: **03/17/22 15:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	203	29		0				188.6	7.3	5	R

Associated samples: **H22030459-001A**

- Since the difference between the analytical result for the sample and its duplicate is less than the reporting limit, the RPD variance is not considered significant.

Run ID :Run Order: **ACCU-124 (14410200)_220317A: 14** SampType: **Sample Duplicate** Lab ID: **H22030440-001A DUP** Method: **A2540 D**

Analysis Date: **03/17/22 15:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	153	18		0				160	4.7	5	

Associated samples: **H22030459-001A**

Run ID :Run Order: **ACCU-124 (14410200)_220317A: 16** SampType: **Method Blank** Lab ID: **MB-1_220317A** Method: **A2540 D**

Analysis Date: **03/17/22 15:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	0.8									

Associated samples: **H22030459-001A**

Run ID :Run Order: **ACCU-124 (14410200)_220317A: 17** SampType: **Laboratory Control Sample** Lab ID: **LCS-2_220317A** Method: **A2540 D**

Analysis Date: **03/17/22 15:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	98.0	10	100	0	98	80	120				

Associated samples: **H22030459-001A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22030459 **BatchID: TSS220321A** **Date:** *21-Apr-22*

Run ID :Run Order: **ACCU-124 (14410200)_220322A: 1** SampType: **Method Blank** Lab ID: **MB-1_220321A** Method: **A2540 D**

Analysis Date: **03/22/22 15:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	0.8									

Associated samples: **H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **ACCU-124 (14410200)_220322A: 2** SampType: **Laboratory Control Sample** Lab ID: **LCS-2_220321A** Method: **A2540 D**

Analysis Date: **03/22/22 15:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	91.0	10	100	0	91	80	120				

Associated samples: **H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Run ID :Run Order: **ACCU-124 (14410200)_220322A: 12** SampType: **Sample Duplicate** Lab ID: **H22030459-010A DUP** Method: **A2540 D**

Analysis Date: **03/22/22 16:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	26.0	10		0				25.75	1.0	5	

Associated samples: **H22030459-002A, H22030459-003A, H22030459-004A, H22030459-005A, H22030459-006A, H22030459-007A, H22030459-008A, H22030459-009A, H22030459-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22030459

Login completed by: Wanda Johnson
Date Received: 3/16/2022

Reviewed by: BL2000\rtooke
Received by: JCS

Reviewed Date: 3/25/2022
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

The temperature of the sample(s) for shipping container 1 was 0.0°C, shipping container 2 was 0.0°C, shipping container 3 was 2.7°C. Coolers 1 and 2 both on ice and trip blank. Container 3 was a box with ice. Sample containers state "Field Blank SS-10A", used ID from COC. wjj 3/17/2022

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Chain of Custody & Analytical Request Record

www.energylab.com

Account Information *(Billing information)*

Company/Name	MTDEQ
Contact	Ben Quinones
Phone	(404) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	H1526
Bottle Order	39863

Report Information *(If different than Account Information)*

Company/Name	MTDEQ/RESPEC
Contact	Ben Quinones; Joe Naughton, Megan Burke
Phone	(406) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	joe.naughton@respec.com; megan.burke@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

Dissolved metals field filtered

Project Information

Project Name, PWSID, Permit, etc.	Silver Bow Creek SSTOU Monitoring
Sampler Name	T Traxler, J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ■ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification *(Name, Location, Interval, etc.)*	Collection Date	Collection Time	Number of Containers	Matrix *(See Codes Above)*	TR Metals (see list)	Diss Metals (see list)	TPN	NH3, NO3+NO2, TP	TSS	Hardness (TR Ca & Mg)	Tot. Alkalinity, HCO3	SO4, Cl, K, Na	Tot Metals, dry weight (see list)	See Attached	RUSH TAT	ELI LAB ID *Laboratory Use Only*
✓ 1	SS-07 C2	3/16/22	1600	5	W	✓	✓	✓	✓	✓	✓	✓	✓				H22030459
✓ 2	Field Blank #1 SS-10A C2	3/16/22	1500	5	W	✓	✓	✓	✓	✓	✓	✓	✓				1
3	SS-10A C2	3/16/22	1445	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
4	SS-13 C2	3/16/22	1350	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
5	SS-14 C2	3/16/22	1300	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
6	SS-15A-2 C1	3/16/22	1200	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
7	SS-16B C1	3/16/22	1030	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
8	SS-16B Duplicate C1	3/16/22	1030	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
9	SS-17D C1	3/16/22	0945	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
10	SS-19 C1	3/16/22	0900	5	W	✓	✓	✓	✓	✓	✓	✓	✓				

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tawher Traxler	3/16/22 17:37	Tawher Traxler			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print) JESSICA SMITH	Date/Time 03/16/2022 1737	Signature

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number *(cash/check only)*
HAND	Y	Y (N) C B	Y N	C1 0.0 °C C2 0.0	(Y) N C3	(Y) N	CC Cash Check_____	$	

C3 2.7

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

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Chain of Custody & Analytical Request Record

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Page 2 of 2

Account Information (Billing Information)

Company/Name	MTDEQ
Contact	Ben Quinones
Phone	(404) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	H1526
Bottle Order	39863

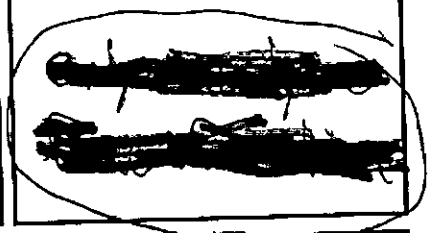
Report Information (if different than Account Information)

Company/Name	MTDEQ/RESPEC
Contact	Ben Quinones; Joe Naughton; Megan Burke
Phone	(406) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	joe.naughton@respec.com, megan.burke@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

Lab to sieve sediment samples into 3 size fractions, report as dry weight concentrations



Project Information

Project Name, PWSID, Permit, etc.	Silver Bow Creek SSTOU Monitoring
Sampler Name	Tanner Traxler
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ■ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A Air
W Water
S Soils/Solids
V Vegetation
B Bioassay
O Other
DW Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Analysis Requested: Tot Metals, dry weight (Specify)	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	SS-07 C3	3/16/22	1600	1	S	✓			L220304-59
2	SS-10A C3	3/16/22	1445	1	S	✓			
3	SS-13 C3	3/16/22	1350	1	S	✓			
4	SS-14 C3	3/16/22	1300	1	S	✓			
5	SS-15A-2 C3	3/16/22	1200	1	S	✓			
6	SS-16B C3	3/16/22	1030	1	S	✓			
7	SS-16B Duplicate	3/16/22	1030	1	S	✓			
8	SS-17D C3	3/16/22	0945	1	S	✓			
9	SS-19 C3	3/16/22	0900	1	S	✓			
10									

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tanner Traxler	3/16/22 17:37	Tanner Traxler			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print) Jessica Sm 1171	Date/Time 03/16/2022 1731	Signature

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
UPS	Y	Y (N) C B	Y N	21.0 °C C3 2.7	(Y) N C3	(Y) N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

APPENDIX B-2

Second Quarter Results

ANALYTICAL SUMMARY REPORT

July 14, 2022

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22060326 Quote ID: H1526

Project Name: Silver Bow Creek SSTOU Monitoring

Energy Laboratories Inc Helena MT received the following 37 samples for MT DEQ-Federal Superfund on 6/9/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22060326-001	SS-07	06/08/22 16:45	06/09/22	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Conductivity Mercury, Dissolved Mercury, Total Recoverable Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 Mercury Digestion by E245.1 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H22060326-002	SS-10A	06/08/22 15:15	06/09/22	Aqueous	Same As Above
H22060326-003	SS-13	06/08/22 14:20	06/09/22	Aqueous	Same As Above
H22060326-004	SS-14	06/08/22 13:45	06/09/22	Aqueous	Same As Above
H22060326-005	SS-15A-2	06/08/22 12:40	06/09/22	Aqueous	Same As Above
H22060326-006	SS-16B	06/08/22 11:30	06/09/22	Aqueous	Same As Above
H22060326-007	Field Blank #1 SS-17D	06/08/22 10:45	06/09/22	Aqueous	Same As Above
H22060326-008	SS-17D	06/08/22 10:30	06/09/22	Aqueous	Same As Above
H22060326-009	SS-19	06/08/22 9:30	06/09/22	Aqueous	Same As Above
H22060326-010	SS-19 Duplicate	06/08/22 9:30	06/09/22	Aqueous	Same As Above
H22060326-011	SS-07 Sediment <0.063mm	06/08/22 16:45	06/09/22	Sediment	Metals by ICP/ICPMS, Total Mercury in Solid By CVAA Moisture Total Metals Digestion by SW3050B Mercury Digestion by SW7471B Sieve Analysis, Wet Soil Preparation USDA1
H22060326-012	SS-07 Sediment 1mm to 0.063mm	06/08/22 16:45	06/09/22	Sediment	Metals by ICP/ICPMS, Total Mercury in Solid By CVAA Moisture Total Metals Digestion by SW3050B Mercury Digestion by SW7471B Sieve Analysis, Wet

ANALYTICAL SUMMARY REPORT

H22060326-013	SS-07 Sediment 2mm to 1mm	06/08/22 16:45	06/09/22	Sediment	Same As Above
H22060326-014	SS-10A Sediment <0.063mm	06/08/22 15:15	06/09/22	Sediment	Same As Above
H22060326-015	SS-10A Sediment 1mm to 0.063mm	06/08/22 15:15	06/09/22	Sediment	Same As Above
H22060326-016	SS-10A Sediment 2mm to 1mm	06/08/22 15:15	06/09/22	Sediment	Same As Above
H22060326-017	SS-13 Sediment <0.063mm	06/08/22 14:20	06/09/22	Sediment	Same As Above
H22060326-018	SS-13 Sediment 1mm to 0.063mm	06/08/22 14:20	06/09/22	Sediment	Same As Above
H22060326-019	SS-13 Sediment 2mm to 1mm Sieve	06/08/22 14:20	06/09/22	Sediment	Same As Above
H22060326-020	SS-14 Sediment <0.063mm	06/08/22 13:45	06/09/22	Sediment	Same As Above
H22060326-021	SS-14 Sediment 1mm to 0.063mm	06/08/22 13:45	06/09/22	Sediment	Same As Above
H22060326-022	SS-14 Sediment 2mm to 1mm	06/08/22 13:45	06/09/22	Sediment	Same As Above
H22060326-023	SS-15A-2 Sediment <0.063mm	06/08/22 12:40	06/09/22	Sediment	Same As Above
H22060326-024	SS-15A-2 Sediment 1mm to 0.063mm	06/08/22 12:40	06/09/22	Sediment	Same As Above
H22060326-025	SS-15A-2 Sediment 2mm to 1mm	06/08/22 12:40	06/09/22	Sediment	Same As Above
H22060326-026	SS-16B Sediment <0.063mm	06/08/22 11:30	06/09/22	Sediment	Same As Above
H22060326-027	SS-16B Sediment 1mm to 0.063mm	06/08/22 11:30	06/09/22	Sediment	Same As Above
H22060326-028	SS-16B Sediment 2mm to 1mm	06/08/22 11:30	06/09/22	Sediment	Same As Above
H22060326-029	SS-17D Sediment <0.063	06/08/22 10:30	06/09/22	Sediment	Same As Above
H22060326-030	SS-17D Sediment 1mm to 0.063mm	06/08/22 10:30	06/09/22	Sediment	Same As Above
H22060326-031	SS-17D Sediment 2mm to 1mm	06/08/22 10:30	06/09/22	Sediment	Same As Above
H22060326-032	SS-19 Sediment <0.063mm	06/08/22 9:30	06/09/22	Sediment	Same As Above
H22060326-033	SS-19 Sediment 1mm to 0.063mm	06/08/22 9:30	06/09/22	Sediment	Same As Above
H22060326-034	SS-19 Sediment 2mm to 1mm	06/08/22 9:30	06/09/22	Sediment	Same As Above
H22060326-035	SS-19 Duplicate Sediment <0.063mm	06/08/22 9:30	06/09/22	Sediment	Same As Above
H22060326-036	SS-19 Duplicate Sediment 1mm to 0.063mm	06/08/22 9:30	06/09/22	Sediment	Same As Above

ANALYTICAL SUMMARY REPORT

H22060326-037	SS-19 Duplicate Sediment 2mm to 1mm	06/08/22 9:30	06/09/22	Sediment	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-001
Collection Date: 06/08/22 16:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	6	mg/L	D	2	0.3	A2540 D	06/10/22 08:59 / ljs			U-124 (14410200)_220610B : 23		TSS220610A
INORGANICS												
Alkalinity, Total as CaCO3	71	mg/L		4	2	A2320 B	06/15/22 14:33 / JAR			PHSC_101-H_220615A : 107		R175655
Bicarbonate as HCO3	86	mg/L		4	3	A2320 B	06/15/22 14:33 / JAR			PHSC_101-H_220615A : 107		R175655
Chloride	25	mg/L		1	0.05	E300.0	06/17/22 08:18 / JAR			IC METROHM_220615A : 175		R175738
Sulfate	523	mg/L		1	0.1	E300.0	06/17/22 08:18 / JAR			IC METROHM_220615A : 175		R175738
Hardness as CaCO3	598	mg/L		1	1	A2340 B	06/16/22 09:57 / sld			WATERCALC_220616B : 2		R175701
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	06/14/22 14:40 / GE			FIA203-HE_220614B : 24		R175659
Nitrogen, Nitrate+Nitrite as N	0.55	mg/L		0.02	0.008	E353.2	06/10/22 16:51 / GE			FIA203-HE_220610C : 157		R175567
Nitrogen, Total	0.85	mg/L		0.05	0.02	A4500 N-C	06/16/22 10:54 / GE	06/15/22 10:29	A4500 N-	FIA203-HE_220616B : 48		61861
Phosphorus, Total as P	0.064	mg/L		0.003	0.001	E365.1	06/14/22 13:14 / GE	06/13/22 09:18	E365.1	SEAL AA500_220614A : 138		61823
METALS, DISSOLVED												
Aluminum	0.017	mg/L		0.009	0.003	E200.8	06/16/22 20:04 / dck			ICPMS205-H_220616B : 126		R175744
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652
Barium	0.052	mg/L		0.003	0.0002	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/16/22 20:04 / dck			ICPMS205-H_220616B : 126		R175744
Boron	0.037	mg/L	J	0.1	0.004	E200.7	06/10/22 21:15 / sld			ICP2-HE_220610A : 105		R175563
Cadmium	0.00015	mg/L		0.00003	0.00002	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652
Calcium	211	mg/L		1	0.1	E200.7	06/14/22 17:57 / sld			ICP2-HE_220614A : 107		R175650
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652
Cobalt	ND	mg/L		0.01	0.001	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652
Copper	0.004	mg/L		0.001	0.0001	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652
Iron	0.03	mg/L		0.02	0.004	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/16/22 20:04 / dck			ICPMS205-H_220616B : 126		R175744
Magnesium	11	mg/L		1	0.02	E200.7	06/10/22 21:15 / sld			ICP2-HE_220610A : 105		R175563
Manganese	0.066	mg/L		0.001	0.0003	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652
Mercury	0.005	ug/L		0.005	0.001	E245.1	06/15/22 11:05 / kjb	06/14/22 14:17	E245.1	HGCV205-H_220615A : 14		61851
Molybdenum	0.275	mg/L		0.005	0.0003	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652
Nickel	0.0004	mg/L	J	0.002	0.0002	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B : 124		R175652

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-001
Collection Date: 06/08/22 16:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	15	mg/L		1	0.06	E200.7	06/10/22 21:15 / sld			ICP2-HE_220610A	105	R175563
Selenium	0.001	mg/L		0.001	0.00007	E200.8	06/16/22 20:04 / dck			ICPMS205-H_220616B	126	R175744
Silver	ND	mg/L		0.0002	0.00008	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B	124	R175652
Sodium	49	mg/L		1	0.02	E200.7	06/10/22 21:15 / sld			ICP2-HE_220610A	105	R175563
Uranium	0.0034	mg/L		0.0002	0.00002	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B	124	R175652
Vanadium	0.0021	mg/L	J	0.1	0.0001	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B	124	R175652
Zinc	0.030	mg/L		0.008	0.001	E200.8	06/14/22 20:29 / sld			ICPMS205-H_220614B	124	R175652
METALS, TOTAL RECOVERABLE												
Aluminum	0.156	mg/L		0.009	0.006	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Arsenic	0.004	mg/L		0.001	0.0001	E200.8	06/15/22 19:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220615C	80	61817
Barium	0.035	mg/L		0.003	0.0002	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Boron	0.054	mg/L	J	0.1	0.007	E200.7	06/14/22 14:15 / sld	06/13/22 09:09	E200.2	ICP2-HE_220614A	48	61817
Cadmium	0.00016	mg/L		0.00003	0.00003	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Calcium	221	mg/L		1	0.1	E200.7	06/14/22 14:15 / sld	06/13/22 09:09	E200.2	ICP2-HE_220614A	48	61817
Chromium	0.0004	mg/L	J	0.01	0.0002	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Cobalt	ND	mg/L		0.01	0.0003	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Copper	0.008	mg/L		0.001	0.0003	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Iron	0.34	mg/L		0.02	0.009	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Lead	0.0011	mg/L		0.0003	0.0001	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Magnesium	11	mg/L		1	0.05	E200.7	06/14/22 14:15 / sld	06/13/22 09:09	E200.2	ICP2-HE_220614A	48	61817
Manganese	0.077	mg/L		0.001	0.0003	E200.8	06/15/22 19:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220615C	80	61817
Mercury	0.011	ug/L		0.005	0.001	E245.1	06/15/22 11:15 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A	17	61851
Molybdenum	0.275	mg/L		0.005	0.0002	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Potassium	14	mg/L		1	0.1	E200.7	06/14/22 14:15 / sld	06/13/22 09:09	E200.2	ICP2-HE_220614A	48	61817
Selenium	0.0010	mg/L	J	0.001	0.0001	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Silver	0.00007	mg/L	J	0.0002	0.00006	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Sodium	46	mg/L		1	0.1	E200.7	06/14/22 14:15 / sld	06/13/22 09:09	E200.2	ICP2-HE_220614A	48	61817
Uranium	0.0036	mg/L		0.0002	0.00003	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Vanadium	0.0029	mg/L	J	0.1	0.0001	E200.8	06/14/22 23:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220614B	194	61817
Zinc	0.026	mg/L		0.008	0.001	E200.8	06/15/22 19:15 / sld	06/13/22 09:09	E200.2	ICPMS205-H_220615C	80	61817

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-001
Collection Date: 06/08/22 16:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-002
Collection Date: 06/08/22 15:15
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	6	mg/L	D	2	0.3	A2540 D	06/10/22 08:59 / ljs			U-124 (14410200)_220610B : 24		TSS220610A
INORGANICS												
Alkalinity, Total as CaCO3	72	mg/L		4	2	A2320 B	06/15/22 14:38 / JAR			PHSC_101-H_220615A : 109		R175655
Bicarbonate as HCO3	87	mg/L		4	3	A2320 B	06/15/22 14:38 / JAR			PHSC_101-H_220615A : 109		R175655
Chloride	26	mg/L		1	0.05	E300.0	06/17/22 08:33 / JAR			IC METROHM_220615A : 176		R175738
Sulfate	639	mg/L		1	0.1	E300.0	06/17/22 08:33 / JAR			IC METROHM_220615A : 176		R175738
Hardness as CaCO3	685	mg/L		1	1	A2340 B	06/16/22 09:57 / sld			WATERCALC_220616B : 3		R175701
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	06/14/22 14:43 / GE			FIA203-HE_220614B : 27		R175659
Nitrogen, Nitrate+Nitrite as N	0.45	mg/L		0.02	0.008	E353.2	06/10/22 16:55 / GE			FIA203-HE_220610C : 160		R175567
Nitrogen, Total	0.71	mg/L		0.05	0.02	A4500 N-C	06/16/22 10:57 / GE	06/15/22 10:29	A4500 N-	FIA203-HE_220616B : 51		61861
Phosphorus, Total as P	0.059	mg/L		0.003	0.001	E365.1	06/14/22 13:17 / GE	06/13/22 09:18	E365.1	SEAL AA500_220614A : 141		61823
METALS, DISSOLVED												
Aluminum	0.013	mg/L		0.009	0.003	E200.8	06/16/22 20:06 / dck			ICPMS205-H_220616B : 127		R175744
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Barium	0.052	mg/L		0.003	0.0002	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Boron	0.030	mg/L	J	0.1	0.004	E200.7	06/10/22 21:19 / sld			ICP2-HE_220610A : 106		R175563
Cadmium	0.00024	mg/L		0.00003	0.00002	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Calcium	249	mg/L		1	0.1	E200.7	06/14/22 18:01 / sld			ICP2-HE_220614A : 108		R175650
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Cobalt	ND	mg/L		0.01	0.001	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Copper	0.012	mg/L		0.001	0.0001	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Iron	0.04	mg/L		0.02	0.004	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Magnesium	13	mg/L		1	0.02	E200.7	06/10/22 21:19 / sld			ICP2-HE_220610A : 106		R175563
Manganese	0.125	mg/L		0.001	0.0003	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Mercury	0.005	ug/L		0.005	0.001	E245.1	06/15/22 11:18 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 18		61851
Molybdenum	0.327	mg/L		0.005	0.0003	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652
Nickel	0.0004	mg/L	J	0.002	0.0002	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B : 127		R175652

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-002
Collection Date: 06/08/22 15:15
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	17	mg/L		1	0.06	E200.7	06/10/22 21:19 / sld			ICP2-HE_220610A	106	R175563
Selenium	0.001	mg/L		0.001	0.00007	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B	127	R175652
Silver	ND	mg/L		0.0002	0.00008	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B	127	R175652
Sodium	56	mg/L		1	0.02	E200.7	06/10/22 21:19 / sld			ICP2-HE_220610A	106	R175563
Uranium	0.0044	mg/L		0.0002	0.00002	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B	127	R175652
Vanadium	0.0022	mg/L	J	0.1	0.0001	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B	127	R175652
Zinc	0.031	mg/L		0.008	0.001	E200.8	06/14/22 20:36 / sld			ICPMS205-H_220614B	127	R175652
METALS, TOTAL RECOVERABLE												
Aluminum	0.147	mg/L		0.009	0.006	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Arsenic	0.005	mg/L		0.001	0.0001	E200.8	06/15/22 19:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	81	61817
Barium	0.040	mg/L		0.003	0.0002	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Boron	0.047	mg/L	J	0.1	0.007	E200.7	06/14/22 14:33 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	53	61817
Cadmium	0.00028	mg/L		0.00003	0.00003	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Calcium	253	mg/L		1	0.1	E200.7	06/14/22 14:33 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	53	61817
Chromium	0.0004	mg/L	J	0.01	0.0002	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Cobalt	ND	mg/L		0.01	0.0003	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Copper	0.019	mg/L		0.001	0.0003	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Iron	0.34	mg/L		0.02	0.009	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Lead	0.0015	mg/L		0.0003	0.0001	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Magnesium	13	mg/L		1	0.05	E200.7	06/14/22 14:33 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	53	61817
Manganese	0.143	mg/L		0.001	0.0003	E200.8	06/15/22 19:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	81	61817
Mercury	0.012	ug/L		0.005	0.001	E245.1	06/15/22 11:21 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A	19	61851
Molybdenum	0.334	mg/L		0.005	0.0002	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Potassium	17	mg/L		1	0.1	E200.7	06/14/22 14:33 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	53	61817
Selenium	0.001	mg/L		0.001	0.0001	E200.8	06/15/22 19:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	81	61817
Silver	0.00007	mg/L	J	0.0002	0.00006	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Sodium	55	mg/L		1	0.1	E200.7	06/14/22 14:33 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	53	61817
Uranium	0.0046	mg/L		0.0002	0.00003	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Vanadium	0.0031	mg/L	J	0.1	0.0001	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817
Zinc	0.044	mg/L		0.008	0.001	E200.8	06/14/22 23:17 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	195	61817

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-002
Collection Date: 06/08/22 15:15
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-003
Collection Date: 06/08/22 14:20
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	6	mg/L	D	2	0.3	A2540 D	06/10/22 14:50 / ljs			U-124 (14410200)_220610B : 27		TSS220610A
INORGANICS												
Alkalinity, Total as CaCO3	82	mg/L		4	2	A2320 B	06/15/22 14:43 / JAR			PHSC_101-H_220615A : 111		R175655
Bicarbonate as HCO3	100	mg/L		4	3	A2320 B	06/15/22 14:43 / JAR			PHSC_101-H_220615A : 111		R175655
Chloride	30	mg/L		1	0.05	E300.0	06/17/22 08:47 / JAR			IC METROHM_220615A : 177		R175738
Sulfate	583	mg/L		1	0.1	E300.0	06/17/22 08:47 / JAR			IC METROHM_220615A : 177		R175738
Hardness as CaCO3	651	mg/L		1	1	A2340 B	06/16/22 09:57 / sld			WATERCALC_220616B : 4		R175701
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	06/14/22 14:47 / GE			FIA203-HE_220614B : 30		R175659
Nitrogen, Nitrate+Nitrite as N	0.36	mg/L		0.02	0.008	E353.2	06/10/22 16:56 / GE			FIA203-HE_220610C : 161		R175567
Nitrogen, Total	0.68	mg/L		0.05	0.02	A4500 N-C	06/16/22 10:58 / GE	06/15/22 10:29	A4500 N-	FIA203-HE_220616B : 52		61861
Phosphorus, Total as P	0.085	mg/L		0.003	0.001	E365.1	06/14/22 13:18 / GE	06/13/22 09:18	E365.1	SEAL AA500_220614A : 142		61823
METALS, DISSOLVED												
Aluminum	0.007	mg/L	J	0.009	0.003	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B : 167		R175744
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	06/14/22 20:39 / sld			ICPMS205-H_220614B : 128		R175652
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B : 167		R175744
Barium	0.056	mg/L		0.003	0.0002	E200.8	06/14/22 20:39 / sld			ICPMS205-H_220614B : 128		R175652
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/17/22 09:57 / dck			ICPMS205-H_220616B : 267		R175744
Boron	0.027	mg/L	J	0.1	0.004	E200.7	06/10/22 21:23 / sld			ICP2-HE_220610A : 107		R175563
Cadmium	0.00017	mg/L		0.00003	0.00002	E200.8	06/14/22 20:39 / sld			ICPMS205-H_220614B : 128		R175652
Calcium	231	mg/L		1	0.1	E200.7	06/14/22 18:04 / sld			ICP2-HE_220614A : 109		R175650
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B : 167		R175744
Cobalt	ND	mg/L		0.01	0.001	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B : 167		R175744
Copper	0.007	mg/L		0.001	0.0001	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B : 167		R175744
Iron	0.04	mg/L		0.02	0.004	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B : 167		R175744
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	06/14/22 20:39 / sld			ICPMS205-H_220614B : 128		R175652
Magnesium	13	mg/L		1	0.02	E200.7	06/10/22 21:23 / sld			ICP2-HE_220610A : 107		R175563
Manganese	0.161	mg/L		0.001	0.0003	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B : 167		R175744
Mercury	0.007	ug/L		0.005	0.001	E245.1	06/15/22 11:25 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 20		61851
Molybdenum	0.280	mg/L		0.005	0.0003	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B : 167		R175744
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B : 167		R175744

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-003
Collection Date: 06/08/22 14:20
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	15	mg/L		1	0.06	E200.7	06/10/22 21:23 / sld			ICP2-HE_220610A	107	R175563
Selenium	0.001	mg/L		0.001	0.00007	E200.8	06/17/22 09:57 / dck			ICPMS205-H_220616B	267	R175744
Silver	ND	mg/L		0.0002	0.00008	E200.8	06/14/22 20:39 / sld			ICPMS205-H_220614B	128	R175652
Sodium	52	mg/L		1	0.02	E200.7	06/10/22 21:23 / sld			ICP2-HE_220610A	107	R175563
Uranium	0.0042	mg/L		0.0002	0.00002	E200.8	06/14/22 20:39 / sld			ICPMS205-H_220614B	128	R175652
Vanadium	0.0021	mg/L	J	0.1	0.0001	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B	167	R175744
Zinc	0.032	mg/L		0.008	0.001	E200.8	06/16/22 22:09 / dck			ICPMS205-H_220616B	167	R175744
METALS, TOTAL RECOVERABLE												
Aluminum	0.172	mg/L		0.009	0.006	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Arsenic	0.008	mg/L		0.001	0.0001	E200.8	06/15/22 19:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	82	61817
Barium	0.045	mg/L		0.003	0.0002	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Boron	0.040	mg/L	J	0.1	0.007	E200.7	06/14/22 14:37 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	54	61817
Cadmium	0.00028	mg/L		0.00003	0.00003	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Calcium	239	mg/L		1	0.1	E200.7	06/14/22 14:37 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	54	61817
Chromium	0.0003	mg/L	J	0.01	0.0002	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Cobalt	ND	mg/L		0.01	0.0003	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Copper	0.014	mg/L		0.001	0.0003	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Iron	0.32	mg/L		0.02	0.009	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Lead	0.0013	mg/L		0.0003	0.0001	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Magnesium	13	mg/L		1	0.05	E200.7	06/14/22 14:37 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	54	61817
Manganese	0.188	mg/L		0.001	0.0003	E200.8	06/15/22 19:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	82	61817
Mercury	0.013	ug/L		0.005	0.001	E245.1	06/15/22 11:28 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A	21	61851
Molybdenum	0.291	mg/L		0.005	0.0002	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Potassium	15	mg/L		1	0.1	E200.7	06/14/22 14:37 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	54	61817
Selenium	0.001	mg/L		0.001	0.0001	E200.8	06/15/22 19:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	82	61817
Silver	ND	mg/L		0.0002	0.00006	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Sodium	52	mg/L		1	0.1	E200.7	06/14/22 14:37 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	54	61817
Uranium	0.0044	mg/L		0.0002	0.00003	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Vanadium	0.0028	mg/L	J	0.1	0.0001	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817
Zinc	0.044	mg/L		0.008	0.001	E200.8	06/14/22 23:20 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	196	61817

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-003
Collection Date: 06/08/22 14:20
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-004
Collection Date: 06/08/22 13:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	7	mg/L	D	2	0.3	A2540 D	06/10/22 14:51 / ljs			U-124 (14410200)_220610B : 28		TSS220610A
INORGANICS												
Alkalinity, Total as CaCO3	83	mg/L		4	2	A2320 B	06/15/22 14:49 / JAR			PHSC_101-H_220615A : 113		R175655
Bicarbonate as HCO3	100	mg/L		4	3	A2320 B	06/15/22 14:49 / JAR			PHSC_101-H_220615A : 113		R175655
Chloride	31	mg/L		1	0.05	E300.0	06/17/22 09:02 / JAR			IC METROHM_220615A : 178		R175738
Sulfate	573	mg/L		1	0.1	E300.0	06/17/22 09:02 / JAR			IC METROHM_220615A : 178		R175738
Hardness as CaCO3	633	mg/L		1	1	A2340 B	06/16/22 09:57 / sld			WATERCALC_220616B : 5		R175701
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	06/14/22 14:48 / GE			FIA203-HE_220614B : 31		R175659
Nitrogen, Nitrate+Nitrite as N	0.34	mg/L		0.02	0.008	E353.2	06/10/22 16:57 / GE			FIA203-HE_220610C : 162		R175567
Nitrogen, Total	0.68	mg/L		0.05	0.02	A4500 N-C	06/16/22 11:02 / GE	06/15/22 10:29	A4500 N-	FIA203-HE_220616B : 55		61861
Phosphorus, Total as P	0.086	mg/L		0.003	0.001	E365.1	06/14/22 13:20 / GE	06/13/22 09:18	E365.1	SEAL AA500_220614A : 143		61823
METALS, DISSOLVED												
Aluminum	0.007	mg/L	J	0.009	0.003	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B : 168		R175744
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	06/14/22 20:41 / sld			ICPMS205-H_220614B : 129		R175652
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B : 168		R175744
Barium	0.053	mg/L		0.003	0.0002	E200.8	06/14/22 20:41 / sld			ICPMS205-H_220614B : 129		R175652
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/17/22 10:00 / dck			ICPMS205-H_220616B : 268		R175744
Boron	0.030	mg/L	J	0.1	0.004	E200.7	06/10/22 21:26 / sld			ICP2-HE_220610A : 108		R175563
Cadmium	0.00017	mg/L		0.00003	0.00002	E200.8	06/14/22 20:41 / sld			ICPMS205-H_220614B : 129		R175652
Calcium	231	mg/L		1	0.1	E200.7	06/14/22 18:08 / sld			ICP2-HE_220614A : 110		R175650
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B : 168		R175744
Cobalt	ND	mg/L		0.01	0.001	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B : 168		R175744
Copper	0.008	mg/L		0.001	0.0001	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B : 168		R175744
Iron	0.04	mg/L		0.02	0.004	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B : 168		R175744
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	06/14/22 20:41 / sld			ICPMS205-H_220614B : 129		R175652
Magnesium	13	mg/L		1	0.02	E200.7	06/10/22 21:26 / sld			ICP2-HE_220610A : 108		R175563
Manganese	0.169	mg/L		0.001	0.0003	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B : 168		R175744
Mercury	0.010	ug/L		0.005	0.001	E245.1	06/15/22 11:31 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 22		61851
Molybdenum	0.275	mg/L		0.005	0.0003	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B : 168		R175744
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B : 168		R175744

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-004
Collection Date: 06/08/22 13:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	15	mg/L		1	0.06	E200.7	06/10/22 21:26 / sld			ICP2-HE_220610A	108	R175563
Selenium	0.001	mg/L		0.001	0.00007	E200.8	06/17/22 10:00 / dck			ICPMS205-H_220616B	268	R175744
Silver	ND	mg/L		0.0002	0.00008	E200.8	06/14/22 20:41 / sld			ICPMS205-H_220614B	129	R175652
Sodium	52	mg/L		1	0.02	E200.7	06/10/22 21:26 / sld			ICP2-HE_220610A	108	R175563
Uranium	0.0041	mg/L		0.0002	0.00002	E200.8	06/14/22 20:41 / sld			ICPMS205-H_220614B	129	R175652
Vanadium	0.0021	mg/L	J	0.1	0.0001	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B	168	R175744
Zinc	0.042	mg/L		0.008	0.001	E200.8	06/16/22 22:11 / dck			ICPMS205-H_220616B	168	R175744
METALS, TOTAL RECOVERABLE												
Aluminum	0.177	mg/L		0.009	0.006	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Arsenic	0.008	mg/L		0.001	0.0001	E200.8	06/15/22 19:22 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	83	61817
Barium	0.047	mg/L		0.003	0.0002	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Boron	0.043	mg/L	J	0.1	0.007	E200.7	06/14/22 14:41 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	55	61817
Cadmium	0.00031	mg/L		0.00003	0.00003	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Calcium	232	mg/L		1	0.1	E200.7	06/14/22 14:41 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	55	61817
Chromium	0.0004	mg/L	J	0.01	0.0002	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Cobalt	ND	mg/L		0.01	0.0003	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Copper	0.015	mg/L		0.001	0.0003	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Iron	0.33	mg/L		0.02	0.009	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Lead	0.0014	mg/L		0.0003	0.0001	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Magnesium	13	mg/L		1	0.05	E200.7	06/14/22 14:41 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	55	61817
Manganese	0.198	mg/L		0.001	0.0003	E200.8	06/15/22 19:22 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	83	61817
Mercury	0.014	ug/L		0.005	0.001	E245.1	06/15/22 11:34 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A	23	61851
Molybdenum	0.294	mg/L		0.005	0.0002	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Potassium	15	mg/L		1	0.1	E200.7	06/14/22 14:41 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	55	61817
Selenium	0.001	mg/L		0.001	0.0001	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Silver	ND	mg/L		0.0002	0.00006	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Sodium	52	mg/L		1	0.1	E200.7	06/14/22 14:41 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	55	61817
Uranium	0.0044	mg/L		0.0002	0.00003	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Vanadium	0.0028	mg/L	J	0.1	0.0001	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817
Zinc	0.054	mg/L		0.008	0.001	E200.8	06/14/22 23:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	202	61817

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-004
Collection Date: 06/08/22 13:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-005
Collection Date: 06/08/22 12:40
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	12	mg/L	D	2	0.3	A2540 D	06/10/22 14:51 / ljs			U-124 (14410200)_220610B : 29		TSS220610A
INORGANICS												
Alkalinity, Total as CaCO3	86	mg/L		4	2	A2320 B	06/15/22 15:18 / JAR			PHSC_101-H_220615A : 119		R175655
Bicarbonate as HCO3	100	mg/L		4	3	A2320 B	06/15/22 15:18 / JAR			PHSC_101-H_220615A : 119		R175655
Chloride	31	mg/L		1	0.05	E300.0	06/17/22 09:16 / JAR			IC METROHM_220615A : 179		R175738
Sulfate	548	mg/L		1	0.1	E300.0	06/17/22 09:16 / JAR			IC METROHM_220615A : 179		R175738
Hardness as CaCO3	609	mg/L		1	1	A2340 B	06/16/22 09:57 / sld			WATERCALC_220616B : 6		R175701
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	06/14/22 14:49 / GE			FIA203-HE_220614B : 32		R175659
Nitrogen, Nitrate+Nitrite as N	0.29	mg/L		0.02	0.008	E353.2	06/10/22 16:59 / GE			FIA203-HE_220610C : 163		R175567
Nitrogen, Total	0.63	mg/L		0.05	0.02	A4500 N-C	06/16/22 11:03 / GE	06/15/22 10:29	A4500 N-	FIA203-HE_220616B : 56		61861
Phosphorus, Total as P	0.087	mg/L		0.003	0.001	E365.1	06/14/22 13:21 / GE	06/13/22 09:18	E365.1	SEAL AA500_220614A : 144		61823
METALS, DISSOLVED												
Aluminum	0.003	mg/L	J	0.009	0.003	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	06/14/22 20:43 / sld			ICPMS205-H_220614B : 130		R175652
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744
Barium	0.054	mg/L		0.003	0.0002	E200.8	06/14/22 20:43 / sld			ICPMS205-H_220614B : 130		R175652
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744
Boron	0.034	mg/L	J	0.1	0.004	E200.7	06/10/22 21:38 / sld			ICP2-HE_220610A : 111		R175563
Cadmium	0.00016	mg/L		0.00003	0.00002	E200.8	06/14/22 20:43 / sld			ICPMS205-H_220614B : 130		R175652
Calcium	222	mg/L		1	0.1	E200.7	06/14/22 18:19 / sld			ICP2-HE_220614A : 113		R175650
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744
Cobalt	ND	mg/L		0.01	0.001	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744
Copper	0.008	mg/L		0.001	0.0001	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744
Iron	0.04	mg/L		0.02	0.004	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744
Magnesium	13	mg/L		1	0.02	E200.7	06/10/22 21:38 / sld			ICP2-HE_220610A : 111		R175563
Manganese	0.224	mg/L		0.001	0.0003	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744
Mercury	0.006	ug/L		0.005	0.001	E245.1	06/15/22 11:37 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 24		61851
Molybdenum	0.255	mg/L		0.005	0.0003	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B : 130		R175744

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-005
Collection Date: 06/08/22 12:40
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	14	mg/L		1	0.06	E200.7	06/10/22 21:38 / sld			ICP2-HE_220610A	111	R175563
Selenium	0.001	mg/L		0.001	0.00007	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B	130	R175744
Silver	ND	mg/L		0.0002	0.00008	E200.8	06/14/22 20:43 / sld			ICPMS205-H_220614B	130	R175652
Sodium	50	mg/L		1	0.02	E200.7	06/10/22 21:38 / sld			ICP2-HE_220610A	111	R175563
Uranium	0.0040	mg/L		0.0002	0.00002	E200.8	06/14/22 20:43 / sld			ICPMS205-H_220614B	130	R175652
Vanadium	0.0020	mg/L	J	0.1	0.0001	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B	130	R175744
Zinc	0.048	mg/L		0.008	0.001	E200.8	06/16/22 20:13 / dck			ICPMS205-H_220616B	130	R175744
METALS, TOTAL RECOVERABLE												
Aluminum	0.292	mg/L		0.009	0.006	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Arsenic	0.008	mg/L		0.001	0.0001	E200.8	06/15/22 19:25 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	84	61817
Barium	0.049	mg/L		0.003	0.0002	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Boron	0.054	mg/L	J	0.1	0.007	E200.7	06/14/22 14:52 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	58	61817
Cadmium	0.00035	mg/L		0.00003	0.00003	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Calcium	223	mg/L		1	0.1	E200.7	06/14/22 14:52 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	58	61817
Chromium	0.0006	mg/L	J	0.01	0.0002	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Cobalt	0.0004	mg/L	J	0.01	0.0003	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Copper	0.021	mg/L		0.001	0.0003	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Iron	0.47	mg/L		0.02	0.009	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Lead	0.0026	mg/L		0.0003	0.0001	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Magnesium	13	mg/L		1	0.05	E200.7	06/14/22 14:52 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	58	61817
Manganese	0.298	mg/L		0.001	0.0003	E200.8	06/15/22 19:25 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	84	61817
Mercury	0.018	ug/L		0.005	0.001	E245.1	06/15/22 11:41 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A	25	61851
Molybdenum	0.265	mg/L		0.005	0.0002	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Nickel	0.0009	mg/L	J	0.002	0.0002	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Potassium	14	mg/L		1	0.1	E200.7	06/14/22 14:52 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	58	61817
Selenium	0.001	mg/L		0.001	0.0001	E200.8	06/15/22 19:25 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	84	61817
Silver	0.00007	mg/L	J	0.0002	0.00006	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Sodium	50	mg/L		1	0.1	E200.7	06/14/22 14:52 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	58	61817
Uranium	0.0042	mg/L		0.0002	0.00003	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Vanadium	0.0030	mg/L	J	0.1	0.0001	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817
Zinc	0.078	mg/L		0.008	0.001	E200.8	06/14/22 23:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	203	61817

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-005
Collection Date: 06/08/22 12:40
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-006
Collection Date: 06/08/22 11:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	12	mg/L	D	2	0.3	A2540 D	06/10/22 14:51 / ljs			U-124 (14410200)_220610B : 30		TSS220610A
INORGANICS												
Alkalinity, Total as CaCO3	83	mg/L		4	2	A2320 B	06/15/22 15:29 / JAR			PHSC_101-H_220615A : 123		R175655
Bicarbonate as HCO3	100	mg/L		4	3	A2320 B	06/15/22 15:29 / JAR			PHSC_101-H_220615A : 123		R175655
Chloride	15	mg/L		1	0.02	E300.0	06/17/22 09:31 / JAR			IC METROHM_220615A : 180		R175738
Sulfate	235	mg/L		1	0.06	E300.0	06/17/22 09:31 / JAR			IC METROHM_220615A : 180		R175738
Hardness as CaCO3	304	mg/L		1	1	A2340 B	06/16/22 09:57 / sld			WATERCALC_220616B : 7		R175701
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	06/14/22 14:50 / GE			FIA203-HE_220614B : 33		R175659
Nitrogen, Nitrate+Nitrite as N	0.13	mg/L		0.02	0.008	E353.2	06/10/22 17:00 / GE			FIA203-HE_220610C : 164		R175567
Nitrogen, Total	0.37	mg/L		0.05	0.02	A4500 N-C	06/16/22 11:04 / GE	06/15/22 10:29	A4500 N-	FIA203-HE_220616B : 57		61861
Phosphorus, Total as P	0.068	mg/L		0.003	0.001	E365.1	06/14/22 12:33 / GE	06/13/22 09:18	E365.1	SEAL AA500_220614A : 104		61823
METALS, DISSOLVED												
Aluminum	0.006	mg/L	J	0.009	0.003	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	06/14/22 20:46 / sld			ICPMS205-H_220614B : 131		R175652
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744
Barium	0.042	mg/L		0.003	0.0002	E200.8	06/14/22 20:46 / sld			ICPMS205-H_220614B : 131		R175652
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744
Boron	0.013	mg/L	J	0.1	0.004	E200.7	06/10/22 21:41 / sld			ICP2-HE_220610A : 112		R175563
Cadmium	0.00008	mg/L		0.00003	0.00002	E200.8	06/14/22 20:46 / sld			ICPMS205-H_220614B : 131		R175652
Calcium	109	mg/L		1	0.1	E200.7	06/14/22 18:23 / sld			ICP2-HE_220614A : 114		R175650
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744
Cobalt	ND	mg/L		0.01	0.001	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744
Copper	0.005	mg/L		0.001	0.0001	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744
Iron	0.03	mg/L		0.02	0.004	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744
Magnesium	8	mg/L		1	0.02	E200.7	06/10/22 21:41 / sld			ICP2-HE_220610A : 112		R175563
Manganese	0.104	mg/L		0.001	0.0003	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744
Mercury	0.007	ug/L		0.005	0.001	E245.1	06/15/22 11:50 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 28		61851
Molybdenum	0.103	mg/L		0.005	0.0003	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B : 131		R175744

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-006
Collection Date: 06/08/22 11:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	7	mg/L		1	0.06	E200.7	06/10/22 21:41 / sld			ICP2-HE_220610A	112	R175563
Selenium	0.00096	mg/L	J	0.001	0.00007	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B	131	R175744
Silver	ND	mg/L		0.0002	0.00008	E200.8	06/14/22 20:46 / sld			ICPMS205-H_220614B	131	R175652
Sodium	23	mg/L		1	0.02	E200.7	06/10/22 21:41 / sld			ICP2-HE_220610A	112	R175563
Uranium	0.0021	mg/L		0.0002	0.00002	E200.8	06/14/22 20:46 / sld			ICPMS205-H_220614B	131	R175652
Vanadium	0.0014	mg/L	J	0.1	0.0001	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B	131	R175744
Zinc	0.027	mg/L		0.008	0.001	E200.8	06/16/22 20:16 / dck			ICPMS205-H_220616B	131	R175744
METALS, TOTAL RECOVERABLE												
Aluminum	0.336	mg/L		0.009	0.006	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	06/15/22 19:27 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	85	61817
Barium	0.030	mg/L		0.003	0.0002	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Boron	0.028	mg/L	J	0.1	0.007	E200.7	06/14/22 14:56 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	59	61817
Cadmium	0.00021	mg/L		0.00003	0.00003	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Calcium	108	mg/L		1	0.1	E200.7	06/14/22 14:56 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	59	61817
Chromium	0.0004	mg/L	J	0.01	0.0002	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Cobalt	0.0008	mg/L	J	0.01	0.0003	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Copper	0.014	mg/L		0.001	0.0003	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Iron	0.38	mg/L		0.02	0.009	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Lead	0.0016	mg/L		0.0003	0.0001	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Magnesium	8	mg/L		1	0.05	E200.7	06/14/22 14:56 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	59	61817
Manganese	0.154	mg/L		0.001	0.0003	E200.8	06/15/22 19:27 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	85	61817
Mercury	0.018	ug/L		0.005	0.001	E245.1	06/15/22 11:54 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A	29	61851
Molybdenum	0.108	mg/L		0.005	0.0002	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Potassium	7	mg/L		1	0.1	E200.7	06/14/22 14:56 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	59	61817
Selenium	0.0009	mg/L	J	0.001	0.0001	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Silver	ND	mg/L		0.0002	0.00006	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Sodium	25	mg/L		1	0.1	E200.7	06/14/22 14:56 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	59	61817
Uranium	0.0022	mg/L		0.0002	0.00003	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Vanadium	0.0023	mg/L	J	0.1	0.0001	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817
Zinc	0.044	mg/L		0.008	0.001	E200.8	06/14/22 23:39 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	204	61817

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-006
Collection Date: 06/08/22 11:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Field Blank #1 SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-007
Collection Date: 06/08/22 10:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1	0.3	A2540 D	06/10/22 14:52 / ljs			U-124 (14410200)_220610B : 31		TSS220610A
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4	2	A2320 B	06/15/22 15:34 / JAR			PHSC_101-H_220615A : 125		R175655
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	06/15/22 15:34 / JAR			PHSC_101-H_220615A : 125		R175655
Chloride	ND	mg/L		1	0.02	E300.0	06/17/22 09:45 / JAR			IC METROHM_220615A : 181		R175738
Sulfate	ND	mg/L		1	0.06	E300.0	06/17/22 09:45 / JAR			IC METROHM_220615A : 181		R175738
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	06/16/22 09:57 / sld			WATERCALC_220616B : 8		R175701
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	06/14/22 14:52 / GE			FIA203-HE_220614B : 34		R175659
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.008	E353.2	06/10/22 17:01 / GE			FIA203-HE_220610C : 165		R175567
Nitrogen, Total	ND	mg/L		0.05	0.02	A4500 N-C	06/16/22 11:06 / GE	06/15/22 10:29	A4500 N-	FIA203-HE_220616B : 58		61861
Phosphorus, Total as P	ND	mg/L		0.003	0.001	E365.1	06/14/22 12:37 / GE	06/13/22 09:18	E365.1	SEAL AA500_220614A : 108		61823
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Antimony	ND	mg/L		0.0005	0.0002	E200.8	06/14/22 20:48 / sld			ICPMS205-H_220614B : 132		R175652
Arsenic	ND	mg/L		0.001	0.0002	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Barium	0.005	mg/L		0.003	0.0002	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Boron	ND	mg/L		0.1	0.004	E200.7	06/10/22 21:45 / sld			ICP2-HE_220610A : 113		R175563
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	06/14/22 20:48 / sld			ICPMS205-H_220614B : 132		R175652
Calcium	ND	mg/L		1	0.1	E200.7	06/14/22 18:38 / sld			ICP2-HE_220614A : 118		R175650
Chromium	ND	mg/L		0.01	0.0001	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Cobalt	ND	mg/L		0.01	0.001	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Copper	ND	mg/L		0.001	0.0001	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Iron	ND	mg/L		0.02	0.004	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Magnesium	ND	mg/L		1	0.02	E200.7	06/10/22 21:45 / sld			ICP2-HE_220610A : 113		R175563
Manganese	ND	mg/L		0.001	0.0003	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Mercury	ND	ug/L		0.005	0.001	E245.1	06/15/22 12:03 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 32		61851
Molybdenum	0.0005	mg/L	J	0.005	0.0003	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744
Nickel	ND	mg/L		0.002	0.0002	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B : 132		R175744

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Field Blank #1 SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-007
Collection Date: 06/08/22 10:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	ND	mg/L		1	0.06	E200.7	06/10/22 21:45 / sld			ICP2-HE_220610A	113	R175563
Selenium	ND	mg/L		0.001	0.00007	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B	132	R175744
Silver	ND	mg/L		0.0002	0.00008	E200.8	06/14/22 20:48 / sld			ICPMS205-H_220614B	132	R175652
Sodium	0.11	mg/L	J	1	0.02	E200.7	06/10/22 21:45 / sld			ICP2-HE_220610A	113	R175563
Uranium	ND	mg/L		0.0002	0.00002	E200.8	06/14/22 20:48 / sld			ICPMS205-H_220614B	132	R175652
Vanadium	ND	mg/L		0.1	0.0001	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B	132	R175744
Zinc	0.012	mg/L		0.008	0.001	E200.8	06/16/22 20:18 / dck			ICPMS205-H_220616B	132	R175744
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.009	0.006	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Antimony	ND	mg/L		0.0005	0.0002	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Arsenic	ND	mg/L		0.001	0.0001	E200.8	06/15/22 19:29 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	86	61817
Barium	ND	mg/L		0.003	0.0002	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Boron	0.010	mg/L	J	0.1	0.007	E200.7	06/14/22 15:00 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	60	61817
Cadmium	ND	mg/L		0.00003	0.00003	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Calcium	ND	mg/L		1	0.1	E200.7	06/14/22 15:00 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	60	61817
Chromium	ND	mg/L		0.01	0.0002	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Cobalt	ND	mg/L		0.01	0.0003	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Copper	ND	mg/L		0.001	0.0003	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Iron	ND	mg/L		0.02	0.009	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Magnesium	ND	mg/L		1	0.05	E200.7	06/14/22 15:00 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	60	61817
Manganese	ND	mg/L		0.001	0.0003	E200.8	06/15/22 19:29 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	86	61817
Mercury	ND	ug/L		0.005	0.001	E245.1	06/15/22 12:06 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A	33	61851
Molybdenum	0.0003	mg/L	J	0.005	0.0002	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Nickel	ND	mg/L		0.002	0.0002	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Potassium	ND	mg/L		1	0.1	E200.7	06/14/22 15:00 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	60	61817
Selenium	ND	mg/L		0.001	0.0001	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Silver	ND	mg/L		0.0002	0.00006	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Sodium	ND	mg/L		1	0.1	E200.7	06/14/22 15:00 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	60	61817
Uranium	ND	mg/L		0.0002	0.00003	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Vanadium	ND	mg/L		0.1	0.0001	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817
Zinc	ND	mg/L		0.008	0.001	E200.8	06/14/22 23:41 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	205	61817

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Field Blank #1 SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-007
Collection Date: 06/08/22 10:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-008
Collection Date: 06/08/22 10:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	14	mg/L	D	2	0.3	A2540 D	06/10/22 14:52 / ljs			U-124 (14410200)_220610B : 32		TSS220610A
INORGANICS												
Alkalinity, Total as CaCO3	79	mg/L		4	2	A2320 B	06/15/22 15:39 / JAR			PHSC_101-H_220615A : 127		R175655
Bicarbonate as HCO3	96	mg/L		4	3	A2320 B	06/15/22 15:39 / JAR			PHSC_101-H_220615A : 127		R175655
Chloride	16	mg/L		1	0.02	E300.0	06/17/22 11:12 / JAR			IC METROHM_220615A : 186		R175738
Sulfate	261	mg/L		1	0.06	E300.0	06/17/22 11:12 / JAR			IC METROHM_220615A : 186		R175738
Hardness as CaCO3	330	mg/L		1	1	A2340 B	06/16/22 09:57 / sld			WATERCALC_220616B : 9		R175701
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	06/14/22 14:53 / GE			FIA203-HE_220614B : 35		R175659
Nitrogen, Nitrate+Nitrite as N	0.08	mg/L		0.02	0.008	E353.2	06/10/22 17:02 / GE			FIA203-HE_220610C : 166		R175567
Nitrogen, Total	0.29	mg/L		0.05	0.02	A4500 N-C	06/16/22 13:52 / GE	06/15/22 10:29	A4500 N-	FIA203-HE_220616B : 198		61861
Phosphorus, Total as P	0.057	mg/L		0.003	0.001	E365.1	06/14/22 12:38 / GE	06/13/22 09:18	E365.1	SEAL AA500_220614A : 109		61823
METALS, DISSOLVED												
Aluminum	0.004	mg/L	J	0.009	0.003	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	06/14/22 20:50 / sld			ICPMS205-H_220614B : 133		R175652
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Barium	0.045	mg/L		0.003	0.0002	E200.8	06/14/22 20:50 / sld			ICPMS205-H_220614B : 133		R175652
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Boron	0.013	mg/L	J	0.1	0.004	E200.7	06/10/22 21:49 / sld			ICP2-HE_220610A : 114		R175563
Cadmium	0.00011	mg/L		0.00003	0.00002	E200.8	06/14/22 20:50 / sld			ICPMS205-H_220614B : 133		R175652
Calcium	122	mg/L		1	0.1	E200.7	06/14/22 18:42 / sld			ICP2-HE_220614A : 119		R175650
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Cobalt	ND	mg/L		0.01	0.001	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Copper	0.005	mg/L		0.001	0.0001	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Iron	0.03	mg/L		0.02	0.004	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Magnesium	9	mg/L		1	0.02	E200.7	06/10/22 21:49 / sld			ICP2-HE_220610A : 114		R175563
Manganese	0.116	mg/L		0.001	0.0003	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Mercury	0.008	ug/L		0.005	0.001	E245.1	06/15/22 12:10 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 34		61851
Molybdenum	0.118	mg/L		0.005	0.0003	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Nickel	0.0004	mg/L	J	0.002	0.0002	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-008
Collection Date: 06/08/22 10:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	7	mg/L		1	0.06	E200.7	06/10/22 21:49 / sld			ICP2-HE_220610A : 114		R175563
Selenium	0.00097	mg/L	J	0.001	0.00007	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Silver	ND	mg/L		0.0002	0.00008	E200.8	06/14/22 20:50 / sld			ICPMS205-H_220614B : 133		R175652
Sodium	24	mg/L		1	0.02	E200.7	06/10/22 21:49 / sld			ICP2-HE_220610A : 114		R175563
Uranium	0.0021	mg/L		0.0002	0.00002	E200.8	06/14/22 20:50 / sld			ICPMS205-H_220614B : 133		R175652
Vanadium	0.0014	mg/L	J	0.1	0.0001	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
Zinc	0.038	mg/L		0.008	0.001	E200.8	06/16/22 20:20 / dck			ICPMS205-H_220616B : 133		R175744
METALS, TOTAL RECOVERABLE												
Aluminum	0.382	mg/L		0.009	0.006	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	06/15/22 19:32 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C : 87		61817
Barium	0.034	mg/L		0.003	0.0002	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Boron	0.027	mg/L	J	0.1	0.007	E200.7	06/14/22 15:04 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A : 61		61817
Cadmium	0.00030	mg/L		0.00003	0.00003	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Calcium	118	mg/L		1	0.1	E200.7	06/14/22 15:04 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A : 61		61817
Chromium	0.0005	mg/L	J	0.01	0.0002	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Cobalt	0.0008	mg/L	J	0.01	0.0003	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Copper	0.017	mg/L		0.001	0.0003	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Iron	0.46	mg/L		0.02	0.009	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Lead	0.0020	mg/L		0.0003	0.0001	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Magnesium	9	mg/L		1	0.05	E200.7	06/14/22 15:04 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A : 61		61817
Manganese	0.195	mg/L		0.001	0.0003	E200.8	06/15/22 19:32 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C : 87		61817
Mercury	0.019	ug/L		0.005	0.001	E245.1	06/15/22 12:13 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 35		61851
Molybdenum	0.123	mg/L		0.005	0.0002	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Potassium	8	mg/L		1	0.1	E200.7	06/14/22 15:04 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A : 61		61817
Selenium	0.0010	mg/L	J	0.001	0.0001	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Silver	ND	mg/L		0.0002	0.00006	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Sodium	26	mg/L		1	0.1	E200.7	06/14/22 15:04 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A : 61		61817
Uranium	0.0023	mg/L		0.0002	0.00003	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Vanadium	0.0024	mg/L	J	0.1	0.0001	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817
Zinc	0.064	mg/L		0.008	0.001	E200.8	06/14/22 23:43 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 206		61817

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-008
Collection Date: 06/08/22 10:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-009
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	15	mg/L	D	2	0.3	A2540 D	06/10/22 14:52 / ljs			U-124 (14410200)_220610B : 33		TSS220610A
INORGANICS												
Alkalinity, Total as CaCO3	81	mg/L		4	2	A2320 B	06/15/22 15:45 / JAR			PHSC_101-H_220615A : 129		R175655
Bicarbonate as HCO3	98	mg/L		4	3	A2320 B	06/15/22 15:45 / JAR			PHSC_101-H_220615A : 129		R175655
Chloride	15	mg/L		1	0.02	E300.0	06/17/22 11:26 / JAR			IC METROHM_220615A : 187		R175738
Sulfate	269	mg/L		1	0.06	E300.0	06/17/22 11:26 / JAR			IC METROHM_220615A : 187		R175738
Hardness as CaCO3	334	mg/L		1	1	A2340 B	06/16/22 09:57 / sld			WATERCALC_220616B : 10		R175701
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	06/14/22 14:54 / GE			FIA203-HE_220614B : 36		R175659
Nitrogen, Nitrate+Nitrite as N	0.10	mg/L		0.02	0.008	E353.2	06/10/22 17:06 / GE			FIA203-HE_220610C : 169		R175567
Nitrogen, Total	0.45	mg/L		0.05	0.02	A4500 N-C	06/16/22 11:09 / GE	06/15/22 10:29	A4500 N-	FIA203-HE_220616B : 61		61862
Phosphorus, Total as P	0.058	mg/L		0.003	0.001	E365.1	06/14/22 12:39 / GE	06/13/22 09:18	E365.1	SEAL AA500_220614A : 110		61823
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	06/16/22 20:23 / dck			ICPMS205-H_220616B : 134		R175744
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652
Barium	0.047	mg/L		0.003	0.0002	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/16/22 20:23 / dck			ICPMS205-H_220616B : 134		R175744
Boron	0.018	mg/L	J	0.1	0.004	E200.7	06/10/22 21:53 / sld			ICP2-HE_220610A : 115		R175563
Cadmium	0.00010	mg/L		0.00003	0.00002	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652
Calcium	125	mg/L		1	0.1	E200.7	06/14/22 18:46 / sld			ICP2-HE_220614A : 120		R175650
Chromium	ND	mg/L		0.01	0.0001	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652
Cobalt	ND	mg/L		0.01	0.001	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652
Copper	0.005	mg/L		0.001	0.0001	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652
Iron	0.03	mg/L		0.02	0.004	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/16/22 20:23 / dck			ICPMS205-H_220616B : 134		R175744
Magnesium	9	mg/L		1	0.02	E200.7	06/10/22 21:53 / sld			ICP2-HE_220610A : 115		R175563
Manganese	0.123	mg/L		0.001	0.0003	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652
Mercury	0.007	ug/L		0.005	0.001	E245.1	06/15/22 12:16 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 36		61851
Molybdenum	0.128	mg/L		0.005	0.0003	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B : 134		R175652

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-009
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	7	mg/L		1	0.06	E200.7	06/10/22 21:53 / sld			ICP2-HE_220610A	115	R175563
Selenium	0.00098	mg/L	J	0.001	0.00007	E200.8	06/16/22 20:23 / dck			ICPMS205-H_220616B	134	R175744
Silver	ND	mg/L		0.0002	0.00008	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B	134	R175652
Sodium	25	mg/L		1	0.02	E200.7	06/10/22 21:53 / sld			ICP2-HE_220610A	115	R175563
Uranium	0.0024	mg/L		0.0002	0.00002	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B	134	R175652
Vanadium	0.0016	mg/L	J	0.1	0.0001	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B	134	R175652
Zinc	0.046	mg/L		0.008	0.001	E200.8	06/14/22 20:53 / sld			ICPMS205-H_220614B	134	R175652
METALS, TOTAL RECOVERABLE												
Aluminum	0.404	mg/L		0.009	0.006	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	06/15/22 19:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	88	61817
Barium	0.037	mg/L		0.003	0.0002	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Boron	0.025	mg/L	J	0.1	0.007	E200.7	06/14/22 15:08 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	62	61817
Cadmium	0.00031	mg/L		0.00003	0.00003	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Calcium	119	mg/L		1	0.1	E200.7	06/14/22 15:08 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	62	61817
Chromium	0.0005	mg/L	J	0.01	0.0002	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Cobalt	0.0009	mg/L	J	0.01	0.0003	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Copper	0.018	mg/L		0.001	0.0003	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Iron	0.49	mg/L		0.02	0.009	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Lead	0.0022	mg/L		0.0003	0.0001	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Magnesium	9	mg/L		1	0.05	E200.7	06/14/22 15:08 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	62	61817
Manganese	0.197	mg/L		0.001	0.0003	E200.8	06/15/22 19:34 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C	88	61817
Mercury	0.017	ug/L		0.005	0.001	E245.1	06/15/22 12:19 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A	37	61851
Molybdenum	0.128	mg/L		0.005	0.0002	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Potassium	8	mg/L		1	0.1	E200.7	06/14/22 15:08 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	62	61817
Selenium	0.0009	mg/L	J	0.001	0.0001	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Silver	ND	mg/L		0.0002	0.00006	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Sodium	28	mg/L		1	0.1	E200.7	06/14/22 15:08 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A	62	61817
Uranium	0.0025	mg/L		0.0002	0.00003	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Vanadium	0.0026	mg/L	J	0.1	0.0001	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817
Zinc	0.070	mg/L		0.008	0.001	E200.8	06/14/22 23:46 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B	207	61817

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-009
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Duplicate
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-010
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	15	mg/L	D	2	0.3	A2540 D	06/10/22 14:53 / ljs			U-124 (14410200)_220610B : 34		TSS220610A
INORGANICS												
Alkalinity, Total as CaCO3	80	mg/L		4	2	A2320 B	06/15/22 15:50 / JAR			PHSC_101-H_220615A : 131		R175655
Bicarbonate as HCO3	97	mg/L		4	3	A2320 B	06/15/22 15:50 / JAR			PHSC_101-H_220615A : 131		R175655
Chloride	15	mg/L		1	0.02	E300.0	06/17/22 11:41 / JAR			IC METROHM_220615A : 188		R175738
Sulfate	272	mg/L		1	0.06	E300.0	06/17/22 11:41 / JAR			IC METROHM_220615A : 188		R175738
Hardness as CaCO3	337	mg/L		1	1	A2340 B	06/16/22 09:57 / sld			WATERCALC_220616B : 11		R175701
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	06/14/22 14:55 / GE			FIA203-HE_220614B : 37		R175659
Nitrogen, Nitrate+Nitrite as N	0.10	mg/L		0.02	0.008	E353.2	06/10/22 17:09 / GE			FIA203-HE_220610C : 172		R175567
Nitrogen, Total	0.33	mg/L		0.05	0.02	A4500 N-C	06/16/22 11:13 / GE	06/15/22 10:29	A4500 N-	FIA203-HE_220616B : 64		61862
Phosphorus, Total as P	0.065	mg/L		0.003	0.001	E365.1	06/14/22 12:41 / GE	06/13/22 09:18	E365.1	SEAL AA500_220614A : 111		61823
METALS, DISSOLVED												
Aluminum	0.004	mg/L	J	0.009	0.003	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Barium	0.039	mg/L		0.003	0.0002	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Boron	0.014	mg/L	J	0.1	0.004	E200.7	06/10/22 22:08 / sld			ICP2-HE_220610A : 119		R175563
Cadmium	0.00011	mg/L		0.00003	0.00002	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Calcium	123	mg/L		1	0.1	E200.7	06/14/22 18:50 / sld			ICP2-HE_220614A : 121		R175650
Chromium	ND	mg/L		0.01	0.0001	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Cobalt	ND	mg/L		0.01	0.001	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Copper	0.005	mg/L		0.001	0.0001	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Iron	0.03	mg/L		0.02	0.004	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Magnesium	9	mg/L		1	0.02	E200.7	06/10/22 22:08 / sld			ICP2-HE_220610A : 119		R175563
Manganese	0.118	mg/L		0.001	0.0003	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Mercury	0.004	ug/L	J	0.005	0.001	E245.1	06/15/22 12:22 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 38		61851
Molybdenum	0.122	mg/L		0.005	0.0003	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Duplicate
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-010
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	7	mg/L		1	0.06	E200.7	06/10/22 22:08 / sld			ICP2-HE_220610A : 119		R175563
Selenium	0.00094	mg/L	J	0.001	0.00007	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Silver	ND	mg/L		0.0002	0.00008	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Sodium	24	mg/L		1	0.02	E200.7	06/10/22 22:08 / sld			ICP2-HE_220610A : 119		R175563
Uranium	0.0024	mg/L		0.0002	0.00002	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Vanadium	0.0016	mg/L	J	0.1	0.0001	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
Zinc	0.042	mg/L		0.008	0.001	E200.8	06/14/22 21:14 / sld			ICPMS205-H_220614B : 143		R175652
METALS, TOTAL RECOVERABLE												
Aluminum	0.417	mg/L		0.009	0.006	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	06/15/22 19:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C : 89		61817
Barium	0.036	mg/L		0.003	0.0002	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Boron	0.024	mg/L	J	0.1	0.007	E200.7	06/14/22 15:11 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A : 63		61817
Cadmium	0.00030	mg/L		0.00003	0.00003	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Calcium	120	mg/L		1	0.1	E200.7	06/14/22 15:11 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A : 63		61817
Chromium	0.0005	mg/L	J	0.01	0.0002	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Cobalt	0.0009	mg/L	J	0.01	0.0003	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Copper	0.018	mg/L		0.001	0.0003	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Iron	0.50	mg/L		0.02	0.009	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Lead	0.0022	mg/L		0.0003	0.0001	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Magnesium	9	mg/L		1	0.05	E200.7	06/14/22 15:11 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A : 63		61817
Manganese	0.198	mg/L		0.001	0.0003	E200.8	06/15/22 19:36 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220615C : 89		61817
Mercury	0.021	ug/L		0.005	0.001	E245.1	06/15/22 12:26 / kjb	06/14/22 14:18	E245.1	HGCV205-H_220615A : 39		61851
Molybdenum	0.126	mg/L		0.005	0.0002	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Potassium	8	mg/L		1	0.1	E200.7	06/14/22 15:11 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A : 63		61817
Selenium	0.0010	mg/L	J	0.001	0.0001	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Silver	ND	mg/L		0.0002	0.00006	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Sodium	27	mg/L		1	0.1	E200.7	06/14/22 15:11 / sld	06/13/22 09:10	E200.2	ICP2-HE_220614A : 63		61817
Uranium	0.0026	mg/L		0.0002	0.00003	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Vanadium	0.0027	mg/L	J	0.1	0.0001	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817
Zinc	0.071	mg/L		0.008	0.001	E200.8	06/14/22 23:48 / sld	06/13/22 09:10	E200.2	ICPMS205-H_220614B : 208		61817

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Duplicate
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060326-010
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-011
Collection Date: 06/08/22 16:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	65.2	wt%		0.2		D2974	06/23/22 14:12 / jjp			L DRYING OVEN 2_220624B : 1		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Passed	1.4	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 1		R175974
3050 EXTRACTABLE METALS												
Aluminum	16600	mg/kg-dry	D	50	50	SW6010B	06/17/22 14:43 / sld	06/16/22 08:09	SW3050 B	ICP2-HE_220617A : 55		61875
Antimony	ND	mg/kg-dry		5	5	SW6020	06/28/22 07:23 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 98		61875
Arsenic	126	mg/kg-dry		5	1	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Barium	195	mg/kg-dry		5	2	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Beryllium	ND	mg/kg-dry		5	3	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Boron	11	mg/kg-dry		5	4	SW6010B	06/20/22 12:00 / sld	06/16/22 08:09	SW3050 B	ICP2-HE_220620B : 23		61875
Cadmium	10.9	mg/kg-dry		0.3	0.3	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Chromium	46	mg/kg-dry		9	9	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Cobalt	12	mg/kg-dry		5	5	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Copper	782	mg/kg-dry		9	9	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Iron	30100	mg/kg-dry	D	300	300	SW6010B	06/17/22 14:43 / sld	06/16/22 08:09	SW3050 B	ICP2-HE_220617A : 55		61875
Lead	416	mg/kg-dry		5	4	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Manganese	1340	mg/kg-dry		5	5	SW6010B	06/17/22 14:43 / sld	06/16/22 08:09	SW3050 B	ICP2-HE_220617A : 55		61875
Molybdenum	85	mg/kg-dry		5	2	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Nickel	23	mg/kg-dry		5	4	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Selenium	2	mg/kg-dry	J	5	1	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Silver	ND	mg/kg-dry		5	5	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Uranium	7	mg/kg-dry		5	0.2	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Vanadium	81	mg/kg-dry		2	2	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
Zinc	2090	mg/kg-dry	D	20	20	SW6020	06/27/22 12:32 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 24		61875
METALS, TOTAL												
Mercury	1.1	mg/kg-dry		0.10	0.013	SW7471B	06/23/22 11:53 / cfg	06/22/22 08:53	SW7471B	HGCV203-H_220623A : 45		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-012
Collection Date: 06/08/22 16:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	24.6	wt%		0.2		D2974	06/23/22 14:12 / jjp			L DRYING OVEN 2_220624B : 4		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Retained	33.8	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 2		R175974
3050 EXTRACTABLE METALS												
Aluminum	5680	mg/kg-dry	D	20	20	SW6010B	06/17/22 14:46 / sld	06/16/22 08:09	SW3050 B	ICP2-HE_220617A : 56		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 07:25 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 99		61875
Arsenic	22	mg/kg-dry		5	0.5	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Barium	89	mg/kg-dry		5	0.9	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Boron	3	mg/kg-dry	J	5	2	SW6010B	06/20/22 12:11 / sld	06/16/22 08:09	SW3050 B	ICP2-HE_220620B : 26		61875
Cadmium	1.7	mg/kg-dry		0.2	0.1	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Chromium	13	mg/kg-dry		5	4	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Cobalt	7	mg/kg-dry		5	2	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Copper	163	mg/kg-dry		5	4	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Iron	20200	mg/kg-dry	D	100	100	SW6010B	06/17/22 14:46 / sld	06/16/22 08:09	SW3050 B	ICP2-HE_220617A : 56		61875
Lead	78	mg/kg-dry		5	2	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Manganese	474	mg/kg-dry		5	3	SW6010B	06/17/22 14:46 / sld	06/16/22 08:09	SW3050 B	ICP2-HE_220617A : 56		61875
Molybdenum	14	mg/kg-dry		5	0.8	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Nickel	7	mg/kg-dry		5	2	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Selenium	0.5	mg/kg-dry	J	5	0.5	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Uranium	2.1	mg/kg-dry	J	5	0.07	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Vanadium	43	mg/kg-dry		1	1	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
Zinc	655	mg/kg-dry	D	10	10	SW6020	06/27/22 12:34 / dck	06/16/22 08:09	SW3050 B	ICPMS205-H_220627B : 25		61875
METALS, TOTAL												
Mercury	0.35	mg/kg-dry		0.10	0.0057	SW7471B	06/23/22 11:55 / cfg	06/22/22 08:53	SW7471B	HGCV203-H_220623A : 46		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-013
Collection Date: 06/08/22 16:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	23.2	wt%		0.2		D2974	06/23/22 14:12 / jjp			L DRYING OVEN 2_220624B : 7		PMOIST_220623_C
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	21.2	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 3		R175974
3050 EXTRACTABLE METALS												
Aluminum	3750	mg/kg-dry	D	20	20	SW6010B	06/17/22 14:50 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 57		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 07:28 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 100		61875
Arsenic	17	mg/kg-dry		5	0.5	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Barium	52	mg/kg-dry		5	0.9	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 12:15 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 27		61875
Cadmium	0.8	mg/kg-dry		0.2	0.1	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Chromium	6	mg/kg-dry		5	4	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Cobalt	4	mg/kg-dry	J	5	2	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Copper	86	mg/kg-dry		5	4	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Iron	8930	mg/kg-dry	D	100	100	SW6010B	06/17/22 14:50 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 57		61875
Lead	36	mg/kg-dry		5	2	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Manganese	411	mg/kg-dry		5	2	SW6010B	06/17/22 14:50 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 57		61875
Molybdenum	11	mg/kg-dry		5	0.8	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Nickel	3	mg/kg-dry	J	5	2	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Selenium	ND	mg/kg-dry		5	0.4	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Uranium	1.3	mg/kg-dry	J	5	0.07	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Vanadium	22	mg/kg-dry		1	1	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
Zinc	286	mg/kg-dry	D	10	10	SW6020	06/27/22 12:36 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 26		61875
METALS, TOTAL												
Mercury	0.07	mg/kg-dry	J	0.10	0.0057	SW7471B	06/23/22 11:57 / cfg	06/22/22 08:53	SW7471B	HGCV203-H_220623A : 47		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-014
Collection Date: 06/08/22 15:15
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	73.3	wt%		0.2		D2974	06/23/22 14:12 / jjp			DRYING OVEN 2_220624B : 10		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Passed	13.8	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 4		R175974
3050 EXTRACTABLE METALS												
Aluminum	27000	mg/kg-dry	D	70	70	SW6010B	06/17/22 14:54 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 58		61875
Antimony	ND	mg/kg-dry		6	6	SW6020	06/28/22 07:30 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 101		61875
Arsenic	60	mg/kg-dry		5	1	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Barium	285	mg/kg-dry		5	3	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Beryllium	ND	mg/kg-dry		5	4	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Boron	16	mg/kg-dry		6	6	SW6010B	06/20/22 12:18 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 28		61875
Cadmium	9.8	mg/kg-dry		0.3	0.3	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Chromium	43	mg/kg-dry		10	10	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Cobalt	13	mg/kg-dry		7	7	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Copper	1120	mg/kg-dry		10	10	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Iron	28700	mg/kg-dry	D	400	400	SW6010B	06/17/22 14:54 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 58		61875
Lead	246	mg/kg-dry		5	5	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Manganese	1180	mg/kg-dry		7	7	SW6010B	06/17/22 14:54 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 58		61875
Molybdenum	52	mg/kg-dry		5	2	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Nickel	22	mg/kg-dry		5	5	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Selenium	3	mg/kg-dry	J	5	1	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Silver	3	mg/kg-dry	J	5	1	SW6020	06/28/22 07:30 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 101		61875
Uranium	4.7	mg/kg-dry	J	5	0.2	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Vanadium	80	mg/kg-dry		3	3	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
Zinc	1910	mg/kg-dry	D	30	30	SW6020	06/27/22 12:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 27		61875
METALS, TOTAL												
Mercury	1.1	mg/kg-dry		0.10	0.016	SW7471B	06/23/22 11:59 / cfg	06/22/22 08:53	SW7471B	HGCV203-H_220623A : 48		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-015
Collection Date: 06/08/22 15:15
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	35.6	wt%		0.2		D2974	06/23/22 14:12 / jjp			DRYING OVEN 2_220624B : 13		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Retained	31.1	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 5		R175974
3050 EXTRACTABLE METALS												
Aluminum	11900	mg/kg-dry	D	30	30	SW6010B	06/17/22 15:19 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 65		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 07:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 103		61875
Arsenic	17	mg/kg-dry		5	0.6	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Barium	182	mg/kg-dry		5	1	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Beryllium	ND	mg/kg-dry		5	2	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Boron	4	mg/kg-dry	J	5	2	SW6010B	06/20/22 12:37 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 33		61875
Cadmium	2.4	mg/kg-dry		0.2	0.1	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Chromium	14	mg/kg-dry		5	5	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Cobalt	6	mg/kg-dry		5	3	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Copper	226	mg/kg-dry		5	5	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Iron	20300	mg/kg-dry	D	200	200	SW6010B	06/17/22 15:19 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 65		61875
Lead	63	mg/kg-dry		5	2	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Manganese	944	mg/kg-dry		5	3	SW6010B	06/17/22 15:19 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 65		61875
Molybdenum	12	mg/kg-dry		5	0.9	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Nickel	5	mg/kg-dry	J	5	2	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Selenium	ND	mg/kg-dry		5	0.5	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Silver	ND	mg/kg-dry		5	3	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Uranium	2.1	mg/kg-dry	J	5	0.08	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Vanadium	53	mg/kg-dry		1	1	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
Zinc	442	mg/kg-dry	D	10	10	SW6020	06/27/22 12:42 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 29		61875
METALS, TOTAL												
Mercury	0.22	mg/kg-dry		0.10	0.0067	SW7471B	06/23/22 12:08 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 52		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-016
Collection Date: 06/08/22 15:15
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	34.3	wt%		0.2		D2974	06/23/22 14:12 / jjp			DRYING OVEN 2_220624B : 16		PMOIST_220623_C
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	11.6	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 6		R175974
3050 EXTRACTABLE METALS												
Aluminum	13000	mg/kg-dry	D	30	30	SW6010B	06/17/22 15:23 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 66		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 07:38 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 105		61875
Arsenic	15	mg/kg-dry		5	0.6	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Barium	164	mg/kg-dry		5	1	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Beryllium	ND	mg/kg-dry		5	2	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Boron	3	mg/kg-dry	J	5	2	SW6010B	06/20/22 12:40 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 34		61875
Cadmium	1.1	mg/kg-dry		0.2	0.1	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Chromium	6	mg/kg-dry		5	5	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Cobalt	6	mg/kg-dry		5	3	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Copper	87	mg/kg-dry		5	5	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Iron	12200	mg/kg-dry	D	200	200	SW6010B	06/17/22 15:23 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 66		61875
Lead	38	mg/kg-dry		5	2	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Manganese	1090	mg/kg-dry		5	3	SW6010B	06/17/22 15:23 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 66		61875
Molybdenum	11	mg/kg-dry		5	0.9	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Nickel	3	mg/kg-dry	J	5	2	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Selenium	ND	mg/kg-dry		5	0.5	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Silver	ND	mg/kg-dry		5	3	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Uranium	1.2	mg/kg-dry	J	5	0.08	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Vanadium	19	mg/kg-dry		1	1	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
Zinc	283	mg/kg-dry	D	10	10	SW6020	06/27/22 12:45 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 30		61875
METALS, TOTAL												
Mercury	0.06	mg/kg-dry	J	0.10	0.0066	SW7471B	06/23/22 12:10 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 53		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-017
Collection Date: 06/08/22 14:20
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	70.0	wt%		0.2		D2974	06/23/22 14:13 / jjp			DRYING OVEN 2_220624B : 19		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Passed	7.8	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 7		R175974
3050 EXTRACTABLE METALS												
Aluminum	23300	mg/kg-dry	D	60	60	SW6010B	06/17/22 15:27 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 67		61875
Antimony	ND	mg/kg-dry		5	4	SW6020	06/28/22 07:41 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 106		61875
Arsenic	41	mg/kg-dry		5	1	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Barium	221	mg/kg-dry		5	2	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Beryllium	ND	mg/kg-dry		5	4	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Boron	13	mg/kg-dry		5	5	SW6010B	06/20/22 12:44 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 35		61875
Cadmium	6.5	mg/kg-dry		0.3	0.3	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Chromium	32	mg/kg-dry		10	10	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Cobalt	11	mg/kg-dry		6	6	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Copper	814	mg/kg-dry		10	10	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Iron	25000	mg/kg-dry	D	400	400	SW6010B	06/17/22 15:27 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 67		61875
Lead	143	mg/kg-dry		5	4	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Manganese	2200	mg/kg-dry		6	6	SW6010B	06/17/22 15:27 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 67		61875
Molybdenum	32	mg/kg-dry		5	2	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Nickel	17	mg/kg-dry		5	4	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Selenium	2	mg/kg-dry	J	5	1	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Silver	1.3	mg/kg-dry	J	5	0.8	SW6020	06/28/22 07:41 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 106		61875
Uranium	3.5	mg/kg-dry	J	5	0.2	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Vanadium	61	mg/kg-dry		3	3	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
Zinc	1150	mg/kg-dry	D	20	20	SW6020	06/27/22 12:47 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 31		61875
METALS, TOTAL												
Mercury	0.71	mg/kg-dry		0.10	0.014	SW7471B	06/23/22 12:12 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 54		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-018
Collection Date: 06/08/22 14:20
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	32.4	wt%		0.2		D2974	06/23/22 14:13 / jjp			DRYING OVEN 2_220624B : 25		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Retained	30.3	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 8		R175974
3050 EXTRACTABLE METALS												
Aluminum	7670	mg/kg-dry	D	30	30	SW6010B	06/17/22 15:30 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 68		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 07:43 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 107		61875
Arsenic	9	mg/kg-dry		5	0.6	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Barium	171	mg/kg-dry		5	1	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Beryllium	ND	mg/kg-dry		5	2	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Boron	2	mg/kg-dry	J	5	2	SW6010B	06/20/22 13:25 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 46		61875
Cadmium	1.2	mg/kg-dry		0.2	0.1	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Chromium	18	mg/kg-dry		5	4	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Cobalt	5	mg/kg-dry	J	5	3	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Copper	95	mg/kg-dry		5	5	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Iron	18300	mg/kg-dry	D	200	200	SW6010B	06/17/22 15:30 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 68		61875
Lead	22	mg/kg-dry		5	2	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Manganese	547	mg/kg-dry		5	3	SW6010B	06/17/22 15:30 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 68		61875
Molybdenum	5	mg/kg-dry		5	0.9	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Nickel	7	mg/kg-dry		5	2	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Selenium	ND	mg/kg-dry		5	0.5	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Silver	ND	mg/kg-dry		5	3	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Uranium	1.2	mg/kg-dry	J	5	0.08	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Vanadium	56	mg/kg-dry		1	1	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
Zinc	208	mg/kg-dry	D	10	10	SW6020	06/27/22 12:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 32		61875
METALS, TOTAL												
Mercury	0.08	mg/kg-dry	J	0.10	0.0065	SW7471B	06/23/22 12:14 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 55		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13 Sediment 2mm to 1mm Sieve
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-019
Collection Date: 06/08/22 14:20
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	23.7	wt%		0.2		D2974	06/23/22 14:13 / jjp			DRYING OVEN 2_220624B : 28		PMOIST_220623_C
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	14.0	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 9		R175974
3050 EXTRACTABLE METALS												
Aluminum	3910	mg/kg-dry	D	20	20	SW6010B	06/17/22 15:34 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 69		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 07:49 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 110		61875
Arsenic	6	mg/kg-dry		5	0.5	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Barium	94	mg/kg-dry		5	0.9	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 13:29 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 47		61875
Cadmium	0.4	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Chromium	9	mg/kg-dry		5	4	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Cobalt	3	mg/kg-dry	J	5	2	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Copper	22	mg/kg-dry		5	4	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Iron	5940	mg/kg-dry	D	100	100	SW6010B	06/17/22 15:34 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 69		61875
Lead	9	mg/kg-dry		5	2	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Manganese	382	mg/kg-dry		5	2	SW6010B	06/17/22 15:34 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 69		61875
Molybdenum	2.9	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Nickel	5	mg/kg-dry		5	2	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Selenium	ND	mg/kg-dry		5	0.5	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Uranium	0.80	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Vanadium	14	mg/kg-dry		1	1	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
Zinc	102	mg/kg-dry	D	10	10	SW6020	06/27/22 13:06 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 40		61875
METALS, TOTAL												
Mercury	0.01	mg/kg-dry	J	0.10	0.0055	SW7471B	06/23/22 12:16 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 56		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-020
Collection Date: 06/08/22 13:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	54.0	wt%		0.2		D2974	06/23/22 14:13 / jjp			DRYING OVEN 2_220624B : 31		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Passed	4.3	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 10		R175974
3050 EXTRACTABLE METALS												
Aluminum	26700	mg/kg-dry	D	40	40	SW6010B	06/17/22 15:38 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 70		61875
Antimony	ND	mg/kg-dry		5	3	SW6020	06/28/22 07:51 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 111		61875
Arsenic	31	mg/kg-dry		5	0.9	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Barium	334	mg/kg-dry		5	1	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Beryllium	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Boron	10	mg/kg-dry		5	3	SW6010B	06/20/22 13:33 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 48		61875
Cadmium	7.0	mg/kg-dry		0.2	0.2	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Chromium	48	mg/kg-dry		7	7	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Cobalt	10	mg/kg-dry		5	4	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Copper	599	mg/kg-dry		7	7	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Iron	26000	mg/kg-dry	D	200	200	SW6010B	06/17/22 15:38 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 70		61875
Lead	116	mg/kg-dry		5	3	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Manganese	895	mg/kg-dry		5	4	SW6010B	06/17/22 15:38 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 70		61875
Molybdenum	26	mg/kg-dry		5	1	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Nickel	25	mg/kg-dry		5	3	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Selenium	2.2	mg/kg-dry	J	5	0.7	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Silver	ND	mg/kg-dry		5	4	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Uranium	3.6	mg/kg-dry	J	5	0.1	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Vanadium	63	mg/kg-dry		2	2	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
Zinc	1070	mg/kg-dry	D	20	20	SW6020	06/27/22 13:08 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 41		61875
METALS, TOTAL												
Mercury	0.46	mg/kg-dry		0.10	0.0094	SW7471B	06/23/22 12:18 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 57		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-021
Collection Date: 06/08/22 13:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	22.6	wt%		0.2		D2974	06/23/22 14:13 / jjp			DRYING OVEN 2_220624B : 34		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Retained	25.8	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 11		R175974
3050 EXTRACTABLE METALS												
Aluminum	7020	mg/kg-dry	D	20	20	SW6010B	06/17/22 15:42 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 71		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 07:54 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 112		61875
Arsenic	6	mg/kg-dry		5	0.5	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Barium	145	mg/kg-dry		5	0.9	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 13:36 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 49		61875
Cadmium	1.4	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Chromium	14	mg/kg-dry		5	4	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Cobalt	4	mg/kg-dry	J	5	2	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Copper	67	mg/kg-dry		5	4	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Iron	15000	mg/kg-dry	D	100	100	SW6010B	06/17/22 15:42 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 71		61875
Lead	13	mg/kg-dry		5	2	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Manganese	195	mg/kg-dry		5	2	SW6010B	06/17/22 15:42 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 71		61875
Molybdenum	3.1	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Nickel	6	mg/kg-dry		5	2	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Selenium	ND	mg/kg-dry		5	0.4	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Uranium	1.1	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Vanadium	43	mg/kg-dry		1	1	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
Zinc	156	mg/kg-dry	D	10	10	SW6020	06/27/22 13:10 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 42		61875
METALS, TOTAL												
Mercury	0.05	mg/kg-dry	J	0.10	0.0057	SW7471B	06/23/22 12:24 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 60		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-022
Collection Date: 06/08/22 13:45
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	22.9	wt%		0.2		D2974	06/23/22 14:13 / jjp			DRYING OVEN 2_220624B : 37		PMOIST_220623_C
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	14.5	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 12		R175974
3050 EXTRACTABLE METALS												
Aluminum	4320	mg/kg-dry	D	20	20	SW6010B	06/17/22 15:45 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 72		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 07:56 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 113		61875
Arsenic	6	mg/kg-dry		5	0.5	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Barium	102	mg/kg-dry		5	0.9	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 13:40 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 50		61875
Cadmium	0.4	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Chromium	10	mg/kg-dry		5	4	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Cobalt	2	mg/kg-dry	J	5	2	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Copper	36	mg/kg-dry		5	4	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Iron	6390	mg/kg-dry	D	100	100	SW6010B	06/17/22 15:45 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 72		61875
Lead	9	mg/kg-dry		5	2	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Manganese	195	mg/kg-dry		5	2	SW6010B	06/17/22 15:45 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 72		61875
Molybdenum	3.4	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Nickel	5	mg/kg-dry	J	5	2	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Selenium	ND	mg/kg-dry		5	0.4	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Uranium	0.73	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Vanadium	14	mg/kg-dry		1	1	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
Zinc	83	mg/kg-dry	D	10	10	SW6020	06/27/22 13:13 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 43		61875
METALS, TOTAL												
Mercury	0.01	mg/kg-dry	J	0.10	0.0056	SW7471B	06/23/22 12:26 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 61		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-023
Collection Date: 06/08/22 12:40
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	54.6	wt%		0.2		D2974	06/23/22 14:14 / jjp			DRYING OVEN 2_220624B : 40		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Passed	3.2	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 13		R175974
3050 EXTRACTABLE METALS												
Aluminum	28400	mg/kg-dry	D	40	40	SW6010B	06/17/22 16:57 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 85		61875
Antimony	ND	mg/kg-dry		5	3	SW6020	06/28/22 07:58 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 114		61875
Arsenic	24	mg/kg-dry		5	0.8	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Barium	275	mg/kg-dry		5	1	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Beryllium	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Boron	11	mg/kg-dry		5	3	SW6010B	06/20/22 13:44 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 51		61875
Cadmium	3.7	mg/kg-dry		0.2	0.2	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Chromium	21	mg/kg-dry		7	7	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Cobalt	11	mg/kg-dry		5	4	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Copper	316	mg/kg-dry		7	7	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Iron	26100	mg/kg-dry	D	200	200	SW6010B	06/17/22 16:57 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 85		61875
Lead	69	mg/kg-dry		5	3	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Manganese	1540	mg/kg-dry		5	4	SW6010B	06/17/22 16:57 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 85		61875
Molybdenum	9	mg/kg-dry		5	1	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Nickel	14	mg/kg-dry		5	3	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Selenium	1.0	mg/kg-dry	J	5	0.7	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Silver	ND	mg/kg-dry		5	4	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Uranium	1.7	mg/kg-dry	J	5	0.1	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Vanadium	50	mg/kg-dry		2	2	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
Zinc	798	mg/kg-dry	D	20	20	SW6020	06/27/22 13:15 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 44		61875
METALS, TOTAL												
Mercury	0.32	mg/kg-dry		0.10	0.0097	SW7471B	06/23/22 12:28 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 62		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-024
Collection Date: 06/08/22 12:40
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	25.9	wt%		0.2		D2974	06/23/22 14:14 / jjp			DRYING OVEN 2_220624B : 43		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Retained	15.2	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 14		R175974
3050 EXTRACTABLE METALS												
Aluminum	7340	mg/kg-dry	D	20	20	SW6010B	06/17/22 17:08 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 88		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 08:02 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 116		61875
Arsenic	21	mg/kg-dry		5	0.5	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Barium	139	mg/kg-dry		5	1	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Beryllium	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Boron	3	mg/kg-dry	J	5	2	SW6010B	06/20/22 13:47 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 52		61875
Cadmium	1.0	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Chromium	8	mg/kg-dry		5	4	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Cobalt	4	mg/kg-dry	J	5	3	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Copper	116	mg/kg-dry		5	4	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Iron	14300	mg/kg-dry	D	200	200	SW6010B	06/17/22 17:08 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 88		61875
Lead	30	mg/kg-dry		5	2	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Manganese	470	mg/kg-dry		5	3	SW6010B	06/17/22 17:08 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 88		61875
Molybdenum	2.8	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Nickel	4	mg/kg-dry	J	5	2	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Selenium	ND	mg/kg-dry		5	0.5	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Silver	ND	mg/kg-dry		5	3	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Uranium	1.4	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Vanadium	36	mg/kg-dry		1	1	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
Zinc	340	mg/kg-dry	D	10	10	SW6020	06/27/22 13:17 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 45		61875
METALS, TOTAL												
Mercury	0.08	mg/kg-dry	J	0.10	0.0058	SW7471B	06/23/22 12:30 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 63		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2 Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-025
Collection Date: 06/08/22 12:40
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	23.5	wt%		0.2		D2974	06/23/22 14:14 / jjp			DRYING OVEN 2_220624B : 46		PMOIST_220623_C
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	15.4	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 15		R175974
3050 EXTRACTABLE METALS												
Aluminum	3520	mg/kg-dry	D	20	20	SW6010B	06/17/22 17:12 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 89		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 08:07 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 117		61875
Arsenic	15	mg/kg-dry		5	0.5	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Barium	61	mg/kg-dry		5	0.9	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 13:51 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 53		61875
Cadmium	0.2	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Chromium	ND	mg/kg-dry		5	4	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Cobalt	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Copper	82	mg/kg-dry		5	4	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Iron	7890	mg/kg-dry	D	100	100	SW6010B	06/17/22 17:12 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 89		61875
Lead	17	mg/kg-dry		5	2	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Manganese	245	mg/kg-dry		5	2	SW6010B	06/17/22 17:12 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 89		61875
Molybdenum	1.6	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Nickel	2	mg/kg-dry	J	5	2	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Selenium	ND	mg/kg-dry		5	0.5	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Uranium	1.6	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Vanadium	14	mg/kg-dry		1	1	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
Zinc	90	mg/kg-dry	D	10	10	SW6020	06/27/22 13:19 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 46		61875
METALS, TOTAL												
Mercury	0.03	mg/kg-dry	J	0.10	0.0058	SW7471B	06/23/22 12:39 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 67		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-026
Collection Date: 06/08/22 11:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	53.6	wt%		0.2		D2974	06/23/22 14:14 / jjp			DRYING OVEN 2_220624B : 49		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Passed	5.4	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 16		R175974
3050 EXTRACTABLE METALS												
Aluminum	17800	mg/kg-dry	D	40	40	SW6010B	06/17/22 17:16 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 90		61875
Antimony	ND	mg/kg-dry		5	3	SW6020	06/28/22 08:09 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 118		61875
Arsenic	188	mg/kg-dry		5	0.9	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Barium	209	mg/kg-dry		5	2	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Beryllium	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Boron	7	mg/kg-dry		5	3	SW6010B	06/20/22 13:55 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 54		61875
Cadmium	13.9	mg/kg-dry		0.2	0.2	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Chromium	21	mg/kg-dry		7	7	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Cobalt	7	mg/kg-dry		5	4	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Copper	2410	mg/kg-dry		7	7	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Iron	18700	mg/kg-dry	D	200	200	SW6010B	06/17/22 17:16 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 90		61875
Lead	337	mg/kg-dry		5	3	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Manganese	999	mg/kg-dry		5	4	SW6010B	06/17/22 17:16 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 90		61875
Molybdenum	14	mg/kg-dry		5	1	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Nickel	13	mg/kg-dry		5	3	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Selenium	1.5	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Silver	9	mg/kg-dry		5	4	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Uranium	4.4	mg/kg-dry	J	5	0.1	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Vanadium	39	mg/kg-dry		2	2	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
Zinc	2030	mg/kg-dry	D	20	20	SW6020	06/27/22 13:21 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 47		61875
METALS, TOTAL												
Mercury	3.5	mg/kg-dry		0.11	0.047	SW7471B	06/23/22 12:47 / cfg	06/22/22 08:54	SW7471B	HGCV203-H_220623A : 69		61978

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-027
Collection Date: 06/08/22 11:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	30.2	wt%		0.2		D2974	06/23/22 14:14 / jjp			DRYING OVEN 2_220624B : 52		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Retained	31.9	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 17		R175974
3050 EXTRACTABLE METALS												
Aluminum	7720	mg/kg-dry	D	30	30	SW6010B	06/17/22 17:19 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 91		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 08:11 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 119		61875
Arsenic	74	mg/kg-dry		5	0.6	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Barium	145	mg/kg-dry		5	1	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Beryllium	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 14:06 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 57		61875
Cadmium	2.8	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Chromium	17	mg/kg-dry		5	5	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Cobalt	5	mg/kg-dry		5	3	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Copper	432	mg/kg-dry		5	5	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Iron	24800	mg/kg-dry	D	200	200	SW6010B	06/17/22 17:19 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 91		61875
Lead	115	mg/kg-dry		5	2	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Manganese	450	mg/kg-dry		5	3	SW6010B	06/17/22 17:19 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 91		61875
Molybdenum	3.7	mg/kg-dry	J	5	0.9	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Nickel	6	mg/kg-dry		5	2	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Selenium	ND	mg/kg-dry		5	0.5	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Silver	ND	mg/kg-dry		5	3	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Uranium	2.4	mg/kg-dry	J	5	0.08	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Vanadium	67	mg/kg-dry		1	1	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
Zinc	698	mg/kg-dry	D	10	10	SW6020	06/27/22 13:23 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 48		61875
METALS, TOTAL												
Mercury	0.56	mg/kg-dry		0.10	0.0063	SW7471B	06/23/22 10:38 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 14		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-028
Collection Date: 06/08/22 11:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	23.8	wt%		0.2		D2974	06/23/22 14:14 / jjp			DRYING OVEN 2_220624B : 58		PMOIST_220623_C
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	13.5	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 18		R175974
3050 EXTRACTABLE METALS												
Aluminum	5460	mg/kg-dry	D	20	20	SW6010B	06/17/22 17:23 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 92		61875
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 08:14 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 120		61875
Arsenic	37	mg/kg-dry		5	0.5	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Barium	90	mg/kg-dry		5	0.9	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Beryllium	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 14:09 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 58		61875
Cadmium	0.8	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Chromium	7	mg/kg-dry		5	4	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Cobalt	3	mg/kg-dry	J	5	3	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Copper	187	mg/kg-dry		5	4	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Iron	9870	mg/kg-dry	D	200	200	SW6010B	06/17/22 17:23 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 92		61875
Lead	51	mg/kg-dry		5	2	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Manganese	226	mg/kg-dry		5	3	SW6010B	06/17/22 17:23 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 92		61875
Molybdenum	1.7	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Nickel	4	mg/kg-dry	J	5	2	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Selenium	ND	mg/kg-dry		5	0.5	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Uranium	1.6	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Vanadium	17	mg/kg-dry		1	1	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
Zinc	366	mg/kg-dry	D	10	10	SW6020	06/27/22 13:25 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 49		61875
METALS, TOTAL												
Mercury	0.15	mg/kg-dry		0.10	0.0058	SW7471B	06/23/22 10:50 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 18		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D Sediment <0.063
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-029
Collection Date: 06/08/22 10:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	67.3	wt%		0.2		D2974	06/23/22 14:15 / jjp			DRYING OVEN 2_220624B : 61		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Passed	0.6	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 19		R175974
3050 EXTRACTABLE METALS												
Aluminum	23400	mg/kg-dry	D	50	50	SW6010B	06/17/22 17:38 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 96		61876
Antimony	ND	mg/kg-dry		5	5	SW6020	06/28/22 08:22 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 124		61876
Arsenic	61	mg/kg-dry		5	1	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Barium	390	mg/kg-dry		5	2	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Beryllium	ND	mg/kg-dry		5	3	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Boron	10	mg/kg-dry		5	5	SW6010B	06/20/22 14:21 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220620B : 61		61876
Cadmium	17.4	mg/kg-dry		0.3	0.3	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Chromium	66	mg/kg-dry		9	9	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Cobalt	18	mg/kg-dry		6	6	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Copper	724	mg/kg-dry		10	10	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Iron	31700	mg/kg-dry	D	300	300	SW6010B	06/17/22 17:38 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 96		61876
Lead	198	mg/kg-dry		5	4	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Manganese	3780	mg/kg-dry		6	6	SW6010B	06/17/22 17:38 / sld	06/16/22 08:10	SW3050 B	ICP2-HE_220617A : 96		61876
Molybdenum	18	mg/kg-dry		5	2	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Nickel	38	mg/kg-dry		5	4	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Selenium	2	mg/kg-dry	J	5	1	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Silver	2	mg/kg-dry	J	5	1	SW6020	06/28/22 08:22 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 124		61876
Uranium	3.1	mg/kg-dry	J	5	0.2	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Vanadium	84	mg/kg-dry		2	2	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
Zinc	2500	mg/kg-dry	D	20	20	SW6020	06/27/22 13:34 / dck	06/16/22 08:10	SW3050 B	ICPMS205-H_220627B : 53		61876
METALS, TOTAL												
Mercury	0.62	mg/kg-dry		0.10	0.013	SW7471B	06/23/22 10:52 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 19		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-030
Collection Date: 06/08/22 10:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	22.1	wt%		0.2		D2974	06/23/22 14:15 / jjp			DRYING OVEN 2_220624B : 64		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Retained	15.0	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 20		R175974
3050 EXTRACTABLE METALS												
Aluminum	4760	mg/kg-dry	D	20	20	SW6010B	06/17/22 17:42 / sld	06/16/22 08:16	SW3050 B	ICP2-HE_220617A : 97		61876
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 08:24 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 125		61876
Arsenic	23	mg/kg-dry		5	0.5	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Barium	92	mg/kg-dry		5	0.9	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 14:24 / sld	06/16/22 08:16	SW3050 B	ICP2-HE_220620B : 62		61876
Cadmium	1.3	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Chromium	22	mg/kg-dry		5	4	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Cobalt	5	mg/kg-dry	J	5	2	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Copper	87	mg/kg-dry		5	4	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Iron	31700	mg/kg-dry	D	100	100	SW6010B	06/17/22 17:42 / sld	06/16/22 08:16	SW3050 B	ICP2-HE_220617A : 97		61876
Lead	29	mg/kg-dry		5	2	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Manganese	784	mg/kg-dry		5	2	SW6010B	06/17/22 17:42 / sld	06/16/22 08:16	SW3050 B	ICP2-HE_220617A : 97		61876
Molybdenum	2.9	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Nickel	6	mg/kg-dry		5	2	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Selenium	ND	mg/kg-dry		5	0.4	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Uranium	10	mg/kg-dry		5	0.07	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Vanadium	96	mg/kg-dry		1	1	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
Zinc	366	mg/kg-dry	D	10	10	SW6020	06/27/22 13:36 / dck	06/16/22 08:16	SW3050 B	ICPMS205-H_220627B : 54		61876
METALS, TOTAL												
Mercury	0.09	mg/kg-dry	J	0.10	0.0054	SW7471B	06/23/22 10:54 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 20		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-031
Collection Date: 06/08/22 10:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	20.5	wt%		0.2		D2974	06/23/22 14:15 / jjp			DRYING OVEN 2_220624B : 67		PMOIST_220623_C
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	10.4	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 21		R175974
3050 EXTRACTABLE METALS												
Aluminum	3710	mg/kg-dry	D	20	20	SW6010B	06/17/22 18:08 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 104		61876
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 08:29 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 127		61876
Arsenic	18	mg/kg-dry		5	0.5	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Barium	223	mg/kg-dry		5	0.9	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 14:50 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220620B : 69		61876
Cadmium	0.6	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Chromium	9	mg/kg-dry		5	4	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Cobalt	3	mg/kg-dry	J	5	2	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Copper	77	mg/kg-dry		5	4	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Iron	11100	mg/kg-dry	D	100	100	SW6010B	06/17/22 18:08 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 104		61876
Lead	28	mg/kg-dry		5	2	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Manganese	1420	mg/kg-dry		5	2	SW6010B	06/17/22 18:08 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 104		61876
Molybdenum	4.0	mg/kg-dry	J	5	0.7	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Nickel	4	mg/kg-dry	J	5	2	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Selenium	ND	mg/kg-dry		5	0.4	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Uranium	1.4	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Vanadium	21	mg/kg-dry		1	1	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
Zinc	199	mg/kg-dry	D	10	10	SW6020	06/27/22 13:41 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 56		61876
METALS, TOTAL												
Mercury	0.15	mg/kg-dry		0.10	0.0055	SW7471B	06/23/22 10:56 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 21		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-032
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	69.6	wt%		0.2		D2974	06/23/22 14:15 / jjp			DRYING OVEN 2_220624B : 70		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Passed	0.8	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 22		R175974
3050 EXTRACTABLE METALS												
Aluminum	24000	mg/kg-dry	D	60	60	SW6010B	06/17/22 18:11 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 105		61876
Antimony	ND	mg/kg-dry		5	5	SW6020	06/28/22 08:31 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 128		61876
Arsenic	52	mg/kg-dry		5	1	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Barium	364	mg/kg-dry		5	2	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Beryllium	ND	mg/kg-dry		5	4	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Boron	9	mg/kg-dry		5	5	SW6010B	06/20/22 14:53 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220620B : 70		61876
Cadmium	19.3	mg/kg-dry		0.3	0.3	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Chromium	45	mg/kg-dry		10	10	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Cobalt	14	mg/kg-dry		6	6	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Copper	687	mg/kg-dry		10	10	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Iron	30900	mg/kg-dry	D	400	400	SW6010B	06/17/22 18:11 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 105		61876
Lead	132	mg/kg-dry		5	4	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Manganese	3280	mg/kg-dry		6	6	SW6010B	06/17/22 18:11 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 105		61876
Molybdenum	18	mg/kg-dry		5	2	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Nickel	26	mg/kg-dry		5	4	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Selenium	2	mg/kg-dry	J	5	1	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Silver	2	mg/kg-dry	J	5	1	SW6020	06/28/22 08:31 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 128		61876
Uranium	4.1	mg/kg-dry	J	5	0.2	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Vanadium	97	mg/kg-dry		3	3	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
Zinc	1760	mg/kg-dry	D	20	20	SW6020	06/27/22 13:43 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 57		61876
METALS, TOTAL												
Mercury	0.65	mg/kg-dry		0.10	0.014	SW7471B	06/23/22 10:58 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 22		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-033
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	23.3	wt%		0.2		D2974	06/23/22 14:15 / jjp			DRYING OVEN 2_220624B : 73		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Retained	27.5	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 23		R175974
3050 EXTRACTABLE METALS												
Aluminum	4310	mg/kg-dry	D	20	20	SW6010B	06/17/22 18:15 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 106		61876
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 08:35 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 130		61876
Arsenic	15	mg/kg-dry		5	0.5	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Barium	97	mg/kg-dry		5	0.9	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 14:57 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220620B : 71		61876
Cadmium	1.0	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Chromium	12	mg/kg-dry		5	4	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Cobalt	4	mg/kg-dry	J	5	2	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Copper	58	mg/kg-dry		5	4	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Iron	14000	mg/kg-dry	D	100	100	SW6010B	06/17/22 18:15 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 106		61876
Lead	30	mg/kg-dry		5	2	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Manganese	594	mg/kg-dry		5	2	SW6010B	06/17/22 18:15 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 106		61876
Molybdenum	2.3	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Nickel	4	mg/kg-dry	J	5	2	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Selenium	ND	mg/kg-dry		5	0.4	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Uranium	2.3	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Vanadium	40	mg/kg-dry		1	1	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
Zinc	193	mg/kg-dry	D	10	10	SW6020	06/27/22 13:45 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 58		61876
METALS, TOTAL												
Mercury	0.1	mg/kg-dry	J	0.10	0.0056	SW7471B	06/23/22 11:02 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 23		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-034
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	21.7	wt%		0.2		D2974	06/23/22 14:15 / jjp			DRYING OVEN 2_220624B : 76		PMOIST_220623_C
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	13.0	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 24		R175974
3050 EXTRACTABLE METALS												
Aluminum	3770	mg/kg-dry	D	20	20	SW6010B	06/17/22 18:19 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 107		61876
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 08:37 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 131		61876
Arsenic	13	mg/kg-dry		5	0.5	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Barium	74	mg/kg-dry		5	0.9	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 15:01 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220620B : 72		61876
Cadmium	0.8	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Chromium	8	mg/kg-dry		5	4	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Cobalt	10	mg/kg-dry		5	2	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Copper	71	mg/kg-dry		5	4	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Iron	9390	mg/kg-dry	D	100	100	SW6010B	06/17/22 18:19 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 107		61876
Lead	21	mg/kg-dry		5	2	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Manganese	465	mg/kg-dry		5	2	SW6010B	06/17/22 18:19 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 107		61876
Molybdenum	1.8	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Nickel	4	mg/kg-dry	J	5	2	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Selenium	ND	mg/kg-dry		5	0.4	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Uranium	1.3	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Vanadium	22	mg/kg-dry		1	1	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
Zinc	213	mg/kg-dry	D	10	10	SW6020	06/27/22 13:47 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 59		61876
METALS, TOTAL												
Mercury	0.12	mg/kg-dry		0.10	0.0056	SW7471B	06/23/22 11:04 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 24		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Duplicate Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-035
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	67.3	wt%		0.2		D2974	06/23/22 14:16 / jjp			DRYING OVEN 2_220624B : 79		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Passed	1.3	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 25		R175974
3050 EXTRACTABLE METALS												
Aluminum	22600	mg/kg-dry	D	60	60	SW6010B	06/17/22 18:22 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 108		61876
Antimony	ND	mg/kg-dry		5	5	SW6020	06/28/22 08:39 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 132		61876
Arsenic	62	mg/kg-dry		5	1	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Barium	362	mg/kg-dry		5	2	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Beryllium	ND	mg/kg-dry		5	3	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Boron	8	mg/kg-dry		5	5	SW6010B	06/20/22 15:04 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220620B : 73		61876
Cadmium	17.9	mg/kg-dry		0.3	0.3	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Chromium	64	mg/kg-dry		10	10	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Cobalt	16	mg/kg-dry		6	6	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Copper	671	mg/kg-dry		10	10	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Iron	33500	mg/kg-dry	D	300	300	SW6010B	06/17/22 18:22 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 108		61876
Lead	172	mg/kg-dry		5	4	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Manganese	3970	mg/kg-dry		6	6	SW6010B	06/17/22 18:22 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 108		61876
Molybdenum	17	mg/kg-dry		5	2	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Nickel	37	mg/kg-dry		5	4	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Selenium	2	mg/kg-dry	J	5	1	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Silver	2	mg/kg-dry	J	5	1	SW6020	06/28/22 08:39 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 132		61876
Uranium	3.9	mg/kg-dry	J	5	0.2	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Vanadium	97	mg/kg-dry		3	3	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
Zinc	1800	mg/kg-dry	D	20	20	SW6020	06/27/22 13:49 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 60		61876
METALS, TOTAL												
Mercury	0.58	mg/kg-dry		0.10	0.013	SW7471B	06/23/22 11:06 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 25		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Duplicate Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-036
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	23.3	wt%		0.2		D2974	06/23/22 14:16 / jjp			DRYING OVEN 2_220624B : 82		PMOIST_220623_C
SIEVE ANALYSIS												
No. 230 (63 um), Retained	32.7	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 26		R175974
3050 EXTRACTABLE METALS												
Aluminum	4580	mg/kg-dry	D	20	20	SW6010B	06/17/22 18:26 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 109		61876
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 08:42 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 133		61876
Arsenic	13	mg/kg-dry		5	0.5	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Barium	94	mg/kg-dry		5	0.9	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 15:08 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220620B : 74		61876
Cadmium	1.0	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Chromium	13	mg/kg-dry		5	4	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Cobalt	4	mg/kg-dry	J	5	2	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Copper	57	mg/kg-dry		5	4	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Iron	16600	mg/kg-dry	D	100	100	SW6010B	06/17/22 18:26 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 109		61876
Lead	27	mg/kg-dry		5	2	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Manganese	510	mg/kg-dry		5	2	SW6010B	06/17/22 18:26 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 109		61876
Molybdenum	1.9	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Nickel	5	mg/kg-dry	J	5	2	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Selenium	ND	mg/kg-dry		5	0.5	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Uranium	2.2	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Vanadium	47	mg/kg-dry		1	1	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
Zinc	238	mg/kg-dry	D	10	10	SW6020	06/27/22 13:51 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 61		61876
METALS, TOTAL												
Mercury	0.05	mg/kg-dry	J	0.10	0.0057	SW7471B	06/23/22 11:08 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 26		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Duplicate Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22060326-037
Collection Date: 06/08/22 09:30
DateReceived: 06/09/22
Report Date: 07/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	20.2	wt%		0.2		D2974	06/23/22 14:16 / jjp			DRYING OVEN 2_220624B : 85		PMOIST_220623_C
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	10.2	wt%-wet		0.1		SSSA 15-2	06/13/22 11:00 / jjp			MISC SOILS_220613B : 27		R175974
3050 EXTRACTABLE METALS												
Aluminum	3570	mg/kg-dry	D	20	20	SW6010B	06/17/22 18:37 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 112		61876
Antimony	ND	mg/kg-dry		5	2	SW6020	06/28/22 08:44 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 134		61876
Arsenic	9	mg/kg-dry		5	0.5	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Barium	109	mg/kg-dry		5	0.9	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Beryllium	ND	mg/kg-dry		5	1	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Boron	ND	mg/kg-dry		5	2	SW6010B	06/20/22 15:12 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220620B : 75		61876
Cadmium	0.6	mg/kg-dry		0.2	0.1	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Chromium	9	mg/kg-dry		5	4	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Cobalt	3	mg/kg-dry	J	5	2	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Copper	37	mg/kg-dry		5	4	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Iron	6760	mg/kg-dry	D	100	100	SW6010B	06/17/22 18:37 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 112		61876
Lead	16	mg/kg-dry		5	2	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Manganese	407	mg/kg-dry		5	2	SW6010B	06/17/22 18:37 / sld	06/16/22 08:17	SW3050 B	ICP2-HE_220617A : 112		61876
Molybdenum	1.5	mg/kg-dry	J	5	0.8	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Nickel	5	mg/kg-dry	J	5	2	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Selenium	ND	mg/kg-dry		5	0.4	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Silver	ND	mg/kg-dry		5	2	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Uranium	1.1	mg/kg-dry	J	5	0.07	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Vanadium	15	mg/kg-dry		1	1	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
Zinc	144	mg/kg-dry	D	10	10	SW6020	06/27/22 13:53 / dck	06/16/22 08:17	SW3050 B	ICPMS205-H_220627B : 62		61876
METALS, TOTAL												
Mercury	0.03	mg/kg-dry	J	0.10	0.0055	SW7471B	06/23/22 11:22 / cfg	06/21/22 09:49	SW7471B	HGCV203-H_220623A : 33		61946

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 2200615waLL-hg205** **Date:** *14-Jul-22*

Run ID :Run Order: **HGCV205-H_220615A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**

Analysis Date: **06/15/22 10:41** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.100	0.0050	0.1	0	**100**	90	110				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **HGCV205-H_220615A: 10** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV1** Method: **E245.1**

Analysis Date: **06/15/22 10:44** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.101	0.0050	0.1	0	**101**	90	110				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **HGCV205-H_220615A: 26** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E245.1**

Analysis Date: **06/15/22 11:44** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.100	0.0050	0.1	0	**100**	90	110				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: 220623sa-hg203
Date: *14-Jul-22*

Run ID :Run Order: **HGCV203-H_220623A: 8** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW7471B**

Analysis Date: **06/23/22 10:22** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00095	0.50	0.001	0	**95**	90	110				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **HGCV203-H_220623A: 9** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW7471B**

Analysis Date: **06/23/22 10:24** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0025	0.50	0.0025	0	**101**	90	110				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: 42595
Date: *14-Jul-22*

Run ID :Run Order: **SEAL AA500_220614A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **06/14/22 10:47** Units: **mg/L** **Prep Info:** Prep Date: **8/7/2018** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.248	0.010	0.25	0	**99**	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: 50660
Date: *14-Jul-22*

Run ID :Run Order: **SEAL AA500_220614A: 36** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **06/14/22 11:11** Units: **mg/L** **Prep Info:** Prep Date: **3/20/2020** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.0997	0.010	0.1	0	**100**	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22060326
BatchID: 50868
Date: *14-Jul-22*

Run ID :Run Order: **FIA203-HE_220616B: 43** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **A4500 N-C**
Analysis Date: **06/16/22 10:48** Units: **mg/L** **Prep Info:** Prep Date: **4/8/2020** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.480	0.10	0.5	0	96	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61817** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220614A: 46** SampType: **Method Blank** Lab ID: **MB-61817** Method: **E200.7**

Analysis Date: **06/14/22 14:07** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.01	0.007									
Calcium	ND	0.1									
Magnesium	ND	0.05									
Potassium	ND	0.1									
Sodium	ND	0.1									

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Run ID :Run Order: **ICP2-HE_220614A: 47** SampType: **Laboratory Control Sample** Lab ID: **LCS-61817** Method: **E200.7**

Analysis Date: **06/14/22 14:11** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.481	0.050	0.5	0	**96**	85	115				
Calcium	25.2	1.0	25	0	**101**	85	115				
Magnesium	24.1	1.0	25	0	**96**	85	115				
Potassium	24.0	1.0	25	0	**96**	85	115				
Sodium	23.7	1.0	25	0	**95**	85	115				

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Run ID :Run Order: **ICP2-HE_220614A: 49** SampType: **Serial Dilution** Lab ID: **H22060326-001CDIL** Method: **E200.7**

Analysis Date: **06/14/22 14:19** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.0418	0.050		0		0	0	0.05368		10	N
Calcium	210	1.0		0		0	0	220.7	**4.9**	10	
Magnesium	11.3	1.0		0		0	0	11.37	**0.5**	10	
Potassium	15.2	1.0		0		0	0	14.13	**7.3**	10	
Sodium	50.3	1.0		0		0	0	46.13	**8.6**	10	

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61817** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220614A: 51** SampType: **Sample Matrix Spike** Lab ID: **H22060326-001CMS3** Method: **E200.7**

Analysis Date: **06/14/22 14:26** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.537	0.050	0.5	0.05368	**97**	70	130				
Calcium	234	1.0	25	220.7		70	130				A
Magnesium	36.4	1.0	25	11.37	**100**	70	130				
Potassium	40.6	1.0	25	14.13	**106**	70	130				
Sodium	75.0	1.0	25	46.13	**116**	70	130				

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Run ID :Run Order: **ICP2-HE_220614A: 52** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-001CMSD3** Method: **E200.7**

Analysis Date: **06/14/22 14:30** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.547	0.050	0.5	0.05368	**99**	70	130	0.5372	**1.7**	20	
Calcium	235	1.0	25	220.7		70	130	233.7	**0.4**	20	A
Magnesium	36.4	1.0	25	11.37	**100**	70	130	36.37	**0**	20	
Potassium	41.6	1.0	25	14.13	**110**	70	130	40.58	**2.4**	20	
Sodium	76.5	1.0	25	46.13	**121**	70	130	75.05	**1.9**	20	

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61817** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 190** SampType: **Method Blank** Lab ID: **MB-61817** Method: **E200.8**

Analysis Date: **06/14/22 23:05** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.006									
Antimony	ND	0.0002									
Arsenic	0.0005	0.0001									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00003									
Chromium	ND	0.0002									
Cobalt	ND	0.0003									
Copper	ND	0.0003									
Iron	ND	0.009									
Lead	ND	0.0001									
Manganese	0.0009	0.0003									
Molybdenum	ND	0.0002									
Nickel	ND	0.0002									
Selenium	ND	0.0001									
Silver	0.0001	0.00006									
Uranium	ND	0.00003									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Run ID :Run Order: **ICPMS205-H_220614B: 197** SampType: **Laboratory Control Sample** Lab ID: **LCS-61817** Method: **E200.8**

Analysis Date: **06/14/22 23:22** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.45	0.030	2.5	0	98	85	115				
Antimony	0.492	0.0010	0.5	0	98	85	115				
Arsenic	0.477	0.0010	0.5	0	95	85	115				
Barium	0.480	0.050	0.5	0	96	85	115				
Beryllium	0.239	0.0010	0.25	0	96	85	115				
Cadmium	0.245	0.0010	0.25	0	98	85	115				
Chromium	0.497	0.0050	0.5	0	99	85	115				
Cobalt	0.504	0.0050	0.5	0	101	85	115				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61817** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 197** SampType: **Laboratory Control Sample** Lab ID: **LCS-61817** Method: **E200.8**

Analysis Date: **06/14/22 23:22** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.480	0.0050	0.5	0	96	85	115				
Iron	2.52	0.020	2.5	0	101	85	115				
Lead	0.507	0.0010	0.5	0	101	85	115				
Manganese	2.58	0.0010	2.5	0	103	85	115				
Molybdenum	0.483	0.0010	0.5	0	97	85	115				
Nickel	0.484	0.0050	0.5	0	97	85	115				
Selenium	0.470	0.0010	0.5	0	94	85	115				
Silver	0.0464	0.0010	0.05	0	93	85	115				
Uranium	0.493	0.00030	0.5	0	99	85	115				
Vanadium	0.500	0.010	0.5	0	100	85	115				
Zinc	0.470	0.010	0.5	0	94	85	115				

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Run ID :Run Order: **ICPMS205-H_220614B: 198** SampType: **Sample Matrix Spike** Lab ID: **H22060326-001CMS3** Method: **E200.8**

Analysis Date: **06/14/22 23:24** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.62	0.030	2.5	0.1556	99	70	130				
Antimony	0.493	0.0010	0.5	0.0003491	99	70	130				
Arsenic	0.493	0.0010	0.5	0.003904	98	70	130				
Barium	0.517	0.050	0.5	0.03526	96	70	130				
Beryllium	0.231	0.0010	0.25	0	92	70	130				
Cadmium	0.238	0.0010	0.25	0.0001642	95	70	130				
Chromium	0.500	0.0050	0.5	0.0004081	100	70	130				
Cobalt	0.504	0.0050	0.5	0	101	70	130				
Copper	0.477	0.0050	0.5	0.007649	94	70	130				
Iron	2.88	0.020	2.5	0.341	102	70	130				
Lead	0.515	0.0010	0.5	0.001133	103	70	130				
Manganese	2.67	0.0010	2.5	0.07813	104	70	130				
Molybdenum	0.790	0.0010	0.5	0.2747	103	70	130				
Nickel	0.479	0.0050	0.5	0.0004596	96	70	130				
Selenium	0.465	0.0010	0.5	0.0009653	93	70	130				
Silver	0.0450	0.0010	0.05	0.00007456	90	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61817** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 198** SampType: **Sample Matrix Spike** Lab ID: **H22060326-001CMS3** Method: **E200.8**

Analysis Date: **06/14/22 23:24** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	0.519	0.00030	0.5	0.003583	103	70	130				
Vanadium	0.509	0.010	0.5	0.002874	101	70	130				
Zinc	0.469	0.010	0.5	0.02571	89	70	130				

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Run ID :Run Order: **ICPMS205-H_220614B: 199** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-001CMSD3** Method: **E200.8**

Analysis Date: **06/14/22 23:27** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.67	0.030	2.5	0.1556	101	70	130	2.62	1.9	20	
Antimony	0.499	0.0010	0.5	0.0003491	100	70	130	0.4931	1.3	20	
Arsenic	0.497	0.0010	0.5	0.003904	99	70	130	0.4928	0.8	20	
Barium	0.519	0.050	0.5	0.03526	97	70	130	0.5173	0.4	20	
Beryllium	0.232	0.0010	0.25	0	93	70	130	0.2308	0.4	20	
Cadmium	0.240	0.0010	0.25	0.0001642	96	70	130	0.2384	0.8	20	
Chromium	0.506	0.0050	0.5	0.0004081	101	70	130	0.5003	1.1	20	
Cobalt	0.509	0.0050	0.5	0	102	70	130	0.5041	1.0	20	
Copper	0.480	0.0050	0.5	0.007649	94	70	130	0.4766	0.6	20	
Iron	2.92	0.020	2.5	0.341	103	70	130	2.882	1.4	20	
Lead	0.526	0.0010	0.5	0.001133	105	70	130	0.515	2.1	20	
Manganese	2.71	0.0010	2.5	0.07813	105	70	130	2.671	1.4	20	
Molybdenum	0.799	0.0010	0.5	0.2747	105	70	130	0.7895	1.1	20	
Nickel	0.481	0.0050	0.5	0.0004596	96	70	130	0.4788	0.4	20	
Selenium	0.470	0.0010	0.5	0.0009653	94	70	130	0.465	1.2	20	
Silver	0.0456	0.0010	0.05	0.00007456	91	70	130	0.04497	1.4	20	
Uranium	0.524	0.00030	0.5	0.003583	104	70	130	0.5188	1.0	20	
Vanadium	0.514	0.010	0.5	0.002874	102	70	130	0.5089	1.1	20	
Zinc	0.476	0.010	0.5	0.02571	90	70	130	0.4694	1.3	20	

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: 61817
Date: *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220615C: 79** SampType: **Method Blank** Lab ID: **MB-61817** Method: **E200.8**

Analysis Date: **06/15/22 19:13** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.006									
Antimony	ND	0.0002									
Arsenic	ND	0.0001									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00003									
Chromium	ND	0.0002									
Cobalt	ND	0.0003									
Copper	ND	0.0003									
Iron	ND	0.009									
Lead	ND	0.0001									
Manganese	0.0009	0.0003									
Molybdenum	ND	0.0002									
Nickel	ND	0.0002									
Selenium	ND	0.0001									
Silver	ND	0.00006									
Uranium	ND	0.00003									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: 61823
Date: *14-Jul-22*

Run ID :Run Order: **SEAL AA500_220614A: 18** SampType: **Method Blank** Lab ID: **MB-61823** Method: **E365.1**

Analysis Date: **06/14/22 10:51** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.001									

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **SEAL AA500_220614A: 21** SampType: **Laboratory Control Sample** Lab ID: **LCS-61823** Method: **E365.1**

Analysis Date: **06/14/22 10:54** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.428	0.010	0.4	0	107	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **SEAL AA500_220614A: 105** SampType: **Sample Matrix Spike** Lab ID: **H22060326-006DMS** Method: **E365.1**

Analysis Date: **06/14/22 12:34** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.284	0.010	0.2	0.0677	108	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **SEAL AA500_220614A: 106** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-006DMSD** Method: **E365.1**

Analysis Date: **06/14/22 12:35** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.286	0.010	0.2	0.0677	109	90	110	0.2838	0.9	20	

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **SEAL AA500_220614A: 139** SampType: **Sample Matrix Spike** Lab ID: **H22060326-001DMS** Method: **E365.1**

Analysis Date: **06/14/22 13:15** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.279	0.010	0.2	0.0635	108	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61823** **Date:** *14-Jul-22*

Run ID :Run Order: **SEAL AA500_220614A: 139** SampType: **Sample Matrix Spike** Lab ID: **H22060326-001DMS** Method: **E365.1**

Analysis Date: **06/14/22 13:15** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **SEAL AA500_220614A: 140** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-001DMSD** Method: **E365.1**

Analysis Date: **06/14/22 13:16** Units: **mg/L** **Prep Info:** Prep Date: **6/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.258	0.010	0.2	0.0635	**97**	90	110	0.279	**7.7**	20	

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61851** **Date:** *14-Jul-22*

Run ID :Run Order: **HGCV205-H_220615A: 12** SampType: **Method Blank** Lab ID: **MB-61851** Method: **E245.1**

Analysis Date: **06/15/22 10:59** Units: **ug/L** **Prep Info:** Prep Date: **6/14/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.001									

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **HGCV205-H_220615A: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-61851** Method: **E245.1**

Analysis Date: **06/15/22 11:02** Units: **ug/L** **Prep Info:** Prep Date: **6/14/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0470	0.0050	0.05	0	94	90	110				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **HGCV205-H_220615A: 15** SampType: **Sample Matrix Spike** Lab ID: **H22060326-001BMS** Method: **E245.1**

Analysis Date: **06/15/22 11:09** Units: **ug/L** **Prep Info:** Prep Date: **6/14/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0525	0.0050	0.05	0.005486	94	70	130				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **HGCV205-H_220615A: 16** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-001BMSD** Method: **E245.1**

Analysis Date: **06/15/22 11:12** Units: **ug/L** **Prep Info:** Prep Date: **6/14/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0525	0.0050	0.05	0.005486	94	70	130	0.05247	0.1	20	

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: 61851
Date: *14-Jul-22*

Run ID :Run Order: **HGCV205-H_220615A: 30** SampType: **Sample Matrix Spike** Lab ID: **H22060326-006CMS** Method: **E245.1**

Analysis Date: **06/15/22 11:57** Units: **ug/L** **Prep Info:** Prep Date: **6/14/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0659	0.0050	0.05	0.0183	**95**	70	130				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **HGCV205-H_220615A: 31** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-006CMSD** Method: **E245.1**

Analysis Date: **06/15/22 12:00** Units: **ug/L** **Prep Info:** Prep Date: **6/14/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0679	0.0050	0.05	0.0183	**99**	70	130	0.06594	**3.0**	20	

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61861** **Date:** *14-Jul-22*

Run ID :Run Order: **FIA203-HE_220616B: 11** SampType: **Method Blank** Lab ID: **MB-61861** Method: **A4500 N-C**
Analysis Date: **06/16/22 10:10** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A**

Run ID :Run Order: **FIA203-HE_220616B: 17** SampType: **Laboratory Control Sample** Lab ID: **LCS-61861** Method: **A4500 N-C**
Analysis Date: **06/16/22 10:17** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	10.7	0.30	11.2	0	95	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A**

Run ID :Run Order: **FIA203-HE_220616B: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-61861** Method: **A4500 N-C**
Analysis Date: **06/16/22 10:24** Units: **mg/L** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.960	0.10	1	0	96	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A**

Run ID :Run Order: **FIA203-HE_220616B: 49** SampType: **Sample Matrix Spike** Lab ID: **H22060326-001AMS** Method: **A4500 N-C**
Analysis Date: **06/16/22 10:55** Units: **mg/L** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.74	0.10	1	0.8529	89	90	110				S

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A**

Run ID :Run Order: **FIA203-HE_220616B: 50** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-001AMSD** Method: **A4500 N-C**
Analysis Date: **06/16/22 10:56** Units: **mg/L** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.74	0.10	1	0.8529	89	90	110	1.744	0.3	20	S

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61862** **Date:** *14-Jul-22*

Run ID :Run Order: **FIA203-HE_220616B: 12** SampType: **Method Blank** Lab ID: **MB-61862** Method: **A4500 N-C**
Analysis Date: **06/16/22 10:11** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H22060326-009A, H22060326-010A**

Run ID :Run Order: **FIA203-HE_220616B: 18** SampType: **Laboratory Control Sample** Lab ID: **LCS-61862** Method: **A4500 N-C**
Analysis Date: **06/16/22 10:18** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	10.6	0.30	11.2	0	95	90	110				

Associated samples: **H22060326-009A, H22060326-010A**

Run ID :Run Order: **FIA203-HE_220616B: 24** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-61862** Method: **A4500 N-C**
Analysis Date: **06/16/22 10:25** Units: **mg/L** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.948	0.10	1	0	95	90	110				

Associated samples: **H22060326-009A, H22060326-010A**

Run ID :Run Order: **FIA203-HE_220616B: 62** SampType: **Sample Matrix Spike** Lab ID: **H22060326-009AMS** Method: **A4500 N-C**
Analysis Date: **06/16/22 11:10** Units: **mg/L** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.34	0.10	1	0.4501	89	90	110				S

Associated samples: **H22060326-009A, H22060326-010A**

Run ID :Run Order: **FIA203-HE_220616B: 63** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-009AMSD** Method: **A4500 N-C**
Analysis Date: **06/16/22 11:12** Units: **mg/L** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.31	0.10	1	0.4501	86	90	110	1.335	1.7	20	S

Associated samples: **H22060326-009A, H22060326-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22060326
BatchID: 61862
Date: *14-Jul-22*

Run ID :Run Order: **FIA203-HE_220616B: 78** SampType: **Sample Matrix Spike** Lab ID: **H22060440-007BMS** Method: **A4500 N-C**
Analysis Date: **06/16/22 11:29** Units: **mg/L** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.02	0.10	1	0.0989	**92**	90	110				

Associated samples: **H22060326-009A, H22060326-010A**

Run ID :Run Order: **FIA203-HE_220616B: 79** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060440-007BMSD** Method: **A4500 N-C**
Analysis Date: **06/16/22 11:30** Units: **mg/L** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.01	0.10	1	0.0989	**91**	90	110	1.017	**0.4**	20	

Associated samples: **H22060326-009A, H22060326-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61875** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220617A: 52** SampType: **Method Blank** Lab ID: **MB-61875** Method: **SW6010B**

Analysis Date: **06/17/22 14:31** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.8									
Iron	ND	20									
Manganese	ND	0.4									

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICP2-HE_220617A: 53** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-61875** Method: **SW6010B**

Analysis Date: **06/17/22 14:35** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	248	5.0	249.8	0	99	80	120				
Boron	47.1	1.0	49.95	0	94	80	120				
Iron	229	22	249.8	0	92	80	120				
Manganese	230	1.0	249.8	0	92	80	120				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICP2-HE_220617A: 54** SampType: **Laboratory Control Sample** Lab ID: **LCS-61875** Method: **SW6010B**

Analysis Date: **06/17/22 14:39** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9720	17	9830	0	99	63.5	122				
Boron	100	3.7	129	0	78	63.9	108				
Iron	14500	110	16300	0	89	71.9	118				
Manganese	400	1.8	434	0	92	74.4	123				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61875** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220617A: 59** SampType: **Serial Dilution** Lab ID: **H22060326-014ADIL** Method: **SW6010B**

Analysis Date: **06/17/22 14:57** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	26500	330		0		0	0	27020	**2.0**	10	
Boron	ND	72		0		0	0	15.75		10	
Iron	29400	2100		0		0	0	28690	**2.5**	10	
Manganese	1200	36		0		0	0	1177	**1.7**	10	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICP2-HE_220617A: 60** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22060326-014APDS** Method: **SW6010B**

Analysis Date: **06/17/22 15:01** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	33600	69	4853	27020		75	125				A
Boron	830	15	970.6	15.75	**84**	75	125				
Iron	34600	430	4853	28690		75	125				A
Manganese	5710	7.4	4853	1177	**93**	75	125				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICP2-HE_220617A: 63** SampType: **Sample Matrix Spike** Lab ID: **H22060326-014AMS** Method: **SW6010B**

Analysis Date: **06/17/22 15:12** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	33600	66	930.1	27020		75	125				A
Boron	176	14	186	15.75	**86**	75	125				
Iron	32100	410	930.1	28690		75	125				A
Manganese	2190	7.1	930.1	1177	**109**	75	125				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61875** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220617A: 64** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-014AMSD** Method: **SW6010B**

Analysis Date: **06/17/22 15:16** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	31100	67	946	27020		75	125	33610	**7.6**	20	A
Boron	175	14	189.2	15.75	**84**	75	125	176.2	**0.6**	20	
Iron	29700	420	946	28690		75	125	32100	**7.7**	20	A
Manganese	2060	7.1	946	1177	**94**	75	125	2193	**6.0**	20	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICP2-HE_220620B: 21** SampType: **Method Blank** Lab ID: **MB-61875** Method: **SW6010B**

Analysis Date: **06/20/22 11:53** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.8									
Iron	ND	20									
Manganese	ND	0.4									

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICP2-HE_220620B: 22** SampType: **Laboratory Control Sample** Lab ID: **LCS-61875** Method: **SW6010B**

Analysis Date: **06/20/22 11:56** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8920	6.9	9830	0	**91**	63.5	122				
Boron	99.1	1.5	129	0	**77**	63.9	108				
Iron	13100	43	16300	0	**81**	71.9	118				
Manganese	349	1.0	434	0	**80**	74.4	123				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61875** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220620B: 29** SampType: **Serial Dilution** Lab ID: **H22060326-014ADIL** Method: **SW6010B**

Analysis Date: **06/20/22 12:22** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	29100	130		0		0	0	26540	9.3	10	
Boron	ND	29		0		0	0	15.88		10	
Iron	33500	830		0		0	0	29230	14	10	R
Manganese	1300	14		0		0	0	1150	13	10	R

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICP2-HE_220620B: 30** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22060326-014APDS** Method: **SW6010B**

Analysis Date: **06/20/22 12:26** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	29100	28	1941	26540		75	125				A
Boron	357	5.9	388.2	15.88	88	75	125				
Iron	31500	170	1941	29230		75	125				A
Manganese	2860	2.9	1941	1150	88	75	125				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICP2-HE_220620B: 31** SampType: **Sample Matrix Spike** Lab ID: **H22060326-014AMS** Method: **SW6010B**

Analysis Date: **06/20/22 12:29** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	31400	26	930.1	26540		75	125				A
Boron	184	5.7	186	15.88	90	75	125				
Iron	29900	160	930.1	29230		75	125				A
Manganese	1950	2.8	930.1	1150	86	75	125				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61875** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220620B: 32** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-014AMSD** Method: **SW6010B**

Analysis Date: **06/20/22 12:33** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	30400	27	946	26540		75	125	31370	**3.1**	20	A
Boron	184	5.7	189.2	15.88	**89**	75	125	183.7	**0.3**	20	
Iron	29600	170	946	29230		75	125	29930	**1.1**	20	A
Manganese	1960	2.9	946	1150	**86**	75	125	1951	**0.6**	20	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61875** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 23** SampType: **Method Blank** Lab ID: **MB-61875** Method: **SW6020**

Analysis Date: **06/27/22 12:30** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	8									
Arsenic	ND	0.4									
Barium	ND	0.7									
Beryllium	ND	1									
Cadmium	ND	0.09									
Chromium	ND	3									
Cobalt	ND	2									
Copper	ND	3									
Lead	ND	1									
Molybdenum	ND	0.6									
Nickel	ND	1									
Selenium	ND	0.3									
Silver	ND	2									
Uranium	ND	0.05									
Vanadium	ND	0.8									
Zinc	ND	8									

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICPMS205-H_220627B: 28** SampType: **Serial Dilution** Lab ID: **H22060326-014ADIL** Method: **SW6020**

Analysis Date: **06/27/22 12:40** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	150		0		0	0	0		10	
Arsenic	58.4	7.4		0		0	0	59.69		10	N
Barium	287	13		0		0	0	284.6	0.9	10	
Beryllium	ND	21		0		0	0	0		10	
Cadmium	10.1	1.7		0		0	0	9.762		10	N
Chromium	ND	58		0		0	0	43.06		10	
Cobalt	ND	34		0		0	0	13.09		10	
Copper	1100	60		0		0	0	1116	1.4	10	
Lead	246	24		0		0	0	245.6	0.1	10	
Molybdenum	51.7	11		0		0	0	51.9		10	N

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61875** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 28** SampType: **Serial Dilution** Lab ID: **H22060326-014ADIL** Method: **SW6020**

Analysis Date: **06/27/22 12:40** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	ND	24		0		0	0	21.78		10	
Selenium	ND	6.5		0		0	0	2.575		10	
Silver	ND	34		0		0	0	0		10	
Uranium	4.67	1.0		0		0	0	4.717		10	N
Vanadium	75.8	15		0		0	0	79.75		10	N
Zinc	1980	150		0		0	0	1909	3.4	10	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICPMS205-H_220627B: 33** SampType: **Laboratory Control Sample** Lab ID: **LCS-61875** Method: **SW6020**

Analysis Date: **06/27/22 12:51** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	61.9	7.6	240	0	26	12.8	37.2				
Arsenic	168	1.0	196	0	86	66.4	104				
Barium	191	1.0	187	0	102	71.8	124				
Beryllium	75.0	1.1	83.6	0	90	70	115				
Cadmium	98.2	1.0	99	0	99	79.2	121				
Chromium	113	3.0	117	0	97	72.5	115				
Cobalt	110	1.8	108	0	101	79.4	126				
Copper	127	3.1	137	0	93	73.9	113				
Lead	107	1.2	105	0	102	71.6	128				
Molybdenum	121	1.0	127	0	95	61.3	124				
Nickel	83.0	1.2	86.2	0	96	70.6	116				
Selenium	175	1.0	205	0	85	72.3	111				
Silver	44.4	1.8	42.1	0	105	70.8	133				
Uranium	105	1.0	99.9	0	105	80.1	120.1				
Vanadium	110	1.0	114	0	97	73	116				
Zinc	234	7.5	231	0	101	83.1	125				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61875** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 34** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-61875** Method: **SW6020**

Analysis Date: **06/27/22 12:53** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	54.5	7.9	49.95	0	109	80	120				
Arsenic	52.7	1.0	49.95	0	106	80	120				
Barium	54.6	1.0	49.95	0	109	80	120				
Beryllium	25.9	1.1	24.98	0	104	80	120				
Cadmium	26.7	1.0	24.98	0	107	80	120				
Chromium	53.7	3.1	49.95	0	107	80	120				
Cobalt	52.6	1.8	49.95	0	105	80	120				
Copper	53.6	3.2	49.95	0	107	80	120				
Lead	52.8	1.3	49.95	0	106	80	120				
Molybdenum	52.3	1.0	49.95	0	105	80	120				
Nickel	53.4	1.2	49.95	0	107	80	120				
Selenium	46.0	1.0	49.95	0	92	80	120				
Silver	28.0	1.8	24.98	0	112	80	120				
Uranium	55.1	1.0	49.95	0	110	80	120				
Vanadium	52.5	1.0	49.95	0	105	80	120				
Zinc	51.2	7.7	49.95	0	102	80	120				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICPMS205-H_220627B: 35** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22060326-014APDS1** Method: **SW6020**

Analysis Date: **06/27/22 12:55** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	51.3	30	47.12	0	109	75	125				
Arsenic	106	1.5	47.12	59.69	99	75	125				
Barium	343	2.6	47.12	284.6		75	125				A
Beryllium	49.7	4.2	47.12	0	105	75	125				
Cadmium	59.6	1.0	47.12	9.762	106	75	125				
Chromium	93.3	12	47.12	43.06	107	75	125				
Cobalt	64.2	6.9	47.12	13.09	108	75	125				
Copper	1170	12	47.12	1116		75	125				A
Lead	299	4.8	47.12	245.6		75	125				A
Molybdenum	103	2.3	47.12	51.9	109	75	125				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61875** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 35** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22060326-014APDS1** Method: **SW6020**

Analysis Date: **06/27/22 12:55** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	73.2	4.7	47.12	21.78	109	75	125				
Selenium	48.3	1.3	47.12	2.575	97	75	125				
Silver	24.5	6.8	18.85	0	130	75	125				S
Uranium	54.6	1.0	47.12	4.717	106	75	125				
Vanadium	128	3.1	47.12	79.75	102	75	125				
Zinc	1940	29	47.12	1909		75	125				A

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Run ID :Run Order: **ICPMS205-H_220627B: 36** SampType: **Sample Matrix Spike** Lab ID: **H22060326-014AMS** Method: **SW6020**

Analysis Date: **06/27/22 12:57** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	107	29	186	0	57	75	125				S
Arsenic	251	1.5	186	59.69	103	75	125				
Barium	482	2.6	186	284.6	106	75	125				
Beryllium	93.5	4.1	93.01	0	101	75	125				
Cadmium	106	1.0	93.01	9.762	104	75	125				
Chromium	245	12	186	43.06	108	75	125				
Cobalt	205	6.8	186	13.09	103	75	125				
Copper	1310	12	186	1116		75	125				A
Lead	446	4.8	186	245.6	108	75	125				
Molybdenum	241	2.2	186	51.9	102	75	125				
Nickel	219	4.6	186	21.78	106	75	125				
Selenium	170	1.3	186	2.575	90	75	125				
Silver	104	6.8	93.01	0	112	75	125				
Uranium	205	1.0	186	4.717	108	75	125				
Vanadium	273	3.0	186	79.75	104	75	125				
Zinc	2050	29	186	1909		75	125				A

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61875** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 37** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-014AMSD** Method: **SW6020**

Analysis Date: **06/27/22 13:00** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	114	30	189.2	0	60	75	125	106.9	6.1	20	S
Arsenic	257	1.5	189.2	59.69	104	75	125	250.6	2.5	20	
Barium	470	2.6	189.2	284.6	98	75	125	482.3	2.5	20	
Beryllium	93.0	4.2	94.6	0	98	75	125	93.48	0.5	20	
Cadmium	109	1.0	94.6	9.762	105	75	125	106.1	2.4	20	
Chromium	244	12	189.2	43.06	106	75	125	244.9	0.5	20	
Cobalt	207	6.9	189.2	13.09	103	75	125	204.6	1.4	20	
Copper	1330	12	189.2	1116		75	125	1306	1.6	20	A
Lead	453	4.8	189.2	245.6	109	75	125	445.6	1.6	20	
Molybdenum	246	2.3	189.2	51.9	103	75	125	241.3	2.0	20	
Nickel	222	4.7	189.2	21.78	106	75	125	218.7	1.3	20	
Selenium	170	1.3	189.2	2.575	88	75	125	170.5	0.5	20	
Silver	105	6.8	94.6	0	111	75	125	103.9	1.5	20	
Uranium	211	1.0	189.2	4.717	109	75	125	204.7	2.8	20	
Vanadium	276	3.1	189.2	79.75	104	75	125	273.1	1.1	20	
Zinc	2100	29	189.2	1909		75	125	2055	2.1	20	A

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61876** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220617A: 93** SampType: **Method Blank** Lab ID: **MB-61876** Method: **SW6010B**

Analysis Date: **06/17/22 17:27** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.7									
Iron	ND	20									
Manganese	ND	0.4									

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220617A: 94** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-61876** Method: **SW6010B**

Analysis Date: **06/17/22 17:31** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	243	5.0	242.5	0	**100**	80	120				
Boron	47.8	1.0	48.5	0	**98**	80	120				
Iron	242	21	242.5	0	**100**	80	120				
Manganese	239	1.0	242.5	0	**99**	80	120				

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220617A: 95** SampType: **Laboratory Control Sample** Lab ID: **LCS-61876** Method: **SW6010B**

Analysis Date: **06/17/22 17:34** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9830	17	9830	0	**100**	63.5	122				
Boron	113	3.7	129	0	**88**	63.9	108				
Iron	15300	110	16300	0	**94**	71.9	118				
Manganese	412	1.9	434	0	**95**	74.4	123				

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220617A: 100** SampType: **Serial Dilution** Lab ID: **H22060326-030ADIL** Method: **SW6010B**

Analysis Date: **06/17/22 17:53** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4640	120		0		0	0	4759	**2.5**	10	
Boron	ND	25		0		0	0	0		10	
Iron	31800	720		0		0	0	31710	**0.1**	10	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61876** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220617A: 100** SampType: **Serial Dilution** Lab ID: **H22060326-030ADIL** Method: **SW6010B**

Analysis Date: **06/17/22 17:53** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	772	12		0		0	0	784	1.6	10	

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220617A: 101** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22060326-030APDS** Method: **SW6010B**

Analysis Date: **06/17/22 17:57** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	6660	24	1675	4759	114	75	125				
Boron	301	5.1	335.1	0	90	75	125				
Iron	34300	150	1675	31710		75	125				A
Manganese	2460	2.5	1675	784	100	75	125				

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220617A: 102** SampType: **Sample Matrix Spike** Lab ID: **H22060326-030AMS** Method: **SW6010B**

Analysis Date: **06/17/22 18:00** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	6000	23	327.2	4759		75	125				A
Boron	58.4	5.0	65.44	0	89	75	125				
Iron	29500	140	327.2	31710		75	125				A
Manganese	1370	2.5	327.2	784	180	75	125				S

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220617A: 103** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-030AMSD** Method: **SW6010B**

Analysis Date: **06/17/22 18:04** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5990	23	330.4	4759		75	125	6000	0.2	20	A
Boron	63.3	5.0	66.08	0	96	75	125	58.37	8.1	20	
Iron	28200	150	330.4	31710		75	125	29510	4.6	20	A
Manganese	1110	2.5	330.4	784	97	75	125	1372	22	20	R

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61876** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220620B: 59** SampType: **Method Blank** Lab ID: **MB-61876** Method: **SW6010B**

Analysis Date: **06/20/22 14:13** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.7									
Iron	ND	20									
Manganese	ND	0.4									

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220620B: 60** SampType: **Laboratory Control Sample** Lab ID: **LCS-61876** Method: **SW6010B**

Analysis Date: **06/20/22 14:17** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8890	6.9	9830	0	90	63.5	122				
Boron	98.1	1.5	129	0	76	63.9	108				
Iron	13000	43	16300	0	80	71.9	118				
Manganese	348	1.0	434	0	80	74.4	123				

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220620B: 63** SampType: **Serial Dilution** Lab ID: **H22060326-030ADIL** Method: **SW6010B**

Analysis Date: **06/20/22 14:28** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4760	46		0		0	0	4521	5.1	10	
Boron	ND	9.9		0		0	0	0		10	
Iron	31600	290		0		0	0	28590	10	10	R
Manganese	766	4.9		0		0	0	708.1	7.8	10	

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220620B: 64** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22060326-030APDS** Method: **SW6010B**

Analysis Date: **06/20/22 14:32** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4090	7.4	522.2	3523		75	125				A
Boron	96.2	1.6	104.4	0	92	75	125				
Iron	22700	46	522.2	22280		75	125				A

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: 61876
Date: *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220620B: 64** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22060326-030APDS** Method: **SW6010B**

Analysis Date: **06/20/22 14:32** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	1020	1.0	522.2	551.8	89	75	125				

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220620B: 65** SampType: **Sample Matrix Spike** Lab ID: **H22060326-030AMS** Method: **SW6010B**

Analysis Date: **06/20/22 14:35** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5590	9.3	327.2	4521		75	125				A
Boron	61.7	2.0	65.44	0	94	75	125				
Iron	25500	58	327.2	28590		75	125				A
Manganese	1190	1.0	327.2	708.1	147	75	125				S

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220620B: 66** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-030AMSD** Method: **SW6010B**

Analysis Date: **06/20/22 14:39** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5740	9.4	330.4	4521		75	125	5590	2.6	20	A
Boron	62.5	2.0	66.08	0	95	75	125	61.72	1.3	20	
Iron	25200	59	330.4	28590		75	125	25480	1.2	20	A
Manganese	994	1.0	330.4	708.1	86	75	125	1190	18	20	

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22060326
BatchID: 61876
Date: *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 52** SampType: **Method Blank** Lab ID: **MB-61876** Method: **SW6020**
Analysis Date: **06/27/22 13:32** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	8									
Arsenic	ND	0.4									
Barium	ND	0.7									
Beryllium	ND	1									
Cadmium	ND	0.09									
Chromium	ND	3									
Cobalt	ND	2									
Copper	ND	3									
Lead	ND	1									
Molybdenum	ND	0.6									
Nickel	ND	1									
Selenium	ND	0.3									
Silver	ND	2									
Uranium	ND	0.05									
Vanadium	ND	0.8									
Zinc	ND	8									

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICPMS205-H_220627B: 55** SampType: **Serial Dilution** Lab ID: **H22060326-030ADIL** Method: **SW6020**
Analysis Date: **06/27/22 13:38** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	51		0		0	0	0		10	
Arsenic	23.7	2.6		0		0	0	23.4		10	N
Barium	90.5	4.5		0		0	0	92.09	1.8	10	
Beryllium	ND	7.2		0		0	0	0		10	
Cadmium	1.25	1.0		0		0	0	1.263		10	N
Chromium	21.9	20		0		0	0	22.08		10	N
Cobalt	ND	12		0		0	0	4.775		10	
Copper	88.2	21		0		0	0	86.92		10	N
Lead	28.6	8.4		0		0	0	28.94		10	N
Molybdenum	ND	3.9		0		0	0	2.9		10	
Nickel	ND	8.1		0		0	0	5.53		10	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61876** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 55** SampType: **Serial Dilution** Lab ID: **H22060326-030ADIL** Method: **SW6020**

Analysis Date: **06/27/22 13:38** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	2.2		0		0	0	0		10	
Silver	ND	12		0		0	0	0		10	
Uranium	9.80	1.0		0		0	0	9.918	1.2	10	
Vanadium	95.4	5.3		0		0	0	95.77	0.3	10	
Zinc	383	50		0		0	0	365.6		10	N

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICPMS205-H_220627B: 63** SampType: **Laboratory Control Sample** Lab ID: **LCS-61876** Method: **SW6020**

Analysis Date: **06/27/22 13:56** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	62.1	7.7	240	0	26	12.8	37.2				
Arsenic	166	1.0	196	0	84	66.4	104				
Barium	194	1.0	187	0	104	71.8	124				
Beryllium	75.0	1.1	83.6	0	90	70	115				
Cadmium	98.7	1.0	99	0	100	79.2	121				
Chromium	112	3.0	117	0	96	72.5	115				
Cobalt	110	1.8	108	0	101	79.4	126				
Copper	127	3.1	137	0	92	73.9	113				
Lead	103	1.3	105	0	98	71.6	128				
Molybdenum	122	1.0	127	0	96	61.3	124				
Nickel	82.6	1.2	86.2	0	96	70.6	116				
Selenium	176	1.0	205	0	86	72.3	111				
Silver	43.4	1.8	42.1	0	103	70.8	133				
Uranium	106	1.0	99.9	0	106	80.1	120.1				
Vanadium	110	1.0	114	0	96	73	116				
Zinc	230	7.5	231	0	99	83.1	125				

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61876** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 64** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-61876** Method: **SW6020**

Analysis Date: **06/27/22 13:58** Units: **mg/kg** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	50.6	7.7	48.5	0	104	80	120				
Arsenic	49.9	1.0	48.5	0	103	80	120				
Barium	51.5	1.0	48.5	0	106	80	120				
Beryllium	24.7	1.1	24.25	0	102	80	120				
Cadmium	24.8	1.0	24.25	0	102	80	120				
Chromium	49.9	3.0	48.5	0	103	80	120				
Cobalt	49.4	1.8	48.5	0	102	80	120				
Copper	50.7	3.1	48.5	0	105	80	120				
Lead	49.6	1.2	48.5	0	102	80	120				
Molybdenum	48.2	1.0	48.5	0	99	80	120				
Nickel	50.9	1.2	48.5	0	105	80	120				
Selenium	43.4	1.0	48.5	0	89	80	120				
Silver	26.3	1.8	24.25	0	108	80	120				
Uranium	50.1	1.0	48.5	0	103	80	120				
Vanadium	49.2	1.0	48.5	0	101	80	120				
Zinc	47.1	7.5	48.5	0	97	80	120				

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICPMS205-H_220627B: 65** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22060326-030APDS1** Method: **SW6020**

Analysis Date: **06/27/22 14:00** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.5	10	16.26	0	107	75	125				
Arsenic	39.0	1.0	16.26	23.4	96	75	125				
Barium	106	1.0	16.26	92.09		75	125				A
Beryllium	16.3	1.4	16.26	0	100	75	125				
Cadmium	18.0	1.0	16.26	1.263	103	75	125				
Chromium	37.8	4.0	16.26	22.08	97	75	125				
Cobalt	21.7	2.4	16.26	4.775	104	75	125				
Copper	100	4.2	16.26	86.92		75	125				A
Lead	44.7	1.7	16.26	28.94	97	75	125				
Molybdenum	19.9	1.0	16.26	2.9	105	75	125				
Nickel	22.5	1.6	16.26	5.53	104	75	125				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22060326 **BatchID: 61876** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 65** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22060326-030APDS1** Method: **SW6020**
Analysis Date: **06/27/22 14:00** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	15.2	1.0	16.26	0	93	75	125				
Silver	7.66	2.4	6.506	0	118	75	125				
Uranium	26.7	1.0	16.26	9.918	103	75	125				
Vanadium	109	1.1	16.26	95.77		75	125				A
Zinc	366	10	16.26	365.6		75	125				A

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICPMS205-H_220627B: 66** SampType: **Sample Matrix Spike** Lab ID: **H22060326-030AMS** Method: **SW6020**
Analysis Date: **06/27/22 14:02** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	46.5	10	65.44	0	71	75	125				S
Arsenic	85.6	1.0	65.44	23.4	95	75	125				
Barium	167	1.0	65.44	92.09	115	75	125				
Beryllium	32.1	1.4	32.72	0	98	75	125				
Cadmium	33.8	1.0	32.72	1.263	99	75	125				
Chromium	86.0	4.1	65.44	22.08	98	75	125				
Cobalt	69.6	2.4	65.44	4.775	99	75	125				
Copper	134	4.2	65.44	86.92	71	75	125				S
Lead	144	1.7	65.44	28.94	175	75	125				S
Molybdenum	67.0	1.0	65.44	2.9	98	75	125				
Nickel	72.0	1.6	65.44	5.53	102	75	125				
Selenium	58.2	1.0	65.44	0	89	75	125				
Silver	35.8	2.4	32.72	0	109	75	125				
Uranium	77.4	1.0	65.44	9.918	103	75	125				
Vanadium	151	1.1	65.44	95.77	84	75	125				
Zinc	328	10	65.44	365.6		75	125				A

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61876** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 67** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-030AMSD** Method: **SW6020**

Analysis Date: **06/27/22 14:04** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method: **SW3050 B**

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.3	10	66.08	0	73	75	125	46.52	3.8	20	S
Arsenic	80.1	1.0	66.08	23.4	86	75	125	85.57	6.6	20	
Barium	174	1.0	66.08	92.09	124	75	125	167.4	3.9	20	
Beryllium	33.2	1.5	33.04	0	100	75	125	32.11	3.4	20	
Cadmium	34.1	1.0	33.04	1.263	99	75	125	33.8	1.0	20	
Chromium	85.2	4.1	66.08	22.08	95	75	125	85.96	0.9	20	
Cobalt	69.5	2.4	66.08	4.775	98	75	125	69.57	0.1	20	
Copper	127	4.2	66.08	86.92	60	75	125	133.5	5.1	20	S
Lead	96.2	1.7	66.08	28.94	102	75	125	143.8	40	20	R
Molybdenum	67.4	1.0	66.08	2.9	98	75	125	66.98	0.7	20	
Nickel	71.6	1.7	66.08	5.53	100	75	125	72	0.6	20	
Selenium	59.4	1.0	66.08	0	90	75	125	58.23	2.0	20	
Silver	34.9	2.4	33.04	0	106	75	125	35.77	2.5	20	
Uranium	90.2	1.0	66.08	9.918	121	75	125	77.44	15	20	
Vanadium	150	1.1	66.08	95.77	82	75	125	151	0.8	20	
Zinc	302	10	66.08	365.6		75	125	328.2	8.3	20	A

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICPMS205-H_220627B: 126** SampType: **Serial Dilution** Lab ID: **H22060326-030ADIL** Method: **SW6020**

Analysis Date: **06/28/22 08:27** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10		0		0	0	0		10	
Arsenic	24.6	1.0		0		0	0	18.75	27	10	R
Barium	95.8	1.0		0		0	0	89.91	6.3	10	
Beryllium	ND	1.4		0		0	0	0		10	
Cadmium	1.20	1.0		0		0	0	1.051		10	N
Chromium	20.5	4.0		0		0	0	17.11		10	N
Cobalt	4.47	2.4		0		0	0	3.614		10	N
Copper	80.8	4.2		0		0	0	64.5	22	10	R
Lead	29.5	1.7		0		0	0	27.66	6.4	10	
Molybdenum	2.84	1.0		0		0	0	2.644		10	N
Nickel	5.26	1.6		0		0	0	4.133		10	N

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61876** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 126** SampType: **Serial Dilution** Lab ID: **H22060326-030ADIL** Method: **SW6020**

Analysis Date: **06/28/22 08:27** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/16/2022** Prep Method:

Analytes 16	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	1.0		0		0	0	0.1275		10	
Silver	ND	2.4		0		0	0	0		10	
Uranium	9.28	1.0		0		0	0	8.744	6.0	10	
Vanadium	92.1	1.1		0		0	0	77.42	17	10	R
Zinc	329	10		0		0	0	243.3	30	10	R

Associated samples: **H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61946** **Date:** *14-Jul-22*

Run ID :Run Order: **HGCV203-H_220623A: 11** SampType: **Method Blank** Lab ID: **MB-61946** Method: **SW7471B**

Analysis Date: **06/23/22 10:30** Units: **mg/kg** **Prep Info:** Prep Date: **6/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.004									

Associated samples: **H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **HGCV203-H_220623A: 12** SampType: **Laboratory Control Sample** Lab ID: **LCS-61946** Method: **SW7471B**

Analysis Date: **06/23/22 10:32** Units: **mg/kg** **Prep Info:** Prep Date: **6/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.3	0.50	5	0	86	71	126.4				

Associated samples: **H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **HGCV203-H_220623A: 13** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-61946** Method: **SW7471B**

Analysis Date: **06/23/22 10:36** Units: **mg/kg** **Prep Info:** Prep Date: **6/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.21	0.50	0.2	0	104	80	120				

Associated samples: **H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **HGCV203-H_220623A: 16** SampType: **Sample Matrix Spike** Lab ID: **H22060326-027AMS** Method: **SW7471B**

Analysis Date: **06/23/22 10:45** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.95	0.50	0.2864	0.5563	139	80	120				SE

Associated samples: **H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **HGCV203-H_220623A: 17** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-027AMSD** Method: **SW7471B**

Analysis Date: **06/23/22 10:48** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.79	0.50	0.2864	0.5563	80	80	120	0.9534	19	20	E

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61946** **Date:** *14-Jul-22*

Run ID :Run Order: **HGCV203-H_220623A: 17** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-027AMSD** Method: **SW7471B**

Analysis Date: **06/23/22 10:48** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **HGCV203-H_220623A: 31** SampType: **Sample Matrix Spike** Lab ID: **H22060326-027AMS** Method: **SW7471B**

Analysis Date: **06/23/22 11:18** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.96	0.50	0.2864	0.5527	**143**	80	120				SE

Associated samples: **H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **HGCV203-H_220623A: 32** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-027AMSD** Method: **SW7471B**

Analysis Date: **06/23/22 11:20** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.80	0.50	0.2864	0.5527	**87**	80	120	0.9615	**18**	20	E

Associated samples: **H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61978** **Date:** *14-Jul-22*

Run ID :Run Order: **HGCV203-H_220623A: 42** SampType: **Method Blank** Lab ID: **MB-61978** Method: **SW7471B**
Analysis Date: **06/23/22 11:47** Units: **mg/kg** **Prep Info:** Prep Date: **6/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.004									

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A**

Run ID :Run Order: **HGCV203-H_220623A: 43** SampType: **Laboratory Control Sample** Lab ID: **LCS-61978** Method: **SW7471B**
Analysis Date: **06/23/22 11:49** Units: **mg/kg** **Prep Info:** Prep Date: **6/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.8	0.50	5	0	116	71	126.4				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A**

Run ID :Run Order: **HGCV203-H_220623A: 44** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-61978** Method: **SW7471B**
Analysis Date: **06/23/22 11:51** Units: **mg/kg** **Prep Info:** Prep Date: **6/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.21	0.50	0.2	0	104	80	120				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A**

Run ID :Run Order: **HGCV203-H_220623A: 49** SampType: **Serial Dilution** Lab ID: **H22060326-014ADIL** Method: **SW7471B**
Analysis Date: **06/23/22 12:01** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/22/2022** Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.2	0.19		0		0	0	1.141	2.9	10	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A**

Run ID :Run Order: **HGCV203-H_220623A: 50** SampType: **Sample Matrix Spike** Lab ID: **H22060326-014AMS** Method: **SW7471B**
Analysis Date: **06/23/22 12:04** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.7	0.50	0.7419	1.141	79	80	120				SE

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: 61978** **Date:** *14-Jul-22*

Run ID :Run Order: **HGCV203-H_220623A: 50** SampType: **Sample Matrix Spike** Lab ID: **H22060326-014AMS** Method: **SW7471B**

Analysis Date: **06/23/22 12:04** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A**

Run ID :Run Order: **HGCV203-H_220623A: 51** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-014AMSD** Method: **SW7471B**

Analysis Date: **06/23/22 12:06** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.8	0.050	0.7269	1.141	87	80	120	1.728	2.5	20	E

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A**

Run ID :Run Order: **HGCV203-H_220623A: 64** SampType: **Serial Dilution** Lab ID: **H22060326-024ADIL** Method: **SW7471B**

Analysis Date: **06/23/22 12:32** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/22/2022** Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.094	0.066		0		0	0	0.08289	12	10	R

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A**

Run ID :Run Order: **HGCV203-H_220623A: 65** SampType: **Sample Matrix Spike** Lab ID: **H22060326-024AMS** Method: **SW7471B**

Analysis Date: **06/23/22 12:34** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.41	0.50	0.2698	0.08289	120	80	120				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A**

Run ID :Run Order: **HGCV203-H_220623A: 66** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-024AMSD** Method: **SW7471B**

Analysis Date: **06/23/22 12:36** Units: **mg/kg-dry** **Prep Info:** Prep Date: **6/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.35	0.050	0.2644	0.08289	100	80	120	0.4075	16	20	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID:** PMOIST_220623_C **Date:** *14-Jul-22*

Run ID :Run Order: **SOIL DRYING OVEN 2_220624B: 2** SampType: **Sample Duplicate** Lab ID: **H22060326-017A DUP** Method: **D2974**

Analysis Date: **06/23/22 14:13** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	58.2	0.20		0				69.96	18	20	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **SOIL DRYING OVEN 2_220624B: 2** SampType: **Sample Duplicate** Lab ID: **H22060326-017A DUP** Method: **D2974**

Analysis Date: **06/23/22 14:13** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	58.2	0.20		0				69.96	18	20	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **SOIL DRYING OVEN 2_220624B: 5** SampType: **Sample Duplicate** Lab ID: **H22060326-027A DUP** Method: **D2974**

Analysis Date: **06/23/22 14:14** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	30.3	0.20		0				30.16	0.4	20	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **SOIL DRYING OVEN 2_220624B: 5** SampType: **Sample Duplicate** Lab ID: **H22060326-027A DUP** Method: **D2974**

Analysis Date: **06/23/22 14:14** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	30.3	0.20		0				30.16	0.4	20	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID:** PMOIST_220623_C **Date:** *14-Jul-22*

Run ID :Run Order: **SOIL DRYING OVEN 2_220624B: 8** SampType: **Sample Duplicate** Lab ID: **H22060326-037A DUP** Method: **D2974**

Analysis Date: **06/23/22 14:16** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	21.7	0.20		0				20.2	**7.3**	20	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **SOIL DRYING OVEN 2_220624B: 8** SampType: **Sample Duplicate** Lab ID: **H22060326-037A DUP** Method: **D2974**

Analysis Date: **06/23/22 14:16** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	21.7	0.20		0				20.2	**7.3**	20	

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175563** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220610A: 29** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **06/10/22 16:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.792	0.10	0.8	0	99	95	105				
Magnesium	39.6	1.0	40	0	99	95	105				
Potassium	38.7	1.0	40	0	97	95	105				
Sodium	38.5	1.0	40	0	96	95	105				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 30** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **06/10/22 16:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.62	0.10	2.5	0	105	95	105				
Magnesium	25.1	1.0	25	0	100	95	105				
Potassium	24.2	1.0	25	0	97	95	105				
Sodium	24.0	1.0	25	0	96	95	105				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 31** SampType: **Continuing Calibration Blank** Lab ID: **ICB** Method: **E200.7**

Analysis Date: **06/10/22 16:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.00337	0.10		0							
Magnesium	0.00265	1.0		0							
Potassium	-0.0264	1.0		0							
Sodium	0.0320	1.0		0							

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 32** SampType: **CRDL Standard for ICP** Lab ID: **LLRV** Method: **E200.7**

Analysis Date: **06/10/22 16:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.0527	0.10	0.05	0	105	50	150				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175563
Date: *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220610A: 32** SampType: **CRDL Standard for ICP** Lab ID: **LLRV** Method: **E200.7**
Analysis Date: **06/10/22 16:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	0.524	1.0	0.5	0	105	50	150				
Potassium	0.456	1.0	0.5	0	91	50	150				
Sodium	0.518	1.0	0.5	0	104	50	150				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 33** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.7**
Analysis Date: **06/10/22 16:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	-0.0163	0.10		0		0	0				
Magnesium	455	1.0	500	0	91	80	120				
Potassium	0.00664	1.0		0		0	0				
Sodium	0.0725	1.0		0		0	0				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 34** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.7**
Analysis Date: **06/10/22 16:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.996	0.10	1	0	100	80	120				
Magnesium	458	1.0	500	0	92	80	120				
Potassium	19.5	1.0	20	0	97	80	120				
Sodium	19.6	1.0	20	0	98	80	120				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 36** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**
Analysis Date: **06/10/22 16:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.004									
Magnesium	ND	0.02									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID:** R175563 **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220610A: 36** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**

Analysis Date: **06/10/22 16:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	0.06									
Sodium	ND	0.02									

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 37** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**

Analysis Date: **06/10/22 16:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.951	0.10	1	0	**95**	85	115				
Magnesium	53.7	1.0	50	0	**107**	85	115				
Potassium	52.1	1.0	50	0	**104**	85	115				
Sodium	52.0	1.0	50	0	**104**	85	115				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 97** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **06/10/22 20:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.47	0.10	2.5	0	**99**	90	110				
Magnesium	25.3	1.0	25	0	**101**	90	110				
Potassium	24.4	1.0	25	0	**98**	90	110				
Sodium	24.5	1.0	25	0	**98**	90	110				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 102** SampType: **Sample Matrix Spike** Lab ID: **H22060299-010BMS2** Method: **E200.7**

Analysis Date: **06/10/22 21:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.929	0.050	1	0	**93**	70	130				
Magnesium	57.9	1.0	50	0	**116**	70	130				
Potassium	56.1	1.0	50	0	**112**	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175563** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220610A: 102** SampType: **Sample Matrix Spike** Lab ID: **H22060299-010BMS2** Method: **E200.7**

Analysis Date: **06/10/22 21:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	55.7	1.0	50	0	111	70	130				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 103** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060299-010BMSD2** Method: **E200.7**

Analysis Date: **06/10/22 21:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.871	0.050	1	0	87	70	130	0.9292	6.5	20	
Magnesium	57.4	1.0	50	0	115	70	130	57.86	0.8	20	
Potassium	57.8	1.0	50	0	116	70	130	56.13	3.0	20	
Sodium	57.4	1.0	50	0	115	70	130	55.71	2.9	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 109** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **06/10/22 21:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.48	0.10	2.5	0	99	90	110				
Magnesium	25.2	1.0	25	0	101	90	110				
Potassium	24.3	1.0	25	0	97	90	110				
Sodium	24.3	1.0	25	0	97	90	110				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 117** SampType: **Sample Matrix Spike** Lab ID: **H22060326-009BMS2** Method: **E200.7**

Analysis Date: **06/10/22 22:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.955	0.050	1	0.01823	94	70	130				
Magnesium	67.1	1.0	50	8.903	116	70	130				
Potassium	63.1	1.0	50	7.036	112	70	130				
Sodium	79.9	1.0	50	24.98	110	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175563
Date: *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220610A: 117** SampType: **Sample Matrix Spike** Lab ID: **H22060326-009BMS2** Method: **E200.7**

Analysis Date: **06/10/22 22:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220610A: 118** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-009BMSD2** Method: **E200.7**

Analysis Date: **06/10/22 22:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.01	0.050	1	0.01823	**100**	70	130	0.9546	**6.1**	20	
Magnesium	64.4	1.0	50	8.903	**111**	70	130	67.1	**4.0**	20	
Potassium	59.2	1.0	50	7.036	**104**	70	130	63.07	**6.3**	20	
Sodium	75.6	1.0	50	24.98	**101**	70	130	79.9	**5.6**	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175567
Date: *14-Jul-22*

Run ID :Run Order: **FIA203-HE_220610C: 23** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E353.2**

Analysis Date: **06/10/22 13:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.07	0.010	1	0	107	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220610C: 24** SampType: **Method Blank** Lab ID: **MBLK** Method: **E353.2**

Analysis Date: **06/10/22 13:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	ND	0.008									

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220610C: 25** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E353.2**

Analysis Date: **06/10/22 13:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.01	0.011	1	0	101	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220610C: 26** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **06/10/22 14:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.500	0.010	0.5	0	100	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220610C: 158** SampType: **Sample Matrix Spike** Lab ID: **H22060326-001DMS** Method: **E353.2**

Analysis Date: **06/10/22 16:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.51	0.011	1	0.5531	95	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175567** **Date:** *14-Jul-22*

Run ID :Run Order: **FIA203-HE_220610C: 158** SampType: **Sample Matrix Spike** Lab ID: **H22060326-001DMS** Method: **E353.2**

Analysis Date: **06/10/22 16:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220610C: 159** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-001DMSD** Method: **E353.2**

Analysis Date: **06/10/22 16:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.52	0.011	1	0.5531	**96**	90	110	1.508	**0.6**	10	

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220610C: 170** SampType: **Sample Matrix Spike** Lab ID: **H22060326-009DMS** Method: **E353.2**

Analysis Date: **06/10/22 17:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.09	0.011	1	0.0978	**99**	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220610C: 171** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-009DMSD** Method: **E353.2**

Analysis Date: **06/10/22 17:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.03	0.011	1	0.0978	**93**	90	110	1.085	**5.2**	10	

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175650
Date: *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220614A: 7** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **06/14/22 11:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.785	0.10	0.8	0	98	95	105				
Calcium	39.1	1.0	40	0	98	95	105				
Magnesium	38.5	1.0	40	0	96	95	105				
Potassium	38.0	1.0	40	0	95	95	105				
Sodium	37.9	1.0	40	0	95	95	105				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **ICP2-HE_220614A: 8** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **06/14/22 11:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.42	0.10	2.5	0	97	95	105				
Calcium	24.4	1.0	25	0	98	95	105				
Magnesium	24.1	1.0	25	0	96	95	105				
Potassium	24.1	1.0	25	0	96	95	105				
Sodium	24.0	1.0	25	0	96	95	105				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **ICP2-HE_220614A: 9** SampType: **Continuing Calibration Blank** Lab ID: **ICB** Method: **E200.7**

Analysis Date: **06/14/22 11:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.00286	0.10		0							
Calcium	-0.00259	1.0		0							
Magnesium	0.000860	1.0		0							
Potassium	0.00182	1.0		0							
Sodium	0.0141	1.0		0							

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175650
Date: *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220614A: 10** SampType: **CRDL Standard for ICP** Lab ID: **LLRV** Method: **E200.7**

Analysis Date: **06/14/22 11:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.0513	0.10	0.05	0	103	50	150				
Calcium	0.491	1.0	0.5	0	98	50	150				
Magnesium	0.481	1.0	0.5	0	96	50	150				
Potassium	0.457	1.0	0.5	0	91	50	150				
Sodium	0.480	1.0	0.5	0	96	50	150				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **ICP2-HE_220614A: 11** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.7**

Analysis Date: **06/14/22 11:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	-0.0145	0.10		0		0	0				
Calcium	473	1.0	500	0	95	80	120				
Magnesium	448	1.0	500	0	90	80	120				
Potassium	0.0378	1.0		0		0	0				
Sodium	0.0620	1.0		0		0	0				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **ICP2-HE_220614A: 12** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.7**

Analysis Date: **06/14/22 11:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.993	0.10	1	0	99	80	120				
Calcium	486	1.0	500	0	97	80	120				
Magnesium	456	1.0	500	0	91	80	120				
Potassium	19.2	1.0	20	0	96	80	120				
Sodium	19.1	1.0	20	0	96	80	120				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID:** R175650 **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220614A: 14** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**

Analysis Date: **06/14/22 12:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.1									

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220614A: 15** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**

Analysis Date: **06/14/22 12:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	50.7	1.0	50	0	101	85	115				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220614A: 66** SampType: **Sample Matrix Spike** Lab ID: **H22060212-001AMS2** Method: **E200.7**

Analysis Date: **06/14/22 15:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	60.1	1.0	50	7.94	104	70	130				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220614A: 67** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060212-001AMSD2** Method: **E200.7**

Analysis Date: **06/14/22 15:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	59.5	1.0	50	7.94	103	70	130	60.08	1.0	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220614A: 101** SampType: **Sample Matrix Spike** Lab ID: **H22060306-001EMS2** Method: **E200.7**

Analysis Date: **06/14/22 17:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	84.1	1.0	50	30.94	106	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175650
Date: *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220614A: 101** SampType: **Sample Matrix Spike** Lab ID: **H22060306-001EMS2** Method: **E200.7**

Analysis Date: **06/14/22 17:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220614A: 102** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060306-001EMSD2** Method: **E200.7**

Analysis Date: **06/14/22 17:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	86.6	1.0	50	30.94	**111**	70	130	84.06	**3.0**	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220614A: 116** SampType: **Sample Matrix Spike** Lab ID: **H22060326-006BMS2** Method: **E200.7**

Analysis Date: **06/14/22 18:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	167	1.0	50	108.5	**117**	70	130				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICP2-HE_220614A: 117** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-006BMSD2** Method: **E200.7**

Analysis Date: **06/14/22 18:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	166	1.0	50	108.5	**115**	70	130	167.1	**0.6**	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22060326
BatchID: R175652
Date: *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **06/14/22 16:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.293	0.10	0.3	0	**98**	90	110				
Antimony	0.0598	0.050	0.06	0	**100**	90	110				
Arsenic	0.0617	0.0050	0.06	0	**103**	90	110				
Barium	0.0593	0.10	0.06	0	**99**	90	110				
Beryllium	0.0294	0.0010	0.03	0	**98**	90	110				
Cadmium	0.0299	0.0010	0.03	0	**100**	90	110				
Chromium	0.0600	0.010	0.06	0	**100**	90	110				
Cobalt	0.0589	0.010	0.06	0	**98**	90	110				
Copper	0.0606	0.010	0.06	0	**101**	90	110				
Iron	0.303	0.020	0.3	0	**101**	90	110				
Lead	0.0587	0.010	0.06	0	**98**	90	110				
Manganese	0.298	0.010	0.3	0	**99**	90	110				
Molybdenum	0.0560	0.0050	0.06	0	**93**	90	110				
Nickel	0.0604	0.010	0.06	0	**101**	90	110				
Selenium	0.0599	0.0050	0.06	0	**100**	90	110				
Silver	0.0305	0.0050	0.03	0	**102**	90	110				
Uranium	0.0577	0.00030	0.06	0	**96**	90	110				
Vanadium	0.0589	0.10	0.06	0	**98**	90	110				
Zinc	0.0617	0.010	0.06	0	**103**	90	110				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **ICPMS205-H_220614B: 24** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **06/14/22 16:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Antimony	ND	0.0002									
Arsenic	ND	0.0002									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00002									
Chromium	ND	0.0001									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22060326 **BatchID:** R175652 **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 24** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **06/14/22 16:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	0.001									
Copper	ND	0.0001									
Iron	ND	0.004									
Lead	ND	0.0001									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Nickel	ND	0.0002									
Selenium	ND	0.00007									
Silver	ND	0.00008									
Uranium	ND	0.00002									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICPMS205-H_220614B: 25** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**
Analysis Date: **06/14/22 16:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0491	0.10	0.05	0	**98**	85	115				
Antimony	0.0464	0.050	0.05	0	**93**	85	115				
Arsenic	0.0494	0.0050	0.05	0	**99**	85	115				
Barium	0.0484	0.10	0.05	0	**97**	85	115				
Beryllium	0.0482	0.0010	0.05	0	**96**	85	115				
Cadmium	0.0502	0.0010	0.05	0	**100**	85	115				
Chromium	0.0490	0.010	0.05	0	**98**	85	115				
Cobalt	0.0494	0.010	0.05	0	**99**	85	115				
Copper	0.0496	0.010	0.05	0	**99**	85	115				
Iron	0.146	0.020	0.15	0	**98**	85	115				
Lead	0.0482	0.010	0.05	0	**96**	85	115				
Manganese	0.0490	0.010	0.05	0	**98**	85	115				
Molybdenum	0.0475	0.0050	0.05	0	**95**	85	115				
Nickel	0.0499	0.010	0.05	0	**100**	85	115				
Selenium	0.0514	0.0050	0.05	0	**103**	85	115				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175652** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 25** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **06/14/22 16:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0200	0.0050	0.02	0	**100**	85	115				
Uranium	0.0466	0.00030	0.05	0	**93**	85	115				
Vanadium	0.0489	0.10	0.05	0	**98**	85	115				
Zinc	0.0517	0.010	0.05	0	**103**	85	115				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICPMS205-H_220614B: 114** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/14/22 20:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0504	0.10	0.05	0	**101**	90	110				
Antimony	0.0487	0.050	0.05	0	**97**	90	110				
Arsenic	0.0503	0.0050	0.05	0	**101**	90	110				
Barium	0.0489	0.10	0.05	0	**98**	90	110				
Beryllium	0.0505	0.0010	0.05	0	**101**	90	110				
Cadmium	0.0507	0.0010	0.05	0	**101**	90	110				
Chromium	0.0516	0.010	0.05	0	**103**	90	110				
Cobalt	0.0506	0.010	0.05	0	**101**	90	110				
Copper	0.0504	0.010	0.05	0	**101**	90	110				
Iron	1.32	0.020	1.3	0	**102**	90	110				
Lead	0.0489	0.010	0.05	0	**98**	90	110				
Manganese	0.0516	0.010	0.05	0	**103**	90	110				
Molybdenum	0.0506	0.0050	0.05	0	**101**	90	110				
Nickel	0.0509	0.010	0.05	0	**102**	90	110				
Selenium	0.0519	0.0050	0.05	0	**104**	90	110				
Silver	0.0200	0.0050	0.02	0	**100**	90	110				
Uranium	0.0476	0.00030	0.05	0	**95**	90	110				
Vanadium	0.0512	0.10	0.05	0	**102**	90	110				
Zinc	0.0516	0.010	0.05	0	**103**	90	110				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175652** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 125** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/14/22 20:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0498	0.10	0.05	0	100	90	110				
Antimony	0.0480	0.050	0.05	0	96	90	110				
Arsenic	0.0502	0.0050	0.05	0	100	90	110				
Barium	0.0486	0.10	0.05	0	97	90	110				
Beryllium	0.0506	0.0010	0.05	0	101	90	110				
Cadmium	0.0506	0.0010	0.05	0	101	90	110				
Chromium	0.0518	0.010	0.05	0	104	90	110				
Cobalt	0.0509	0.010	0.05	0	102	90	110				
Copper	0.0504	0.010	0.05	0	101	90	110				
Iron	1.34	0.020	1.3	0	103	90	110				
Lead	0.0488	0.010	0.05	0	98	90	110				
Manganese	0.0517	0.010	0.05	0	103	90	110				
Molybdenum	0.0515	0.0050	0.05	0	103	90	110				
Nickel	0.0509	0.010	0.05	0	102	90	110				
Selenium	0.0516	0.0050	0.05	0	103	90	110				
Silver	0.0203	0.0050	0.02	0	101	90	110				
Uranium	0.0472	0.00030	0.05	0	94	90	110				
Vanadium	0.0518	0.10	0.05	0	104	90	110				
Zinc	0.0505	0.010	0.05	0	101	90	110				

Associated samples: **H22060326-001B, H22060326-001C, H22060326-002B, H22060326-002C, H22060326-003B, H22060326-003C, H22060326-004B, H22060326-004C, H22060326-005B, H22060326-005C, H22060326-006B, H22060326-006C, H22060326-007B, H22060326-007C, H22060326-008B, H22060326-008C, H22060326-009B, H22060326-009C, H22060326-010B, H22060326-010C**

Run ID :Run Order: **ICPMS205-H_220614B: 135** SampType: **Sample Matrix Spike** Lab ID: **H22060326-002BMS** Method: **E200.8**

Analysis Date: **06/14/22 20:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0615	0.030	0.05	0.01527	92	70	130				
Antimony	0.0465	0.0010	0.05	0.0003392	92	70	130				
Arsenic	0.0544	0.0010	0.05	0.003665	101	70	130				
Barium	0.101	0.050	0.05	0.05239	96	70	130				
Beryllium	0.0478	0.0010	0.05	0	96	70	130				
Cadmium	0.0492	0.0010	0.05	0.0002387	98	70	130				
Chromium	0.0504	0.0050	0.05	0.0001469	101	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175652** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 135** SampType: **Sample Matrix Spike** Lab ID: **H22060326-002BMS** Method: **E200.8**

Analysis Date: **06/14/22 20:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	0.0493	0.0050	0.05	0	99	70	130				
Copper	0.0592	0.0050	0.05	0.0116	95	70	130				
Iron	0.183	0.020	0.15	0.03534	99	70	130				
Lead	0.0482	0.0010	0.05	0.0001666	96	70	130				
Manganese	0.176	0.0010	0.05	0.1251	101	70	130				
Molybdenum	0.378	0.0010	0.05	0.3271		70	130				A
Nickel	0.0484	0.0050	0.05	0.0004075	96	70	130				
Selenium	0.0551	0.0010	0.05	0.001201	108	70	130				
Silver	0.0170	0.0010	0.02	0	85	70	130				
Uranium	0.0516	0.00030	0.05	0.0044	94	70	130				
Vanadium	0.0528	0.010	0.05	0.00222	101	70	130				
Zinc	0.0774	0.010	0.05	0.03127	92	70	130				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICPMS205-H_220614B: 136** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-002BMSD** Method: **E200.8**

Analysis Date: **06/14/22 20:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0630	0.030	0.05	0.01527	95	70	130	0.06149	2.4	20	
Antimony	0.0468	0.0010	0.05	0.0003392	93	70	130	0.04654	0.5	20	
Arsenic	0.0553	0.0010	0.05	0.003665	103	70	130	0.05437	1.7	20	
Barium	0.0980	0.050	0.05	0.05239	91	70	130	0.1006	2.6	20	
Beryllium	0.0476	0.0010	0.05	0	95	70	130	0.04779	0.4	20	
Cadmium	0.0490	0.0010	0.05	0.0002387	98	70	130	0.04925	0.5	20	
Chromium	0.0513	0.0050	0.05	0.0001469	102	70	130	0.05043	1.7	20	
Cobalt	0.0498	0.0050	0.05	0	100	70	130	0.04926	1.1	20	
Copper	0.0605	0.0050	0.05	0.0116	98	70	130	0.05923	2.1	20	
Iron	0.186	0.020	0.15	0.03534	101	70	130	0.1832	1.7	20	
Lead	0.0491	0.0010	0.05	0.0001666	98	70	130	0.04821	1.8	20	
Manganese	0.179	0.0010	0.05	0.1251	108	70	130	0.1755	2.0	20	
Molybdenum	0.376	0.0010	0.05	0.3271		70	130	0.3782	0.6	20	A
Nickel	0.0496	0.0050	0.05	0.0004075	98	70	130	0.04844	2.3	20	
Selenium	0.0546	0.0010	0.05	0.001201	107	70	130	0.05514	1.0	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175652** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 136** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-002BMSD** Method: **E200.8**

Analysis Date: **06/14/22 20:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0169	0.0010	0.02	0	**84**	70	130	0.01701	**0.8**	20	
Uranium	0.0524	0.00030	0.05	0.0044	**96**	70	130	0.05158	**1.5**	20	
Vanadium	0.0542	0.010	0.05	0.00222	**104**	70	130	0.05278	**2.7**	20	
Zinc	0.0784	0.010	0.05	0.03127	**94**	70	130	0.07739	**1.3**	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICPMS205-H_220614B: 151** SampType: **Sample Matrix Spike** Lab ID: **H22060351-003BMS** Method: **E200.8**

Analysis Date: **06/14/22 21:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0495	0.030	0.05	0	**99**	70	130				
Antimony	0.0477	0.0010	0.05	0.0003236	**95**	70	130				
Arsenic	0.0939	0.0010	0.05	0.04253	**103**	70	130				
Barium	0.0496	0.050	0.05	0.00102	**97**	70	130				
Beryllium	0.0506	0.0010	0.05	0	**101**	70	130				
Cadmium	0.0505	0.0010	0.05	0	**101**	70	130				
Chromium	0.0505	0.0050	0.05	0	**101**	70	130				
Cobalt	0.0496	0.0050	0.05	0	**99**	70	130				
Copper	0.0528	0.0050	0.05	0.00341	**99**	70	130				
Iron	0.150	0.020	0.15	0	**100**	70	130				
Lead	0.0494	0.0010	0.05	0.0004914	**98**	70	130				
Manganese	0.0507	0.0010	0.05	0	**101**	70	130				
Molybdenum	0.0555	0.0010	0.05	0.006217	**99**	70	130				
Nickel	0.0492	0.0050	0.05	0	**98**	70	130				
Selenium	0.0574	0.0010	0.05	0.002304	**110**	70	130				
Silver	0.0203	0.0010	0.02	0	**102**	70	130				
Uranium	0.0864	0.00030	0.05	0.03825	**96**	70	130				
Vanadium	0.0521	0.010	0.05	0.001553	**101**	70	130				
Zinc	0.0768	0.010	0.05	0.02699	**100**	70	130				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175652** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 152** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060351-003BMSD** Method: **E200.8**

Analysis Date: **06/14/22 21:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0478	0.030	0.05	0	95	70	130	0.04949	3.6	20	
Antimony	0.0476	0.0010	0.05	0.0003236	95	70	130	0.04767	0.1	20	
Arsenic	0.0935	0.0010	0.05	0.04253	102	70	130	0.09392	0.5	20	
Barium	0.0497	0.050	0.05	0.00102	97	70	130	0.04961		20	
Beryllium	0.0493	0.0010	0.05	0	99	70	130	0.05063	2.6	20	
Cadmium	0.0501	0.0010	0.05	0	100	70	130	0.0505	0.8	20	
Chromium	0.0509	0.0050	0.05	0	102	70	130	0.05046	0.9	20	
Cobalt	0.0497	0.0050	0.05	0	99	70	130	0.04956	0.3	20	
Copper	0.0530	0.0050	0.05	0.00341	99	70	130	0.05285	0.3	20	
Iron	0.151	0.020	0.15	0	100	70	130	0.1504	0.1	20	
Lead	0.0498	0.0010	0.05	0.0004914	99	70	130	0.04944	0.6	20	
Manganese	0.0503	0.0010	0.05	0	101	70	130	0.05066	0.8	20	
Molybdenum	0.0556	0.0010	0.05	0.006217	99	70	130	0.05554	0.1	20	
Nickel	0.0496	0.0050	0.05	0	99	70	130	0.04915	0.9	20	
Selenium	0.0573	0.0010	0.05	0.002304	110	70	130	0.05739	0.1	20	
Silver	0.0201	0.0010	0.02	0	100	70	130	0.02034	1.3	20	
Uranium	0.0873	0.00030	0.05	0.03825	98	70	130	0.08642	1.0	20	
Vanadium	0.0520	0.010	0.05	0.001553	101	70	130	0.05213	0.2	20	
Zinc	0.0773	0.010	0.05	0.02699	101	70	130	0.07682	0.7	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICPMS205-H_220614B: 186** SampType: **Sample Matrix Spike** Lab ID: **H22060401-001BMS** Method: **E200.8**

Analysis Date: **06/14/22 22:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0626	0.030	0.05	0.01208	101	70	130				
Antimony	0.0488	0.0010	0.05	0.001795	94	70	130				
Arsenic	0.0521	0.0010	0.05	0.002076	100	70	130				
Barium	0.0884	0.050	0.05	0.04033	96	70	130				
Beryllium	0.0504	0.0010	0.05	0	101	70	130				
Cadmium	0.0514	0.0010	0.05	0.0003847	102	70	130				
Chromium	0.0509	0.0050	0.05	0	102	70	130				
Cobalt	0.0499	0.0050	0.05	0	100	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175652** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 186** SampType: **Sample Matrix Spike** Lab ID: **H22060401-001BMS** Method: **E200.8**

Analysis Date: **06/14/22 22:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0514	0.0050	0.05	0.001897	99	70	130				
Iron	0.164	0.020	0.15	0.01234	101	70	130				
Lead	0.0490	0.0010	0.05	0.0002255	98	70	130				
Manganese	0.0524	0.0010	0.05	0.001296	102	70	130				
Molybdenum	0.0508	0.0010	0.05	0.001141	99	70	130				
Nickel	0.0506	0.0050	0.05	0.0005779	100	70	130				
Selenium	0.0535	0.0010	0.05	0	107	70	130				
Silver	0.0199	0.0010	0.02	0	99	70	130				
Uranium	0.0474	0.00030	0.05	0.000217	94	70	130				
Vanadium	0.0518	0.010	0.05	0.0006652	102	70	130				
Zinc	0.234	0.010	0.05	0.1846	98	70	130				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Run ID :Run Order: **ICPMS205-H_220614B: 187** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060401-001BMSD** Method: **E200.8**

Analysis Date: **06/14/22 22:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0586	0.030	0.05	0.01208	93	70	130	0.06263	6.6	20	
Antimony	0.0490	0.0010	0.05	0.001795	94	70	130	0.04875	0.5	20	
Arsenic	0.0515	0.0010	0.05	0.002076	99	70	130	0.05208	1.1	20	
Barium	0.0874	0.050	0.05	0.04033	94	70	130	0.0884	1.2	20	
Beryllium	0.0510	0.0010	0.05	0	102	70	130	0.05035	1.2	20	
Cadmium	0.0513	0.0010	0.05	0.0003847	102	70	130	0.05135	0.1	20	
Chromium	0.0514	0.0050	0.05	0	103	70	130	0.05087	1.0	20	
Cobalt	0.0502	0.0050	0.05	0	100	70	130	0.04994	0.4	20	
Copper	0.0516	0.0050	0.05	0.001897	99	70	130	0.05144	0.2	20	
Iron	0.165	0.020	0.15	0.01234	102	70	130	0.1635	0.9	20	
Lead	0.0487	0.0010	0.05	0.0002255	97	70	130	0.04905	0.7	20	
Manganese	0.0531	0.0010	0.05	0.001296	104	70	130	0.05236	1.5	20	
Molybdenum	0.0507	0.0010	0.05	0.001141	99	70	130	0.05085	0.3	20	
Nickel	0.0503	0.0050	0.05	0.0005779	100	70	130	0.05056	0.5	20	
Selenium	0.0542	0.0010	0.05	0	108	70	130	0.05353	1.2	20	
Silver	0.0201	0.0010	0.02	0	101	70	130	0.01986	1.3	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175652
Date: *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220614B: 187** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060401-001BMSD** Method: **E200.8**

Analysis Date: **06/14/22 22:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	0.0469	0.00030	0.05	0.000217	**93**	70	130	0.04742	**1.1**	20	
Vanadium	0.0520	0.010	0.05	0.0006652	**103**	70	130	0.05184	**0.3**	20	
Zinc	0.235	0.010	0.05	0.1846	**100**	70	130	0.2336	**0.5**	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B, H22060326-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID:** R175655 **Date:** *14-Jul-22*

Run ID :Run Order: **PHSC_101-H_220615A: 68** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **06/15/22 11:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **PHSC_101-H_220615A: 69** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **06/15/22 11:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	610	4.0	600	0	**102**	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **PHSC_101-H_220615A: 77** SampType: **Sample Duplicate** Lab ID: **H22050912-001ADUP** Method: **A2320 B**

Analysis Date: **06/15/22 12:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	130	4.0		0				129.8	**0.5**	10	
Bicarbonate as HCO3	160	4.0		0				157.7	**0.5**	10	

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **PHSC_101-H_220615A: 115** SampType: **Sample Duplicate** Lab ID: **H22060326-004ADUP** Method: **A2320 B**

Analysis Date: **06/15/22 14:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	85	4.0		0				83.1	**1.8**	10	
Bicarbonate as HCO3	100	4.0		0				100.8	**1.8**	10	

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **PHSC_101-H_220615A: 117** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **06/15/22 14:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175655** **Date:** *14-Jul-22*

Run ID :Run Order: **PHSC_101-H_220615A: 117** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **06/15/22 14:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **PHSC_101-H_220615A: 118** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **06/15/22 15:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	620	4.0	600	0	**103**	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **PHSC_101-H_220615A: 121** SampType: **Sample Duplicate** Lab ID: **H22060326-005ADUP** Method: **A2320 B**

Analysis Date: **06/15/22 15:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	86	4.0		0				86.3	**0.1**	10	
Bicarbonate as HCO3	100	4.0		0				104.7	**0.1**	10	

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **PHSC_101-H_220615A: 161** SampType: **Sample Duplicate** Lab ID: **H22060360-001BDUP** Method: **A2320 B**

Analysis Date: **06/15/22 17:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	20	4.0		0				19.65	**0.8**	10	
Bicarbonate as HCO3	23	4.0		0				23.36	**0.8**	10	

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175659
Date: *14-Jul-22*

Run ID :Run Order: **FIA203-HE_220614B: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E350.1**

Analysis Date: **06/14/22 14:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.970	0.050	1	0	97	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220614B: 10** SampType: **Method Blank** Lab ID: **MBLK** Method: **E350.1**

Analysis Date: **06/14/22 14:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	ND	0.03									

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220614B: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E350.1**

Analysis Date: **06/14/22 14:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.961	0.050	1	0	96	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220614B: 25** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E350.1**

Analysis Date: **06/14/22 14:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.481	0.050	0.5	0	96	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220614B: 28** SampType: **Sample Matrix Spike** Lab ID: **H22060326-002DMS** Method: **E350.1**

Analysis Date: **06/14/22 14:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.916	0.050	1	0	92	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID:** R175659 **Date:** *14-Jul-22*

Run ID :Run Order: **FIA203-HE_220614B: 28** SampType: **Sample Matrix Spike** Lab ID: **H22060326-002DMS** Method: **E350.1**

Analysis Date: **06/14/22 14:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220614B: 29** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-002DMSD** Method: **E350.1**

Analysis Date: **06/14/22 14:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.913	0.050	1	0	**91**	80	120	0.9155	**0.3**	10	

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Run ID :Run Order: **FIA203-HE_220614B: 65** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E350.1**

Analysis Date: **06/14/22 15:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.979	0.050	1	0	**98**	90	110				

Associated samples: **H22060326-001D, H22060326-002D, H22060326-003D, H22060326-004D, H22060326-005D, H22060326-006D, H22060326-007D, H22060326-008D, H22060326-009D, H22060326-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175694
Date: *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220615C: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **06/15/22 16:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0615	0.0050	0.06	0	**103**	90	110				
Manganese	0.296	0.010	0.3	0	**99**	90	110				
Selenium	0.0603	0.0050	0.06	0	**101**	90	110				

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Run ID :Run Order: **ICPMS205-H_220615C: 20** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/15/22 16:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0496	0.0050	0.05	0	**99**	90	110				
Manganese	0.0498	0.010	0.05	0	**100**	90	110				
Selenium	0.0512	0.0050	0.05	0	**102**	90	110				

Associated samples: **H22060326-001C, H22060326-002C, H22060326-003C, H22060326-004C, H22060326-005C, H22060326-006C, H22060326-007C, H22060326-008C, H22060326-009C, H22060326-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175729
Date: *14-Jul-22*

Run ID :Run Order: **FIA203-HE_220616B: 9** SampType: **Initial Calibration Blank, Instrument Blank** Lab ID: **ICB** Method: **A4500 N-C**

Analysis Date: **06/16/22 10:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	-0.000700	0.10		0		0	0				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175738** **Date:** *14-Jul-22*

Run ID :Run Order: **IC METROHM_220615A: 2** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **06/15/22 11:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.06									

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **IC METROHM_220615A: 3** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **06/15/22 11:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98.6	1.0	100	0	99	90	110				
Sulfate	381	1.0	400	0	95	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **IC METROHM_220615A: 4** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **06/15/22 11:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.3	1.0	25	0	97	90	110				
Sulfate	98.6	1.0	100	0	99	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **IC METROHM_220615A: 6** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **06/15/22 12:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.6	1.0	50	0	99	90	110				
Sulfate	196	1.0	200	0	98	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175738** **Date:** *14-Jul-22*

Run ID :Run Order: **IC METROHM_220615A: 168** SampType: **Sample Matrix Spike** Lab ID: **H22060318-008AMS** Method: **E300.0**

Analysis Date: **06/17/22 06:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	111	1.0	25	87.37	94	90	110				
Sulfate	190	1.0	100	93.85	96	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **IC METROHM_220615A: 169** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060318-008AMSD** Method: **E300.0**

Analysis Date: **06/17/22 06:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	110	1.0	25	87.37	92	90	110	110.8	0.4	20	
Sulfate	190	1.0	100	93.85	96	90	110	190.2	0.3	20	

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **IC METROHM_220615A: 170** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **06/17/22 06:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.5	1.0	50	0	99	90	110				
Sulfate	197	1.0	200	0	99	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **IC METROHM_220615A: 182** SampType: **Sample Matrix Spike** Lab ID: **H22060326-007AMS** Method: **E300.0**

Analysis Date: **06/17/22 10:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.3	1.0	25	0	97	90	110				
Sulfate	99.1	1.0	100	0	99	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22060326
BatchID: R175738
Date: *14-Jul-22*

Run ID :Run Order: **IC METROHM_220615A: 183** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-007AMSD** Method: **E300.0**
Analysis Date: **06/17/22 10:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.2	1.0	25	0	**97**	90	110	24.29	**0.5**	20	
Sulfate	98.7	1.0	100	0	**99**	90	110	99.11	**0.4**	20	

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **IC METROHM_220615A: 184** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**
Analysis Date: **06/17/22 10:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.9	1.0	50	0	**100**	90	110				
Sulfate	198	1.0	200	0	**99**	90	110				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22060326
BatchID: R175744
Date: *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220616B: 22** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **06/16/22 15:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Arsenic	ND	0.0002									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Chromium	ND	0.0001									
Cobalt	ND	0.001									
Copper	ND	0.0001									
Iron	ND	0.004									
Lead	0.0007	0.0001									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Nickel	ND	0.0002									
Selenium	ND	0.00007									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Run ID :Run Order: **ICPMS205-H_220616B: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**
Analysis Date: **06/16/22 15:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0493	0.10	0.05	0	**99**	85	115				
Arsenic	0.0508	0.0050	0.05	0	**101**	85	115				
Barium	0.0504	0.10	0.05	0	**101**	85	115				
Beryllium	0.0519	0.0010	0.05	0	**104**	85	115				
Chromium	0.0499	0.010	0.05	0	**100**	85	115				
Cobalt	0.0506	0.010	0.05	0	**101**	85	115				
Copper	0.0506	0.010	0.05	0	**101**	85	115				
Iron	0.144	0.020	0.15	0	**96**	85	115				
Lead	0.0496	0.010	0.05	0	**99**	85	115				
Manganese	0.0510	0.010	0.05	0	**102**	85	115				
Molybdenum	0.0488	0.0050	0.05	0	**98**	85	115				
Nickel	0.0507	0.010	0.05	0	**101**	85	115				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175744** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220616B: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **06/16/22 15:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.0533	0.0050	0.05	0	**107**	85	115				
Vanadium	0.0495	0.10	0.05	0	**99**	85	115				
Zinc	0.0540	0.010	0.05	0	**108**	85	115				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Run ID :Run Order: **ICPMS205-H_220616B: 70** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **06/16/22 17:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.302	0.10	0.3	0	**101**	90	110				
Arsenic	0.0639	0.0050	0.06	0	**106**	90	110				
Barium	0.0613	0.10	0.06	0	**102**	90	110				
Beryllium	0.0295	0.0010	0.03	0	**98**	90	110				
Chromium	0.0607	0.010	0.06	0	**101**	90	110				
Cobalt	0.0597	0.010	0.06	0	**100**	90	110				
Copper	0.0621	0.010	0.06	0	**103**	90	110				
Iron	0.306	0.020	0.3	0	**102**	90	110				
Lead	0.0603	0.010	0.06	0	**101**	90	110				
Manganese	0.304	0.010	0.3	0	**101**	90	110				
Molybdenum	0.0586	0.0050	0.06	0	**98**	90	110				
Nickel	0.0621	0.010	0.06	0	**103**	90	110				
Selenium	0.0607	0.0050	0.06	0	**101**	90	110				
Vanadium	0.0603	0.10	0.06	0	**101**	90	110				
Zinc	0.0640	0.010	0.06	0	**107**	90	110				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Run ID :Run Order: **ICPMS205-H_220616B: 78** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/16/22 18:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0500	0.10	0.05	0	**100**	90	110				
Arsenic	0.0504	0.0050	0.05	0	**101**	90	110				
Barium	0.0492	0.10	0.05	0	**98**	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22060326
BatchID: **R175744**
Date: *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220616B: 78** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**
Analysis Date: **06/16/22 18:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	0.0498	0.0010	0.05	0	100	90	110				
Chromium	0.0500	0.010	0.05	0	100	90	110				
Cobalt	0.0498	0.010	0.05	0	100	90	110				
Copper	0.0501	0.010	0.05	0	100	90	110				
Iron	1.29	0.020	1.3	0	100	90	110				
Lead	0.0495	0.010	0.05	0	99	90	110				
Manganese	0.0496	0.010	0.05	0	99	90	110				
Molybdenum	0.0499	0.0050	0.05	0	100	90	110				
Nickel	0.0500	0.010	0.05	0	100	90	110				
Selenium	0.0505	0.0050	0.05	0	101	90	110				
Vanadium	0.0495	0.10	0.05	0	99	90	110				
Zinc	0.0505	0.010	0.05	0	101	90	110				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Run ID :Run Order: **ICPMS205-H_220616B: 122** SampType: **Sample Matrix Spike** Lab ID: **H22060313-010BMS** Method: **E200.8**
Analysis Date: **06/16/22 19:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0557	0.030	0.05	0.005824	100	70	130				
Arsenic	0.0713	0.0010	0.05	0.0191	104	70	130				
Barium	0.101	0.050	0.05	0.05122	99	70	130				
Beryllium	0.0488	0.0010	0.05	0	98	70	130				
Chromium	0.0499	0.0050	0.05	0	100	70	130				
Cobalt	0.0502	0.0050	0.05	0	100	70	130				
Copper	0.0535	0.0050	0.05	0.003433	100	70	130				
Iron	0.244	0.020	0.15	0.09862	97	70	130				
Lead	0.0497	0.0010	0.05	0.0001607	99	70	130				
Manganese	0.254	0.0010	0.05	0.2033		70	130				A
Molybdenum	0.0974	0.0010	0.05	0.04892	97	70	130				
Nickel	0.0503	0.0050	0.05	0.0007332	99	70	130				
Selenium	0.0534	0.0010	0.05	0.0002352	106	70	130				
Vanadium	0.0509	0.010	0.05	0.0008397	100	70	130				
Zinc	0.0828	0.010	0.05	0.03078	104	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175744** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220616B: 122** SampType: **Sample Matrix Spike** Lab ID: **H22060313-010BMS** Method: **E200.8**

Analysis Date: **06/16/22 19:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Run ID :Run Order: **ICPMS205-H_220616B: 123** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060313-010BMSD** Method: **E200.8**

Analysis Date: **06/16/22 19:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0582	0.030	0.05	0.005824	105	70	130	0.05573	4.3	20	
Arsenic	0.0706	0.0010	0.05	0.0191	103	70	130	0.07128	1.0	20	
Barium	0.0999	0.050	0.05	0.05122	97	70	130	0.1006	0.7	20	
Beryllium	0.0499	0.0010	0.05	0	100	70	130	0.04881	2.2	20	
Chromium	0.0504	0.0050	0.05	0	101	70	130	0.04993	1.0	20	
Cobalt	0.0508	0.0050	0.05	0	102	70	130	0.05018	1.2	20	
Copper	0.0535	0.0050	0.05	0.003433	100	70	130	0.05353	0.0	20	
Iron	0.246	0.020	0.15	0.09862	98	70	130	0.2439	0.9	20	
Lead	0.0500	0.0010	0.05	0.0001607	100	70	130	0.04968	0.7	20	
Manganese	0.255	0.0010	0.05	0.2033		70	130	0.2544	0.1	20	A
Molybdenum	0.0984	0.0010	0.05	0.04892	99	70	130	0.09736	1.1	20	
Nickel	0.0506	0.0050	0.05	0.0007332	100	70	130	0.05031	0.5	20	
Selenium	0.0534	0.0010	0.05	0.0002352	106	70	130	0.0534	0.1	20	
Vanadium	0.0512	0.010	0.05	0.0008397	101	70	130	0.05094	0.5	20	
Zinc	0.0825	0.010	0.05	0.03078	103	70	130	0.08275	0.3	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Run ID :Run Order: **ICPMS205-H_220616B: 135** SampType: **Sample Matrix Spike** Lab ID: **H22060326-006BMS** Method: **E200.8**

Analysis Date: **06/16/22 20:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0567	0.030	0.05	0.005753	102	70	130				
Arsenic	0.0569	0.0010	0.05	0.004675	104	70	130				
Barium	0.0920	0.050	0.05	0.04249	99	70	130				
Beryllium	0.0488	0.0010	0.05	0	98	70	130				
Chromium	0.0501	0.0050	0.05	0.0001243	100	70	130				
Cobalt	0.0504	0.0050	0.05	0	101	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175744** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220616B: 135** SampType: **Sample Matrix Spike** Lab ID: **H22060326-006BMS** Method: **E200.8**

Analysis Date: **06/16/22 20:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0565	0.0050	0.05	0.004764	103	70	130				
Iron	0.175	0.020	0.15	0.02896	97	70	130				
Lead	0.0497	0.0010	0.05	0	99	70	130				
Manganese	0.152	0.0010	0.05	0.1038	97	70	130				
Molybdenum	0.153	0.0010	0.05	0.1031	99	70	130				
Nickel	0.0502	0.0050	0.05	0.0004665	99	70	130				
Selenium	0.0536	0.0010	0.05	0.0009552	105	70	130				
Vanadium	0.0513	0.010	0.05	0.001447	100	70	130				
Zinc	0.0781	0.010	0.05	0.02657	103	70	130				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Run ID :Run Order: **ICPMS205-H_220616B: 136** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060326-006BMSD** Method: **E200.8**

Analysis Date: **06/16/22 20:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0553	0.030	0.05	0.005753	99	70	130	0.05669	2.4	20	
Arsenic	0.0568	0.0010	0.05	0.004675	104	70	130	0.05691	0.1	20	
Barium	0.0931	0.050	0.05	0.04249	101	70	130	0.092	1.2	20	
Beryllium	0.0490	0.0010	0.05	0	98	70	130	0.04877	0.4	20	
Chromium	0.0505	0.0050	0.05	0.0001243	101	70	130	0.05008	0.9	20	
Cobalt	0.0512	0.0050	0.05	0	102	70	130	0.05041	1.5	20	
Copper	0.0549	0.0050	0.05	0.004764	100	70	130	0.05647	2.9	20	
Iron	0.177	0.020	0.15	0.02896	99	70	130	0.1748	1.2	20	
Lead	0.0501	0.0010	0.05	0	100	70	130	0.04966	0.9	20	
Manganese	0.156	0.0010	0.05	0.1038	104	70	130	0.1524	2.1	20	
Molybdenum	0.154	0.0010	0.05	0.1031	101	70	130	0.1526	0.8	20	
Nickel	0.0505	0.0050	0.05	0.0004665	100	70	130	0.0502	0.7	20	
Selenium	0.0542	0.0010	0.05	0.0009552	106	70	130	0.05364	1.0	20	
Vanadium	0.0517	0.010	0.05	0.001447	100	70	130	0.05128	0.8	20	
Zinc	0.0793	0.010	0.05	0.02657	106	70	130	0.07807	1.6	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175744** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220616B: 163** SampType: **Sample Matrix Spike** Lab ID: **H22060440-009CMS** Method: **E200.8**

Analysis Date: **06/16/22 22:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0517	0.030	0.05	0	103	70	130				
Arsenic	0.0515	0.0010	0.05	0.000341	102	70	130				
Barium	0.0656	0.050	0.05	0.01526	101	70	130				
Beryllium	0.0490	0.0010	0.05	0	98	70	130				
Chromium	0.0819	0.0050	0.05	0.03259	99	70	130				
Cobalt	0.0497	0.0050	0.05	0	99	70	130				
Copper	0.0496	0.0050	0.05	0	99	70	130				
Iron	0.163	0.020	0.15	0.01666	98	70	130				
Lead	0.0499	0.0010	0.05	0	100	70	130				
Manganese	0.0506	0.0010	0.05	0.0009699	99	70	130				
Molybdenum	0.0513	0.0010	0.05	0.00172	99	70	130				
Nickel	0.0492	0.0050	0.05	0.00019	98	70	130				
Selenium	0.0538	0.0010	0.05	0.0003563	107	70	130				
Vanadium	0.0507	0.010	0.05	0.001293	99	70	130				
Zinc	0.0529	0.010	0.05	0	106	70	130				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Run ID :Run Order: **ICPMS205-H_220616B: 164** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060440-009CMSD** Method: **E200.8**

Analysis Date: **06/16/22 22:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0528	0.030	0.05	0	106	70	130	0.05172	2.1	20	
Arsenic	0.0540	0.0010	0.05	0.000341	107	70	130	0.05154	4.6	20	
Barium	0.0673	0.050	0.05	0.01526	104	70	130	0.06558	2.5	20	
Beryllium	0.0500	0.0010	0.05	0	100	70	130	0.04904	2.0	20	
Chromium	0.0859	0.0050	0.05	0.03259	107	70	130	0.08191	4.7	20	
Cobalt	0.0519	0.0050	0.05	0	104	70	130	0.04971	4.3	20	
Copper	0.0518	0.0050	0.05	0	104	70	130	0.04962	4.2	20	
Iron	0.171	0.020	0.15	0.01666	103	70	130	0.1634	4.6	20	
Lead	0.0512	0.0010	0.05	0	102	70	130	0.04991	2.6	20	
Manganese	0.0532	0.0010	0.05	0.0009699	104	70	130	0.05064	4.9	20	
Molybdenum	0.0526	0.0010	0.05	0.00172	102	70	130	0.0513	2.6	20	
Nickel	0.0520	0.0050	0.05	0.00019	104	70	130	0.04925	5.5	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175744** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220616B: 164** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060440-009CMSD** Method: **E200.8**

Analysis Date: **06/16/22 22:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.0544	0.0010	0.05	0.0003563	108	70	130	0.05385	1.1	20	
Vanadium	0.0527	0.010	0.05	0.001293	103	70	130	0.05072	3.8	20	
Zinc	0.0544	0.010	0.05	0	109	70	130	0.05287	2.9	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Run ID :Run Order: **ICPMS205-H_220616B: 290** SampType: **Sample Matrix Spike** Lab ID: **H22060473-001CMS** Method: **E200.8**

Analysis Date: **06/17/22 11:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0916	0.030	0.05	0.04114	101	70	130				
Arsenic	0.0506	0.0010	0.05	0.0007957	100	70	130				
Barium	0.0574	0.050	0.05	0.009744	95	70	130				
Beryllium	0.0486	0.0010	0.05	0	97	70	130				
Chromium	0.0486	0.0050	0.05	0	97	70	130				
Cobalt	0.0485	0.0050	0.05	0	97	70	130				
Copper	0.0508	0.0050	0.05	0.002696	96	70	130				
Iron	0.183	0.020	0.15	0.03857	96	70	130				
Lead	0.0467	0.0010	0.05	0.0004819	92	70	130				
Manganese	0.0499	0.0010	0.05	0.0005478	99	70	130				
Molybdenum	0.0460	0.0010	0.05	0	92	70	130				
Nickel	0.0490	0.0050	0.05	0.0001922	98	70	130				
Selenium	0.0521	0.0010	0.05	0	104	70	130				
Vanadium	0.0485	0.010	0.05	0	97	70	130				
Zinc	0.0534	0.010	0.05	0	107	70	130				

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Run ID :Run Order: **ICPMS205-H_220616B: 291** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060473-001CMSD** Method: **E200.8**

Analysis Date: **06/17/22 11:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0924	0.030	0.05	0.04233	100	70	130	0.09246	0.1	20	
Arsenic	0.0504	0.0010	0.05	0.000956	99	70	130	0.05272	4.5	20	
Barium	0.0567	0.050	0.05	0.009731	94	70	130	0.05718	0.8	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175744** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220616B: 291** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060473-001CMSD** Method: **E200.8**

Analysis Date: **06/17/22 11:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	0.0486	0.0010	0.05	0	**97**	70	130	0.04997	**2.7**	20	
Chromium	0.0481	0.0050	0.05	0	**96**	70	130	0.05108	**5.9**	20	
Cobalt	0.0483	0.0050	0.05	0	**97**	70	130	0.05074	**5.0**	20	
Copper	0.0509	0.0050	0.05	0.002833	**96**	70	130	0.0536	**5.2**	20	
Iron	0.182	0.020	0.15	0.03962	**95**	70	130	0.1895	**4.0**	20	
Lead	0.0477	0.0010	0.05	0.0003943	**95**	70	130	0.04711	**1.3**	20	
Manganese	0.0503	0.0010	0.05	0.0005718	**100**	70	130	0.05216	**3.6**	20	
Molybdenum	0.0461	0.0010	0.05	0	**92**	70	130	0.04856	**5.1**	20	
Nickel	0.0490	0.0050	0.05	0.0001763	**98**	70	130	0.05109	**4.3**	20	
Selenium	0.0523	0.0010	0.05	0	**105**	70	130	0.0543	**3.8**	20	
Vanadium	0.0486	0.010	0.05	0	**97**	70	130	0.05079	**4.3**	20	
Zinc	0.0543	0.010	0.05	0	**109**	70	130	0.05527	**1.8**	20	

Associated samples: **H22060326-001B, H22060326-002B, H22060326-003B, H22060326-004B, H22060326-005B, H22060326-006B, H22060326-007B, H22060326-008B, H22060326-009B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175766
Date: *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220617A: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6010B**

Analysis Date: **06/17/22 11:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4.00	0.10	4	0	100	90	110				
Iron	3.87	0.030	4	0	97	90	110				
Manganese	3.89	0.010	4	0	97	90	110				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220617A: 13** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6010B**

Analysis Date: **06/17/22 12:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.54	0.10	2.5	0	102	90	110				
Iron	2.45	0.030	2.5	0	98	90	110				
Manganese	2.47	0.010	2.5	0	99	90	110				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220617A: 14** SampType: **Continuing Calibration Blank** Lab ID: **ICB** Method: **SW6010B**

Analysis Date: **06/17/22 12:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	-0.000860	0.10		0							
Iron	0.0000900	0.030		0							
Manganese	0.000370	0.010		0							

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175766
Date: *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220617A: 16** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6010B**

Analysis Date: **06/17/22 12:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	516	0.10	500	0	103	80	120				
Iron	182	0.030	200	0	91	80	120				
Manganese	-0.00741	0.010		0		0	0				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220617A: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6010B**

Analysis Date: **06/17/22 12:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	522	0.10	500	0	104	80	120				
Iron	183	0.030	200	0	92	80	120				
Manganese	0.473	0.010	0.5	0	95	80	120				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R175800** **Date:** *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220620B: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6010B**

Analysis Date: **06/20/22 08:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.791	0.10	0.8	0	99	90	110				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220620B: 7** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6010B**

Analysis Date: **06/20/22 09:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.47	0.10	2.5	0	99	90	110				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220620B: 8** SampType: **Continuing Calibration Blank** Lab ID: **ICB** Method: **SW6010B**

Analysis Date: **06/20/22 09:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.00435	0.10		0							

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICP2-HE_220620B: 10** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6010B**

Analysis Date: **06/20/22 09:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	-0.0105	0.10		0		0	0				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R175800
Date: *14-Jul-22*

Run ID :Run Order: **ICP2-HE_220620B: 11** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6010B**

Analysis Date: **06/20/22 09:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.978	0.10	1	0	98	80	120				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22060326
BatchID: R176026
Date: *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**
Analysis Date: **06/27/22 12:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0611	0.0010	0.06	0	102	90	110				
Barium	0.0592	0.0010	0.06	0	99	90	110				
Beryllium	0.0292	0.0010	0.03	0	97	90	110				
Cadmium	0.0299	0.0010	0.03	0	100	90	110				
Chromium	0.0583	0.0010	0.06	0	97	90	110				
Cobalt	0.0571	0.0011	0.06	0	95	90	110				
Copper	0.0585	0.0010	0.06	0	97	90	110				
Lead	0.0573	0.0010	0.06	0	95	90	110				
Molybdenum	0.0558	0.0010	0.06	0	93	90	110				
Nickel	0.0582	0.0010	0.06	0	97	90	110				
Selenium	0.0592	0.0010	0.06	0	99	90	110				
Silver	0.0298	0.0010	0.03	0	99	90	110				
Uranium	0.0572	0.00030	0.06	0	95	90	110				
Vanadium	0.0567	0.0010	0.06	0	94	90	110				
Zinc	0.0601	0.0013	0.06	0	100	90	110				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICPMS205-H_220627B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**
Analysis Date: **06/27/22 12:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.000143	0.0010		0							
Barium	0.000194	0.0010		0							
Beryllium	-0.0000420	0.0010		0							
Cadmium	0.0000407	0.0010		0							
Chromium	0.00181	0.0010		0							
Cobalt	0.0000164	0.0011		0							
Copper	0.0000458	0.0010		0							
Lead	-0.0000671	0.0010		0							
Molybdenum	0.782	0.0010	0.8	0	98	70	130				
Nickel	0.000120	0.0010		0		0	0				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R176026** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **06/27/22 12:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.000107	0.0010		0							
Silver	4.73E-06	0.0010		0							
Uranium	0.0000198	0.00030		0							
Vanadium	-0.000116	0.0010		0		0	0				
Zinc	0.000330	0.0013		0							

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICPMS205-H_220627B: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **06/27/22 12:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.00994	0.0010	0.01	0	99	70	130				
Barium	0.000105	0.0010		0		0	0				
Beryllium	-0.0000631	0.0010		0		0	0				
Cadmium	0.00973	0.0010	0.01	0	97	70	130				
Chromium	0.0208	0.0010	0.02	0	104	70	130				
Cobalt	0.0195	0.0011	0.02	0	98	70	130				
Copper	0.0189	0.0010	0.02	0	94	70	130				
Lead	-0.0000407	0.0010		0		0	0				
Molybdenum	0.784	0.0010	0.8	0	98	70	130				
Nickel	0.0193	0.0010	0.02	0	97	70	130				
Selenium	0.00954	0.0010	0.01	0	95	70	130				
Silver	0.0193	0.0010	0.02	0	96	70	130				
Uranium	0.0000222	0.00030		0		0	0				
Vanadium	0.0190	0.0010	0.02	0	95	70	130				
Zinc	0.00994	0.0013	0.01	0	99	70	130				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326
BatchID: R176026
Date: *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 20** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **06/27/22 12:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 15	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0516	0.0010	0.05	0	103	90	110				
Barium	0.0501	0.0010	0.05	0	100	90	110				
Beryllium	0.0479	0.0010	0.05	0	96	90	110				
Cadmium	0.0505	0.0010	0.05	0	101	90	110				
Chromium	0.0515	0.0010	0.05	0	103	90	110				
Cobalt	0.0513	0.0011	0.05	0	103	90	110				
Copper	0.0510	0.0010	0.05	0	102	90	110				
Lead	0.0494	0.0010	0.05	0	99	90	110				
Molybdenum	0.0514	0.0010	0.05	0	103	90	110				
Nickel	0.0503	0.0010	0.05	0	101	90	110				
Selenium	0.0501	0.0010	0.05	0	100	90	110				
Silver	0.0203	0.0010	0.02	0	102	90	110				
Uranium	0.0500	0.00030	0.05	0	100	90	110				
Vanadium	0.0501	0.0010	0.05	0	100	90	110				
Zinc	0.0503	0.0013	0.05	0	101	90	110				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICPMS205-H_220627B: 87** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**

Analysis Date: **06/28/22 07:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0610	0.0010	0.06	0	102	90	110				
Silver	0.0284	0.0010	0.03	0	95	90	110				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: R176026** **Date:** *14-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627B: 90** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **06/28/22 07:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000485	0.0010		0							
Silver	8.87E-06	0.0010		0							

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICPMS205-H_220627B: 92** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **06/28/22 07:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000261	0.0010		0		0	0				
Silver	0.0184	0.0010	0.02	0	92	70	130				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Run ID :Run Order: **ICPMS205-H_220627B: 95** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **06/28/22 07:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0478	0.0010	0.05	0	96	90	110				
Silver	0.0188	0.0010	0.02	0	94	90	110				

Associated samples: **H22060326-011A, H22060326-012A, H22060326-013A, H22060326-014A, H22060326-015A, H22060326-016A, H22060326-017A, H22060326-018A, H22060326-019A, H22060326-020A, H22060326-021A, H22060326-022A, H22060326-023A, H22060326-024A, H22060326-025A, H22060326-026A, H22060326-027A, H22060326-028A, H22060326-029A, H22060326-030A, H22060326-031A, H22060326-032A, H22060326-033A, H22060326-034A, H22060326-035A, H22060326-036A, H22060326-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: TSS220610A** **Date:** *14-Jul-22*

Run ID :Run Order: **ACCU-124 (14410200)_220610B: 1** SampType: **Method Blank** Lab ID: **MB-1_220610A** Method: **A2540 D**

Analysis Date: **06/10/22 08:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	0.3									

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **ACCU-124 (14410200)_220610B: 2** SampType: **Laboratory Control Sample** Lab ID: **LCS-2_220610A** Method: **A2540 D**

Analysis Date: **06/10/22 08:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	81.0	10	100	0	81	80	120				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **ACCU-124 (14410200)_220610B: 8** SampType: **Sample Duplicate** Lab ID: **H22060289-005A DUP** Method: **A2540 D**

Analysis Date: **06/10/22 08:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	579	10		0				577	0.3	5	

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **ACCU-124 (14410200)_220610B: 2** SampType: **Sample Duplicate** Lab ID: **H22060293-001A DUP** Method: **A2540 D**

Analysis Date: **06/10/22 08:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	71.4	29		0				82.86	15	5	R

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

- Since the difference between the analytical result for the sample and its duplicate is less than the reporting limit, the RPD variance is not considered significant.

Run ID :Run Order: **ACCU-124 (14410200)_220610B: 2** SampType: **Method Blank** Lab ID: **MB-25_220610A** Method: **A2540 D**

Analysis Date: **06/10/22 14:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	0.3									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060326 **BatchID: TSS220610A** **Date:** *14-Jul-22*

Run ID :Run Order: **ACCU-124 (14410200)_220610B: 2** SampType: **Method Blank** Lab ID: **MB-25_220610A** Method: **A2540 D**

Analysis Date: **06/10/22 14:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **ACCU-124 (14410200)_220610B: 2** SampType: **Laboratory Control Sample** Lab ID: **LCS-26_220610A** Method: **A2540 D**

Analysis Date: **06/10/22 14:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	82.0	10	100	0	82	80	120				

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **ACCU-124 (14410200)_220610B: 3** SampType: **Sample Duplicate** Lab ID: **H22060290-001A DUP** Method: **A2540 D**

Analysis Date: **06/10/22 14:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	340	40		0				336	1.2	5	

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

Run ID :Run Order: **ACCU-124 (14410200)_220610B: 4** SampType: **Sample Duplicate** Lab ID: **H22060337-007A DUP** Method: **A2540 D**

Analysis Date: **06/10/22 14:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	11.6	10		0				9.778		5	

Associated samples: **H22060326-001A, H22060326-002A, H22060326-003A, H22060326-004A, H22060326-005A, H22060326-006A, H22060326-007A, H22060326-008A, H22060326-009A, H22060326-010A**

- Since the difference between the analytical result for the sample and its duplicate is less than the reporting limit, the RPD variance is not considered significant.

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22060326

Login completed by: Wanda Johnson
Date Received: 6/9/2022

Reviewed by: BL2000\acarlson
Received by: RAT

Reviewed Date: 7/14/2022
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Applicable ☑
Container/Temp Blank temperature:	°C		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☑	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

Samples left in locked entry. Cooler 1 was received at 0.5°C and Cooler 2 at 1.4°C and Box 1 18.1C, coolers were on ice, box was not. Sample "Field Blank #1 SS-17D" on COC, container states SS-17D, used information from the COC. wjj 6/9/2022

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information (Billing information)

Company/Name	MTDEQ
Contact	Ben Quinones
Phone	(404) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ▣Email
Receive Report	☐Hard Copy ▣Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; megan.burke@respec.com
Receive Report	☐Hard Copy ▣Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

C1 0.5
C2 1.4
B1 18.1

Project Information

Project Name, PWSID, Permit, etc.	Silver Bow Creek SSTOU Monitoring
Sampler Name	T. Traxler, J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ▣ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	TR Metals (see list)	Diss Metals (see list)	TPN	NH3, NO3+NO2, TP	TSS	Hardness (TR Ca & Mg)	Tot. Alkalinity, HCO3	SO4, Cl, K, Na	Tot Metals, dry weight (see list)	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
C2	1 SS-07	6/8/22	1645	5	W	✓	✓	✓	✓	✓	✓	✓	✓				H220603 26
	2 SS-10A	6/8/22	1555	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
	3 SS-13	6/8/22	1420	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
	4 SS-14	6/8/22	1345	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
	5 SS-15A-2	6/8/22	1240	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	6 SS-16B	6/8/22	1130	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	7 Field Blank #1 SS-17D	6/8/22	1045	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	8 SS-17D	6/8/22	1030	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	9 SS-19	6/8/22	0930	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	10 SS-19 Duplicate	6/8/22	0930	5	W	✓	✓	✓	✓	✓	✓	✓	✓				

Custody Record MUST be signed							
Relinquished by (print)	Tanner Traxler	Date/Time	6/8/22 1825	Signature	Tanner Traxler	Received by (print)	Date/Time	Signature
Relinquished by (print)		Date/Time		Signature		Received by Laboratory (print) Rebecca Mick	Date/Time 6-9-22 8:00	Signature

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand delivered	2 coolers 1 box	(Y) N (C) B	Y N	see com °C	(Y) N	(Y) N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

Chain of Custody & Analytical Request Record

ENERGY LABORATORIES — Trust our People. Trust our Data.

www.energylab.com

Account Information *(Billing information)*

Company/Name	MTDEQ
Contact	Ben Quinones
Phone	(404) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information *(if different than Account Information)*

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; megan.burke@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

lab to sieve sediment samples into 3 size fractions, report as dry weight concentrations

C1 0.5
C2 1.4
B1 18.1

Project Information

Project Name, PWSID, Permit, etc.	Silver Bow Creek SSTOU Monitoring
Sampler Name	T. Traxler, J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ■ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.

Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification *(Name, Location, Interval, etc.)*	Collection Date	Collection Time	Number of Containers	Matrix *(See Codes Above)*	Tot Metals, dry weight (see list)	See Attached	RUSH TAT	ELI LAB ID *Laboratory Use Only*
1	SS-07	6/8/22	1645	1	S	✓			4220603-26
2	SS-10A	6/8/22	1515	1	S	✓			
3	SS-13	6/8/22	1420	1	S	✓			
4	SS-14	6/8/22	1345	1	S	✓			
5	SS-15A-2	6/8/22	1240	1	S	✓			
6	SS-16B	6/8/22	1130	1	S	✓			
7	SS-17D	6/8/22	1030	1	S	✓			
8	SS-19	6/8/22	0930	1	S	✓			
9	SS-19 Duplicate	6/8/22	0930	1	S	✓			
10									

B1

MET

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tarleet Traxler	6/8/22 1505	Tarleet Traxler			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Rebecca Tuttle	6-9-22 8:00	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number *(cash/check only)*
hand	2 cooler 1 box	(Y) N (C) B	Y N	see com °C	(Y) N	(Y) N	CC Cash Check_____	$	

Obtained entry

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

July 18, 2022

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22060599 Quote ID: H1526

Project Name: Silver Bow Creek SSTOU Monitoring

Energy Laboratories Inc Helena MT received the following 14 samples for MT DEQ-Federal Superfund on 6/20/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22060599-001	SS-07 0.0	06/08/22 16:45	06/20/22	Aqueous	Metals by ICP/ICPMS, Tot. Rec. Metals Digestion by E200.2
H22060599-002	SS-07 0.5	06/08/22 17:50	06/20/22	Aqueous	Same As Above
H22060599-003	SS-07 1.0	06/08/22 18:10	06/20/22	Aqueous	Same As Above
H22060599-004	SS-07 1.5	06/08/22 18:20	06/20/22	Aqueous	Same As Above
H22060599-005	SS-07 1.5 DUP	06/08/22 18:20	06/20/22	Aqueous	Same As Above
H22060599-006	SS-07 2.0	06/08/22 18:30	06/20/22	Aqueous	Same As Above
H22060599-007	SS-07 2.5	06/08/22 18:40	06/20/22	Aqueous	Same As Above
H22060599-008	SS-07 3.0	06/08/22 18:48	06/20/22	Aqueous	Same As Above
H22060599-009	QC FB SS-07 3.5	06/08/22 18:55	06/20/22	Aqueous	Same As Above
H22060599-010	SS-07 3.5	06/08/22 18:55	06/20/22	Aqueous	Same As Above
H22060599-011	SS-07 4.0	06/08/22 19:05	06/20/22	Aqueous	Same As Above
H22060599-012	SS-07 4.5	06/08/22 19:12	06/20/22	Aqueous	Same As Above
H22060599-013	SS-07 5.0	06/08/22 19:20	06/20/22	Aqueous	Same As Above
H22060599-014	SS-07 5.3	06/08/22 19:25	06/20/22	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 0.0
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-001
Collection Date: 06/08/22 16:45
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.008	mg/L		0.001	0.0003	E200.8	06/28/22 13:43 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	351	61999

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 0.5
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-002
Collection Date: 06/08/22 17:50
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.008	mg/L		0.001	0.0003	E200.8	06/28/22 15:18 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	398	61999

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 1.0
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-003
Collection Date: 06/08/22 18:10
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.008	mg/L		0.001	0.0003	E200.8	06/28/22 15:42 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	412	61999

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 1.5
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-004
Collection Date: 06/08/22 18:20
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.009	mg/L		0.001	0.0003	E200.8	06/28/22 15:44 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	413	61999

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 1.5 DUP
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-005
Collection Date: 06/08/22 18:20
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.009	mg/L		0.001	0.0003	E200.8	06/28/22 16:17 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	428	61999

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 2.0
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-006
Collection Date: 06/08/22 18:30
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.012	mg/L		0.001	0.0003	E200.8	06/28/22 16:19 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	429	61999

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 2.5
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-007
Collection Date: 06/08/22 18:40
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.012	mg/L		0.001	0.0003	E200.8	06/28/22 14:18 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	368	61999

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 3.0
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-008
Collection Date: 06/08/22 18:48
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.012	mg/L		0.001	0.0003	E200.8	06/28/22 14:20 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	369	61999

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: QC FB SS-07 3.5
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-009
Collection Date: 06/08/22 18:55
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	ND	mg/L		0.001	0.0003	E200.8	06/28/22 14:23 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	370	61999

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 3.5
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-010
Collection Date: 06/08/22 18:55
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.021	mg/L		0.001	0.0003	E200.8	06/28/22 14:25 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	371	61999

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 4.0
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-011
Collection Date: 06/08/22 19:05
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.022	mg/L		0.001	0.0003	E200.8	06/28/22 14:27 / dck	06/23/22 10:09	E200.2	ICPMS205-H_220627A	372	61999

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 4.5
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-012
Collection Date: 06/08/22 19:12
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.022	mg/L		0.001	0.0003	E200.8	06/28/22 14:29 / dck	06/23/22 10:10	E200.2	ICPMS205-H_220627A	373	61999

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 5.0
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-013
Collection Date: 06/08/22 19:20
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.021	mg/L		0.001	0.0003	E200.8	06/28/22 14:31 / dck	06/23/22 10:10	E200.2	ICPMS205-H_220627A	374	61999

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 5.3
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Aqueous

Lab ID: H22060599-014
Collection Date: 06/08/22 19:25
DateReceived: 06/20/22
Report Date: 07/18/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.022	mg/L		0.001	0.0003	E200.8	06/28/22 14:33 / dck	06/23/22 10:10	E200.2	ICPMS205-H_220627A	375	61999

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060599 **BatchID: 61999** **Date:** *18-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627A: 349** SampType: **Method Blank** Lab ID: **MB-61999** Method: **E200.8**
Analysis Date: **06/28/22 13:39** Units: **mg/L** **Prep Info:** Prep Date: **6/23/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0003									

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Run ID :Run Order: **ICPMS205-H_220627A: 362** SampType: **Laboratory Control Sample** Lab ID: **LCS-61999** Method: **E200.8**
Analysis Date: **06/28/22 14:06** Units: **mg/L** **Prep Info:** Prep Date: **6/23/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.492	0.0050	0.5	0	98	85	115				

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Run ID :Run Order: **ICPMS205-H_220627A: 363** SampType: **Sample Matrix Spike** Lab ID: **H22060599-001AMS3** Method: **E200.8**
Analysis Date: **06/28/22 14:08** Units: **mg/L** **Prep Info:** Prep Date: **6/23/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.512	0.0050	0.5	0.007979	101	70	130				

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Run ID :Run Order: **ICPMS205-H_220627A: 364** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060599-001AMSD3** Method: **E200.8**
Analysis Date: **06/28/22 14:10** Units: **mg/L** **Prep Info:** Prep Date: **6/23/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.507	0.0050	0.5	0.007979	100	70	130	0.5118	1.0	20	

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Run ID :Run Order: **ICPMS205-H_220627A: 379** SampType: **Sample Matrix Spike** Lab ID: **H22060627-001AMS3** Method: **E200.8**
Analysis Date: **06/28/22 14:41** Units: **mg/L** **Prep Info:** Prep Date: **6/23/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	12.4	0.0050	5	6.538	117	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060599 **BatchID: 61999** **Date:** *18-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627A: 379** SampType: **Sample Matrix Spike** Lab ID: **H22060627-001AMS3** Method: **E200.8**

Analysis Date: **06/28/22 14:41** Units: **mg/L** **Prep Info:** Prep Date: **6/23/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Run ID :Run Order: **ICPMS205-H_220627A: 381** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22060627-001AMSD3** Method: **E200.8**

Analysis Date: **06/28/22 14:46** Units: **mg/L** **Prep Info:** Prep Date: **6/23/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	12.2	0.0050	5	6.538	**114**	70	130	12.38	**1.1**	20	

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060599
BatchID: R176009
Date: *18-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627A: 338** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **06/28/22 13:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0630	0.010	0.06	0	105	90	110				

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Run ID :Run Order: **ICPMS205-H_220627A: 346** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/28/22 13:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0520	0.010	0.05	0	104	90	110				

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Run ID :Run Order: **ICPMS205-H_220627A: 366** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/28/22 14:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0529	0.010	0.05	0	106	90	110				

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Run ID :Run Order: **ICPMS205-H_220627A: 396** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/28/22 15:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0522	0.010	0.05	0	104	90	110				

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Run ID :Run Order: **ICPMS205-H_220627A: 410** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/28/22 15:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0525	0.010	0.05	0	105	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22060599 **BatchID: R176009** **Date:** *18-Jul-22*

Run ID :Run Order: **ICPMS205-H_220627A: 410** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/28/22 15:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Run ID :Run Order: **ICPMS205-H_220627A: 426** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/28/22 16:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0528	0.010	0.05	0	**106**	90	110				

Associated samples: **H22060599-001A, H22060599-002A, H22060599-003A, H22060599-004A, H22060599-005A, H22060599-006A, H22060599-007A, H22060599-008A, H22060599-009A, H22060599-010A, H22060599-011A, H22060599-012A, H22060599-013A, H22060599-014A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22060599

Login completed by: Rebecca A. Tooke
Date Received: 6/20/2022

Reviewed by: BL2000\acarlson
Received by: amh

Reviewed Date: 7/18/2022
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	2.1°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

None

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Chain of Custody & Analytical Request Record

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Page 1 of 2

Account Information (Billing information)

Company/Name	MTDEQ
Contact	Ben Quinones
Phone	(404) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; megan.burke@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

Project Information

Project Name, PWSID, Permit, etc.	Silver Bow Creek SSTOU Monitoring
Sampler Name	J. Naughton
Sampler Phone	(406) 214-4478
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ■ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	TR Copper	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	SS-07 0.0	6/15/22	1645	1	W	✓			H220605-09
2	SS-07 0.5		1750	1	W	✓			
3	SS-07 1.0		1810	1	W	✓			
4	SS-07 1.5		1820	1	W	✓			
5	SS-07 1.5 DUP		1820	1	W	✓			
6	SS-07 2.0		1830	1	W	✓			
7	SS-07 2.5		1840	1	W	✓			
8	SS-07 3.0		1848	1	W	✓			
9	QC FB SS-07 3.5		1855	1	W	✓			
10	SS-07 3.5	↓	1855	1	W	✓			

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tawnee Traxler	6/20/22 1043	Tawnee Traxler			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Margaret	6/20/22 1043	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand	2	Y (N) C B	Y N	2.1 °C	(Y) N	(Y) N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

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Chain of Custody & Analytical Request Record

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Page 2 of 2

Account Information *(Billing Information)*

Company/Name	MTDEQ
Contact	Ben Quinones
Phone	(404) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information *(if different than Account Information)*

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; megan.burke@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

Project Information

Project Name, PWSID, Permit, etc.	Silver Bow Creek SSTOU Monitoring
Sampler Name	J. Naughton
Sampler Phone	(406) 214-4478
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ■ No

MINING CLIENTS, please indicate sample type
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Solls/ Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

Analysis Requested

All turnaround times are standard unless marked as RUSH

Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling -- See Instructions Page

	Sample Identification *(Name, Location, Interval, etc.)*	Collection Date	Collection Time	Number of Containers	Matrix *(See Codes Above)*	TR Copper	See Attached	RUSH TAT	ELI LAB ID *Laboratory Use Only*
1	55-07 4.0	6/8/22	1905	1	W	✓			H220605-9
2	55-07 4.5		1912	1	W	✓			
3	55-07 5.0		1920	1	W	✓			
4	55-07 5.3	↓	1925	1	W	✓			
5				1	W	✓			
6				1	W	✓			
7				1	W	✓			
8				1	W	✓			
9				1	W	✓			
10				1	W	✓			

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tanner Thaxter	6/9/22 1043				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
					6/10/22 1043	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	Chilled	Payment Type	Amount	Receipt Number *(cash/check only)*
hand		Y (N) C B	Y N	20 °C	(Y) N	(Y) N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility All subcontracted data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

June 14, 2022

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22050843 Quote ID: H1526

Project Name: SSTOU Repository Groundwater

Energy Laboratories Inc Helena MT received the following 8 samples for MT DEQ-Federal Superfund on 5/24/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22050843-001	1GW-1056	05/24/22 14:20	05/24/22	Groundwater	Metals by ICP/ICPMS, Dissolved Alkalinity to pH 4.5 Conductivity Mercury, Dissolved Hardness Anions by Ion Chromatography Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1
H22050843-002	LYP-07	05/24/22 14:55	05/24/22	Aqueous	Same As Above
H22050843-003	MW-2A	05/24/22 15:25	05/24/22	Aqueous	Same As Above
H22050843-004	MW-2B	05/24/22 11:50	05/24/22	Aqueous	Same As Above
H22050843-005	MW-2C	05/24/22 13:05	05/24/22	Aqueous	Same As Above
H22050843-006	MW-2D	05/24/22 14:00	05/24/22	Aqueous	Same As Above
H22050843-007	MW-2C-DUP	05/24/22 13:05	05/24/22	Aqueous	Same As Above
H22050843-008	Blank MW-2B	05/24/22 12:00	05/24/22	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: 1GW-1056
Project: SSTOU Repository Groundwater
Matrix: Groundwater

Lab ID: H22050843-001
Collection Date: 05/24/22 14:20
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	05/30/22 18:30 / JAR			PHSC_101-H_220530A : 12		R175174
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	05/30/22 18:30 / JAR			PHSC_101-H_220530A : 12		R175174
Chloride	39	mg/L		1	0.02	E300.0	06/02/22 22:46 / JAR			IC METROHM_220531A : 221		R175253
Sulfate	164	mg/L		1	0.06	E300.0	06/02/22 22:46 / JAR			IC METROHM_220531A : 221		R175253
Hardness as CaCO3	299	mg/L		1	1	A2340 B	05/31/22 10:31 / sld			WATERCALC_220531A : 2		R175194
METALS, DISSOLVED												
Aluminum	0.147	mg/L		0.009	0.003	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Antimony	ND	mg/L		0.0005	0.0002	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Barium	0.035	mg/L		0.003	0.0002	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Boron	0.039	mg/L	J	0.1	0.004	E200.7	05/27/22 18:39 / sld	05/26/22 12:38		ICP2-HE_220527A : 162		R175178
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Calcium	89	mg/L		1	0.2	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Copper	0.0005	mg/L	J	0.001	0.0001	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Iron	0.08	mg/L		0.02	0.004	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Lead	ND	mg/L		0.0003	0.0001	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Magnesium	19	mg/L		1	0.01	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Manganese	0.018	mg/L		0.001	0.0003	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Mercury	0.002	ug/L	J	0.005	0.001	E245.1	05/27/22 10:22 / kjb	05/26/22 09:05	E245.1	HGCV205-H_220527A : 24		61562
Molybdenum	0.006	mg/L		0.005	0.0003	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Potassium	3	mg/L		1	0.04	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Selenium	0.005	mg/L		0.001	0.00007	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Sodium	28	mg/L		1	0.02	E200.7	05/27/22 18:39 / sld	05/26/22 12:38		ICP2-HE_220527A : 162		R175178
Uranium	0.0397	mg/L		0.0002	0.00002	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Vanadium	0.0028	mg/L	J	0.1	0.0001	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	05/26/22 16:58 / dck	05/26/22 12:38		ICPMS205-H_220525B : 306		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYP-07
Project: SSTOU Repository Groundwater
Matrix: Aqueous

Lab ID: H22050843-002
Collection Date: 05/24/22 14:55
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	200	mg/L		4	2	A2320 B	05/30/22 18:38 / JAR			PHSC_101-H_220530A : 14		R175174
Bicarbonate as HCO3	240	mg/L		4	3	A2320 B	05/30/22 18:38 / JAR			PHSC_101-H_220530A : 14		R175174
Chloride	42	mg/L		1	0.02	E300.0	06/02/22 23:00 / JAR			IC METROHM_220531A : 222		R175253
Sulfate	143	mg/L		1	0.06	E300.0	06/02/22 23:00 / JAR			IC METROHM_220531A : 222		R175253
Hardness as CaCO3	327	mg/L		1	1	A2340 B	06/02/22 10:37 / sld			WATERCALC_220602A : 1		R175274
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Antimony	0.0005	mg/L	J	0.0005	0.0002	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Barium	0.055	mg/L		0.003	0.0002	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Boron	0.046	mg/L	J	0.1	0.004	E200.7	05/27/22 18:42 / sld	05/26/22 12:38		ICP2-HE_220527A : 163		R175178
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Calcium	99	mg/L		1	0.2	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Chromium	ND	mg/L		0.01	0.0001	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Cobalt	0.002	mg/L	J	0.01	0.001	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Copper	0.0002	mg/L	J	0.001	0.0001	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Iron	0.55	mg/L		0.02	0.004	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Lead	ND	mg/L		0.0003	0.0001	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Magnesium	19	mg/L		1	0.01	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Manganese	0.165	mg/L		0.001	0.0003	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Mercury	0.009	ug/L		0.005	0.001	E245.1	05/27/22 10:25 / kjb	05/26/22 09:05	E245.1	HGCV205-H_220527A : 25		61562
Molybdenum	0.0030	mg/L	J	0.005	0.0003	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Nickel	0.002	mg/L		0.002	0.0002	E200.8	06/01/22 19:03 / dck	05/26/22 12:38		ICPMS205-H_220601A : 189		R175239
Potassium	11	mg/L		1	0.04	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Selenium	0.003	mg/L		0.001	0.00007	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Sodium	35	mg/L		1	0.02	E200.7	05/27/22 18:42 / sld	05/26/22 12:38		ICP2-HE_220527A : 163		R175178
Uranium	0.0361	mg/L		0.0002	0.00002	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Vanadium	0.0033	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	05/26/22 17:01 / dck	05/26/22 12:38		ICPMS205-H_220525B : 307		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2A
Project: SSTOU Repository Groundwater
Matrix: Aqueous

Lab ID: H22050843-003
Collection Date: 05/24/22 15:25
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	05/30/22 18:47 / JAR			PHSC_101-H_220530A : 15		R175174
Bicarbonate as HCO3	140	mg/L		4	3	A2320 B	05/30/22 18:47 / JAR			PHSC_101-H_220530A : 15		R175174
Chloride	8	mg/L		1	0.02	E300.0	06/02/22 23:15 / JAR			IC METROHM_220531A : 223		R175253
Sulfate	193	mg/L		1	0.06	E300.0	06/02/22 23:15 / JAR			IC METROHM_220531A : 223		R175253
Hardness as CaCO3	269	mg/L		1	1	A2340 B	05/27/22 10:28 / sld			WATERCALC_220527A : 1		R175123
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Arsenic	0.012	mg/L		0.001	0.0002	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Barium	0.013	mg/L		0.003	0.0002	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Boron	0.025	mg/L	J	0.1	0.004	E200.7	05/26/22 14:56 / sld	05/26/22 11:28		ICP2-HE_220526A : 104		R175093
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Calcium	87	mg/L		1	0.1	E200.7	05/26/22 14:56 / sld	05/26/22 11:28		ICP2-HE_220526A : 104		R175093
Chromium	ND	mg/L		0.01	0.0001	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Copper	ND	mg/L		0.001	0.0001	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 14:56 / sld	05/26/22 11:28		ICP2-HE_220526A : 104		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Magnesium	13	mg/L		1	0.02	E200.7	05/26/22 14:56 / sld	05/26/22 11:28		ICP2-HE_220526A : 104		R175093
Manganese	ND	mg/L		0.001	0.0003	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Mercury	ND	ug/L		0.005	0.003	E245.1	05/27/22 10:35 / kjb	05/26/22 09:05	E245.1	HGCV205-H_220527A : 28		61562
Molybdenum	0.008	mg/L		0.005	0.0003	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Nickel	ND	mg/L		0.002	0.0002	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Potassium	4	mg/L		1	0.06	E200.7	05/26/22 14:56 / sld	05/26/22 11:28		ICP2-HE_220526A : 104		R175093
Selenium	0.011	mg/L		0.001	0.00007	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Sodium	26	mg/L		1	0.02	E200.7	05/26/22 14:56 / sld	05/26/22 11:28		ICP2-HE_220526A : 104		R175093
Uranium	0.0382	mg/L		0.0002	0.00002	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Vanadium	0.0032	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089
Zinc	ND	mg/L		0.008	0.001	E200.8	05/26/22 17:03 / dck	05/26/22 11:28		ICPMS205-H_220525B : 308		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2B
Project: SSTOU Repository Groundwater
Matrix: Aqueous

Lab ID: H22050843-004
Collection Date: 05/24/22 11:50
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	92	mg/L		4	2	A2320 B	05/30/22 18:53 / JAR			PHSC_101-H_220530A : 17		R175174
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	05/30/22 18:53 / JAR			PHSC_101-H_220530A : 17		R175174
Chloride	33	mg/L		1	0.02	E300.0	06/02/22 23:29 / JAR			IC METROHM_220531A : 224		R175253
Sulfate	106	mg/L		1	0.06	E300.0	06/02/22 23:29 / JAR			IC METROHM_220531A : 224		R175253
Hardness as CaCO3	196	mg/L		1	1	A2340 B	05/27/22 10:28 / sld			WATERCALC_220527A : 2		R175123
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Arsenic	0.012	mg/L		0.001	0.0002	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Barium	0.027	mg/L		0.003	0.0002	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Boron	0.028	mg/L	J	0.1	0.004	E200.7	05/26/22 15:00 / sld	05/26/22 11:28		ICP2-HE_220526A : 105		R175093
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Calcium	57	mg/L		1	0.1	E200.7	05/26/22 15:00 / sld	05/26/22 11:28		ICP2-HE_220526A : 105		R175093
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Copper	0.0008	mg/L	J	0.001	0.0001	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 15:00 / sld	05/26/22 11:28		ICP2-HE_220526A : 105		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Magnesium	13	mg/L		1	0.02	E200.7	05/26/22 15:00 / sld	05/26/22 11:28		ICP2-HE_220526A : 105		R175093
Manganese	ND	mg/L		0.001	0.0003	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Mercury	0.001	ug/L	J	0.005	0.001	E245.1	05/27/22 10:45 / kjb	05/26/22 09:05	E245.1	HGCV205-H_220527A : 31		61562
Molybdenum	0.0022	mg/L	J	0.005	0.0003	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Nickel	ND	mg/L		0.002	0.0002	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Potassium	3	mg/L		1	0.06	E200.7	05/26/22 15:00 / sld	05/26/22 11:28		ICP2-HE_220526A : 105		R175093
Selenium	0.003	mg/L		0.001	0.00007	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Sodium	22	mg/L		1	0.02	E200.7	05/26/22 15:00 / sld	05/26/22 11:28		ICP2-HE_220526A : 105		R175093
Uranium	0.0068	mg/L		0.0002	0.00002	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Vanadium	0.0029	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089
Zinc	ND	mg/L		0.008	0.001	E200.8	05/26/22 17:06 / dck	05/26/22 11:28		ICPMS205-H_220525B : 309		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2C
Project: SSTOU Repository Groundwater
Matrix: Aqueous

Lab ID: H22050843-005
Collection Date: 05/24/22 13:05
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	99	mg/L		4	2	A2320 B	05/30/22 19:01 / JAR			PHSC_101-H_220530A : 19		R175174
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	05/30/22 19:01 / JAR			PHSC_101-H_220530A : 19		R175174
Chloride	37	mg/L		1	0.02	E300.0	06/02/22 23:43 / JAR			IC METROHM_220531A : 225		R175253
Sulfate	140	mg/L		1	0.06	E300.0	06/02/22 23:43 / JAR			IC METROHM_220531A : 225		R175253
Hardness as CaCO3	229	mg/L		1	1	A2340 B	05/27/22 10:28 / sld			WATERCALC_220527A : 3		R175123
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Antimony	ND	mg/L		0.0005	0.0002	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Barium	0.019	mg/L		0.003	0.0002	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Boron	0.038	mg/L	J	0.1	0.004	E200.7	05/26/22 15:03 / sld	05/26/22 11:28		ICP2-HE_220526A : 106		R175093
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Calcium	67	mg/L		1	0.1	E200.7	05/26/22 15:03 / sld	05/26/22 11:28		ICP2-HE_220526A : 106		R175093
Chromium	ND	mg/L		0.01	0.0001	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Copper	ND	mg/L		0.001	0.0001	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 15:03 / sld	05/26/22 11:28		ICP2-HE_220526A : 106		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Magnesium	15	mg/L		1	0.02	E200.7	05/26/22 15:03 / sld	05/26/22 11:28		ICP2-HE_220526A : 106		R175093
Manganese	ND	mg/L		0.001	0.0003	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Mercury	ND	ug/L		0.005	0.001	E245.1	05/27/22 10:48 / kjb	05/26/22 09:05	E245.1	HGCV205-H_220527A : 32		61562
Molybdenum	0.0015	mg/L	J	0.005	0.0003	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Nickel	ND	mg/L		0.002	0.0002	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Potassium	3	mg/L		1	0.06	E200.7	05/26/22 15:03 / sld	05/26/22 11:28		ICP2-HE_220526A : 106		R175093
Selenium	0.003	mg/L		0.001	0.00007	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Sodium	29	mg/L		1	0.02	E200.7	05/26/22 15:03 / sld	05/26/22 11:28		ICP2-HE_220526A : 106		R175093
Uranium	0.0062	mg/L		0.0002	0.00002	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Vanadium	0.0025	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089
Zinc	ND	mg/L		0.008	0.001	E200.8	05/26/22 17:09 / dck	05/26/22 11:28		ICPMS205-H_220525B : 310		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2D
Project: SSTOU Repository Groundwater
Matrix: Aqueous

Lab ID: H22050843-006
Collection Date: 05/24/22 14:00
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	150	mg/L		4	2	A2320 B	05/30/22 19:08 / JAR			PHSC_101-H_220530A : 21		R175174
Bicarbonate as HCO3	180	mg/L		4	3	A2320 B	05/30/22 19:08 / JAR			PHSC_101-H_220530A : 21		R175174
Chloride	50	mg/L		1	0.02	E300.0	06/03/22 01:10 / JAR			IC METROHM_220531A : 230		R175253
Sulfate	178	mg/L		1	0.06	E300.0	06/03/22 01:10 / JAR			IC METROHM_220531A : 230		R175253
Hardness as CaCO3	342	mg/L		1	1	A2340 B	05/27/22 10:28 / sld			WATERCALC_220527A : 4		R175123
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Antimony	ND	mg/L		0.0005	0.0002	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Barium	0.045	mg/L		0.003	0.0002	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Boron	0.050	mg/L	J	0.1	0.004	E200.7	05/26/22 15:07 / sld	05/26/22 11:28		ICP2-HE_220526A : 107		R175093
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Calcium	104	mg/L		1	0.1	E200.7	05/26/22 15:07 / sld	05/26/22 11:28		ICP2-HE_220526A : 107		R175093
Chromium	ND	mg/L		0.01	0.0001	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Copper	ND	mg/L		0.001	0.0001	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 15:07 / sld	05/26/22 11:28		ICP2-HE_220526A : 107		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Magnesium	20	mg/L		1	0.02	E200.7	05/26/22 15:07 / sld	05/26/22 11:28		ICP2-HE_220526A : 107		R175093
Manganese	0.0007	mg/L	J	0.001	0.0003	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Mercury	ND	ug/L		0.005	0.001	E245.1	05/27/22 10:51 / kjb	05/26/22 09:05	E245.1	HGCV205-H_220527A : 33		61562
Molybdenum	0.005	mg/L		0.005	0.0003	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Nickel	ND	mg/L		0.002	0.0002	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Potassium	4	mg/L		1	0.06	E200.7	05/26/22 15:07 / sld	05/26/22 11:28		ICP2-HE_220526A : 107		R175093
Selenium	0.005	mg/L		0.001	0.00007	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Sodium	30	mg/L		1	0.02	E200.7	05/26/22 15:07 / sld	05/26/22 11:28		ICP2-HE_220526A : 107		R175093
Uranium	0.0468	mg/L		0.0002	0.00002	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Vanadium	0.0027	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089
Zinc	ND	mg/L		0.008	0.001	E200.8	05/26/22 17:12 / dck	05/26/22 11:28		ICPMS205-H_220525B : 311		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2C-DUP
Project: SSTOU Repository Groundwater
Matrix: Aqueous

Lab ID: H22050843-007
Collection Date: 05/24/22 13:05
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	96	mg/L		4	2	A2320 B	05/30/22 19:16 / JAR			PHSC_101-H_220530A : 23		R175174
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	05/30/22 19:16 / JAR			PHSC_101-H_220530A : 23		R175174
Chloride	37	mg/L		1	0.02	E300.0	06/03/22 01:24 / JAR			IC METROHM_220531A : 231		R175253
Sulfate	139	mg/L		1	0.06	E300.0	06/03/22 01:24 / JAR			IC METROHM_220531A : 231		R175253
Hardness as CaCO3	235	mg/L		1	1	A2340 B	05/27/22 10:28 / sld			WATERCALC_220527A : 5		R175123
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Antimony	ND	mg/L		0.0005	0.0002	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Barium	0.019	mg/L		0.003	0.0002	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Boron	0.039	mg/L	J	0.1	0.004	E200.7	05/26/22 15:11 / sld	05/26/22 11:28		ICP2-HE_220526A : 108		R175093
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Calcium	70	mg/L		1	0.1	E200.7	05/26/22 15:11 / sld	05/26/22 11:28		ICP2-HE_220526A : 108		R175093
Chromium	ND	mg/L		0.01	0.0001	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Copper	ND	mg/L		0.001	0.0001	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 15:11 / sld	05/26/22 11:28		ICP2-HE_220526A : 108		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Magnesium	15	mg/L		1	0.02	E200.7	05/26/22 15:11 / sld	05/26/22 11:28		ICP2-HE_220526A : 108		R175093
Manganese	ND	mg/L		0.001	0.0003	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Mercury	ND	ug/L		0.005	0.001	E245.1	05/27/22 10:54 / kjb	05/26/22 09:05	E245.1	HGCV205-H_220527A : 34		61562
Molybdenum	0.0015	mg/L	J	0.005	0.0003	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Nickel	ND	mg/L		0.002	0.0002	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Potassium	3	mg/L		1	0.06	E200.7	05/26/22 15:11 / sld	05/26/22 11:28		ICP2-HE_220526A : 108		R175093
Selenium	0.003	mg/L		0.001	0.00007	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Sodium	29	mg/L		1	0.02	E200.7	05/26/22 15:11 / sld	05/26/22 11:28		ICP2-HE_220526A : 108		R175093
Uranium	0.0063	mg/L		0.0002	0.00002	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Vanadium	0.0025	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089
Zinc	ND	mg/L		0.008	0.001	E200.8	05/26/22 17:14 / dck	05/26/22 11:28		ICPMS205-H_220525B : 312		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Blank MW-2B
Project: SSTOU Repository Groundwater
Matrix: Aqueous

Lab ID: H22050843-008
Collection Date: 05/24/22 12:00
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4	2	A2320 B	05/30/22 19:24 / JAR			PHSC_101-H_220530A : 25		R175174
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	05/30/22 19:24 / JAR			PHSC_101-H_220530A : 25		R175174
Chloride	ND	mg/L		1	0.02	E300.0	06/03/22 01:39 / JAR			IC METROHM_220531A : 232		R175253
Sulfate	ND	mg/L		1	0.06	E300.0	06/03/22 01:39 / JAR			IC METROHM_220531A : 232		R175253
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	05/27/22 10:28 / sld			WATERCALC_220527A : 6		R175123
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Antimony	ND	mg/L		0.0005	0.0002	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Arsenic	ND	mg/L		0.001	0.0002	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Barium	ND	mg/L		0.003	0.0002	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Boron	ND	mg/L		0.1	0.004	E200.7	05/26/22 15:15 / sld	05/26/22 11:28		ICP2-HE_220526A : 109		R175093
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Calcium	ND	mg/L		1	0.1	E200.7	05/26/22 15:15 / sld	05/26/22 11:28		ICP2-HE_220526A : 109		R175093
Chromium	ND	mg/L		0.01	0.0001	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Copper	ND	mg/L		0.001	0.0001	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 15:15 / sld	05/26/22 11:28		ICP2-HE_220526A : 109		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Magnesium	ND	mg/L		1	0.02	E200.7	05/26/22 15:15 / sld	05/26/22 11:28		ICP2-HE_220526A : 109		R175093
Manganese	ND	mg/L		0.001	0.0003	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Mercury	ND	ug/L		0.005	0.001	E245.1	05/27/22 10:57 / kjb	05/26/22 09:05	E245.1	HGCV205-H_220527A : 35		61562
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Nickel	ND	mg/L		0.002	0.0002	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Potassium	ND	mg/L		1	0.06	E200.7	05/26/22 15:15 / sld	05/26/22 11:28		ICP2-HE_220526A : 109		R175093
Selenium	ND	mg/L		0.001	0.00007	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Sodium	ND	mg/L		1	0.02	E200.7	05/26/22 15:15 / sld	05/26/22 11:28		ICP2-HE_220526A : 109		R175093
Uranium	ND	mg/L		0.0002	0.00002	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Vanadium	0.0001	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089
Zinc	ND	mg/L		0.008	0.001	E200.8	05/26/22 17:17 / dck	05/26/22 11:28		ICPMS205-H_220525B : 313		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843
BatchID: 220527waLL-hg205
Date: *14-Jun-22*

Run ID :Run Order: **HGCV205-H_220527A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**
Analysis Date: **05/27/22 09:23** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0974	0.0050	0.1	0	97	90	110				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **HGCV205-H_220527A: 10** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV1** Method: **E245.1**
Analysis Date: **05/27/22 09:26** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0990	0.0050	0.1	0	99	90	110				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **HGCV205-H_220527A: 26** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E245.1**
Analysis Date: **05/27/22 10:29** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.101	0.0050	0.1	0	101	90	110				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843 **BatchID: 61562** **Date:** *14-Jun-22*

Run ID :Run Order: **HGCV205-H_220527A: 12** SampType: **Method Blank** Lab ID: **MB-61562** Method: **E245.1**
Analysis Date: **05/27/22 09:43** Units: **ug/L** **Prep Info:** Prep Date: **5/25/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.001									

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **HGCV205-H_220527A: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-61562** Method: **E245.1**
Analysis Date: **05/27/22 09:46** Units: **ug/L** **Prep Info:** Prep Date: **5/25/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0494	0.0050	0.05	0	99	90	110				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **HGCV205-H_220527A: 29** SampType: **Sample Matrix Spike** Lab ID: **H22050843-003BMS** Method: **E245.1**
Analysis Date: **05/27/22 10:38** Units: **ug/L** **Prep Info:** Prep Date: **5/26/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0961	0.0050	0.1	0	96	70	130				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **HGCV205-H_220527A: 30** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050843-003BMSD** Method: **E245.1**
Analysis Date: **05/27/22 10:41** Units: **ug/L** **Prep Info:** Prep Date: **5/26/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0976	0.0050	0.1	0	98	70	130	0.0961	1.5	20	

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843
BatchID: R175089
Date: *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **05/25/22 09:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.304	0.10	0.3	0	**101**	90	110				
Antimony	0.0615	0.050	0.06	0	**102**	90	110				
Arsenic	0.0614	0.0050	0.06	0	**102**	90	110				
Barium	0.0604	0.10	0.06	0	**101**	90	110				
Beryllium	0.0303	0.0010	0.03	0	**101**	90	110				
Cadmium	0.0308	0.0010	0.03	0	**103**	90	110				
Calcium	3.04	0.50	3	0	**101**	90	110				
Chromium	0.0597	0.010	0.06	0	**99**	90	110				
Cobalt	0.0587	0.010	0.06	0	**98**	90	110				
Copper	0.0610	0.010	0.06	0	**102**	90	110				
Iron	0.294	0.020	0.3	0	**98**	90	110				
Lead	0.0587	0.010	0.06	0	**98**	90	110				
Magnesium	2.98	0.50	3	0	**99**	90	110				
Manganese	0.297	0.010	0.3	0	**99**	90	110				
Molybdenum	0.0578	0.0050	0.06	0	**96**	90	110				
Nickel	0.0608	0.010	0.06	0	**101**	90	110				
Potassium	3.02	0.50	3	0	**101**	90	110				
Selenium	0.0606	0.0050	0.06	0	**101**	90	110				
Silver	0.0310	0.0050	0.03	0	**103**	90	110				
Uranium	0.0580	0.00030	0.06	0	**97**	90	110				
Vanadium	0.0590	0.10	0.06	0	**98**	90	110				
Zinc	0.0639	0.010	0.06	0	**106**	90	110				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**
Analysis Date: **05/25/22 10:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	43.1	0.10	40	0	**108**	70	130				
Antimony	0.0000419	0.050		0							
Arsenic	0.0000282	0.0050		0							
Barium	0.000144	0.10		0							
Beryllium	-0.0000509	0.0010		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843 **BatchID: R175089** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**
Analysis Date: **05/25/22 10:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.000110	0.0010		0							
Calcium	124	0.50	120	0	104	70	130				
Chromium	0.00189	0.010		0							
Cobalt	0.0000220	0.010		0							
Copper	0.000174	0.010		0							
Iron	103	0.020	100	0	103	70	130				
Lead	0.000118	0.010		0							
Magnesium	42.5	0.50	40	0	106	70	130				
Manganese	0.000391	0.010		0							
Molybdenum	0.870	0.0050	0.8	0	109	70	130				
Nickel	0.000116	0.010		0							
Potassium	40.4	0.50	40	0	101	70	130				
Selenium	0.000217	0.0050		0							
Silver	3.20E-06	0.0050		0							
Uranium	0.0000229	0.00030		0							
Vanadium	-0.0000508	0.10		0							
Zinc	0.000485	0.010		0							

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**
Analysis Date: **05/25/22 10:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	43.7	0.10	40	0	109	70	130				
Antimony	0.0000295	0.050		0		0	0				
Arsenic	0.0104	0.0050	0.01	0	104	70	130				
Barium	0.000160	0.10		0		0	0				
Beryllium	-0.0000654	0.0010		0		0	0				
Cadmium	0.0107	0.0010	0.01	0	107	70	130				
Calcium	126	0.50	120	0	105	70	130				
Chromium	0.0219	0.010	0.02	0	109	70	130				
Cobalt	0.0206	0.010	0.02	0	103	70	130				
Copper	0.0203	0.010	0.02	0	102	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843
BatchID: R175089
Date: *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**
Analysis Date: **05/25/22 10:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	105	0.020	100	0	105	70	130				
Lead	0.0000790	0.010		0		0	0				
Magnesium	42.9	0.50	40	0	107	70	130				
Manganese	0.0211	0.010	0.02	0	105	70	130				
Molybdenum	0.868	0.0050	0.8	0	108	70	130				
Nickel	0.0207	0.010	0.02	0	103	70	130				
Potassium	40.9	0.50	40	0	102	70	130				
Selenium	0.0102	0.0050	0.01	0	102	70	130				
Silver	0.0204	0.0050	0.02	0	102	70	130				
Uranium	0.0000206	0.00030		0		0	0				
Vanadium	0.0202	0.10	0.02	0	101	70	130				
Zinc	0.0104	0.010	0.01	0	104	70	130				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 22** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **05/25/22 12:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Antimony	ND	0.0002									
Arsenic	ND	0.0002									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00002									
Calcium	ND	0.2									
Chromium	ND	0.0001									
Cobalt	ND	0.001									
Copper	ND	0.0001									
Iron	ND	0.004									
Lead	ND	0.0001									
Magnesium	ND	0.01									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843 **BatchID:** R175089 **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 22** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **05/25/22 12:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	ND	0.0002									
Potassium	ND	0.04									
Selenium	ND	0.00007									
Silver	ND	0.00008									
Uranium	ND	0.00002									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **05/25/22 13:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0520	0.10	0.05	0	**104**	85	115				
Antimony	0.0506	0.050	0.05	0	**101**	85	115				
Arsenic	0.0498	0.0050	0.05	0	**100**	85	115				
Barium	0.0513	0.10	0.05	0	**103**	85	115				
Beryllium	0.0507	0.0010	0.05	0	**101**	85	115				
Cadmium	0.0505	0.0010	0.05	0	**101**	85	115				
Calcium	1.02	0.50	1	0	**102**	85	115				
Chromium	0.0489	0.010	0.05	0	**98**	85	115				
Cobalt	0.0498	0.010	0.05	0	**100**	85	115				
Copper	0.0504	0.010	0.05	0	**101**	85	115				
Iron	0.149	0.020	0.15	0	**99**	85	115				
Lead	0.0485	0.010	0.05	0	**97**	85	115				
Magnesium	0.989	0.50	1	0	**99**	85	115				
Manganese	0.0497	0.010	0.05	0	**99**	85	115				
Molybdenum	0.0474	0.0050	0.05	0	**95**	85	115				
Nickel	0.0500	0.010	0.05	0	**100**	85	115				
Potassium	0.985	0.50	1	0	**98**	85	115				
Selenium	0.0511	0.0050	0.05	0	**102**	85	115				
Silver	0.0202	0.0050	0.02	0	**101**	85	115				
Uranium	0.0477	0.00030	0.05	0	**95**	85	115				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843 **BatchID:** R175089 **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **05/25/22 13:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	0.0482	0.10	0.05	0	**96**	85	115				
Zinc	0.0524	0.010	0.05	0	**105**	85	115				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 165** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **05/26/22 08:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.298	0.10	0.3	0	**99**	90	110				
Antimony	0.0617	0.050	0.06	0	**103**	90	110				
Arsenic	0.0630	0.0050	0.06	0	**105**	90	110				
Barium	0.0608	0.10	0.06	0	**101**	90	110				
Beryllium	0.0310	0.0010	0.03	0	**103**	90	110				
Cadmium	0.0313	0.0010	0.03	0	**104**	90	110				
Calcium	3.03	0.50	3	0	**101**	90	110				
Chromium	0.0607	0.010	0.06	0	**101**	90	110				
Cobalt	0.0598	0.010	0.06	0	**100**	90	110				
Copper	0.0620	0.010	0.06	0	**103**	90	110				
Iron	0.293	0.020	0.3	0	**98**	90	110				
Lead	0.0594	0.010	0.06	0	**99**	90	110				
Magnesium	3.01	0.50	3	0	**100**	90	110				
Manganese	0.302	0.010	0.3	0	**101**	90	110				
Molybdenum	0.0582	0.0050	0.06	0	**97**	90	110				
Nickel	0.0614	0.010	0.06	0	**102**	90	110				
Potassium	3.06	0.50	3	0	**102**	90	110				
Selenium	0.0615	0.0050	0.06	0	**103**	90	110				
Silver	0.0311	0.0050	0.03	0	**104**	90	110				
Uranium	0.0594	0.00030	0.06	0	**99**	90	110				
Vanadium	0.0599	0.10	0.06	0	**100**	90	110				
Zinc	0.0657	0.010	0.06	0	**109**	90	110				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843 **BatchID: R175089** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 168** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**
Analysis Date: **05/26/22 08:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.8	0.10	40	0	102	70	130				
Antimony	0.0000474	0.050		0							
Arsenic	0.0000466	0.0050		0							
Barium	0.000248	0.10		0							
Beryllium	-0.0000358	0.0010		0							
Cadmium	0.000142	0.0010		0							
Calcium	123	0.50	120	0	102	70	130				
Chromium	0.00188	0.010		0							
Cobalt	0.0000552	0.010		0							
Copper	0.000199	0.010		0							
Iron	101	0.020	100	0	101	70	130				
Lead	0.000256	0.010		0							
Magnesium	41.1	0.50	40	0	103	70	130				
Manganese	0.000351	0.010		0							
Molybdenum	0.881	0.0050	0.8	0	110	70	130				
Nickel	-0.0000273	0.010		0							
Potassium	39.8	0.50	40	0	100	70	130				
Selenium	0.000169	0.0050		0							
Silver	0.0000147	0.0050		0							
Uranium	0.0000249	0.00030		0							
Vanadium	-0.0000380	0.10		0							
Zinc	0.000699	0.010		0							

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 170** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**
Analysis Date: **05/26/22 08:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.9	0.10	40	0	105	70	130				
Antimony	0.0000353	0.050		0		0	0				
Arsenic	0.0104	0.0050	0.01	0	104	70	130				
Barium	0.000260	0.10		0		0	0				
Beryllium	-0.0000136	0.0010		0		0	0				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843 **BatchID: R175089** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 170** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**
Analysis Date: **05/26/22 08:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0105	0.0010	0.01	0	105	70	130				
Calcium	124	0.50	120	0	103	70	130				
Chromium	0.0218	0.010	0.02	0	109	70	130				
Cobalt	0.0205	0.010	0.02	0	103	70	130				
Copper	0.0204	0.010	0.02	0	102	70	130				
Iron	103	0.020	100	0	103	70	130				
Lead	0.000240	0.010		0		0	0				
Magnesium	42.0	0.50	40	0	105	70	130				
Manganese	0.0209	0.010	0.02	0	105	70	130				
Molybdenum	0.901	0.0050	0.8	0	113	70	130				
Nickel	0.0204	0.010	0.02	0	102	70	130				
Potassium	40.5	0.50	40	0	101	70	130				
Selenium	0.0101	0.0050	0.01	0	101	70	130				
Silver	0.0208	0.0050	0.02	0	104	70	130				
Uranium	0.0000221	0.00030		0		0	0				
Vanadium	0.0205	0.10	0.02	0	102	70	130				
Zinc	0.0103	0.010	0.01	0	103	70	130				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 303** SampType: **Method Blank** Lab ID: **MB-61582** Method: **E200.8**
Analysis Date: **05/26/22 16:50** Units: **mg/L** **Prep Info:** Prep Date: **5/26/2022** Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Antimony	ND	0.0002									
Arsenic	ND	0.0002									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00002									
Calcium	ND	0.2									
Chromium	ND	0.0001									
Cobalt	ND	0.001									
Copper	ND	0.0001									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843 **BatchID: R175089** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 303** SampType: **Method Blank** Lab ID: **MB-61582** Method: **E200.8**

Analysis Date: **05/26/22 16:50** Units: **mg/L** **Prep Info:** Prep Date: **5/26/2022** Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	0.004									
Lead	ND	0.0001									
Magnesium	ND	0.01									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Nickel	ND	0.0002									
Potassium	ND	0.04									
Selenium	ND	0.00007									
Silver	ND	0.00008									
Uranium	ND	0.00002									
Vanadium	0.0001	0.0001									
Zinc	ND	0.001									

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 329** SampType: **Sample Matrix Spike** Lab ID: **H22050845-004BMS** Method: **E200.8**

Analysis Date: **05/26/22 18:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0459	0.030	0.05	0	92	70	130				
Antimony	0.0491	0.0010	0.05	0.000627	97	70	130				
Arsenic	0.0815	0.0010	0.05	0.02972	104	70	130				
Barium	0.122	0.050	0.05	0.07421	95	70	130				
Beryllium	0.0462	0.0010	0.05	0	92	70	130				
Cadmium	0.0475	0.0010	0.05	0.00003645	95	70	130				
Calcium	118	1.0	1	115.9		70	130				A
Chromium	0.0476	0.0050	0.05	0.001071	93	70	130				
Cobalt	0.0460	0.0050	0.05	0	92	70	130				
Copper	0.0518	0.0050	0.05	0.006767	90	70	130				
Iron	0.136	0.020	0.15	0	91	70	130				
Lead	0.0441	0.0010	0.05	0.0001105	88	70	130				
Magnesium	47.6	1.0	1	46.48		70	130				A
Manganese	0.0484	0.0010	0.05	0.0007557	95	70	130				
Molybdenum	0.0620	0.0010	0.05	0.01495	94	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843 **BatchID: R175089** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 329** SampType: **Sample Matrix Spike** Lab ID: **H22050845-004BMS** Method: **E200.8**

Analysis Date: **05/26/22 18:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0455	0.0050	0.05	0	91	70	130				
Potassium	29.4	1.0	1	27.97		70	130				A
Selenium	0.0606	0.0010	0.05	0.005773	110	70	130				
Silver	0.0130	0.0010	0.02	0	65	70	130				S
Uranium	0.0819	0.00030	0.05	0.03978	84	70	130				
Vanadium	0.0568	0.010	0.05	0.009837	94	70	130				
Zinc	0.0561	0.010	0.05	0.009305	94	70	130				

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 330** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050845-004BMSD** Method: **E200.8**

Analysis Date: **05/26/22 18:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0498	0.030	0.05	0	100	70	130	0.04587	8.1	20	
Antimony	0.0505	0.0010	0.05	0.000627	100	70	130	0.04912	2.8	20	
Arsenic	0.0815	0.0010	0.05	0.02972	104	70	130	0.08148	0.1	20	
Barium	0.122	0.050	0.05	0.07421	95	70	130	0.1218	0.0	20	
Beryllium	0.0458	0.0010	0.05	0	92	70	130	0.04619	0.9	20	
Cadmium	0.0487	0.0010	0.05	0.00003645	97	70	130	0.04752	2.5	20	
Calcium	119	1.0	1	115.9		70	130	118.3	0.3	20	A
Chromium	0.0487	0.0050	0.05	0.001071	95	70	130	0.0476	2.2	20	
Cobalt	0.0469	0.0050	0.05	0	94	70	130	0.04604	1.8	20	
Copper	0.0527	0.0050	0.05	0.006767	92	70	130	0.05181	1.6	20	
Iron	0.139	0.020	0.15	0	92	70	130	0.1361	1.9	20	
Lead	0.0457	0.0010	0.05	0.0001105	91	70	130	0.04412	3.5	20	
Magnesium	47.7	1.0	1	46.48		70	130	47.65	0.2	20	A
Manganese	0.0490	0.0010	0.05	0.0007557	97	70	130	0.04844	1.2	20	
Molybdenum	0.0626	0.0010	0.05	0.01495	95	70	130	0.06197	1.1	20	
Nickel	0.0461	0.0050	0.05	0	92	70	130	0.04548	1.3	20	
Potassium	29.1	1.0	1	27.97		70	130	29.43	1.0	20	A
Selenium	0.0614	0.0010	0.05	0.005773	111	70	130	0.06058	1.4	20	
Silver	0.0143	0.0010	0.02	0	72	70	130	0.01295	10	20	
Uranium	0.0842	0.00030	0.05	0.03978	89	70	130	0.08191	2.8	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843
BatchID: R175089
Date: *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 330** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050845-004BMSD** Method: **E200.8**

Analysis Date: **05/26/22 18:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 22	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	0.0575	0.010	0.05	0.009837	**95**	70	130	0.05679	**1.2**	20	
Zinc	0.0576	0.010	0.05	0.009305	**97**	70	130	0.05609	**2.7**	20	

Associated samples: **H22050843-001B, H22050843-002B, H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843 **BatchID: R175093** **Date:** *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220526A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **05/26/22 08:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.799	0.10	0.8	0	100	95	105				
Calcium	39.9	1.0	40	0	100	95	105				
Iron	3.98	0.020	4	0	100	95	105				
Magnesium	40.0	1.0	40	0	100	95	105				
Potassium	40.7	1.0	40	0	102	95	105				
Sodium	40.5	1.0	40	0	101	95	105				

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICP2-HE_220526A: 7** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **05/26/22 08:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.49	0.10	2.5	0	100	95	105				
Calcium	24.7	1.0	25	0	99	95	105				
Iron	2.50	0.020	2.5	0	100	95	105				
Magnesium	25.2	1.0	25	0	101	95	105				
Potassium	25.3	1.0	25	0	101	95	105				
Sodium	25.1	1.0	25	0	101	95	105				

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICP2-HE_220526A: 10** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.7**

Analysis Date: **05/26/22 09:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	-0.0123	0.10		0		0	0				
Calcium	474	1.0	500	0	95	80	120				
Iron	186	0.020	200	0	93	80	120				
Magnesium	463	1.0	500	0	93	80	120				
Potassium	0.00235	1.0		0		0	0				
Sodium	0.0597	1.0		0		0	0				

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843
BatchID: R175093
Date: *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220526A: 11** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.7**
Analysis Date: **05/26/22 09:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.983	0.10	1	0	98	80	120				
Calcium	472	1.0	500	0	94	80	120				
Iron	185	0.020	200	0	93	80	120				
Magnesium	459	1.0	500	0	92	80	120				
Potassium	19.4	1.0	20	0	97	80	120				
Sodium	19.5	1.0	20	0	98	80	120				

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICP2-HE_220526A: 13** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**
Analysis Date: **05/26/22 09:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.004									
Calcium	ND	0.1									
Iron	ND	0.008									
Magnesium	ND	0.02									
Potassium	ND	0.06									
Sodium	ND	0.02									

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICP2-HE_220526A: 14** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**
Analysis Date: **05/26/22 09:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.963	0.10	1	0	96	85	115				
Calcium	50.9	1.0	50	0	102	85	115				
Iron	5.16	0.020	5	0	103	85	115				
Magnesium	51.6	1.0	50	0	103	85	115				
Potassium	50.0	1.0	50	0	100	85	115				
Sodium	49.6	1.0	50	0	99	85	115				

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843 **BatchID: R175093** **Date:** *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220526A: 98** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **05/26/22 14:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.41	0.10	2.5	0	97	90	110				
Calcium	25.0	1.0	25	0	100	90	110				
Iron	2.41	0.020	2.5	0	96	90	110				
Magnesium	24.1	1.0	25	0	96	90	110				
Potassium	23.3	1.0	25	0	93	90	110				
Sodium	23.2	1.0	25	0	93	90	110				

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICP2-HE_220526A: 101** SampType: **Sample Matrix Spike** Lab ID: **H22050738-006FMS2** Method: **E200.7**

Analysis Date: **05/26/22 14:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.953	0.050	1	0	95	70	130				
Calcium	146	1.0	50	96.19	99	70	130				
Iron	4.50	0.020	5	0	90	70	130				
Magnesium	91.2	1.0	50	47.33	88	70	130				
Potassium	53.8	1.0	50	6.256	95	70	130				
Sodium	71.2	1.0	50	23.14	96	70	130				

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICP2-HE_220526A: 102** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050738-006FMSD2** Method: **E200.7**

Analysis Date: **05/26/22 14:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.929	0.050	1	0	93	70	130	0.9528	2.5	20	
Calcium	142	1.0	50	96.19	92	70	130	145.5	2.4	20	
Iron	4.50	0.020	5	0	90	70	130	4.5	0	20	
Magnesium	91.6	1.0	50	47.33	89	70	130	91.19	0.5	20	
Potassium	55.7	1.0	50	6.256	99	70	130	53.76	3.5	20	
Sodium	73.8	1.0	50	23.14	101	70	130	71.16	3.7	20	

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843
BatchID: R175093
Date: *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220526A: 113** SampType: **Sample Matrix Spike** Lab ID: **H22050843-008BMS2** Method: **E200.7**

Analysis Date: **05/26/22 15:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.930	0.050	1	0	**93**	70	130				
Calcium	50.1	1.0	50	0	**100**	70	130				
Iron	4.57	0.020	5	0	**91**	70	130				
Magnesium	47.2	1.0	50	0	**94**	70	130				
Potassium	52.2	1.0	50	0	**104**	70	130				
Sodium	52.8	1.0	50	0	**106**	70	130				

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Run ID :Run Order: **ICP2-HE_220526A: 114** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050843-008BMSD2** Method: **E200.7**

Analysis Date: **05/26/22 15:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.916	0.050	1	0	**92**	70	130	0.9298	**1.5**	20	
Calcium	50.2	1.0	50	0	**100**	70	130	50.06	**0.2**	20	
Iron	4.53	0.020	5	0	**91**	70	130	4.567	**0.8**	20	
Magnesium	46.6	1.0	50	0	**93**	70	130	47.24	**1.4**	20	
Potassium	49.9	1.0	50	0	**100**	70	130	52.23	**4.6**	20	
Sodium	50.3	1.0	50	0	**101**	70	130	52.84	**4.9**	20	

Associated samples: **H22050843-003B, H22050843-004B, H22050843-005B, H22050843-006B, H22050843-007B, H22050843-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843 **BatchID:** R175174 **Date:** *14-Jun-22*

Run ID :Run Order: **PHSC_101-H_220530A: 2** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **05/30/22 17:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Run ID :Run Order: **PHSC_101-H_220530A: 3** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **05/30/22 17:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	610	4.0	600	0	**102**	90	110				

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Run ID :Run Order: **PHSC_101-H_220530A: 8** SampType: **Sample Duplicate** Lab ID: **H22050771-001ADUP** Method: **A2320 B**

Analysis Date: **05/30/22 18:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	200	4.0		0				192.6	**1.9**	10	
Bicarbonate as HCO3	240	4.0		0				234.3	**1.9**	10	

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Run ID :Run Order: **PHSC_101-H_220530A: 37** SampType: **Sample Duplicate** Lab ID: **H22050771-004ADUP** Method: **A2320 B**

Analysis Date: **05/30/22 20:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	85	4.0		0				83	**2.7**	10	
Bicarbonate as HCO3	100	4.0		0				100.6	**2.7**	10	

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843
BatchID: R175178
Date: *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220527A: 20** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**
Analysis Date: **05/27/22 09:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.790	0.10	0.8	0	99	95	105				
Sodium	39.4	1.0	40	0	99	95	105				

Associated samples: **H22050843-001B, H22050843-002B**

Run ID :Run Order: **ICP2-HE_220527A: 21** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**
Analysis Date: **05/27/22 09:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.49	0.10	2.5	0	99	95	105				
Sodium	25.1	1.0	25	0	100	95	105				

Associated samples: **H22050843-001B, H22050843-002B**

Run ID :Run Order: **ICP2-HE_220527A: 24** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.7**
Analysis Date: **05/27/22 09:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	-0.0106	0.10		0		0	0				
Sodium	0.0734	1.0		0		0	0				

Associated samples: **H22050843-001B, H22050843-002B**

Run ID :Run Order: **ICP2-HE_220527A: 25** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.7**
Analysis Date: **05/27/22 10:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.955	0.10	1	0	96	80	120				
Sodium	19.9	1.0	20	0	100	80	120				

Associated samples: **H22050843-001B, H22050843-002B**

Run ID :Run Order: **ICP2-HE_220527A: 27** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**
Analysis Date: **05/27/22 10:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.004									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843 **BatchID:** R175178 **Date:** *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220527A: 27** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**
Analysis Date: **05/27/22 10:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	0.02									

Associated samples: **H22050843-001B, H22050843-002B**

Run ID :Run Order: **ICP2-HE_220527A: 28** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**
Analysis Date: **05/27/22 10:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.961	0.10	1	0	96	85	115				
Sodium	50.5	1.0	50	0	101	85	115				

Associated samples: **H22050843-001B, H22050843-002B**

Run ID :Run Order: **ICP2-HE_220527A: 147** SampType: **Sample Matrix Spike** Lab ID: **H22050933-004BMS2** Method: **E200.7**
Analysis Date: **05/27/22 17:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.978	0.050	1	0	98	70	130				
Sodium	54.6	1.0	50	1.772	106	70	130				

Associated samples: **H22050843-001B, H22050843-002B**

Run ID :Run Order: **ICP2-HE_220527A: 155** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**
Analysis Date: **05/27/22 18:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.41	0.10	2.5	0	96	90	110				
Sodium	26.1	1.0	25	0	104	90	110				

Associated samples: **H22050843-001B, H22050843-002B**

Run ID :Run Order: **ICP2-HE_220527A: 158** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050933-004BMSD2** Method: **E200.7**
Analysis Date: **05/27/22 18:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.836	0.050	1	0	84	70	130	0.9784	16	20	
Sodium	51.0	1.0	50	1.772	99	70	130	54.63	6.8	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843
BatchID: R175178
Date: *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220527A: 158** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050933-004BMSD2** Method: **E200.7**

Analysis Date: **05/27/22 18:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes **2**	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22050843-001B, H22050843-002B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843
BatchID: R175239
Date: *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220601A: 13** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **06/01/22 10:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0611	0.010	0.06	0	102	90	110				

Associated samples: **H22050843-002B**

Run ID :Run Order: **ICPMS205-H_220601A: 16** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**
Analysis Date: **06/01/22 10:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0000830	0.010		0							

Associated samples: **H22050843-002B**

Run ID :Run Order: **ICPMS205-H_220601A: 18** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**
Analysis Date: **06/01/22 10:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0189	0.010	0.02	0	94	70	130				

Associated samples: **H22050843-002B**

Run ID :Run Order: **ICPMS205-H_220601A: 49** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**
Analysis Date: **06/01/22 13:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0513	0.010	0.05	0	103	85	115				

Associated samples: **H22050843-002B**

Run ID :Run Order: **ICPMS205-H_220601A: 147** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **06/01/22 17:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0608	0.010	0.06	0	101	90	110				

Associated samples: **H22050843-002B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843
BatchID: R175239
Date: *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220601A: 150** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**
Analysis Date: **06/01/22 17:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.000106	0.010		0							

Associated samples: **H22050843-002B**

Run ID :Run Order: **ICPMS205-H_220601A: 152** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**
Analysis Date: **06/01/22 17:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0191	0.010	0.02	0	95	70	130				

Associated samples: **H22050843-002B**

Run ID :Run Order: **ICPMS205-H_220601A: 157** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **06/01/22 17:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	ND	0.0002									

Associated samples: **H22050843-002B**

Run ID :Run Order: **ICPMS205-H_220601A: 187** SampType: **Method Blank** Lab ID: **MB-61582** Method: **E200.8**
Analysis Date: **06/01/22 18:58** Units: **mg/L** **Prep Info:** Prep Date: **5/26/2022** Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	ND	0.0002									

Associated samples: **H22050843-002B**

Run ID :Run Order: **ICPMS205-H_220601A: 198** SampType: **Sample Matrix Spike** Lab ID: **H22050884-005BMS** Method: **E200.8**
Analysis Date: **06/01/22 19:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0504	0.0050	0.05	0	101	70	130				

Associated samples: **H22050843-002B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843
BatchID: R175239
Date: *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220601A: 200** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050884-005BMSD** Method: **E200.8**

Analysis Date: **06/01/22 19:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0508	0.0050	0.05	0	**102**	70	130	0.05039	**0.8**	20	

Associated samples: **H22050843-002B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050843
BatchID: R175253
Date: *14-Jun-22*

Run ID :Run Order: **IC METROHM_220531A: 2** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**
Analysis Date: **05/31/22 14:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.06									

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Run ID :Run Order: **IC METROHM_220531A: 3** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**
Analysis Date: **05/31/22 14:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	1.0	100	0	100	90	110				
Sulfate	384	1.0	400	0	96	90	110				

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Run ID :Run Order: **IC METROHM_220531A: 4** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**
Analysis Date: **05/31/22 14:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.0	1.0	25	0	96	90	110				
Sulfate	98.0	1.0	100	0	98	90	110				

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Run ID :Run Order: **IC METROHM_220531A: 214** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**
Analysis Date: **06/02/22 20:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51.6	1.0	50	0	103	90	110				
Sulfate	203	1.0	200	0	102	90	110				

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Run ID :Run Order: **IC METROHM_220531A: 226** SampType: **Sample Matrix Spike** Lab ID: **H22050843-005AMS** Method: **E300.0**
Analysis Date: **06/02/22 23:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	61.6	1.0	25	37.04	98	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050843 **BatchID:** R175253 **Date:** *14-Jun-22*

Run ID :Run Order: **IC METROHM_220531A: 226** SampType: **Sample Matrix Spike** Lab ID: **H22050843-005AMS** Method: **E300.0**

Analysis Date: **06/02/22 23:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	236	1.0	100	139.6	**97**	90	110				

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Run ID :Run Order: **IC METROHM_220531A: 227** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050843-005AMSD** Method: **E300.0**

Analysis Date: **06/03/22 00:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	61.7	1.0	25	37.04	**99**	90	110	61.62	**0.1**	20	
Sulfate	238	1.0	100	139.6	**98**	90	110	236.4	**0.5**	20	

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Run ID :Run Order: **IC METROHM_220531A: 228** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **06/03/22 00:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51.4	1.0	50	0	**103**	90	110				
Sulfate	203	1.0	200	0	**102**	90	110				

Associated samples: **H22050843-001A, H22050843-002A, H22050843-003A, H22050843-004A, H22050843-005A, H22050843-006A, H22050843-007A, H22050843-008A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22050843

Login completed by: Jessica C. Smith
Date Received: 5/24/2022
Reviewed by: BL2000\swunderlich
Received by: JCS
Reviewed Date: 6/13/2022
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	0.3°C On Ice - From Field		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

Samples for Dissolved Metals/Hardness was subsampled, filtered, and preserved to pH <2 with 2 mL of Nitric acid per 250 mL in the laboratory. According to 40CFR136, samples for Dissolved Metals should be filtered and preserved within 15 minutes of collection. jcs 05/25/2022

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 1

Account Information (Billing information)

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	40545

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email
Special Report/Formats:	☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other

Comments

Please filter all samples in the laboratory to 0.45 um (all samples are submitted raw).

Project Information

Project Name, PWSID, Permit, etc.	SSTOU Repository Groundwater
Sampler Name	T. Traxler, J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Dissolved As, Cd, Cu, Pb, Hg, Zn	Dissolved Al, Sb, Ba, Be, B, Cr, Co, Fe	Dissolved Mn, Mb, Ni, Se, Ag, U, V	Dissolved Ca, Mg, K, Na	Hardness	Chloride, Sulfate	Alkalinity/Bicarbonate			See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1 1GW-1056	5/24/22	1420	1	W	✓	✓	✓	✓	✓	✓	✓					H22050843
2 LYP-07	5/24/22	1455	1	W	✓	✓	✓	✓	✓	✓	✓					
3 MW-2A	5/24/22	1525	1	W	✓	✓	✓	✓	✓	✓	✓					
4 MW-2B	5/24/22	1150	1	W	✓	✓	✓	✓	✓	✓	✓					
5 MW-2C	5/24/22	1305	1	W	✓	✓	✓	✓	✓	✓	✓					
6 MW-2D	5/24/22	1400	1	W	✓	✓	✓	✓	✓	✓	✓					
7 MW-2C-DUP	5/24/22	1305	1	W	✓	✓	✓	✓	✓	✓	✓					
8 Blank MW-2B	5/24/22	1200	1	W	✓	✓	✓	✓	✓	✓	✓					
9																
10																

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tanner Traxler	5/24/22 1803	Tanner Traxler			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				JESSICA SMITH	5/24/2022 1803	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
HAND	Y	Y (N) C B	Y N	0.3 °C	(Y) N	(Y) N	CC Cash Check	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

June 14, 2022

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22050845 Quote ID: H1526

Project Name: SSTOU Repository Vadose Zone

Energy Laboratories Inc Helena MT received the following 8 samples for MT DEQ-Federal Superfund on 5/24/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22050845-001	LYS-01	05/24/22 16:29	05/24/22	Groundwater	Metals by ICP/ICPMS, Dissolved Alkalinity to pH 4.5 Mercury, Dissolved Hardness Anions by Ion Chromatography Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1
H22050845-002	LYS-02	05/24/22 15:44	05/24/22	Aqueous	Same As Above
H22050845-003	LYS-03	05/24/22 16:16	05/24/22	Aqueous	Metals by ICP/ICPMS, Dissolved Hardness Preparation, Dissolved Filtration MCAWW
H22050845-004	LYS-04R	05/24/22 15:53	05/24/22	Aqueous	Metals by ICP/ICPMS, Dissolved Mercury, Dissolved Hardness Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1
H22050845-005	LYS-05	05/24/22 15:59	05/24/22	Aqueous	Metals by ICP/ICPMS, Dissolved Mercury, Dissolved Hardness Anions by Ion Chromatography Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1
H22050845-006	LYS-06	05/24/22 16:24	05/24/22	Aqueous	Metals by ICP/ICPMS, Dissolved Mercury, Dissolved Hardness Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1
H22050845-007	LYS-07	05/24/22 16:35	05/24/22	Aqueous	Same As Above
H22050845-008	LYS-08	05/24/22 16:10	05/24/22	Aqueous	Metals by ICP/ICPMS, Dissolved Mercury, Dissolved Hardness Anions by Ion Chromatography Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

ANALYTICAL SUMMARY REPORT

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-01
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22050845-001
Collection Date: 05/24/22 16:29
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	170	mg/L		4	2	A2320 B	05/31/22 14:16 / JAR			PHSC_101-H_220531A : 82		R175176
Bicarbonate as HCO3	210	mg/L		4	3	A2320 B	05/31/22 14:16 / JAR			PHSC_101-H_220531A : 82		R175176
Chloride	46	mg/L		1	0.02	E300.0	06/03/22 01:53 / JAR			IC METROHM_220531A : 233		R175253
Sulfate	203	mg/L		1	0.06	E300.0	06/03/22 01:53 / JAR			IC METROHM_220531A : 233		R175253
Hardness as CaCO3	360	mg/L		1	1	A2340 B	06/02/22 10:37 / sld			WATERCALC_220602A : 2		R175274
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Antimony	ND	mg/L		0.0005	0.0002	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Barium	0.038	mg/L		0.003	0.0002	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Boron	0.043	mg/L	J	0.1	0.004	E200.7	05/26/22 15:37 / sld	05/26/22 11:28		ICP2-HE_220526A : 115		R175093
Cadmium	0.00002	mg/L	J	0.00003	0.00002	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Calcium	108	mg/L		1	0.1	E200.7	05/26/22 15:37 / sld	05/26/22 11:28		ICP2-HE_220526A : 115		R175093
Chromium	ND	mg/L		0.01	0.0001	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Copper	0.0007	mg/L	J	0.001	0.0001	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 15:37 / sld	05/26/22 11:28		ICP2-HE_220526A : 115		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/01/22 15:26 / dck	05/26/22 11:28		ICPMS205-H_220601A : 104		R175239
Magnesium	22	mg/L		1	0.02	E200.7	05/26/22 15:37 / sld	05/26/22 11:28		ICP2-HE_220526A : 115		R175093
Manganese	ND	mg/L		0.001	0.0003	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Mercury	0.002	ug/L	J	0.005	0.001	E245.1	06/02/22 15:15 / kjb	06/02/22 10:46	E245.1	HGCV205-H_220603A : 18		61640
Molybdenum	0.0044	mg/L	J	0.005	0.0003	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Nickel	ND	mg/L		0.002	0.0002	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Potassium	3	mg/L		1	0.06	E200.7	05/26/22 15:37 / sld	05/26/22 11:28		ICP2-HE_220526A : 115		R175093
Selenium	0.008	mg/L		0.001	0.00007	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Sodium	34	mg/L		1	0.02	E200.7	05/26/22 15:37 / sld	05/26/22 11:28		ICP2-HE_220526A : 115		R175093
Uranium	0.0809	mg/L		0.0002	0.00002	E200.8	06/01/22 15:26 / dck	05/26/22 11:28		ICPMS205-H_220601A : 104		R175239
Vanadium	0.0020	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	05/26/22 17:31 / dck	05/26/22 11:28		ICPMS205-H_220525B : 318		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-02
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22050845-002
Collection Date: 05/24/22 15:44
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	560	mg/L		4	2	A2320 B	05/31/22 14:29 / JAR			PHSC_101-H_220531A : 84		R175176
Bicarbonate as HCO3	680	mg/L		4	3	A2320 B	05/31/22 14:29 / JAR			PHSC_101-H_220531A : 84		R175176
Chloride	270	mg/L		1	1	E300.0	06/03/22 02:08 / JAR			IC METROHM_220531A : 234		R175253
Sulfate	6820	mg/L	D	5	3	E300.0	06/03/22 02:08 / JAR			IC METROHM_220531A : 234		R175253
Hardness as CaCO3	1920	mg/L		1	1	A2340 B	06/02/22 10:37 / sld			WATERCALC_220602A : 3		R175274
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Antimony	0.0007	mg/L		0.0005	0.0002	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Arsenic	0.016	mg/L		0.001	0.0002	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Barium	0.009	mg/L		0.003	0.0002	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Boron	0.6	mg/L		0.1	0.004	E200.7	05/26/22 15:41 / sld	05/26/22 11:28		ICP2-HE_220526A : 116		R175093
Cadmium	0.00004	mg/L		0.00003	0.00002	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Calcium	388	mg/L		1	0.2	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Chromium	0.0012	mg/L	J	0.01	0.0001	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Copper	0.016	mg/L		0.001	0.0001	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 15:41 / sld	05/26/22 11:28		ICP2-HE_220526A : 116		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/01/22 15:28 / dck	05/26/22 11:28		ICPMS205-H_220601A : 105		R175239
Magnesium	282	mg/L		1	0.01	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Manganese	ND	mg/L		0.001	0.0003	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Mercury	0.027	ug/L		0.005	0.001	E245.1	06/02/22 15:19 / kjb	06/02/22 10:46	E245.1	HGCV205-H_220603A : 19		61640
Molybdenum	0.049	mg/L		0.005	0.0003	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Nickel	0.0009	mg/L	J	0.002	0.0002	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Potassium	3	mg/L		1	0.06	E200.7	05/26/22 15:41 / sld	05/26/22 11:28		ICP2-HE_220526A : 116		R175093
Selenium	0.023	mg/L		0.001	0.00007	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Sodium	2420	mg/L		1	0.7	E200.7	05/26/22 15:41 / sld	05/26/22 11:28		ICP2-HE_220526A : 116		R175093
Uranium	1.37	mg/L		0.0002	0.00002	E200.8	06/01/22 15:28 / dck	05/26/22 11:28		ICPMS205-H_220601A : 105		R175239
Vanadium	0.027	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089
Zinc	0.146	mg/L		0.008	0.001	E200.8	05/26/22 17:33 / dck	05/26/22 11:28		ICPMS205-H_220525B : 319		R175089

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-03
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22050845-003
Collection Date: 05/24/22 16:16
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Hardness as CaCO3	323	mg/L		1	1	A2340 B	06/02/22 10:37 / sld			WATERCALC_220602A : 4		R175274
METALS, DISSOLVED												
Aluminum	0.021	mg/L		0.009	0.007	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Antimony	0.0009	mg/L		0.0005	0.0003	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Arsenic	0.205	mg/L		0.001	0.0004	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Barium	0.074	mg/L		0.003	0.0003	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Beryllium	ND	mg/L		0.0008	0.0004	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Boron	0.7	mg/L		0.1	0.008	E200.7	05/26/22 15:45 / sld	05/26/22 11:28		ICP2-HE_220526A : 117		R175093
Cadmium	0.00009	mg/L		0.00003	0.00003	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Calcium	92	mg/L		1	0.3	E200.7	05/26/22 15:45 / sld	05/26/22 11:28		ICP2-HE_220526A : 117		R175093
Chromium	0.0040	mg/L	J	0.01	0.0002	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Cobalt	ND	mg/L		0.01	0.002	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Copper	0.006	mg/L		0.001	0.0003	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Iron	0.02	mg/L		0.02	0.009	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Lead	0.0005	mg/L		0.0003	0.0002	E200.8	06/01/22 15:30 / dck	05/26/22 11:28		ICPMS205-H_220601A : 106		R175239
Magnesium	23	mg/L		1	0.05	E200.7	05/26/22 15:45 / sld	05/26/22 11:28		ICP2-HE_220526A : 117		R175093
Manganese	0.003	mg/L		0.001	0.0005	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Molybdenum	0.079	mg/L		0.005	0.0005	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Nickel	ND	mg/L		0.002	0.0003	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Potassium	3	mg/L		1	0.1	E200.7	05/26/22 15:45 / sld	05/26/22 11:28		ICP2-HE_220526A : 117		R175093
Selenium	0.002	mg/L		0.001	0.0001	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Silver	ND	mg/L		0.0002	0.0002	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Sodium	106	mg/L		1	0.04	E200.7	05/26/22 15:45 / sld	05/26/22 11:28		ICP2-HE_220526A : 117		R175093
Uranium	0.0072	mg/L		0.0002	0.00004	E200.8	06/01/22 15:30 / dck	05/26/22 11:28		ICPMS205-H_220601A : 106		R175239
Vanadium	0.1	mg/L		0.1	0.0002	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089
Zinc	0.017	mg/L		0.008	0.003	E200.8	05/26/22 17:36 / dck	05/26/22 11:28		ICPMS205-H_220525B : 320		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-04R
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22050845-004
Collection Date: 05/24/22 15:53
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Hardness as CaCO3	448	mg/L		1	1	A2340 B	06/02/22 10:37 / sld			WATERCALC_220602A : 5		R175274
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Antimony	0.0006	mg/L		0.0005	0.0002	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Arsenic	0.030	mg/L		0.001	0.0002	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Barium	0.074	mg/L		0.003	0.0002	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Boron	0.2	mg/L		0.1	0.004	E200.7	05/26/22 15:49 / sld	05/26/22 11:28		ICP2-HE_220526A : 118		R175093
Cadmium	0.00004	mg/L		0.00003	0.00002	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Calcium	109	mg/L		1	0.1	E200.7	05/26/22 15:49 / sld	05/26/22 11:28		ICP2-HE_220526A : 118		R175093
Chromium	0.0011	mg/L	J	0.01	0.0001	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Copper	0.007	mg/L		0.001	0.0001	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 15:49 / sld	05/26/22 11:28		ICP2-HE_220526A : 118		R175093
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	06/01/22 15:33 / dck	05/26/22 11:28		ICPMS205-H_220601A : 107		R175239
Magnesium	42	mg/L		1	0.02	E200.7	05/26/22 15:49 / sld	05/26/22 11:28		ICP2-HE_220526A : 118		R175093
Manganese	0.0008	mg/L	J	0.001	0.0003	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Mercury	0.004	ug/L	J	0.005	0.001	E245.1	06/02/22 15:22 / kjb	06/02/22 10:46	E245.1	HGCV205-H_220603A : 20		61640
Molybdenum	0.015	mg/L		0.005	0.0003	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Nickel	ND	mg/L		0.002	0.0002	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Potassium	28	mg/L		1	0.06	E200.7	05/26/22 15:49 / sld	05/26/22 11:28		ICP2-HE_220526A : 118		R175093
Selenium	0.006	mg/L		0.001	0.00007	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Sodium	185	mg/L		1	0.02	E200.7	05/26/22 15:49 / sld	05/26/22 11:28		ICP2-HE_220526A : 118		R175093
Uranium	0.0365	mg/L		0.0002	0.00002	E200.8	06/01/22 15:33 / dck	05/26/22 11:28		ICPMS205-H_220601A : 107		R175239
Vanadium	0.0098	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089
Zinc	0.009	mg/L		0.008	0.001	E200.8	05/26/22 17:39 / dck	05/26/22 11:28		ICPMS205-H_220525B : 321		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-05
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22050845-005
Collection Date: 05/24/22 15:59
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Chloride	5	mg/L		1	1	E300.0	06/03/22 02:22 / JAR			IC METROHM_220531A : 235		R175253
Sulfate	3960	mg/L	D	5	3	E300.0	06/03/22 02:22 / JAR			IC METROHM_220531A : 235		R175253
Hardness as CaCO3	1600	mg/L		1	1	A2340 B	06/02/22 10:37 / sld			WATERCALC_220602A : 6		R175274
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Antimony	0.0012	mg/L		0.0005	0.0002	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Arsenic	0.017	mg/L		0.001	0.0002	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Barium	0.013	mg/L		0.003	0.0002	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Boron	1.9	mg/L		0.1	0.004	E200.7	05/26/22 15:53 / sld	05/26/22 11:28		ICP2-HE_220526A : 119		R175093
Cadmium	0.00014	mg/L		0.00003	0.00002	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Calcium	437	mg/L		1	0.1	E200.7	05/26/22 15:53 / sld	05/26/22 11:28		ICP2-HE_220526A : 119		R175093
Chromium	0.0066	mg/L	J	0.01	0.0001	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Copper	0.009	mg/L		0.001	0.0001	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 15:53 / sld	05/26/22 11:28		ICP2-HE_220526A : 119		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/01/22 15:35 / dck	05/26/22 11:28		ICPMS205-H_220601A : 108		R175239
Magnesium	122	mg/L		1	0.02	E200.7	05/26/22 15:53 / sld	05/26/22 11:28		ICP2-HE_220526A : 119		R175093
Manganese	0.0004	mg/L	J	0.001	0.0003	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Mercury	0.007	ug/L		0.005	0.001	E245.1	06/02/22 15:25 / kjb	06/02/22 10:46	E245.1	HGCV205-H_220603A : 21		61640
Molybdenum	0.021	mg/L		0.005	0.0003	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Nickel	ND	mg/L		0.002	0.0002	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Potassium	21	mg/L		1	0.06	E200.7	05/26/22 15:53 / sld	05/26/22 11:28		ICP2-HE_220526A : 119		R175093
Selenium	0.002	mg/L		0.001	0.00007	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Sodium	1090	mg/L		1	0.7	E200.7	05/26/22 15:53 / sld	05/26/22 11:28		ICP2-HE_220526A : 119		R175093
Uranium	1.43	mg/L		0.0002	0.00002	E200.8	06/01/22 15:35 / dck	05/26/22 11:28		ICPMS205-H_220601A : 108		R175239
Vanadium	0.0044	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089
Zinc	0.017	mg/L		0.008	0.001	E200.8	05/26/22 17:42 / dck	05/26/22 11:28		ICPMS205-H_220525B : 322		R175089

Report Definitions:

RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-06
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22050845-006
Collection Date: 05/24/22 16:24
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Hardness as CaCO3	251	mg/L		1	1	A2340 B	06/02/22 10:37 / sld			WATERCALC_220602A : 7		R175274
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Barium	0.016	mg/L		0.003	0.0002	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Boron	0.1	mg/L		0.1	0.004	E200.7	05/26/22 15:57 / sld	05/26/22 11:28		ICP2-HE_220526A : 120		R175093
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Calcium	81	mg/L		1	0.1	E200.7	05/26/22 15:57 / sld	05/26/22 11:28		ICP2-HE_220526A : 120		R175093
Chromium	0.0007	mg/L	J	0.01	0.0001	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Copper	0.006	mg/L		0.001	0.0001	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 15:57 / sld	05/26/22 11:28		ICP2-HE_220526A : 120		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/01/22 15:37 / dck	05/26/22 11:28		ICPMS205-H_220601A : 109		R175239
Magnesium	12	mg/L		1	0.02	E200.7	05/26/22 15:57 / sld	05/26/22 11:28		ICP2-HE_220526A : 120		R175093
Manganese	ND	mg/L		0.001	0.0003	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Mercury	0.008	ug/L		0.005	0.001	E245.1	06/02/22 15:28 / kjb	06/02/22 10:46	E245.1	HGCV205-H_220603A : 22		61640
Molybdenum	0.011	mg/L		0.005	0.0003	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Nickel	0.0002	mg/L	J	0.002	0.0002	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Potassium	0.14	mg/L	J	1	0.06	E200.7	05/26/22 15:57 / sld	05/26/22 11:28		ICP2-HE_220526A : 120		R175093
Selenium	0.017	mg/L		0.001	0.00007	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Sodium	136	mg/L		1	0.02	E200.7	05/26/22 15:57 / sld	05/26/22 11:28		ICP2-HE_220526A : 120		R175093
Uranium	0.0013	mg/L		0.0002	0.00002	E200.8	06/01/22 15:37 / dck	05/26/22 11:28		ICPMS205-H_220601A : 109		R175239
Vanadium	0.013	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089
Zinc	0.004	mg/L	J	0.008	0.001	E200.8	05/26/22 17:44 / dck	05/26/22 11:28		ICPMS205-H_220525B : 323		R175089

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-07
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22050845-007
Collection Date: 05/24/22 16:35
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Hardness as CaCO3	1280	mg/L		1	1	A2340 B	06/02/22 10:37 / sld			WATERCALC_220602A : 8		R175274
METALS, DISSOLVED												
Aluminum	0.008	mg/L	J	0.009	0.007	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Antimony	ND	mg/L		0.0005	0.0003	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Arsenic	0.007	mg/L		0.001	0.0004	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Barium	0.009	mg/L		0.003	0.0003	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Beryllium	ND	mg/L		0.0008	0.0004	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Boron	0.2	mg/L		0.1	0.008	E200.7	05/26/22 16:01 / sld	05/26/22 11:28		ICP2-HE_220526A : 121		R175093
Cadmium	0.00005	mg/L	D	0.00004	0.00004	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Calcium	378	mg/L		1	0.3	E200.7	05/26/22 16:01 / sld	05/26/22 11:28		ICP2-HE_220526A : 121		R175093
Chromium	0.0015	mg/L	J	0.01	0.0002	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Cobalt	ND	mg/L		0.01	0.002	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Copper	0.003	mg/L		0.001	0.0003	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Iron	ND	mg/L		0.02	0.02	E200.7	05/26/22 16:01 / sld	05/26/22 11:28		ICP2-HE_220526A : 121		R175093
Lead	ND	mg/L		0.0003	0.0002	E200.8	06/01/22 15:40 / dck	05/26/22 11:28		ICPMS205-H_220601A : 110		R175239
Magnesium	82	mg/L		1	0.05	E200.7	05/26/22 16:01 / sld	05/26/22 11:28		ICP2-HE_220526A : 121		R175093
Manganese	ND	mg/L		0.001	0.0005	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Mercury	0.008	ug/L	D	0.008	0.005	E245.1	06/02/22 15:31 / kjb	06/02/22 10:46	E245.1	HGCV205-H_220603A : 23		61640
Molybdenum	0.068	mg/L		0.005	0.0005	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Nickel	ND	mg/L		0.002	0.0003	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Potassium	10	mg/L		1	0.1	E200.7	05/26/22 16:01 / sld	05/26/22 11:28		ICP2-HE_220526A : 121		R175093
Selenium	0.001	mg/L		0.001	0.0001	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Silver	ND	mg/L		0.0002	0.0002	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Sodium	446	mg/L		1	0.04	E200.7	05/26/22 16:01 / sld	05/26/22 11:28		ICP2-HE_220526A : 121		R175093
Uranium	0.179	mg/L		0.0002	0.00004	E200.8	06/01/22 15:40 / dck	05/26/22 11:28		ICPMS205-H_220601A : 110		R175239
Vanadium	0.0036	mg/L	J	0.1	0.0002	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089
Zinc	0.007	mg/L	J	0.008	0.003	E200.8	05/26/22 17:47 / dck	05/26/22 11:28		ICPMS205-H_220525B : 324		R175089

Report Definitions:

RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-08
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22050845-008
Collection Date: 05/24/22 16:10
DateReceived: 05/24/22
Report Date: 06/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Chloride	73	mg/L		1	0.5	E300.0	06/03/22 02:37 / JAR			IC METROHM_220531A : 236		R175253
Sulfate	1970	mg/L	D	2	1	E300.0	06/03/22 02:37 / JAR			IC METROHM_220531A : 236		R175253
Hardness as CaCO3	1900	mg/L		1	1	A2340 B	06/02/22 10:37 / sld			WATERCALC_220602A : 9		R175274
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Barium	0.018	mg/L		0.003	0.0002	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Boron	0.077	mg/L	J	0.1	0.004	E200.7	05/26/22 16:12 / sld	05/26/22 11:28		ICP2-HE_220526A : 124		R175093
Cadmium	0.00008	mg/L		0.00003	0.00002	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Calcium	430	mg/L		1	0.1	E200.7	05/26/22 16:12 / sld	05/26/22 11:28		ICP2-HE_220526A : 124		R175093
Chromium	0.0003	mg/L	J	0.01	0.0001	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Cobalt	ND	mg/L		0.01	0.001	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Copper	0.002	mg/L		0.001	0.0001	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Iron	ND	mg/L		0.02	0.008	E200.7	05/26/22 16:12 / sld	05/26/22 11:28		ICP2-HE_220526A : 124		R175093
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/01/22 15:42 / dck	05/26/22 11:28		ICPMS205-H_220601A : 111		R175239
Magnesium	201	mg/L		1	0.02	E200.7	05/26/22 16:12 / sld	05/26/22 11:28		ICP2-HE_220526A : 124		R175093
Manganese	0.005	mg/L		0.001	0.0003	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Mercury	0.003	ug/L	J	0.005	0.001	E245.1	06/02/22 15:35 / kjb	06/02/22 10:46	E245.1	HGCV205-H_220603A : 24		61640
Molybdenum	0.006	mg/L		0.005	0.0003	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Nickel	0.0002	mg/L	J	0.002	0.0002	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Potassium	6	mg/L		1	0.06	E200.7	05/26/22 16:12 / sld	05/26/22 11:28		ICP2-HE_220526A : 124		R175093
Selenium	0.014	mg/L		0.001	0.00007	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Silver	ND	mg/L		0.0002	0.00008	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Sodium	202	mg/L		1	0.02	E200.7	05/26/22 16:12 / sld	05/26/22 11:28		ICP2-HE_220526A : 124		R175093
Uranium	0.188	mg/L		0.0002	0.00002	E200.8	06/01/22 15:42 / dck	05/26/22 11:28		ICPMS205-H_220601A : 111		R175239
Vanadium	0.025	mg/L	J	0.1	0.0001	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089
Zinc	0.014	mg/L		0.008	0.001	E200.8	05/26/22 17:50 / dck	05/26/22 11:28		ICPMS205-H_220525B : 325		R175089

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050845
BatchID: 220602waLL-hg205
Date: *14-Jun-22*

Run ID :Run Order: **HGCV205-H_220603A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**
Analysis Date: **06/02/22 14:44** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0969	0.0050	0.1	0	97	90	110				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **HGCV205-H_220603A: 10** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV1** Method: **E245.1**
Analysis Date: **06/02/22 14:47** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0984	0.0050	0.1	0	98	90	110				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: 61640** **Date:** *14-Jun-22*

Run ID :Run Order: **HGCV205-H_220603A: 12** SampType: **Method Blank** Lab ID: **MB-61640** Method: **E245.1**
Analysis Date: **06/02/22 14:56** Units: **ug/L** **Prep Info:** Prep Date: **6/1/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.001									

Associated samples: **H22050845-001B, H22050845-002B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **HGCV205-H_220603A: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-61640** Method: **E245.1**
Analysis Date: **06/02/22 14:59** Units: **ug/L** **Prep Info:** Prep Date: **6/1/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0488	0.0050	0.05	0	98	90	110				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **HGCV205-H_220603A: 15** SampType: **Sample Matrix Spike** Lab ID: **H22050971-001BMS** Method: **E245.1**
Analysis Date: **06/02/22 15:06** Units: **ug/L** **Prep Info:** Prep Date: **6/2/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0991	0.0050	0.1	0.004986	94	70	130				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **HGCV205-H_220603A: 16** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050971-001BMSD** Method: **E245.1**
Analysis Date: **06/02/22 15:09** Units: **ug/L** **Prep Info:** Prep Date: **6/2/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0965	0.0050	0.1	0.004986	91	70	130	0.09906	2.6	20	

Associated samples: **H22050845-001B, H22050845-002B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050845
BatchID: R175089
Date: *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **05/25/22 09:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.304	0.10	0.3	0	**101**	90	110				
Antimony	0.0615	0.050	0.06	0	**102**	90	110				
Arsenic	0.0614	0.0050	0.06	0	**102**	90	110				
Barium	0.0604	0.10	0.06	0	**101**	90	110				
Beryllium	0.0303	0.0010	0.03	0	**101**	90	110				
Cadmium	0.0308	0.0010	0.03	0	**103**	90	110				
Calcium	3.04	0.50	3	0	**101**	90	110				
Chromium	0.0597	0.010	0.06	0	**99**	90	110				
Cobalt	0.0587	0.010	0.06	0	**98**	90	110				
Copper	0.0610	0.010	0.06	0	**102**	90	110				
Iron	0.294	0.020	0.3	0	**98**	90	110				
Magnesium	2.98	0.50	3	0	**99**	90	110				
Manganese	0.297	0.010	0.3	0	**99**	90	110				
Molybdenum	0.0578	0.0050	0.06	0	**96**	90	110				
Nickel	0.0608	0.010	0.06	0	**101**	90	110				
Selenium	0.0606	0.0050	0.06	0	**101**	90	110				
Silver	0.0310	0.0050	0.03	0	**103**	90	110				
Vanadium	0.0590	0.10	0.06	0	**98**	90	110				
Zinc	0.0639	0.010	0.06	0	**106**	90	110				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**
Analysis Date: **05/25/22 10:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	43.1	0.10	40	0	**108**	70	130				
Antimony	0.0000419	0.050		0							
Arsenic	0.0000282	0.0050		0							
Barium	0.000144	0.10		0							
Beryllium	-0.0000509	0.0010		0							
Cadmium	0.000110	0.0010		0							
Calcium	124	0.50	120	0	**104**	70	130				
Chromium	0.00189	0.010		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175089** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **05/25/22 10:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	0.0000220	0.010		0							
Copper	0.000174	0.010		0							
Iron	103	0.020	100	0	103	70	130				
Magnesium	42.5	0.50	40	0	106	70	130				
Manganese	0.000391	0.010		0							
Molybdenum	0.870	0.0050	0.8	0	109	70	130				
Nickel	0.000116	0.010		0							
Selenium	0.000217	0.0050		0							
Silver	3.20E-06	0.0050		0							
Vanadium	-0.0000508	0.10		0							
Zinc	0.000485	0.010		0							

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **05/25/22 10:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	43.7	0.10	40	0	109	70	130				
Antimony	0.0000295	0.050		0		0	0				
Arsenic	0.0104	0.0050	0.01	0	104	70	130				
Barium	0.000160	0.10		0		0	0				
Beryllium	-0.0000654	0.0010		0		0	0				
Cadmium	0.0107	0.0010	0.01	0	107	70	130				
Calcium	126	0.50	120	0	105	70	130				
Chromium	0.0219	0.010	0.02	0	109	70	130				
Cobalt	0.0206	0.010	0.02	0	103	70	130				
Copper	0.0203	0.010	0.02	0	102	70	130				
Iron	105	0.020	100	0	105	70	130				
Magnesium	42.9	0.50	40	0	107	70	130				
Manganese	0.0211	0.010	0.02	0	105	70	130				
Molybdenum	0.868	0.0050	0.8	0	108	70	130				
Nickel	0.0207	0.010	0.02	0	103	70	130				
Selenium	0.0102	0.0050	0.01	0	102	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050845
BatchID: R175089
Date: *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**
Analysis Date: **05/25/22 10:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0204	0.0050	0.02	0	102	70	130				
Vanadium	0.0202	0.10	0.02	0	101	70	130				
Zinc	0.0104	0.010	0.01	0	104	70	130				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 22** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **05/25/22 12:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Antimony	ND	0.0002									
Arsenic	ND	0.0002									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00002									
Calcium	ND	0.2									
Chromium	ND	0.0001									
Cobalt	ND	0.001									
Copper	ND	0.0001									
Iron	ND	0.004									
Magnesium	ND	0.01									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Nickel	ND	0.0002									
Selenium	ND	0.00007									
Silver	ND	0.00008									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID:** R175089 **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **05/25/22 13:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0520	0.10	0.05	0	104	85	115				
Antimony	0.0506	0.050	0.05	0	101	85	115				
Arsenic	0.0498	0.0050	0.05	0	100	85	115				
Barium	0.0513	0.10	0.05	0	103	85	115				
Beryllium	0.0507	0.0010	0.05	0	101	85	115				
Cadmium	0.0505	0.0010	0.05	0	101	85	115				
Calcium	1.02	0.50	1	0	102	85	115				
Chromium	0.0489	0.010	0.05	0	98	85	115				
Cobalt	0.0498	0.010	0.05	0	100	85	115				
Copper	0.0504	0.010	0.05	0	101	85	115				
Iron	0.149	0.020	0.15	0	99	85	115				
Magnesium	0.989	0.50	1	0	99	85	115				
Manganese	0.0497	0.010	0.05	0	99	85	115				
Molybdenum	0.0474	0.0050	0.05	0	95	85	115				
Nickel	0.0500	0.010	0.05	0	100	85	115				
Selenium	0.0511	0.0050	0.05	0	102	85	115				
Silver	0.0202	0.0050	0.02	0	101	85	115				
Vanadium	0.0482	0.10	0.05	0	96	85	115				
Zinc	0.0524	0.010	0.05	0	105	85	115				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 165** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **05/26/22 08:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.298	0.10	0.3	0	99	90	110				
Antimony	0.0617	0.050	0.06	0	103	90	110				
Arsenic	0.0630	0.0050	0.06	0	105	90	110				
Barium	0.0608	0.10	0.06	0	101	90	110				
Beryllium	0.0310	0.0010	0.03	0	103	90	110				
Cadmium	0.0313	0.0010	0.03	0	104	90	110				
Calcium	3.03	0.50	3	0	101	90	110				
Chromium	0.0607	0.010	0.06	0	101	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175089** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 165** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **05/26/22 08:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	0.0598	0.010	0.06	0	**100**	90	110				
Copper	0.0620	0.010	0.06	0	**103**	90	110				
Iron	0.293	0.020	0.3	0	**98**	90	110				
Magnesium	3.01	0.50	3	0	**100**	90	110				
Manganese	0.302	0.010	0.3	0	**101**	90	110				
Molybdenum	0.0582	0.0050	0.06	0	**97**	90	110				
Nickel	0.0614	0.010	0.06	0	**102**	90	110				
Selenium	0.0615	0.0050	0.06	0	**103**	90	110				
Silver	0.0311	0.0050	0.03	0	**104**	90	110				
Vanadium	0.0599	0.10	0.06	0	**100**	90	110				
Zinc	0.0657	0.010	0.06	0	**109**	90	110				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 168** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **05/26/22 08:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.8	0.10	40	0	**102**	70	130				
Antimony	0.0000474	0.050		0							
Arsenic	0.0000466	0.0050		0							
Barium	0.000248	0.10		0							
Beryllium	-0.0000358	0.0010		0							
Cadmium	0.000142	0.0010		0							
Calcium	123	0.50	120	0	**102**	70	130				
Chromium	0.00188	0.010		0							
Cobalt	0.0000552	0.010		0							
Copper	0.000199	0.010		0							
Iron	101	0.020	100	0	**101**	70	130				
Magnesium	41.1	0.50	40	0	**103**	70	130				
Manganese	0.000351	0.010		0							
Molybdenum	0.881	0.0050	0.8	0	**110**	70	130				
Nickel	-0.0000273	0.010		0							
Selenium	0.000169	0.0050		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050845 **BatchID: R175089** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 168** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**
Analysis Date: **05/26/22 08:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0000147	0.0050		0							
Vanadium	-0.0000380	0.10		0							
Zinc	0.000699	0.010		0							

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 170** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**
Analysis Date: **05/26/22 08:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.9	0.10	40	0	105	70	130				
Antimony	0.0000353	0.050		0		0	0				
Arsenic	0.0104	0.0050	0.01	0	104	70	130				
Barium	0.000260	0.10		0		0	0				
Beryllium	-0.0000136	0.0010		0		0	0				
Cadmium	0.0105	0.0010	0.01	0	105	70	130				
Calcium	124	0.50	120	0	103	70	130				
Chromium	0.0218	0.010	0.02	0	109	70	130				
Cobalt	0.0205	0.010	0.02	0	103	70	130				
Copper	0.0204	0.010	0.02	0	102	70	130				
Iron	103	0.020	100	0	103	70	130				
Magnesium	42.0	0.50	40	0	105	70	130				
Manganese	0.0209	0.010	0.02	0	105	70	130				
Molybdenum	0.901	0.0050	0.8	0	113	70	130				
Nickel	0.0204	0.010	0.02	0	102	70	130				
Selenium	0.0101	0.0050	0.01	0	101	70	130				
Silver	0.0208	0.0050	0.02	0	104	70	130				
Vanadium	0.0205	0.10	0.02	0	102	70	130				
Zinc	0.0103	0.010	0.01	0	103	70	130				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID:** R175089 **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 303** SampType: **Method Blank** Lab ID: **MB-61582** Method: **E200.8**

Analysis Date: **05/26/22 16:50** Units: **mg/L** **Prep Info:** Prep Date: **5/26/2022** Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Antimony	ND	0.0002									
Arsenic	ND	0.0002									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00002									
Calcium	ND	0.2									
Chromium	ND	0.0001									
Cobalt	ND	0.001									
Copper	ND	0.0001									
Iron	ND	0.004									
Magnesium	ND	0.01									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Nickel	ND	0.0002									
Selenium	ND	0.00007									
Silver	ND	0.00008									
Vanadium	0.0001	0.0001									
Zinc	ND	0.001									

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 329** SampType: **Sample Matrix Spike** Lab ID: **H22050845-004BMS** Method: **E200.8**

Analysis Date: **05/26/22 18:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0459	0.030	0.05	0	**92**	70	130				
Antimony	0.0491	0.0010	0.05	0.000627	**97**	70	130				
Arsenic	0.0815	0.0010	0.05	0.02972	**104**	70	130				
Barium	0.122	0.050	0.05	0.07421	**95**	70	130				
Beryllium	0.0462	0.0010	0.05	0	**92**	70	130				
Cadmium	0.0475	0.0010	0.05	0.00003645	**95**	70	130				
Calcium	118	1.0	1	115.9		70	130				A
Chromium	0.0476	0.0050	0.05	0.001071	**93**	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175089** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 329** SampType: **Sample Matrix Spike** Lab ID: **H22050845-004BMS** Method: **E200.8**

Analysis Date: **05/26/22 18:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	0.0460	0.0050	0.05	0	92	70	130				
Copper	0.0518	0.0050	0.05	0.006767	90	70	130				
Iron	0.136	0.020	0.15	0	91	70	130				
Magnesium	47.6	1.0	1	46.48		70	130				A
Manganese	0.0484	0.0010	0.05	0.0007557	95	70	130				
Molybdenum	0.0620	0.0010	0.05	0.01495	94	70	130				
Nickel	0.0455	0.0050	0.05	0	91	70	130				
Selenium	0.0606	0.0010	0.05	0.005773	110	70	130				
Silver	0.0130	0.0010	0.02	0	65	70	130				S
Vanadium	0.0568	0.010	0.05	0.009837	94	70	130				
Zinc	0.0561	0.010	0.05	0.009305	94	70	130				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220525B: 330** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050845-004BMSD** Method: **E200.8**

Analysis Date: **05/26/22 18:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0498	0.030	0.05	0	100	70	130	0.04587	8.1	20	
Antimony	0.0505	0.0010	0.05	0.000627	100	70	130	0.04912	2.8	20	
Arsenic	0.0815	0.0010	0.05	0.02972	104	70	130	0.08148	0.1	20	
Barium	0.122	0.050	0.05	0.07421	95	70	130	0.1218	0.0	20	
Beryllium	0.0458	0.0010	0.05	0	92	70	130	0.04619	0.9	20	
Cadmium	0.0487	0.0010	0.05	0.00003645	97	70	130	0.04752	2.5	20	
Calcium	119	1.0	1	115.9		70	130	118.3	0.3	20	A
Chromium	0.0487	0.0050	0.05	0.001071	95	70	130	0.0476	2.2	20	
Cobalt	0.0469	0.0050	0.05	0	94	70	130	0.04604	1.8	20	
Copper	0.0527	0.0050	0.05	0.006767	92	70	130	0.05181	1.6	20	
Iron	0.139	0.020	0.15	0	92	70	130	0.1361	1.9	20	
Magnesium	47.7	1.0	1	46.48		70	130	47.65	0.2	20	A
Manganese	0.0490	0.0010	0.05	0.0007557	97	70	130	0.04844	1.2	20	
Molybdenum	0.0626	0.0010	0.05	0.01495	95	70	130	0.06197	1.1	20	
Nickel	0.0461	0.0050	0.05	0	92	70	130	0.04548	1.3	20	
Selenium	0.0614	0.0010	0.05	0.005773	111	70	130	0.06058	1.4	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845
BatchID: R175089
Date: *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220525B: 330** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050845-004BMSD** Method: **E200.8**

Analysis Date: **05/26/22 18:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0143	0.0010	0.02	0	**72**	70	130	0.01295	**10**	20	
Vanadium	0.0575	0.010	0.05	0.009837	**95**	70	130	0.05679	**1.2**	20	
Zinc	0.0576	0.010	0.05	0.009305	**97**	70	130	0.05609	**2.7**	20	

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175093** **Date:** *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220526A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **05/26/22 08:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.799	0.10	0.8	0	100	95	105				
Calcium	39.9	1.0	40	0	100	95	105				
Iron	3.98	0.020	4	0	100	95	105				
Magnesium	40.0	1.0	40	0	100	95	105				
Potassium	40.7	1.0	40	0	102	95	105				
Sodium	40.5	1.0	40	0	101	95	105				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICP2-HE_220526A: 7** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **05/26/22 08:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.49	0.10	2.5	0	100	95	105				
Calcium	24.7	1.0	25	0	99	95	105				
Iron	2.50	0.020	2.5	0	100	95	105				
Magnesium	25.2	1.0	25	0	101	95	105				
Potassium	25.3	1.0	25	0	101	95	105				
Sodium	25.1	1.0	25	0	101	95	105				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICP2-HE_220526A: 10** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.7**

Analysis Date: **05/26/22 09:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	-0.0123	0.10		0		0	0				
Calcium	474	1.0	500	0	95	80	120				
Iron	186	0.020	200	0	93	80	120				
Magnesium	463	1.0	500	0	93	80	120				
Potassium	0.00235	1.0		0		0	0				
Sodium	0.0597	1.0		0		0	0				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175093** **Date:** *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220526A: 11** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.7**

Analysis Date: **05/26/22 09:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.983	0.10	1	0	98	80	120				
Calcium	472	1.0	500	0	94	80	120				
Iron	185	0.020	200	0	93	80	120				
Magnesium	459	1.0	500	0	92	80	120				
Potassium	19.4	1.0	20	0	97	80	120				
Sodium	19.5	1.0	20	0	98	80	120				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICP2-HE_220526A: 13** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**

Analysis Date: **05/26/22 09:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.004									
Calcium	ND	0.1									
Iron	ND	0.008									
Magnesium	ND	0.02									
Potassium	ND	0.06									
Sodium	ND	0.02									

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICP2-HE_220526A: 14** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**

Analysis Date: **05/26/22 09:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.963	0.10	1	0	96	85	115				
Calcium	50.9	1.0	50	0	102	85	115				
Iron	5.16	0.020	5	0	103	85	115				
Magnesium	51.6	1.0	50	0	103	85	115				
Potassium	50.0	1.0	50	0	100	85	115				
Sodium	49.6	1.0	50	0	99	85	115				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175093** **Date:** *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220526A: 110** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **05/26/22 15:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.43	0.10	2.5	0	**97**	90	110				
Calcium	25.8	1.0	25	0	**103**	90	110				
Iron	2.29	0.020	2.5	0	**92**	90	110				
Magnesium	23.0	1.0	25	0	**92**	90	110				
Potassium	23.5	1.0	25	0	**94**	90	110				
Sodium	23.6	1.0	25	0	**94**	90	110				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICP2-HE_220526A: 113** SampType: **Sample Matrix Spike** Lab ID: **H22050843-008BMS2** Method: **E200.7**

Analysis Date: **05/26/22 15:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.930	0.050	1	0	**93**	70	130				
Calcium	50.1	1.0	50	0	**100**	70	130				
Iron	4.57	0.020	5	0	**91**	70	130				
Magnesium	47.2	1.0	50	0	**94**	70	130				
Potassium	52.2	1.0	50	0	**104**	70	130				
Sodium	52.8	1.0	50	0	**106**	70	130				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICP2-HE_220526A: 114** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050843-008BMSD2** Method: **E200.7**

Analysis Date: **05/26/22 15:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.916	0.050	1	0	**92**	70	130	0.9298	**1.5**	20	
Calcium	50.2	1.0	50	0	**100**	70	130	50.06	**0.2**	20	
Iron	4.53	0.020	5	0	**91**	70	130	4.567	**0.8**	20	
Magnesium	46.6	1.0	50	0	**93**	70	130	47.24	**1.4**	20	
Potassium	49.9	1.0	50	0	**100**	70	130	52.23	**4.6**	20	
Sodium	50.3	1.0	50	0	**101**	70	130	52.84	**4.9**	20	

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175093** **Date:** *14-Jun-22*

Run ID :Run Order: **ICP2-HE_220526A: 122** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **05/26/22 16:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.43	0.10	2.5	0	**97**	90	110				
Calcium	25.8	1.0	25	0	**103**	90	110				
Iron	2.29	0.020	2.5	0	**92**	90	110				
Magnesium	23.4	1.0	25	0	**93**	90	110				
Potassium	25.2	1.0	25	0	**101**	90	110				
Sodium	25.4	1.0	25	0	**102**	90	110				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICP2-HE_220526A: 127** SampType: **Sample Matrix Spike** Lab ID: **H22050864-001BMS2** Method: **E200.7**

Analysis Date: **05/26/22 16:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.41	0.050	5	0.6322	**96**	70	130				
Calcium	262	1.0	250	10.46	**100**	70	130				
Iron	22.3	0.041	25	0	**89**	70	130				
Magnesium	236	1.0	250	7.71	**91**	70	130				
Potassium	263	1.0	250	9.13	**102**	70	130				
Sodium	2900	1.0	250	2446		70	130				A

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICP2-HE_220526A: 128** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050864-001BMSD2** Method: **E200.7**

Analysis Date: **05/26/22 16:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5.50	0.050	5	0.6322	**97**	70	130	5.414	**1.5**	20	
Calcium	256	1.0	250	10.46	**98**	70	130	261.6	**2.3**	20	
Iron	22.2	0.041	25	0	**89**	70	130	22.3	**0.5**	20	
Magnesium	234	1.0	250	7.71	**91**	70	130	236.1	**0.8**	20	
Potassium	253	1.0	250	9.13	**98**	70	130	263.5	**4.0**	20	
Sodium	2790	1.0	250	2446		70	130	2901	**3.9**	20	A

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22050845
BatchID: R175176
Date: *14-Jun-22*

Run ID :Run Order: **PHSC_101-H_220531A: 80** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**
Analysis Date: **05/31/22 14:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22050845-001A, H22050845-002A**

Run ID :Run Order: **PHSC_101-H_220531A: 81** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**
Analysis Date: **05/31/22 14:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	600	4.0	600	0	**100**	90	110				

Associated samples: **H22050845-001A, H22050845-002A**

Run ID :Run Order: **PHSC_101-H_220531A: 92** SampType: **Sample Duplicate** Lab ID: **H22050902-002ADUP** Method: **A2320 B**
Analysis Date: **05/31/22 15:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	220	4.0		0				214.2	**1.7**	10	
Bicarbonate as HCO3	270	4.0		0				260.7	**1.7**	10	

Associated samples: **H22050845-001A, H22050845-002A**

Run ID :Run Order: **PHSC_101-H_220531A: 120** SampType: **Sample Duplicate** Lab ID: **H22050912-001ADUP** Method: **A2320 B**
Analysis Date: **05/31/22 16:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	130	4.0		0				131.8	**0.1**	10	
Bicarbonate as HCO3	160	4.0		0				160.1	**0.1**	10	

Associated samples: **H22050845-001A, H22050845-002A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175239** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220601A: 13** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **06/01/22 10:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0592	0.010	0.06	0	99	90	110				
Uranium	0.0579	0.00030	0.06	0	96	90	110				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 16** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **06/01/22 10:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0000434	0.010		0							
Uranium	0.0000206	0.00030		0							

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 18** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/01/22 10:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0000391	0.010		0		0	0				
Uranium	0.0000205	0.00030		0		0	0				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 38** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **06/01/22 12:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0607	0.010	0.06	0	101	90	110				
Uranium	0.0578	0.00030	0.06	0	96	90	110				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 41** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **06/01/22 12:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	-0.0000151	0.010		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175239** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220601A: 41** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **E200.8**

Analysis Date: **06/01/22 12:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	0.0000223	0.00030		0							

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 43** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/01/22 13:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	-0.0000192	0.010		0		0	0				
Uranium	0.0000186	0.00030		0		0	0				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 49** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **06/01/22 13:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0491	0.010	0.05	0	98	85	115				
Uranium	0.0468	0.00030	0.05	0	94	85	115				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 64** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **06/01/22 13:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.0001									
Uranium	ND	0.00002									

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 98** SampType: **Sample Matrix Spike** Lab ID: **H22050840-001BMS** Method: **E200.8**

Analysis Date: **06/01/22 15:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0508	0.0010	0.05	0	102	70	130				
Uranium	0.0517	0.00030	0.05	0.0001751	103	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175239** **Date:** *14-Jun-22*

Run ID :Run Order: **ICPMS205-H_220601A: 98** SampType: **Sample Matrix Spike** Lab ID: **H22050840-001BMS** Method: **E200.8**

Analysis Date: **06/01/22 15:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 99** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050840-001BMSD** Method: **E200.8**

Analysis Date: **06/01/22 15:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0517	0.0010	0.05	0	103	70	130	0.05077	1.8	20	
Uranium	0.0526	0.00030	0.05	0.0001751	105	70	130	0.05172	1.7	20	

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 114** SampType: **Sample Matrix Spike** Lab ID: **H22050849-001BMS** Method: **E200.8**

Analysis Date: **06/01/22 15:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0489	0.0010	0.05	0	98	70	130				
Uranium	0.0454	0.00030	0.05	0.00005956	91	70	130				

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Run ID :Run Order: **ICPMS205-H_220601A: 115** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050849-001BMSD** Method: **E200.8**

Analysis Date: **06/01/22 15:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0491	0.0010	0.05	0	98	70	130	0.04886	0.5	20	
Uranium	0.0454	0.00030	0.05	0.00005956	91	70	130	0.04538	0.1	20	

Associated samples: **H22050845-001B, H22050845-002B, H22050845-003B, H22050845-004B, H22050845-005B, H22050845-006B, H22050845-007B, H22050845-008B**

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID:** R175253 **Date:** *14-Jun-22*

Run ID :Run Order: **IC METROHM_220531A: 2** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **05/31/22 14:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.06									

Associated samples: **H22050845-001A, H22050845-002A, H22050845-005A, H22050845-008A**

Run ID :Run Order: **IC METROHM_220531A: 3** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **05/31/22 14:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	1.0	100	0	100	90	110				
Sulfate	384	1.0	400	0	96	90	110				

Associated samples: **H22050845-001A, H22050845-002A, H22050845-005A, H22050845-008A**

Run ID :Run Order: **IC METROHM_220531A: 4** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **05/31/22 14:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.0	1.0	25	0	96	90	110				
Sulfate	98.0	1.0	100	0	98	90	110				

Associated samples: **H22050845-001A, H22050845-002A, H22050845-005A, H22050845-008A**

Run ID :Run Order: **IC METROHM_220531A: 226** SampType: **Sample Matrix Spike** Lab ID: **H22050843-005AMS** Method: **E300.0**

Analysis Date: **06/02/22 23:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	61.6	1.0	25	37.04	98	90	110				
Sulfate	236	1.0	100	139.6	97	90	110				

Associated samples: **H22050845-001A, H22050845-002A, H22050845-005A, H22050845-008A**

Run ID :Run Order: **IC METROHM_220531A: 227** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050843-005AMSD** Method: **E300.0**

Analysis Date: **06/03/22 00:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	61.7	1.0	25	37.04	99	90	110	61.62	0.1	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22050845 **BatchID: R175253** **Date:** *14-Jun-22*

Run ID :Run Order: **IC METROHM_220531A: 227** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050843-005AMSD** Method: **E300.0**

Analysis Date: **06/03/22 00:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	238	1.0	100	139.6	**98**	90	110	236.4	**0.5**	20	

Associated samples: **H22050845-001A, H22050845-002A, H22050845-005A, H22050845-008A**

Run ID :Run Order: **IC METROHM_220531A: 228** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **06/03/22 00:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51.4	1.0	50	0	**103**	90	110				
Sulfate	203	1.0	200	0	**102**	90	110				

Associated samples: **H22050845-001A, H22050845-002A, H22050845-005A, H22050845-008A**

Run ID :Run Order: **IC METROHM_220531A: 240** SampType: **Sample Matrix Spike** Lab ID: **H22050961-001AMS** Method: **E300.0**

Analysis Date: **06/03/22 03:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	26.1	1.0	25	1.044	**100**	90	110				
Sulfate	136	1.0	100	38.39	**98**	90	110				

Associated samples: **H22050845-001A, H22050845-002A, H22050845-005A, H22050845-008A**

Run ID :Run Order: **IC METROHM_220531A: 241** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22050961-001AMSD** Method: **E300.0**

Analysis Date: **06/03/22 03:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	26.0	1.0	25	1.044	**100**	90	110	26.12	**0.4**	20	
Sulfate	137	1.0	100	38.39	**98**	90	110	136.1	**0.3**	20	

Associated samples: **H22050845-001A, H22050845-002A, H22050845-005A, H22050845-008A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22050845

Login completed by: Jessica C. Smith
Date Received: 5/24/2022
Reviewed by: BL2000\swunderlich
Received by: JCS
Reviewed Date: 6/13/2022
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☐	No ☑	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	0.3°C On Ice - From Field		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

Limited volume on majority of samples. LYS-03, 04R, 06, 07 have volume for metals only. LYS-05 and 08 have volume for metals and anions only. srw 6/13/2022

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 1

Account Information (Billing information)

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ☒Email
Receive Report	☐Hard Copy ☒Email
Purchase Order	
Quote	
Bottle Order	40545

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ☒Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ☒ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

Please filter all samples in the laboratory to 0.45 um (all samples are submitted raw). If water quantity is insufficient for all analyses, please prioritize dissolved metals first, then dissolved Hg, then common ions (anions before cations), and then alkalinity.

Project Information

Project Name, PWSID, Permit, etc.	SSTOU Repository Vadose Zone
Sampler Name	T. Traxler, J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☒ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Dissolved As, Cd, Cu, Pb, Hg, Zn	Dissolved Al, Sb, Ba, Be, B, Cr, Co, Fe	Dissolved Mn, Mb, ni, Se, Ag, U, V	Alkalinity/Bicarbonate	Hardness	Ca, Mg, Cl, K, Na, SO4	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1 LYS-01	5/24/22	1629	1	W	✓	✓	✓	✓	✓	✓			H22050845
2 LYS-02	5/24/22	1544	1	W	✓	✓	✓	✓	✓	✓			
3 LYS-03	5/24/22	1616	1	W	✓	✓	✓	✓	✓	✓			
4 LYS-04R	5/24/22	1553	1	W	✓	✓	✓	✓	✓	✓			
5 LYS-05	5/24/22	1559	1	W	✓	✓	✓	✓	✓	✓			
6 LYS-06	5/24/22	1624	1	W	✓	✓	✓	✓	✓	✓			
7 LYS-07	5/24/22	1635	1	W	✓	✓	✓	✓	✓	✓			
8 LYS-08	5/24/22	1610	1	W	✓	✓	✓	✓	✓	✓			
9													
10													

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tanner Traxler	5/24/22 1803	Tanner Traxler			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				JESSICA SMITH	05/24/2022 1803	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
HAND	Y	Y (N) C B	Y N	0.3 °C	(Y) N	(Y) N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

APPENDIX B-3

Third Quarter Results

ANALYTICAL SUMMARY REPORT

October 14, 2022

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22090081 Quote ID: H1526

Project Name: Silver Bow Creek SSTOU Monitoring

Energy Laboratories Inc Helena MT received the following 37 samples for MT DEQ-Federal Superfund on 9/6/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22090081-001	SS-07	09/02/22 16:00	09/06/22	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Conductivity Mercury, Dissolved Mercury, Total Recoverable Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 Mercury Digestion by E245.1 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H22090081-002	SS-10A	09/02/22 14:30	09/06/22	Surface Water	Same As Above
H22090081-003	SS-10A Duplicate	09/02/22 14:30	09/06/22	Surface Water	Same As Above
H22090081-004	SS-13	09/02/22 13:30	09/06/22	Surface Water	Same As Above
H22090081-005	Field Blank #1 SS-14	09/02/22 13:00	09/06/22	Surface Water	Same As Above
H22090081-006	SS-14	09/02/22 12:45	09/06/22	Surface Water	Same As Above
H22090081-007	SS-15A-2	09/02/22 12:00	09/06/22	Surface Water	Same As Above
H22090081-008	SS-16B	09/02/22 10:30	09/06/22	Surface Water	Same As Above
H22090081-009	SS-17D	09/02/22 9:45	09/06/22	Surface Water	Same As Above
H22090081-010	SS-19	09/02/22 9:00	09/06/22	Surface Water	Same As Above
H22090081-011	SS-07 <0.063mm	09/02/22 16:00	09/06/22	Sediment	Metals by ICP/ICPMS, Total Mercury in Solid By CVAA Percent Moisture Total Metals Digestion by SW3050B Mercury Digestion by SW7471B Sieve Analysis, Wet Soil Preparation USDA1
H22090081-012	SS-07 1mm to 0.063mm	09/02/22 16:00	09/06/22	Sediment	Metals by ICP/ICPMS, Total Mercury in Solid By CVAA Percent Moisture Total Metals Digestion by SW3050B Mercury Digestion by SW7471B Sieve Analysis, Wet
H22090081-013	SS-07 2mm to 1mm	09/02/22 16:00	09/06/22	Sediment	Same As Above

ANALYTICAL SUMMARY REPORT

H22090081-014	SS-10A <0.063mm	09/02/22 14:30	09/06/22	Sediment	Same As Above
H22090081-015	SS-10A 1mm to 0.063mm	09/02/22 14:30	09/06/22	Sediment	Same As Above
H22090081-016	SS-10A 2mm to 1mm	09/02/22 14:30	09/06/22	Sediment	Same As Above
H22090081-017	SS-13 <0.063mm	09/02/22 13:30	09/06/22	Sediment	Same As Above
H22090081-018	SS-13 1mm to 0.063mm	09/02/22 13:30	09/06/22	Sediment	Same As Above
H22090081-019	SS-13 2mm to 1mm	09/02/22 13:30	09/06/22	Sediment	Same As Above
H22090081-020	SS-14 <0.063mm	09/02/22 12:45	09/06/22	Sediment	Same As Above
H22090081-021	SS-14 1mm to 0.063mm	09/02/22 12:45	09/06/22	Sediment	Same As Above
H22090081-022	SS-14 2mm to 1mm	09/02/22 12:45	09/06/22	Sediment	Same As Above
H22090081-023	SS-15A-2 <0.063mm	09/02/22 12:00	09/06/22	Sediment	Same As Above
H22090081-024	SS-15A-2 1mm to 0.063mm	09/02/22 12:00	09/06/22	Sediment	Same As Above
H22090081-025	SS-15A-2 2mm to 1mm	09/02/22 12:00	09/06/22	Sediment	Same As Above
H22090081-026	SS-16B <0.063mm	09/02/22 10:30	09/06/22	Sediment	Same As Above
H22090081-027	SS-16B 1mm to 0.063mm	09/02/22 10:30	09/06/22	Sediment	Same As Above
H22090081-028	SS-16B 2mm to 1mm	09/02/22 10:30	09/06/22	Sediment	Same As Above
H22090081-029	SS-16B Duplicate <0.063mm	09/02/22 10:30	09/06/22	Sediment	Same As Above
H22090081-030	SS-16B Duplicate 1mm to 0.063mm	09/02/22 10:30	09/06/22	Sediment	Same As Above
H22090081-031	SS-16B Duplicate 2mm to 1mm	09/02/22 10:30	09/06/22	Sediment	Same As Above
H22090081-032	SS-17D <0.063mm	09/02/22 9:45	09/06/22	Sediment	Same As Above
H22090081-033	SS-17D 1mm to 0.063mm	09/02/22 9:45	09/06/22	Sediment	Same As Above
H22090081-034	SS-17D 2mm to 1mm	09/02/22 9:45	09/06/22	Sediment	Same As Above
H22090081-035	SS-19 <0.063mm	09/02/22 9:00	09/06/22	Sediment	Same As Above
H22090081-036	SS-19 1mm to 0.063mm	09/02/22 9:00	09/06/22	Sediment	Same As Above
H22090081-037	SS-19 2mm to 1mm	09/02/22 9:00	09/06/22	Sediment	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

CLIENT: MT DEQ-Federal Superfund
Project: Silver Bow Creek SSTOU Monitoring
Work Order: H22090081

Report Date: 10/14/22

CASE NARRATIVE

Sample SS-07 the nutrient container had been preserved with Nitric Acid. Contacted client regarding improper preservation Per email from T. Traxler, sub-sample from the unpreserved container and preserve with Sulfuric Acid. wjj 9/12/2022

All "J" qualified analyte concentrations are below the laboratory minimum recommended Reporting Limit (RL) and above the calculated method detection limit (MDL). Inorganic analytes reported with "J" qualifiers should be verified against the corresponding method blank and continuing calibration blanks. Inorganic "J" quantitations near the MDL may be suspect due to possible method background levels, sample matrix effects, and/or daily variability in instrument signal-to-noise levels.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-001
Collection Date: 09/02/22 16:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L		1	0.3	A2540 D	09/08/22 13:26 / ljs			CU-124 (14410200)_220908A : 8		TSS220908A
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	09/07/22 18:19 / SR			PHSC_101-H_220907A : 86		R178009
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	09/07/22 18:19 / SR			PHSC_101-H_220907A : 86		R178009
Chloride	46	mg/L		1	0.02	E300.0	09/07/22 17:17 / SR			IC METROHM_220907A : 27		R178042
Sulfate	95	mg/L		1	0.06	E300.0	09/07/22 17:17 / SR			IC METROHM_220907A : 27		R178042
Hardness as CaCO3	178	mg/L		1	1	A2340 B	09/07/22 15:20 / abc			CALC_220912C : 707		R178138
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	09/12/22 16:41 / JAR			FIA203-HE_220912A : 91		R178164
Nitrogen, Nitrate+Nitrite as N	1.22	mg/L	H	0.02	0.008	E353.2	10/12/22 10:48 / SR			FIA203-HE_221012A : 15		R179106
Nitrogen, Total	1.64	mg/L		0.05	0.02	A4500 N-C	09/07/22 14:18 / JAR	09/06/22 13:18	A4500 N-	FIA203-HE_220907A : 197		63261
Phosphorus, Total as P	0.040	mg/L		0.003	0.001	E365.1	09/20/22 09:57 / JAR	09/16/22 14:48	E365.1	SEAL AA500_220920A : 33		63456
METALS, DISSOLVED												
Aluminum	0.013	mg/L		0.009	0.003	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Barium	0.035	mg/L		0.003	0.0002	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Boron	0.1	mg/L		0.1	0.004	E200.7	09/07/22 15:20 / sld			ICP2-HE_220907A : 90		R178029
Cadmium	0.00005	mg/L		0.00003	0.00002	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Calcium	49	mg/L		1	0.1	E200.7	09/07/22 15:20 / sld			ICP2-HE_220907A : 90		R178029
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Copper	0.004	mg/L		0.001	0.0001	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Iron	0.019	mg/L	J	0.02	0.004	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Lead	0.0003	mg/L	J	0.0003	0.0001	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Magnesium	14	mg/L		1	0.02	E200.7	09/07/22 15:20 / sld			ICP2-HE_220907A : 90		R178029
Manganese	0.025	mg/L		0.001	0.0003	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	09/07/22 10:50 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A : 30		63270
Molybdenum	0.007	mg/L		0.005	0.0003	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A : 142		R178196

Report Definitions:
RL - Analyte Reporting Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-001
Collection Date: 09/02/22 16:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	10	mg/L		1	0.06	E200.7	09/07/22 15:20 / sld			ICP2-HE_220907A	90	R178029
Selenium	0.00013	mg/L	J	0.001	0.00007	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A	142	R178196
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A	142	R178196
Sodium	45	mg/L		1	0.02	E200.7	09/07/22 15:20 / sld			ICP2-HE_220907A	90	R178029
Uranium	0.0033	mg/L		0.0002	0.00002	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A	142	R178196
Vanadium	0.0026	mg/L	J	0.1	0.0001	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A	142	R178196
Zinc	0.040	mg/L		0.008	0.001	E200.8	09/13/22 22:19 / dck			ICPMS205-H_220913A	142	R178196
METALS, TOTAL RECOVERABLE												
Aluminum	0.058	mg/L		0.009	0.006	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Arsenic	0.003	mg/L		0.001	0.0001	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Barium	0.036	mg/L		0.003	0.0002	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Boron	0.1	mg/L		0.1	0.007	E200.7	09/08/22 02:19 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	172	63288
Cadmium	0.00005	mg/L		0.00003	0.00003	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Calcium	48	mg/L		1	0.1	E200.7	09/08/22 02:19 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	172	63288
Chromium	0.0003	mg/L	J	0.01	0.0002	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Cobalt	ND	mg/L		0.01	0.0003	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Copper	0.006	mg/L		0.001	0.0003	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Iron	0.11	mg/L		0.02	0.009	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Lead	0.0010	mg/L		0.0003	0.0001	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Magnesium	14	mg/L		1	0.05	E200.7	09/08/22 02:19 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	172	63288
Manganese	0.050	mg/L		0.001	0.0003	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	09/07/22 10:54 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	31	63270
Molybdenum	0.007	mg/L		0.005	0.0002	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Potassium	11	mg/L		1	0.1	E200.7	09/08/22 13:10 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	47	63288
Selenium	0.0001	mg/L	J	0.001	0.0001	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Silver	ND	mg/L		0.0002	0.00006	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Sodium	46	mg/L		1	0.1	E200.7	09/08/22 13:10 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	47	63288
Uranium	0.0035	mg/L		0.0002	0.00003	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Vanadium	0.0028	mg/L	J	0.1	0.0001	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288
Zinc	0.046	mg/L		0.008	0.001	E200.8	09/13/22 22:22 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	143	63288

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-001
Collection Date: 09/02/22 16:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-002
Collection Date: 09/02/22 14:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	6	mg/L		1	0.3	A2540 D	09/08/22 13:26 / ljs			CU-124 (14410200)_220908A : 9		TSS220908A
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	09/07/22 18:24 / SR			PHSC_101-H_220907A : 88		R178009
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	09/07/22 18:24 / SR			PHSC_101-H_220907A : 88		R178009
Chloride	44	mg/L		1	0.02	E300.0	09/07/22 17:31 / SR			IC METROHM_220907A : 28		R178042
Sulfate	104	mg/L		1	0.06	E300.0	09/07/22 17:31 / SR			IC METROHM_220907A : 28		R178042
Hardness as CaCO3	189	mg/L		1	1	A2340 B	09/07/22 15:34 / abc			CALC_220912C : 564		R178138
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	09/12/22 15:25 / JAR			FIA203-HE_220912A : 27		R178164
Nitrogen, Nitrate+Nitrite as N	0.44	mg/L		0.02	0.02	E353.2	09/08/22 13:32 / JAR			FIA203-HE_220908A : 99		R178065
Nitrogen, Total	0.80	mg/L		0.05	0.02	A4500 N-C	09/07/22 14:19 / JAR	09/06/22 13:18	A4500 N-	FIA203-HE_220907A : 198		63261
Phosphorus, Total as P	0.088	mg/L		0.003	0.001	E365.1	09/14/22 16:18 / JAR	09/09/22 11:19	E365.1	SEAL AA500_220914A : 202		63335
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Barium	0.027	mg/L		0.003	0.0002	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Boron	0.1	mg/L		0.1	0.004	E200.7	09/07/22 15:34 / sld			ICP2-HE_220907A : 94		R178029
Cadmium	0.00016	mg/L		0.00003	0.00002	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Calcium	54	mg/L		1	0.1	E200.7	09/07/22 15:34 / sld			ICP2-HE_220907A : 94		R178029
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Copper	0.012	mg/L		0.001	0.0001	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Iron	0.018	mg/L	J	0.02	0.004	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Magnesium	13	mg/L		1	0.02	E200.7	09/07/22 15:34 / sld			ICP2-HE_220907A : 94		R178029
Manganese	0.012	mg/L		0.001	0.0003	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	09/07/22 10:57 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A : 32		63270
Molybdenum	0.018	mg/L		0.005	0.0003	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A : 144		R178196

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-002
Collection Date: 09/02/22 14:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	9	mg/L		1	0.06	E200.7	09/07/22 15:34 / sld			ICP2-HE_220907A	94	R178029
Selenium	0.00016	mg/L	J	0.001	0.00007	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A	144	R178196
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A	144	R178196
Sodium	43	mg/L		1	0.02	E200.7	09/07/22 15:34 / sld			ICP2-HE_220907A	94	R178029
Uranium	0.0045	mg/L		0.0002	0.00002	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A	144	R178196
Vanadium	0.0040	mg/L	J	0.1	0.0001	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A	144	R178196
Zinc	0.023	mg/L		0.008	0.001	E200.8	09/13/22 22:24 / dck			ICPMS205-H_220913A	144	R178196
METALS, TOTAL RECOVERABLE												
Aluminum	0.069	mg/L		0.009	0.006	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Barium	0.028	mg/L		0.003	0.0002	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Boron	0.1	mg/L		0.1	0.007	E200.7	09/08/22 02:23 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	173	63288
Cadmium	0.00018	mg/L		0.00003	0.00003	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Calcium	53	mg/L		1	0.1	E200.7	09/08/22 02:23 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	173	63288
Chromium	ND	mg/L		0.01	0.0002	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Cobalt	ND	mg/L		0.01	0.0003	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Copper	0.018	mg/L		0.001	0.0003	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Iron	0.13	mg/L		0.02	0.009	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Lead	0.0015	mg/L		0.0003	0.0001	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Magnesium	13	mg/L		1	0.05	E200.7	09/08/22 02:23 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	173	63288
Manganese	0.029	mg/L		0.001	0.0003	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Mercury	0.011	ug/L		0.005	0.002	E245.1	09/07/22 11:00 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	33	63270
Molybdenum	0.019	mg/L		0.005	0.0002	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Potassium	9	mg/L		1	0.1	E200.7	09/08/22 13:14 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	48	63288
Selenium	0.0002	mg/L	J	0.001	0.0001	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Silver	ND	mg/L		0.0002	0.00006	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Sodium	43	mg/L		1	0.1	E200.7	09/08/22 13:14 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	48	63288
Uranium	0.0047	mg/L		0.0002	0.00003	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Vanadium	0.0042	mg/L	J	0.1	0.0001	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288
Zinc	0.033	mg/L		0.008	0.001	E200.8	09/13/22 22:26 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	145	63288

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-002
Collection Date: 09/02/22 14:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A Duplicate
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-003
Collection Date: 09/02/22 14:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L		1	0.3	A2540 D	09/08/22 13:26 / ljs			U-124 (14410200)_220908A : 10		TSS220908A
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	09/07/22 16:50 / SR			PHSC_101-H_220907A : 80		R178009
Bicarbonate as HCO3	100	mg/L		4	3	A2320 B	09/07/22 16:50 / SR			PHSC_101-H_220907A : 80		R178009
Chloride	44	mg/L		1	0.02	E300.0	09/07/22 17:46 / SR			IC METROHM_220907A : 29		R178042
Sulfate	102	mg/L		1	0.06	E300.0	09/07/22 17:46 / SR			IC METROHM_220907A : 29		R178042
Hardness as CaCO3	188	mg/L		1	1	A2340 B	09/07/22 15:38 / abc			CALC_220912C : 575		R178138
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	09/12/22 15:29 / JAR			FIA203-HE_220912A : 30		R178164
Nitrogen, Nitrate+Nitrite as N	0.44	mg/L		0.02	0.02	E353.2	09/08/22 13:33 / JAR			FIA203-HE_220908A : 100		R178065
Nitrogen, Total	0.80	mg/L		0.05	0.02	A4500 N-C	09/07/22 14:20 / JAR	09/06/22 13:18	A4500 N-	FIA203-HE_220907A : 199		63261
Phosphorus, Total as P	0.084	mg/L		0.003	0.001	E365.1	09/14/22 16:24 / JAR	09/09/22 11:19	E365.1	SEAL AA500_220914A : 206		63335
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Barium	0.026	mg/L		0.003	0.0002	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Boron	0.098	mg/L	J	0.1	0.004	E200.7	09/07/22 15:38 / sld			ICP2-HE_220907A : 95		R178029
Cadmium	0.00014	mg/L		0.00003	0.00002	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Calcium	53	mg/L		1	0.1	E200.7	09/07/22 15:38 / sld			ICP2-HE_220907A : 95		R178029
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Copper	0.012	mg/L		0.001	0.0001	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Iron	0.014	mg/L	J	0.02	0.004	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Magnesium	13	mg/L		1	0.02	E200.7	09/07/22 15:38 / sld			ICP2-HE_220907A : 95		R178029
Manganese	0.011	mg/L		0.001	0.0003	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	09/07/22 11:10 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A : 36		63270
Molybdenum	0.018	mg/L		0.005	0.0003	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196
Nickel	0.0004	mg/L	J	0.002	0.0002	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A : 177		R178196

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A Duplicate
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-003
Collection Date: 09/02/22 14:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	9	mg/L		1	0.06	E200.7	09/07/22 15:38 / sld			ICP2-HE_220907A	95	R178029
Selenium	0.00015	mg/L	J	0.001	0.00007	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A	177	R178196
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A	177	R178196
Sodium	42	mg/L		1	0.02	E200.7	09/07/22 15:38 / sld			ICP2-HE_220907A	95	R178029
Uranium	0.0046	mg/L		0.0002	0.00002	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A	177	R178196
Vanadium	0.0040	mg/L	J	0.1	0.0001	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A	177	R178196
Zinc	0.024	mg/L		0.008	0.001	E200.8	09/14/22 12:59 / dck			ICPMS205-H_220913A	177	R178196
METALS, TOTAL RECOVERABLE												
Aluminum	0.044	mg/L		0.009	0.006	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Barium	0.027	mg/L		0.003	0.0002	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Boron	0.1	mg/L		0.1	0.007	E200.7	09/08/22 02:26 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	174	63288
Cadmium	0.00018	mg/L		0.00003	0.00002	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Calcium	53	mg/L		1	0.1	E200.7	09/08/22 02:26 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	174	63288
Chromium	ND	mg/L		0.01	0.0002	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Cobalt	ND	mg/L		0.01	0.0003	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Copper	0.017	mg/L		0.001	0.0003	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Iron	0.09	mg/L		0.02	0.009	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Lead	0.0011	mg/L		0.0003	0.0001	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Magnesium	13	mg/L		1	0.05	E200.7	09/08/22 02:26 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	174	63288
Manganese	0.025	mg/L		0.001	0.0003	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Mercury	0.008	ug/L		0.005	0.002	E245.1	09/07/22 11:13 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	37	63270
Molybdenum	0.019	mg/L		0.005	0.0002	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Potassium	9	mg/L		1	0.1	E200.7	09/08/22 13:18 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	49	63288
Selenium	0.0002	mg/L	J	0.001	0.0001	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Silver	ND	mg/L		0.0002	0.00006	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Sodium	44	mg/L		1	0.1	E200.7	09/08/22 13:18 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	49	63288
Uranium	0.0047	mg/L		0.0002	0.00003	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Vanadium	0.0041	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288
Zinc	0.029	mg/L		0.008	0.001	E200.8	09/14/22 13:06 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	180	63288

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A Duplicate
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-003
Collection Date: 09/02/22 14:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-004
Collection Date: 09/02/22 13:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	6	mg/L		1	0.3	A2540 D	09/08/22 13:26 / ljs			U-124 (14410200)_220908A : 11		TSS220908A
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	09/07/22 18:31 / SR			PHSC_101-H_220907A : 90		R178009
Bicarbonate as HCO3	140	mg/L		4	3	A2320 B	09/07/22 18:31 / SR			PHSC_101-H_220907A : 90		R178009
Chloride	66	mg/L		1	0.02	E300.0	09/07/22 18:00 / SR			IC METROHM_220907A : 30		R178042
Sulfate	134	mg/L		1	0.06	E300.0	09/07/22 18:00 / SR			IC METROHM_220907A : 30		R178042
Hardness as CaCO3	253	mg/L		1	1	A2340 B	09/07/22 15:42 / abc			CALC_220912C : 586		R178138
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	09/12/22 15:30 / JAR			FIA203-HE_220912A : 31		R178164
Nitrogen, Nitrate+Nitrite as N	0.53	mg/L		0.02	0.008	E353.2	09/08/22 13:35 / JAR			FIA203-HE_220908A : 101		R178065
Nitrogen, Total	0.93	mg/L		0.05	0.02	A4500 N-C	09/07/22 14:21 / JAR	09/06/22 13:18	A4500 N-	FIA203-HE_220907A : 200		63261
Phosphorus, Total as P	0.133	mg/L		0.003	0.001	E365.1	09/14/22 16:26 / JAR	09/09/22 11:19	E365.1	SEAL AA500_220914A : 207		63335
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Barium	0.036	mg/L		0.003	0.0002	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Boron	0.098	mg/L	J	0.1	0.004	E200.7	09/07/22 15:42 / sld			ICP2-HE_220907A : 96		R178029
Cadmium	0.00006	mg/L		0.00003	0.00002	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Calcium	73	mg/L		1	0.1	E200.7	09/07/22 15:42 / sld			ICP2-HE_220907A : 96		R178029
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Copper	0.008	mg/L		0.001	0.0001	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Iron	0.012	mg/L	J	0.02	0.004	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Magnesium	17	mg/L		1	0.02	E200.7	09/07/22 15:42 / sld			ICP2-HE_220907A : 96		R178029
Manganese	0.083	mg/L		0.001	0.0003	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Mercury	0.005	ug/L		0.005	0.002	E245.1	09/07/22 11:16 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A : 38		63270
Molybdenum	0.018	mg/L		0.005	0.0003	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196
Nickel	0.0009	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A : 181		R178196

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-004
Collection Date: 09/02/22 13:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	10	mg/L		1	0.06	E200.7	09/07/22 15:42 / sld			ICP2-HE_220907A	96	R178029
Selenium	0.00076	mg/L	J	0.001	0.00007	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A	181	R178196
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A	181	R178196
Sodium	46	mg/L		1	0.02	E200.7	09/07/22 15:42 / sld			ICP2-HE_220907A	96	R178029
Uranium	0.0053	mg/L		0.0002	0.00002	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A	181	R178196
Vanadium	0.0036	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A	181	R178196
Zinc	0.019	mg/L		0.008	0.001	E200.8	09/14/22 13:09 / dck			ICPMS205-H_220913A	181	R178196
METALS, TOTAL RECOVERABLE												
Aluminum	0.086	mg/L		0.009	0.006	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Barium	0.039	mg/L		0.003	0.0002	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Boron	0.1	mg/L		0.1	0.007	E200.7	09/08/22 02:30 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	175	63288
Cadmium	0.00014	mg/L		0.00003	0.00002	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Calcium	73	mg/L		1	0.1	E200.7	09/08/22 02:30 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	175	63288
Chromium	ND	mg/L		0.01	0.0002	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Cobalt	ND	mg/L		0.01	0.0003	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Copper	0.012	mg/L		0.001	0.0003	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Iron	0.13	mg/L		0.02	0.009	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Lead	0.0009	mg/L		0.0003	0.0001	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Magnesium	17	mg/L		1	0.05	E200.7	09/08/22 02:30 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	175	63288
Manganese	0.138	mg/L		0.001	0.0003	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Mercury	0.007	ug/L		0.005	0.002	E245.1	09/07/22 11:20 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	39	63270
Molybdenum	0.019	mg/L		0.005	0.0002	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Nickel	0.0009	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Potassium	10	mg/L		1	0.1	E200.7	09/08/22 13:21 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	50	63288
Selenium	0.0008	mg/L	J	0.001	0.0001	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Silver	ND	mg/L		0.0002	0.00006	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Sodium	47	mg/L		1	0.1	E200.7	09/08/22 13:21 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	50	63288
Uranium	0.0055	mg/L		0.0002	0.00003	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Vanadium	0.0037	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288
Zinc	0.029	mg/L		0.008	0.001	E200.8	09/14/22 13:11 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	182	63288

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-004
Collection Date: 09/02/22 13:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Field Blank #1 SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-005
Collection Date: 09/02/22 13:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1	0.3	A2540 D	09/08/22 13:26 / ljs			U-124 (14410200)_220908A : 12		TSS220908A
- TSS did not obtain the minimum residue requirement of 2.5 mg residue.												
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4	2	A2320 B	09/07/22 18:44 / SR			PHSC_101-H_220907A : 94		R178009
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	09/07/22 18:44 / SR			PHSC_101-H_220907A : 94		R178009
Chloride	ND	mg/L		1	0.02	E300.0	09/07/22 18:15 / SR			IC METROHM_220907A : 31		R178042
Sulfate	ND	mg/L		1	0.06	E300.0	09/07/22 18:15 / SR			IC METROHM_220907A : 31		R178042
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	09/15/22 11:10 / sld			WATERCALC_220915A : 2		R178248
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	09/12/22 15:31 / JAR			FIA203-HE_220912A : 32		R178164
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.008	E353.2	09/08/22 13:36 / JAR			FIA203-HE_220908A : 102		R178065
Nitrogen, Total	ND	mg/L		0.05	0.02	A4500 N-C	09/07/22 14:23 / JAR	09/06/22 13:18	A4500 N-	FIA203-HE_220907A : 201		63261
Phosphorus, Total as P	ND	mg/L		0.003	0.001	E365.1	09/14/22 16:27 / JAR	09/09/22 11:19	E365.1	SEAL AA500_220914A : 208		63335
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Arsenic	ND	mg/L		0.001	0.0002	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Barium	ND	mg/L		0.003	0.0002	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Boron	ND	mg/L		0.1	0.004	E200.7	09/07/22 15:46 / sld			ICP2-HE_220907A : 97		R178029
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Calcium	ND	mg/L		1	0.1	E200.7	09/07/22 15:46 / sld			ICP2-HE_220907A : 97		R178029
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Copper	ND	mg/L		0.001	0.0001	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Iron	ND	mg/L		0.02	0.004	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Magnesium	ND	mg/L		1	0.02	E200.7	09/07/22 15:46 / sld			ICP2-HE_220907A : 97		R178029
Manganese	ND	mg/L		0.001	0.0003	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Mercury	ND	ug/L		0.005	0.002	E245.1	09/07/22 11:23 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A : 40		63270
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A : 188		R178196

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Field Blank #1 SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-005
Collection Date: 09/02/22 13:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	ND	mg/L		1	0.06	E200.7	09/07/22 15:46 / sld			ICP2-HE_220907A	97	R178029
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A	188	R178196
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A	188	R178196
Sodium	ND	mg/L		1	0.02	E200.7	09/07/22 15:46 / sld			ICP2-HE_220907A	97	R178029
Uranium	ND	mg/L		0.0002	0.00002	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A	188	R178196
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A	188	R178196
Zinc	ND	mg/L		0.008	0.001	E200.8	09/14/22 13:26 / dck			ICPMS205-H_220913A	188	R178196
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.009	0.006	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Arsenic	ND	mg/L		0.001	0.0001	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Barium	ND	mg/L		0.003	0.0002	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Boron	ND	mg/L		0.1	0.007	E200.7	09/08/22 03:27 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	190	63288
Cadmium	ND	mg/L		0.00003	0.00003	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Calcium	ND	mg/L		1	0.1	E200.7	09/08/22 03:27 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	190	63288
Chromium	ND	mg/L		0.01	0.0002	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Cobalt	ND	mg/L		0.01	0.0003	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Copper	ND	mg/L		0.001	0.0003	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Iron	ND	mg/L		0.02	0.009	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Magnesium	ND	mg/L		1	0.05	E200.7	09/08/22 03:27 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	190	63288
Manganese	ND	mg/L		0.001	0.0003	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Mercury	ND	ug/L		0.005	0.002	E245.1	09/07/22 11:39 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	45	63271
Molybdenum	ND	mg/L		0.005	0.0002	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Potassium	ND	mg/L		1	0.1	E200.7	09/08/22 13:48 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	57	63288
Selenium	ND	mg/L		0.001	0.0001	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Silver	ND	mg/L		0.0002	0.00006	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Sodium	ND	mg/L		1	0.1	E200.7	09/08/22 13:48 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	57	63288
Uranium	ND	mg/L		0.0002	0.00003	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288
Zinc	ND	mg/L		0.008	0.001	E200.8	09/14/22 13:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	189	63288

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Field Blank #1 SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-005
Collection Date: 09/02/22 13:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-006
Collection Date: 09/02/22 12:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	10	mg/L		1	0.3	A2540 D	09/08/22 13:26 / ljs			U-124 (14410200)_220908A : 13		TSS220908A
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	09/07/22 18:49 / SR			PHSC_101-H_220907A : 96		R178009
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	09/07/22 18:49 / SR			PHSC_101-H_220907A : 96		R178009
Chloride	63	mg/L		1	0.02	E300.0	09/07/22 19:41 / SR			IC METROHM_220907A : 36		R178042
Sulfate	127	mg/L		1	0.06	E300.0	09/07/22 19:41 / SR			IC METROHM_220907A : 36		R178042
Hardness as CaCO3	243	mg/L		1	1	A2340 B	09/07/22 15:57 / abc			CALC_220912C : 608		R178138
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	09/12/22 15:32 / JAR			FIA203-HE_220912A : 33		R178164
Nitrogen, Nitrate+Nitrite as N	0.48	mg/L		0.02	0.008	E353.2	09/08/22 13:39 / JAR			FIA203-HE_220908A : 105		R178065
Nitrogen, Total	0.85	mg/L		0.05	0.02	A4500 N-C	09/07/22 14:26 / JAR	09/06/22 13:19	A4500 N-	FIA203-HE_220907A : 204		63272
Phosphorus, Total as P	0.125	mg/L		0.003	0.001	E365.1	09/14/22 16:31 / JAR	09/09/22 11:19	E365.1	SEAL AA500_220914A : 212		63335
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Barium	0.034	mg/L		0.003	0.0002	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Boron	0.10	mg/L	J	0.1	0.004	E200.7	09/07/22 15:57 / sld			ICP2-HE_220907A : 100		R178029
Cadmium	0.00008	mg/L		0.00003	0.00002	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Calcium	70	mg/L		1	0.1	E200.7	09/07/22 15:57 / sld			ICP2-HE_220907A : 100		R178029
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Copper	0.007	mg/L		0.001	0.0001	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Iron	0.012	mg/L	J	0.02	0.004	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Magnesium	16	mg/L		1	0.02	E200.7	09/07/22 15:57 / sld			ICP2-HE_220907A : 100		R178029
Manganese	0.064	mg/L		0.001	0.0003	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	09/07/22 11:42 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A : 46		63271
Molybdenum	0.020	mg/L		0.005	0.0003	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A : 190		R178196

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-006
Collection Date: 09/02/22 12:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	10	mg/L		1	0.06	E200.7	09/07/22 15:57 / sld			ICP2-HE_220907A	100	R178029
Selenium	0.00076	mg/L	J	0.001	0.00007	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A	190	R178196
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A	190	R178196
Sodium	45	mg/L		1	0.02	E200.7	09/07/22 15:57 / sld			ICP2-HE_220907A	100	R178029
Uranium	0.0054	mg/L		0.0002	0.00002	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A	190	R178196
Vanadium	0.0034	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A	190	R178196
Zinc	0.020	mg/L		0.008	0.001	E200.8	09/14/22 13:31 / dck			ICPMS205-H_220913A	190	R178196
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.009	0.006	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Barium	0.034	mg/L		0.003	0.0002	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Boron	0.098	mg/L	J	0.1	0.007	E200.7	09/08/22 03:31 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	191	63288
Cadmium	0.00008	mg/L		0.00003	0.00003	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Calcium	71	mg/L		1	0.1	E200.7	09/08/22 03:31 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	191	63288
Chromium	ND	mg/L		0.01	0.0002	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Cobalt	ND	mg/L		0.01	0.0003	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Copper	0.008	mg/L		0.001	0.0003	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Iron	0.016	mg/L	J	0.02	0.009	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Magnesium	16	mg/L		1	0.05	E200.7	09/08/22 03:31 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	191	63288
Manganese	0.063	mg/L		0.001	0.0003	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Mercury	0.005	ug/L	J	0.005	0.002	E245.1	09/07/22 11:46 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	47	63271
Molybdenum	0.021	mg/L		0.005	0.0002	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Potassium	9	mg/L		1	0.1	E200.7	09/08/22 13:52 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	58	63288
Selenium	0.0007	mg/L	J	0.001	0.0001	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Silver	ND	mg/L		0.0002	0.00006	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Sodium	44	mg/L		1	0.1	E200.7	09/08/22 13:52 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	58	63288
Uranium	0.0056	mg/L		0.0002	0.00003	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Vanadium	0.0036	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288
Zinc	0.021	mg/L		0.008	0.001	E200.8	09/14/22 13:34 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	191	63288

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-006
Collection Date: 09/02/22 12:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-007
Collection Date: 09/02/22 12:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	35	mg/L	D	2	0.3	A2540 D	09/08/22 13:27 / ljs			U-124 (14410200)_220908A : 14		TSS220908A
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	09/07/22 18:55 / SR			PHSC_101-H_220907A : 98		R178009
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	09/07/22 18:55 / SR			PHSC_101-H_220907A : 98		R178009
Chloride	59	mg/L		1	0.02	E300.0	09/07/22 19:56 / SR			IC METROHM_220907A : 37		R178042
Sulfate	109	mg/L		1	0.06	E300.0	09/07/22 19:56 / SR			IC METROHM_220907A : 37		R178042
Hardness as CaCO3	213	mg/L		1	1	A2340 B	09/07/22 16:01 / abc			CALC_220912C : 619		R178138
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	09/12/22 15:33 / JAR			FIA203-HE_220912A : 34		R178164
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.008	E353.2	09/08/22 13:40 / JAR			FIA203-HE_220908A : 106		R178065
Nitrogen, Total	0.34	mg/L		0.05	0.02	A4500 N-C	09/07/22 14:30 / JAR	09/06/22 13:19	A4500 N-	FIA203-HE_220907A : 207		63272
Phosphorus, Total as P	0.138	mg/L		0.003	0.001	E365.1	09/14/22 16:32 / JAR	09/09/22 11:19	E365.1	SEAL AA500_220914A : 213		63335
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Arsenic	0.008	mg/L		0.001	0.0002	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Barium	0.020	mg/L		0.003	0.0002	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Boron	0.091	mg/L	J	0.1	0.004	E200.7	09/07/22 16:01 / sld			ICP2-HE_220907A : 101		R178029
Cadmium	0.00011	mg/L		0.00003	0.00002	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Calcium	62	mg/L		1	0.1	E200.7	09/07/22 16:01 / sld			ICP2-HE_220907A : 101		R178029
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Copper	0.008	mg/L		0.001	0.0001	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Iron	0.009	mg/L	J	0.02	0.004	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Magnesium	14	mg/L		1	0.02	E200.7	09/07/22 16:01 / sld			ICP2-HE_220907A : 101		R178029
Manganese	0.021	mg/L		0.001	0.0003	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	09/07/22 11:49 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A : 48		63271
Molybdenum	0.026	mg/L		0.005	0.0003	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A : 192		R178196

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-007
Collection Date: 09/02/22 12:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	8	mg/L		1	0.06	E200.7	09/07/22 16:01 / sld			ICP2-HE_220907A	101	R178029
Selenium	0.00044	mg/L	J	0.001	0.00007	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A	192	R178196
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A	192	R178196
Sodium	43	mg/L		1	0.02	E200.7	09/07/22 16:01 / sld			ICP2-HE_220907A	101	R178029
Uranium	0.0047	mg/L		0.0002	0.00002	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A	192	R178196
Vanadium	0.0033	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A	192	R178196
Zinc	0.018	mg/L		0.008	0.001	E200.8	09/14/22 13:36 / dck			ICPMS205-H_220913A	192	R178196
METALS, TOTAL RECOVERABLE												
Aluminum	0.710	mg/L		0.009	0.006	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Arsenic	0.009	mg/L		0.001	0.0001	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Barium	0.035	mg/L		0.003	0.0002	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Boron	0.093	mg/L	J	0.1	0.007	E200.7	09/08/22 03:35 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	192	63288
Cadmium	0.00043	mg/L		0.00003	0.00003	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Calcium	64	mg/L		1	0.1	E200.7	09/08/22 03:35 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	192	63288
Chromium	0.0007	mg/L	J	0.01	0.0002	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Cobalt	0.0006	mg/L	J	0.01	0.0003	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Copper	0.035	mg/L		0.001	0.0003	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Iron	0.79	mg/L		0.02	0.009	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Lead	0.0044	mg/L		0.0003	0.0001	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Magnesium	14	mg/L		1	0.05	E200.7	09/08/22 03:35 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	192	63288
Manganese	0.256	mg/L	D	0.002	0.002	E200.7	09/08/22 13:55 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	59	63288
Mercury	0.024	ug/L		0.005	0.002	E245.1	09/07/22 11:52 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	49	63271
Molybdenum	0.027	mg/L		0.005	0.0002	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Nickel	0.0010	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Potassium	8	mg/L		1	0.1	E200.7	09/08/22 13:55 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	59	63288
Selenium	0.0005	mg/L	J	0.001	0.0001	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Silver	0.00007	mg/L	J	0.0002	0.00006	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Sodium	44	mg/L		1	0.1	E200.7	09/08/22 13:55 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	59	63288
Uranium	0.0050	mg/L		0.0002	0.00003	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Vanadium	0.0047	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288
Zinc	0.093	mg/L		0.008	0.001	E200.8	09/14/22 13:46 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	196	63288

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-007
Collection Date: 09/02/22 12:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-008
Collection Date: 09/02/22 10:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L		1	0.3	A2540 D	09/08/22 13:27 / ljs			U-124 (14410200)_220908A	16	TSS220908A
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	09/07/22 19:02 / SR			PHSC_101-H_220907A	100	R178009
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	09/07/22 19:02 / SR			PHSC_101-H_220907A	100	R178009
Chloride	55	mg/L		1	0.02	E300.0	09/07/22 20:10 / SR			IC METROHM_220907A	38	R178042
Sulfate	100	mg/L		1	0.06	E300.0	09/07/22 20:10 / SR			IC METROHM_220907A	38	R178042
Hardness as CaCO3	215	mg/L		1	1	A2340 B	09/07/22 16:05 / abc			CALC_220912C	630	R178138
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	09/12/22 15:35 / JAR			FIA203-HE_220912A	35	R178164
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.008	E353.2	09/08/22 13:42 / JAR			FIA203-HE_220908A	107	R178065
Nitrogen, Total	0.32	mg/L		0.05	0.02	A4500 N-C	09/07/22 14:31 / JAR	09/06/22 13:19	A4500 N-	FIA203-HE_220907A	208	63272
Phosphorus, Total as P	0.095	mg/L		0.003	0.001	E365.1	09/14/22 16:33 / JAR	09/09/22 11:19	E365.1	SEAL AA500_220914A	214	63335
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Barium	0.024	mg/L		0.003	0.0002	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Boron	0.084	mg/L	J	0.1	0.004	E200.7	09/07/22 16:05 / sld			ICP2-HE_220907A	102	R178029
Cadmium	0.00009	mg/L		0.00003	0.00002	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Calcium	63	mg/L		1	0.1	E200.7	09/07/22 16:05 / sld			ICP2-HE_220907A	102	R178029
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Copper	0.007	mg/L		0.001	0.0001	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Iron	0.008	mg/L	J	0.02	0.004	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Magnesium	14	mg/L		1	0.02	E200.7	09/07/22 16:05 / sld			ICP2-HE_220907A	102	R178029
Manganese	0.022	mg/L		0.001	0.0003	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Mercury	ND	ug/L		0.005	0.002	E245.1	09/07/22 11:55 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	50	63271
Molybdenum	0.025	mg/L		0.005	0.0003	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-008
Collection Date: 09/02/22 10:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	8	mg/L		1	0.06	E200.7	09/07/22 16:05 / sld			ICP2-HE_220907A	102	R178029
Selenium	0.00041	mg/L	J	0.001	0.00007	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Sodium	39	mg/L		1	0.02	E200.7	09/07/22 16:05 / sld			ICP2-HE_220907A	102	R178029
Uranium	0.0044	mg/L		0.0002	0.00002	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Vanadium	0.0026	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
Zinc	0.018	mg/L		0.008	0.001	E200.8	09/14/22 13:49 / dck			ICPMS205-H_220913A	197	R178196
METALS, TOTAL RECOVERABLE												
Aluminum	0.059	mg/L		0.009	0.006	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Barium	0.026	mg/L		0.003	0.0002	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Boron	0.082	mg/L	J	0.1	0.007	E200.7	09/08/22 03:39 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	193	63288
Cadmium	0.00013	mg/L		0.00003	0.00003	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Calcium	63	mg/L		1	0.1	E200.7	09/08/22 03:39 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	193	63288
Chromium	ND	mg/L		0.01	0.0002	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Cobalt	ND	mg/L		0.01	0.0003	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Copper	0.010	mg/L		0.001	0.0003	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Iron	0.07	mg/L		0.02	0.009	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Lead	0.0005	mg/L		0.0003	0.0001	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Magnesium	14	mg/L		1	0.05	E200.7	09/08/22 03:39 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	193	63288
Manganese	0.049	mg/L		0.001	0.0003	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	09/07/22 11:59 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	51	63271
Molybdenum	0.026	mg/L		0.005	0.0002	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Potassium	8	mg/L		1	0.1	E200.7	09/08/22 13:59 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	60	63288
Selenium	0.0004	mg/L	J	0.001	0.0001	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Silver	ND	mg/L		0.0002	0.00006	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Sodium	41	mg/L		1	0.1	E200.7	09/08/22 13:59 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	60	63288
Uranium	0.0045	mg/L		0.0002	0.00003	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Vanadium	0.0028	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288
Zinc	0.025	mg/L		0.008	0.001	E200.8	09/14/22 13:51 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	198	63288

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-008
Collection Date: 09/02/22 10:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-009
Collection Date: 09/02/22 09:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	1	mg/L		1	0.3	A2540 D	09/08/22 13:27 / ljs			U-124 (14410200)_220908A	17	TSS220908A
- TSS did not obtain the minimum residue requirement of 2.5 mg residue.												
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	09/07/22 19:08 / SR			PHSC_101-H_220907A	102	R178009
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	09/07/22 19:08 / SR			PHSC_101-H_220907A	102	R178009
Chloride	53	mg/L		1	0.02	E300.0	09/07/22 20:25 / SR			IC METROHM_220907A	39	R178042
Sulfate	113	mg/L		1	0.06	E300.0	09/07/22 20:25 / SR			IC METROHM_220907A	39	R178042
Hardness as CaCO3	226	mg/L		1	1	A2340 B	09/07/22 16:08 / abc			CALC_220912C	641	R178138
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	09/12/22 15:36 / JAR			FIA203-HE_220912A	36	R178164
Nitrogen, Nitrate+Nitrite as N	0.04	mg/L		0.02	0.008	E353.2	09/08/22 13:43 / JAR			FIA203-HE_220908A	108	R178065
Nitrogen, Total	0.33	mg/L		0.05	0.02	A4500 N-C	09/07/22 14:32 / JAR	09/06/22 13:19	A4500 N-	FIA203-HE_220907A	209	63272
Phosphorus, Total as P	0.088	mg/L		0.003	0.001	E365.1	09/14/22 16:34 / JAR	09/09/22 11:19	E365.1	SEAL AA500_220914A	215	63335
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Arsenic	0.008	mg/L		0.001	0.0002	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Barium	0.021	mg/L		0.003	0.0002	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Boron	0.082	mg/L	J	0.1	0.004	E200.7	09/07/22 16:08 / sld			ICP2-HE_220907A	103	R178029
Cadmium	0.00011	mg/L		0.00003	0.00002	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Calcium	68	mg/L		1	0.1	E200.7	09/07/22 16:08 / sld			ICP2-HE_220907A	103	R178029
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Copper	0.009	mg/L		0.001	0.0001	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Iron	0.010	mg/L	J	0.02	0.004	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Magnesium	14	mg/L		1	0.02	E200.7	09/07/22 16:08 / sld			ICP2-HE_220907A	103	R178029
Manganese	0.015	mg/L		0.001	0.0003	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	09/07/22 12:02 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	52	63271
Molybdenum	0.032	mg/L		0.005	0.0003	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-009
Collection Date: 09/02/22 09:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	7	mg/L		1	0.06	E200.7	09/07/22 16:08 / sld			ICP2-HE_220907A	103	R178029
Selenium	0.00035	mg/L	J	0.001	0.00007	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Sodium	40	mg/L		1	0.02	E200.7	09/07/22 16:08 / sld			ICP2-HE_220907A	103	R178029
Uranium	0.0045	mg/L		0.0002	0.00002	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Vanadium	0.0023	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
Zinc	0.024	mg/L		0.008	0.001	E200.8	09/14/22 13:54 / dck			ICPMS205-H_220913A	199	R178196
METALS, TOTAL RECOVERABLE												
Aluminum	0.023	mg/L		0.009	0.006	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Arsenic	0.008	mg/L		0.001	0.0001	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Barium	0.022	mg/L		0.003	0.0002	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Boron	0.082	mg/L	J	0.1	0.007	E200.7	09/08/22 03:43 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	194	63288
Cadmium	0.00013	mg/L		0.00003	0.00002	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Calcium	67	mg/L		1	0.1	E200.7	09/08/22 03:43 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	194	63288
Chromium	ND	mg/L		0.01	0.0002	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Cobalt	ND	mg/L		0.01	0.0003	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Copper	0.011	mg/L		0.001	0.0003	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Iron	0.05	mg/L		0.02	0.009	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Lead	0.0003	mg/L	J	0.0003	0.0001	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Magnesium	13	mg/L		1	0.05	E200.7	09/08/22 03:43 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	194	63288
Manganese	0.031	mg/L		0.001	0.0003	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Mercury	0.003	ug/L	J	0.005	0.002	E245.1	09/07/22 12:05 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	53	63271
Molybdenum	0.034	mg/L		0.005	0.0002	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Potassium	7	mg/L		1	0.1	E200.7	09/08/22 14:03 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	61	63288
Selenium	0.0003	mg/L	J	0.001	0.0001	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Silver	ND	mg/L		0.0002	0.00006	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Sodium	41	mg/L		1	0.1	E200.7	09/08/22 14:03 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	61	63288
Uranium	0.0046	mg/L		0.0002	0.00003	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Vanadium	0.0025	mg/L	J	0.1	0.0001	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288
Zinc	0.029	mg/L		0.008	0.001	E200.8	09/14/22 13:56 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	200	63288

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-009
Collection Date: 09/02/22 09:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-010
Collection Date: 09/02/22 09:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	1	mg/L		1	0.3	A2540 D	09/08/22 13:28 / ljs			U-124 (14410200)_220908A	18	TSS220908A
- TSS did not obtain the minimum residue requirement of 2.5 mg residue.												
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	09/07/22 19:14 / SR			PHSC_101-H_220907A	104	R178009
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	09/07/22 19:14 / SR			PHSC_101-H_220907A	104	R178009
Chloride	42	mg/L		1	0.02	E300.0	09/07/22 20:39 / SR			IC METROHM_220907A	40	R178042
Sulfate	112	mg/L		1	0.06	E300.0	09/07/22 20:39 / SR			IC METROHM_220907A	40	R178042
Hardness as CaCO3	220	mg/L		1	1	A2340 B	09/07/22 16:12 / abc			CALC_220912C	652	R178138
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	09/12/22 15:37 / JAR			FIA203-HE_220912A	37	R178164
Nitrogen, Nitrate+Nitrite as N	0.04	mg/L		0.02	0.008	E353.2	09/08/22 13:44 / JAR			FIA203-HE_220908A	109	R178065
Nitrogen, Total	0.34	mg/L		0.05	0.02	A4500 N-C	09/07/22 14:33 / JAR	09/06/22 13:19	A4500 N-	FIA203-HE_220907A	210	63272
Phosphorus, Total as P	0.067	mg/L		0.003	0.001	E365.1	09/14/22 16:35 / JAR	09/09/22 11:19	E365.1	SEAL AA500_220914A	216	63335
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Barium	0.029	mg/L		0.003	0.0002	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Boron	0.076	mg/L	J	0.1	0.004	E200.7	09/07/22 16:12 / sld			ICP2-HE_220907A	104	R178029
Cadmium	0.00007	mg/L		0.00003	0.00002	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Calcium	65	mg/L		1	0.1	E200.7	09/07/22 16:12 / sld			ICP2-HE_220907A	104	R178029
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Copper	0.006	mg/L		0.001	0.0001	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Iron	0.012	mg/L	J	0.02	0.004	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Magnesium	14	mg/L		1	0.02	E200.7	09/07/22 16:12 / sld			ICP2-HE_220907A	104	R178029
Manganese	0.027	mg/L		0.001	0.0003	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Mercury	ND	ug/L		0.005	0.002	E245.1	09/07/22 12:08 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	54	63271
Molybdenum	0.026	mg/L		0.005	0.0003	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196

Report Definitions:
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MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-010
Collection Date: 09/02/22 09:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	7	mg/L		1	0.06	E200.7	09/07/22 16:12 / sld			ICP2-HE_220907A	104	R178029
Selenium	0.00031	mg/L	J	0.001	0.00007	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Sodium	41	mg/L		1	0.02	E200.7	09/07/22 16:12 / sld			ICP2-HE_220907A	104	R178029
Uranium	0.0058	mg/L		0.0002	0.00002	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Vanadium	0.0027	mg/L	J	0.1	0.0001	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
Zinc	0.020	mg/L		0.008	0.001	E200.8	09/14/22 14:26 / dck			ICPMS205-H_220913A	208	R178196
METALS, TOTAL RECOVERABLE												
Aluminum	0.018	mg/L		0.009	0.006	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Barium	0.029	mg/L		0.003	0.0002	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Boron	0.079	mg/L	J	0.1	0.007	E200.7	09/08/22 03:54 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	197	63288
Cadmium	0.00009	mg/L		0.00003	0.00003	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Calcium	66	mg/L		1	0.1	E200.7	09/08/22 03:54 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	197	63288
Chromium	ND	mg/L		0.01	0.0002	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Cobalt	ND	mg/L		0.01	0.0003	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Copper	0.007	mg/L		0.001	0.0003	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Iron	0.04	mg/L		0.02	0.009	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Magnesium	13	mg/L		1	0.05	E200.7	09/08/22 03:54 / sld	09/07/22 09:37	E200.2	ICP2-HE_220907A	197	63288
Manganese	0.038	mg/L		0.001	0.0003	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Mercury	0.005	ug/L	J	0.005	0.002	E245.1	09/07/22 12:25 / cfg	09/07/22 08:08	E245.1	HGCV203-H_220907A	59	63271
Molybdenum	0.027	mg/L		0.005	0.0002	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Nickel	0.0004	mg/L	J	0.002	0.0002	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Potassium	7	mg/L		1	0.1	E200.7	09/08/22 14:07 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	62	63288
Selenium	0.0003	mg/L	J	0.001	0.0001	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Silver	ND	mg/L		0.0002	0.00006	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Sodium	42	mg/L		1	0.1	E200.7	09/08/22 14:07 / sld	09/07/22 09:37	E200.2	ICP2-HE_220908A	62	63288
Uranium	0.0058	mg/L		0.0002	0.00003	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Vanadium	0.0026	mg/L	J	0.1	0.0001	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288
Zinc	0.020	mg/L		0.008	0.001	E200.8	09/14/22 14:29 / dck	09/07/22 09:37	E200.2	ICPMS205-H_220913A	209	63288

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22090081-010
Collection Date: 09/02/22 09:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID

METALS, TOTAL RECOVERABLE

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-011
Collection Date: 09/02/22 16:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	74.8	wt%		0.2	0.02	D2974	09/30/22 10:21 / jjp			L DRYING OVEN 2_221003C : 1		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	11.5	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 9		R179030
3050 EXTRACTABLE METALS												
Aluminum	21700	mg/kg-dry	D	70	70	SW6010B	09/26/22 21:05 / cfg	09/22/22 08:38	SW3050 B	ICP2-HE_220926B : 34		63550
Antimony	ND	mg/kg-dry		10	10	SW6020	09/23/22 22:37 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 364		63550
Arsenic	86	mg/kg-dry		5	2	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Barium	227	mg/kg-dry		5	3	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Beryllium	ND	mg/kg-dry		5	4	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Boron	16	mg/kg-dry		10	10	SW6010B	09/26/22 21:05 / cfg	09/22/22 08:38	SW3050 B	ICP2-HE_220926B : 34		63550
Cadmium	6.9	mg/kg-dry		0.4	0.4	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Chromium	74	mg/kg-dry		10	10	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Cobalt	14	mg/kg-dry		7	7	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Copper	817	mg/kg-dry		10	10	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Iron	35900	mg/kg-dry	D	400	400	SW6010B	09/26/22 21:05 / cfg	09/22/22 08:38	SW3050 B	ICP2-HE_220926B : 34		63550
Lead	414	mg/kg-dry		5	5	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Manganese	2580	mg/kg-dry		10	10	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Molybdenum	52	mg/kg-dry		5	2	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Nickel	43	mg/kg-dry		5	5	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Selenium	3	mg/kg-dry	J	5	1	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Silver	ND	mg/kg-dry		7	7	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Uranium	8	mg/kg-dry		5	0.2	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Vanadium	106	mg/kg-dry		3	3	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
Zinc	1870	mg/kg-dry	D	30	30	SW6020	09/23/22 12:21 / dck	09/22/22 08:38	SW3050 B	ICPMS205-H_220922B : 301		63550
METALS, TOTAL												
Mercury	0.92	mg/kg-dry		0.10	0.027	SW7471B	09/23/22 12:31 / cfg	09/21/22 11:00	SW7471B	HGCV205-H_220923A : 31		63531

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-012
Collection Date: 09/02/22 16:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	27.2	wt%		0.2	0.02	D2974	09/30/22 10:21 / jjp			L DRYING OVEN 2_221003C : 3		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	28.8	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 10		R179030
3050 EXTRACTABLE METALS												
Aluminum	5950	mg/kg-dry	D	20	20	SW6010B	09/26/22 21:30 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 41		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 22:39 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 365		63550
Arsenic	24	mg/kg-dry		5	0.5	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Barium	114	mg/kg-dry		5	0.9	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 21:30 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 41		63550
Cadmium	1.7	mg/kg-dry		0.2	0.1	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Chromium	14	mg/kg-dry		5	4	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Cobalt	7	mg/kg-dry		5	2	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Copper	193	mg/kg-dry		5	4	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Iron	23500	mg/kg-dry	D	100	100	SW6010B	09/26/22 21:30 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 41		63550
Lead	94	mg/kg-dry		5	2	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Manganese	1140	mg/kg-dry		5	4	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Molybdenum	11	mg/kg-dry		5	0.8	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Nickel	7	mg/kg-dry		5	2	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Selenium	0.5	mg/kg-dry	J	5	0.5	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Uranium	2.4	mg/kg-dry	J	5	0.07	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Vanadium	46	mg/kg-dry		1	1	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
Zinc	802	mg/kg-dry	D	10	10	SW6020	09/23/22 12:35 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 307		63550
METALS, TOTAL												
Mercury	0.15	mg/kg-dry		0.10	0.0094	SW7471B	09/23/22 12:33 / cfg	09/21/22 11:00	SW7471B	HGCV205-H_220923A : 32		63531

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-013
Collection Date: 09/02/22 16:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	26.3	wt%		0.2	0.02	D2974	09/30/22 10:21 / jjp			L DRYING OVEN 2_221003C : 5		PMOIST_220930_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	16.1	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 11		R179030
3050 EXTRACTABLE METALS												
Aluminum	2660	mg/kg-dry	D	20	20	SW6010B	09/26/22 21:34 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 42		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 22:42 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 366		63550
Arsenic	14	mg/kg-dry		5	0.5	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Barium	55	mg/kg-dry		5	0.9	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 21:34 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 42		63550
Cadmium	0.7	mg/kg-dry		0.2	0.1	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Chromium	ND	mg/kg-dry		5	4	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Cobalt	13	mg/kg-dry		5	2	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Copper	63	mg/kg-dry		5	4	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Iron	6300	mg/kg-dry	D	100	100	SW6010B	09/26/22 21:34 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 42		63550
Lead	22	mg/kg-dry		5	2	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Manganese	1330	mg/kg-dry		5	4	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Molybdenum	14	mg/kg-dry		5	0.8	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Nickel	3	mg/kg-dry	J	5	2	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Selenium	ND	mg/kg-dry		5	0.5	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Uranium	1.1	mg/kg-dry	J	5	0.07	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Vanadium	13	mg/kg-dry		1	1	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
Zinc	259	mg/kg-dry	D	10	10	SW6020	09/23/22 12:38 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 308		63550
METALS, TOTAL												
Mercury	0.02	mg/kg-dry	J	0.10	0.0093	SW7471B	09/23/22 12:40 / cfg	09/21/22 11:01	SW7471B	HGCV205-H_220923A : 36		63531

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-014
Collection Date: 09/02/22 14:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	71.9	wt%		0.2	0.02	D2974	09/30/22 10:21 / jjp			L DRYING OVEN 2_221003C : 7		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	5.5	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 12		R179030
3050 EXTRACTABLE METALS												
Aluminum	35700	mg/kg-dry	D	60	60	SW6010B	09/26/22 21:38 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 43		63550
Antimony	ND	mg/kg-dry		10	10	SW6020	09/23/22 22:44 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 367		63550
Arsenic	45	mg/kg-dry		5	1	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Barium	242	mg/kg-dry		5	2	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Beryllium	ND	mg/kg-dry		5	4	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Boron	ND	mg/kg-dry		10	10	SW6010B	09/26/22 21:38 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 43		63550
Cadmium	10.1	mg/kg-dry		0.3	0.3	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Chromium	32	mg/kg-dry		10	10	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Cobalt	13	mg/kg-dry		6	6	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Copper	878	mg/kg-dry		10	10	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Iron	35900	mg/kg-dry	D	400	400	SW6010B	09/26/22 21:38 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 43		63550
Lead	319	mg/kg-dry		5	4	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Manganese	2730	mg/kg-dry		10	10	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Molybdenum	19	mg/kg-dry		5	2	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Nickel	19	mg/kg-dry		5	4	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Selenium	2	mg/kg-dry	J	5	1	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Silver	ND	mg/kg-dry		6	6	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Uranium	3.9	mg/kg-dry	J	5	0.2	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Vanadium	56	mg/kg-dry		3	3	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
Zinc	1590	mg/kg-dry	D	30	30	SW6020	09/23/22 12:40 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 309		63550
METALS, TOTAL												
Mercury	1.2	mg/kg-dry		0.10	0.024	SW7471B	09/23/22 12:42 / cfg	09/21/22 11:01	SW7471B	HGCV205-H_220923A : 37		63531

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-015
Collection Date: 09/02/22 14:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	26.1	wt%		0.2	0.02	D2974	09/30/22 10:21 / jjp			L DRYING OVEN 2_221003C : 9		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	21.2	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 13		R179030
3050 EXTRACTABLE METALS												
Aluminum	6810	mg/kg-dry	D	20	20	SW6010B	09/26/22 21:41 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 44		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 22:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 368		63550
Arsenic	10	mg/kg-dry		5	0.5	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Barium	84	mg/kg-dry		5	0.9	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 21:41 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 44		63550
Cadmium	1.1	mg/kg-dry		0.2	0.1	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Chromium	14	mg/kg-dry		5	4	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Cobalt	4	mg/kg-dry	J	5	2	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Copper	76	mg/kg-dry		5	4	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Iron	22900	mg/kg-dry	D	100	100	SW6010B	09/26/22 21:41 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 44		63550
Lead	59	mg/kg-dry		5	2	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Manganese	615	mg/kg-dry		5	4	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Molybdenum	2.3	mg/kg-dry	J	5	0.8	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Nickel	3	mg/kg-dry	J	5	2	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Selenium	ND	mg/kg-dry		5	0.5	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Uranium	1.1	mg/kg-dry	J	5	0.07	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Vanadium	60	mg/kg-dry		1	1	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
Zinc	243	mg/kg-dry	D	10	10	SW6020	09/23/22 12:43 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 310		63550
METALS, TOTAL												
Mercury	0.39	mg/kg-dry		0.10	0.0093	SW7471B	09/23/22 12:44 / cfg	09/21/22 11:01	SW7471B	HGCV205-H_220923A : 38		63531

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-016
Collection Date: 09/02/22 14:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	23.6	wt%		0.2	0.02	D2974	09/30/22 10:21 / jjp			DRYING OVEN 2_221003C : 11		PMOIST_220930_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	19.9	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 14		R179030
3050 EXTRACTABLE METALS												
Aluminum	6700	mg/kg-dry	D	20	20	SW6010B	09/26/22 21:45 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 45		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 22:49 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 369		63550
Arsenic	7	mg/kg-dry		5	0.5	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Barium	83	mg/kg-dry		5	0.9	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 21:45 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 45		63550
Cadmium	1.0	mg/kg-dry		0.2	0.1	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Chromium	ND	mg/kg-dry		5	4	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Cobalt	ND	mg/kg-dry		5	2	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Copper	36	mg/kg-dry		5	4	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Iron	7870	mg/kg-dry	D	100	100	SW6010B	09/26/22 21:45 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 45		63550
Lead	51	mg/kg-dry		5	2	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Manganese	789	mg/kg-dry		5	4	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Molybdenum	3.1	mg/kg-dry	J	5	0.8	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Nickel	2	mg/kg-dry	J	5	2	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Selenium	ND	mg/kg-dry		5	0.4	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Uranium	1.1	mg/kg-dry	J	5	0.07	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Vanadium	11	mg/kg-dry		1	1	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
Zinc	177	mg/kg-dry	D	10	10	SW6020	09/23/22 12:45 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 311		63550
METALS, TOTAL												
Mercury	0.03	mg/kg-dry	J	0.10	0.0090	SW7471B	09/23/22 12:46 / cfg	09/21/22 11:01	SW7471B	HGCV205-H_220923A : 39		63531

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13 <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-017
Collection Date: 09/02/22 13:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	78.0	wt%		0.2	0.02	D2974	09/30/22 10:22 / jjp			DRYING OVEN 2_221003C : 13		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	14.7	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 15		R179030
3050 EXTRACTABLE METALS												
Aluminum	33800	mg/kg-dry	D	80	80	SW6010B	09/26/22 21:49 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 46		63550
Antimony	ND	mg/kg-dry		10	10	SW6020	09/23/22 22:51 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 370		63550
Arsenic	70	mg/kg-dry		5	2	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Barium	270	mg/kg-dry		5	3	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Beryllium	ND	mg/kg-dry		5	5	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Boron	ND	mg/kg-dry		20	20	SW6010B	09/26/22 21:49 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 46		63550
Cadmium	12.4	mg/kg-dry		0.4	0.4	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Chromium	55	mg/kg-dry		10	10	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Cobalt	16	mg/kg-dry		8	8	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Copper	1070	mg/kg-dry		10	10	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Iron	40400	mg/kg-dry	D	500	500	SW6010B	09/26/22 21:49 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 46		63550
Lead	202	mg/kg-dry		6	6	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Manganese	1520	mg/kg-dry		10	10	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Molybdenum	69	mg/kg-dry		5	3	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Nickel	31	mg/kg-dry		6	6	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Selenium	5	mg/kg-dry	J	5	2	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Silver	ND	mg/kg-dry		8	8	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Uranium	9	mg/kg-dry		5	0.2	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Vanadium	95	mg/kg-dry		4	4	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
Zinc	2200	mg/kg-dry	D	40	40	SW6020	09/23/22 12:47 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 312		63550
METALS, TOTAL												
Mercury	0.78	mg/kg-dry		0.10	0.031	SW7471B	09/23/22 12:47 / cfg	09/21/22 11:01	SW7471B	HGCV205-H_220923A : 40		63531

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-018
Collection Date: 09/02/22 13:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	27.3	wt%		0.2	0.02	D2974	09/30/22 10:22 / jjp			DRYING OVEN 2_221003C : 15		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	41.4	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 16		R179030
3050 EXTRACTABLE METALS												
Aluminum	7840	mg/kg-dry	D	20	20	SW6010B	09/26/22 21:53 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 47		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 22:54 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 371		63550
Arsenic	6	mg/kg-dry		5	0.5	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Barium	183	mg/kg-dry		5	0.9	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 21:53 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 47		63550
Cadmium	1.5	mg/kg-dry		0.2	0.1	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Chromium	14	mg/kg-dry		5	4	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Cobalt	4	mg/kg-dry	J	5	2	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Copper	80	mg/kg-dry		5	4	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Iron	16100	mg/kg-dry	D	100	100	SW6010B	09/26/22 21:53 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 47		63550
Lead	16	mg/kg-dry		5	2	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Manganese	244	mg/kg-dry		5	4	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Molybdenum	5	mg/kg-dry		5	0.8	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Nickel	7	mg/kg-dry		5	2	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Selenium	ND	mg/kg-dry		5	0.5	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Uranium	3.0	mg/kg-dry	J	5	0.07	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Vanadium	36	mg/kg-dry		1	1	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
Zinc	209	mg/kg-dry	D	10	10	SW6020	09/23/22 12:55 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 315		63550
METALS, TOTAL												
Mercury	0.07	mg/kg-dry	J	0.10	0.0094	SW7471B	09/23/22 12:58 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A : 46		63559

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-019
Collection Date: 09/02/22 13:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	25.0	wt%		0.2	0.02	D2974	09/30/22 10:22 / jjp			DRYING OVEN 2_221003C : 17		PMOIST_220930_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	16.9	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 17		R179030
3050 EXTRACTABLE METALS												
Aluminum	5190	mg/kg-dry	D	20	20	SW6010B	09/26/22 21:56 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 48		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 22:56 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 372		63550
Arsenic	4.9	mg/kg-dry	J	5	0.5	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Barium	119	mg/kg-dry		5	0.9	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 21:56 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 48		63550
Cadmium	0.2	mg/kg-dry		0.2	0.1	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Chromium	16	mg/kg-dry		5	4	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Cobalt	3	mg/kg-dry	J	5	2	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Copper	15	mg/kg-dry		5	4	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Iron	8870	mg/kg-dry	D	100	100	SW6010B	09/26/22 21:56 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 48		63550
Lead	6	mg/kg-dry		5	2	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Manganese	150	mg/kg-dry		5	4	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Molybdenum	1.4	mg/kg-dry	J	5	0.8	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Nickel	7	mg/kg-dry		5	2	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Selenium	ND	mg/kg-dry		5	0.4	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Uranium	1.0	mg/kg-dry	J	5	0.07	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Vanadium	17	mg/kg-dry		1	1	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
Zinc	68	mg/kg-dry	D	10	10	SW6020	09/23/22 12:57 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 316		63550
METALS, TOTAL												
Mercury	0.01	mg/kg-dry	J	0.10	0.0091	SW7471B	09/23/22 13:05 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A : 50		63559

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-020
Collection Date: 09/02/22 12:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	63.8	wt%		0.2	0.02	D2974	09/30/22 10:22 / jjp			DRYING OVEN 2_221003C : 19		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	5.7	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 18		R179030
3050 EXTRACTABLE METALS												
Aluminum	26600	mg/kg-dry	D	50	50	SW6010B	09/26/22 22:00 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 49		63550
Antimony	ND	mg/kg-dry		9	9	SW6020	09/23/22 22:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 373		63550
Arsenic	60	mg/kg-dry		5	1	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Barium	300	mg/kg-dry		5	2	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Beryllium	ND	mg/kg-dry		5	3	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Boron	12	mg/kg-dry		10	10	SW6010B	09/26/22 22:00 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 49		63550
Cadmium	8.4	mg/kg-dry		0.3	0.3	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Chromium	54	mg/kg-dry		9	9	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Cobalt	13	mg/kg-dry		5	5	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Copper	640	mg/kg-dry		9	9	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Iron	30600	mg/kg-dry	D	300	300	SW6010B	09/26/22 22:00 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 49		63550
Lead	185	mg/kg-dry		5	4	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Manganese	1180	mg/kg-dry		8	8	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Molybdenum	66	mg/kg-dry		5	2	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Nickel	29	mg/kg-dry		5	3	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Selenium	3	mg/kg-dry	J	5	1	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Silver	ND	mg/kg-dry		5	5	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Uranium	7	mg/kg-dry		5	0.1	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Vanadium	72	mg/kg-dry		2	2	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
Zinc	1990	mg/kg-dry	D	20	20	SW6020	09/23/22 12:59 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 317		63550
METALS, TOTAL												
Mercury	0.50	mg/kg-dry		0.10	0.019	SW7471B	09/23/22 13:07 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A : 51		63559

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-021
Collection Date: 09/02/22 12:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	25.8	wt%		0.2	0.02	D2974	09/30/22 10:22 / jjp			DRYING OVEN 2_221003C : 23		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	36.9	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 19		R179030
3050 EXTRACTABLE METALS												
Aluminum	6620	mg/kg-dry	D	20	20	SW6010B	09/26/22 22:11 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 52		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:06 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 376		63550
Arsenic	6	mg/kg-dry		5	0.5	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Barium	161	mg/kg-dry		5	0.9	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 22:11 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 52		63550
Cadmium	1.0	mg/kg-dry		0.2	0.1	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Chromium	12	mg/kg-dry		5	4	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Cobalt	4	mg/kg-dry	J	5	2	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Copper	52	mg/kg-dry		5	4	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Iron	11200	mg/kg-dry	D	100	100	SW6010B	09/26/22 22:11 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 52		63550
Lead	14	mg/kg-dry		5	2	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Manganese	199	mg/kg-dry		5	4	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Molybdenum	4.8	mg/kg-dry	J	5	0.8	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Nickel	6	mg/kg-dry		5	2	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Selenium	ND	mg/kg-dry		5	0.5	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Uranium	1.6	mg/kg-dry	J	5	0.07	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Vanadium	24	mg/kg-dry		1	1	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
Zinc	196	mg/kg-dry	D	10	10	SW6020	09/23/22 13:02 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 318		63550
METALS, TOTAL												
Mercury	0.07	mg/kg-dry	J	0.10	0.0089	SW7471B	09/23/22 13:09 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A : 52		63559

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-022
Collection Date: 09/02/22 12:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	21.9	wt%		0.2	0.02	D2974	09/30/22 10:22 / jjp			DRYING OVEN 2_221003C : 25		PMOIST_220930_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	19.4	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 20		R179030
3050 EXTRACTABLE METALS												
Aluminum	4190	mg/kg-dry	D	20	20	SW6010B	09/26/22 22:15 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 53		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:08 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 377		63550
Arsenic	6	mg/kg-dry		5	0.5	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Barium	105	mg/kg-dry		5	0.9	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 22:15 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 53		63550
Cadmium	0.3	mg/kg-dry		0.2	0.1	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Chromium	12	mg/kg-dry		5	4	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Cobalt	3	mg/kg-dry	J	5	2	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Copper	20	mg/kg-dry		5	4	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Iron	7130	mg/kg-dry	D	100	100	SW6010B	09/26/22 22:15 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 53		63550
Lead	11	mg/kg-dry		5	2	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Manganese	130	mg/kg-dry		5	4	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Molybdenum	3.6	mg/kg-dry	J	5	0.8	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Nickel	6	mg/kg-dry		5	2	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Selenium	ND	mg/kg-dry		5	0.4	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Uranium	0.81	mg/kg-dry	J	5	0.07	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Vanadium	12	mg/kg-dry		1	1	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
Zinc	97	mg/kg-dry	D	10	10	SW6020	09/23/22 13:04 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 319		63550
METALS, TOTAL												
Mercury	0.02	mg/kg-dry	J	0.10	0.0089	SW7471B	09/23/22 13:11 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A : 53		63559

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2 <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-023
Collection Date: 09/02/22 12:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	65.1	wt%		0.2	0.02	D2974	09/30/22 10:23 / jjp			DRYING OVEN 2_221003C : 27		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	2.3	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 21		R179030
3050 EXTRACTABLE METALS												
Aluminum	32300	mg/kg-dry	D	50	50	SW6010B	09/26/22 22:19 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 54		63550
Antimony	ND	mg/kg-dry		9	9	SW6020	09/23/22 23:11 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 378		63550
Arsenic	53	mg/kg-dry		5	1	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Barium	463	mg/kg-dry		5	2	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Beryllium	ND	mg/kg-dry		5	3	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Boron	17	mg/kg-dry		10	10	SW6010B	09/26/22 22:19 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 54		63550
Cadmium	15.7	mg/kg-dry		0.3	0.3	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Chromium	47	mg/kg-dry		9	9	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Cobalt	15	mg/kg-dry		5	5	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Copper	910	mg/kg-dry		9	9	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Iron	32000	mg/kg-dry	D	300	300	SW6010B	09/26/22 22:19 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 54		63550
Lead	179	mg/kg-dry		5	4	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Manganese	1310	mg/kg-dry		8	8	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Molybdenum	21	mg/kg-dry		5	2	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Nickel	29	mg/kg-dry		5	3	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Selenium	2	mg/kg-dry	J	5	1	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Silver	ND	mg/kg-dry		5	5	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Uranium	4.1	mg/kg-dry	J	5	0.1	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Vanadium	65	mg/kg-dry		2	2	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
Zinc	2400	mg/kg-dry	D	20	20	SW6020	09/23/22 13:07 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 320		63550
METALS, TOTAL												
Mercury	0.63	mg/kg-dry		0.10	0.019	SW7471B	09/23/22 13:12 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A : 54		63559

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-024
Collection Date: 09/02/22 12:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	24.3	wt%		0.2	0.02	D2974	09/30/22 10:23 / jjp			DRYING OVEN 2_221003C : 29		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	10.7	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 22		R179030
3050 EXTRACTABLE METALS												
Aluminum	6770	mg/kg-dry	D	20	20	SW6010B	09/26/22 22:22 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 55		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:13 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 379		63550
Arsenic	41	mg/kg-dry		5	0.5	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Barium	140	mg/kg-dry		5	0.9	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 22:22 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 55		63550
Cadmium	2.5	mg/kg-dry		0.2	0.1	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Chromium	19	mg/kg-dry		5	4	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Cobalt	5	mg/kg-dry	J	5	2	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Copper	213	mg/kg-dry		5	4	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Iron	36700	mg/kg-dry	D	100	100	SW6010B	09/26/22 22:22 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 55		63550
Lead	47	mg/kg-dry		5	2	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Manganese	314	mg/kg-dry		5	4	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Molybdenum	4.2	mg/kg-dry	J	5	0.8	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Nickel	6	mg/kg-dry		5	2	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Selenium	ND	mg/kg-dry		5	0.5	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Uranium	5	mg/kg-dry		5	0.07	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Vanadium	91	mg/kg-dry		1	1	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
Zinc	653	mg/kg-dry	D	10	10	SW6020	09/23/22 13:09 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 321		63550
METALS, TOTAL												
Mercury	0.14	mg/kg-dry		0.10	0.0088	SW7471B	09/23/22 13:14 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A : 55		63559

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-025
Collection Date: 09/02/22 12:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	21.5	wt%		0.2	0.02	D2974	09/30/22 10:23 / jjp			DRYING OVEN 2_221003C : 31		PMOIST_220930_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	13.1	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 23		R179030
3050 EXTRACTABLE METALS												
Aluminum	3600	mg/kg-dry	D	20	20	SW6010B	09/26/22 22:26 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 56		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 380		63550
Arsenic	17	mg/kg-dry		5	0.5	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Barium	49	mg/kg-dry		5	0.9	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 22:26 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 56		63550
Cadmium	0.5	mg/kg-dry		0.2	0.1	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Chromium	6	mg/kg-dry		5	4	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Cobalt	ND	mg/kg-dry		5	2	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Copper	78	mg/kg-dry		5	4	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Iron	8440	mg/kg-dry	D	100	100	SW6010B	09/26/22 22:26 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 56		63550
Lead	28	mg/kg-dry		5	2	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Manganese	134	mg/kg-dry		5	4	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Molybdenum	2.9	mg/kg-dry	J	5	0.8	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Nickel	3	mg/kg-dry	J	5	2	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Selenium	ND	mg/kg-dry		5	0.4	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Uranium	1.5	mg/kg-dry	J	5	0.07	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Vanadium	16	mg/kg-dry		1	1	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
Zinc	144	mg/kg-dry	D	10	10	SW6020	09/23/22 13:12 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 322		63550
METALS, TOTAL												
Mercury	0.11	mg/kg-dry		0.10	0.0087	SW7471B	09/23/22 13:16 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A : 56		63559

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-026
Collection Date: 09/02/22 10:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	67.0	wt%		0.2	0.02	D2974	09/30/22 10:23 / jjp			DRYING OVEN 2_221003C : 33		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	8.3	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 24		R179030
3050 EXTRACTABLE METALS												
Aluminum	29800	mg/kg-dry	D	50	50	SW6010B	09/26/22 22:30 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 57		63550
Antimony	ND	mg/kg-dry		9	9	SW6020	09/23/22 23:18 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 381		63550
Arsenic	63	mg/kg-dry		5	1	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Barium	396	mg/kg-dry		5	2	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Beryllium	ND	mg/kg-dry		5	3	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Boron	14	mg/kg-dry		10	10	SW6010B	09/26/22 22:30 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 57		63550
Cadmium	7.4	mg/kg-dry		0.3	0.3	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Chromium	50	mg/kg-dry		9	9	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Cobalt	13	mg/kg-dry		5	5	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Copper	488	mg/kg-dry		10	10	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Iron	33300	mg/kg-dry	D	300	300	SW6010B	09/26/22 22:30 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 57		63550
Lead	182	mg/kg-dry		5	4	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Manganese	1890	mg/kg-dry		9	9	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Molybdenum	12	mg/kg-dry		5	2	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Nickel	30	mg/kg-dry		5	4	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Selenium	2	mg/kg-dry	J	5	1	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Silver	ND	mg/kg-dry		5	5	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Uranium	3.0	mg/kg-dry	J	5	0.2	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Vanadium	57	mg/kg-dry		2	2	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
Zinc	1710	mg/kg-dry	D	20	20	SW6020	09/23/22 13:14 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 323		63550
METALS, TOTAL												
Mercury	0.58	mg/kg-dry		0.10	0.021	SW7471B	09/23/22 13:18 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A : 57		63559

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-027
Collection Date: 09/02/22 10:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	25.8	wt%		0.2	0.02	D2974	09/30/22 10:24 / jjp			DRYING OVEN 2_221003C : 35		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	47.4	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 25		R179030
3050 EXTRACTABLE METALS												
Aluminum	7040	mg/kg-dry	D	20	20	SW6010B	09/26/22 22:33 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 58		63550
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:20 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 382		63550
Arsenic	17	mg/kg-dry		5	0.5	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Barium	144	mg/kg-dry		5	0.9	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 22:33 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 58		63550
Cadmium	1.6	mg/kg-dry		0.2	0.1	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Chromium	11	mg/kg-dry		5	4	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Cobalt	4	mg/kg-dry	J	5	2	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Copper	130	mg/kg-dry		5	4	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Iron	16600	mg/kg-dry	D	100	100	SW6010B	09/26/22 22:33 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 58		63550
Lead	40	mg/kg-dry		5	2	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Manganese	463	mg/kg-dry		5	4	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Molybdenum	1.4	mg/kg-dry	J	5	0.8	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Nickel	5	mg/kg-dry		5	2	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Selenium	ND	mg/kg-dry		5	0.5	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Uranium	1.5	mg/kg-dry	J	5	0.07	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Vanadium	34	mg/kg-dry		1	1	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
Zinc	524	mg/kg-dry	D	10	10	SW6020	09/23/22 13:16 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 324		63550
METALS, TOTAL												
Mercury	ND	mg/kg-dry		0.10	0.0091	SW7471B	09/23/22 13:20 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A : 58		63559

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-028
Collection Date: 09/02/22 10:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	24.2	wt%		0.2	0.02	D2974	09/30/22 10:24 / jjp			DRYING OVEN 2_221003C	37	PMOIST_220930_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	24.7	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B	26	R179030
3050 EXTRACTABLE METALS												
Aluminum	5050	mg/kg-dry	D	20	20	SW6010B	09/27/22 20:59 / sld	09/26/22 08:08	SW3050 B	ICP2-HE_220927B	47	63605
Antimony	ND	mg/kg-dry		5	4	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Arsenic	31	mg/kg-dry		5	0.2	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Barium	102	mg/kg-dry		5	0.4	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Beryllium	ND	mg/kg-dry		5	0.6	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Boron	ND	mg/kg-dry		5	5	SW6010B	09/27/22 20:59 / sld	09/26/22 08:08	SW3050 B	ICP2-HE_220927B	47	63605
Cadmium	0.5	mg/kg-dry		0.2	0.05	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Chromium	7	mg/kg-dry		5	2	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Cobalt	2	mg/kg-dry	J	5	1	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Copper	130	mg/kg-dry		5	2	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Iron	9240	mg/kg-dry	D	100	100	SW6010B	09/27/22 20:59 / sld	09/26/22 08:08	SW3050 B	ICP2-HE_220927B	47	63605
Lead	74	mg/kg-dry		5	0.7	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Manganese	428	mg/kg-dry		5	2	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Molybdenum	1.3	mg/kg-dry	J	5	0.3	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Nickel	3.8	mg/kg-dry	J	5	0.7	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Selenium	ND	mg/kg-dry		5	0.2	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Silver	ND	mg/kg-dry		5	1	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Uranium	1.8	mg/kg-dry	J	5	0.03	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Vanadium	14	mg/kg-dry		1	0.4	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
Zinc	169	mg/kg-dry		5	4	SW6020	09/28/22 12:14 / dck	09/26/22 08:08	SW3050 B	ICPMS205-H_220928B	26	63605
METALS, TOTAL												
Mercury	0.05	mg/kg-dry	J	0.10	0.0090	SW7471B	09/23/22 13:30 / cfg	09/22/22 11:30	SW7471B	HGCV205-H_220923A	64	63560

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Duplicate <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-029
Collection Date: 09/02/22 10:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	70.4	wt%		0.2	0.02	D2974	09/30/22 10:24 / jjp			DRYING OVEN 2_221003C : 39		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	6.0	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 27		R179030
3050 EXTRACTABLE METALS												
Aluminum	33800	mg/kg-dry	D	60	60	SW6010B	09/26/22 22:37 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 59		63550
Antimony	ND	mg/kg-dry		10	10	SW6020	09/23/22 23:23 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 383		63550
Arsenic	72	mg/kg-dry		5	1	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Barium	424	mg/kg-dry		5	2	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Beryllium	ND	mg/kg-dry		5	4	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Boron	17	mg/kg-dry		10	10	SW6010B	09/26/22 22:37 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 59		63550
Cadmium	9.8	mg/kg-dry		0.3	0.3	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Chromium	45	mg/kg-dry		10	10	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Cobalt	15	mg/kg-dry		6	6	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Copper	648	mg/kg-dry		10	10	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Iron	34400	mg/kg-dry	D	400	400	SW6010B	09/26/22 22:37 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 59		63550
Lead	211	mg/kg-dry		5	4	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Manganese	2640	mg/kg-dry		10	10	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Molybdenum	16	mg/kg-dry		5	2	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Nickel	26	mg/kg-dry		5	4	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Selenium	2	mg/kg-dry	J	5	1	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Silver	ND	mg/kg-dry		6	6	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Uranium	3.5	mg/kg-dry	J	5	0.2	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Vanadium	64	mg/kg-dry		3	3	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
Zinc	2110	mg/kg-dry	D	30	30	SW6020	09/23/22 13:19 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 325		63550
METALS, TOTAL												
Mercury	0.65	mg/kg-dry		0.10	0.023	SW7471B	09/23/22 13:37 / cfg	09/22/22 11:31	SW7471B	HGCV205-H_220923A : 68		63560

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Duplicate 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-030
Collection Date: 09/02/22 10:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	23.6	wt%		0.2	0.02	D2974	09/30/22 10:24 / jjp			DRYING OVEN 2_221003C : 41		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	42.5	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 28		R179030
3050 EXTRACTABLE METALS												
Aluminum	5510	mg/kg-dry	D	20	20	SW6010B	09/26/22 23:38 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 75		63551
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:25 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 384		63551
Arsenic	24	mg/kg-dry		5	0.5	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Barium	116	mg/kg-dry		5	0.9	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 23:38 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 75		63551
Cadmium	1.3	mg/kg-dry		0.2	0.1	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Chromium	10	mg/kg-dry		5	4	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Cobalt	3	mg/kg-dry	J	5	2	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Copper	135	mg/kg-dry		5	4	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Iron	13800	mg/kg-dry	D	100	100	SW6010B	09/26/22 23:38 / cfg	09/22/22 08:39	SW3050 B	ICP2-HE_220926B : 75		63551
Lead	43	mg/kg-dry		5	2	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Manganese	386	mg/kg-dry		5	4	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Molybdenum	2.4	mg/kg-dry	J	5	0.8	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Nickel	5	mg/kg-dry	J	5	2	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Selenium	ND	mg/kg-dry		5	0.5	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Uranium	2.3	mg/kg-dry	J	5	0.07	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Vanadium	32	mg/kg-dry		1	1	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
Zinc	427	mg/kg-dry	D	10	10	SW6020	09/23/22 13:36 / dck	09/22/22 08:39	SW3050 B	ICPMS205-H_220922B : 332		63551
METALS, TOTAL												
Mercury	0.17	mg/kg-dry		0.10	0.0090	SW7471B	09/23/22 13:39 / cfg	09/22/22 11:31	SW7471B	HGCV205-H_220923A : 69		63560

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B Duplicate 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-031
Collection Date: 09/02/22 10:30
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	22.7	wt%		0.2	0.02	D2974	09/30/22 10:24 / jjp			DRYING OVEN 2_221003C : 45		PMOIST_220930_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	30.6	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 29		R179030
3050 EXTRACTABLE METALS												
Aluminum	6340	mg/kg-dry	D	20	20	SW6010B	09/26/22 23:56 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 80		63551
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:28 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 385		63551
Arsenic	18	mg/kg-dry		5	0.5	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Barium	103	mg/kg-dry		5	0.9	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Boron	ND	mg/kg-dry		5	5	SW6010B	09/26/22 23:56 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 80		63551
Cadmium	0.4	mg/kg-dry		0.2	0.1	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Chromium	7	mg/kg-dry		5	4	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Cobalt	3	mg/kg-dry	J	5	2	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Copper	83	mg/kg-dry		5	4	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Iron	8280	mg/kg-dry	D	100	100	SW6010B	09/26/22 23:56 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 80		63551
Lead	28	mg/kg-dry		5	2	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Manganese	363	mg/kg-dry		5	4	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Molybdenum	1.5	mg/kg-dry	J	5	0.8	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Nickel	5	mg/kg-dry	J	5	2	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Selenium	ND	mg/kg-dry		5	0.4	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Uranium	1.3	mg/kg-dry	J	5	0.07	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Vanadium	16	mg/kg-dry		1	1	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
Zinc	216	mg/kg-dry	D	10	10	SW6020	09/23/22 13:50 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 338		63551
METALS, TOTAL												
Mercury	0.04	mg/kg-dry	J	0.10	0.0087	SW7471B	09/23/22 13:41 / cfg	09/22/22 11:31	SW7471B	HGCV205-H_220923A : 70		63560

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-032
Collection Date: 09/02/22 09:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	70.9	wt%		0.2	0.02	D2974	09/30/22 10:25 / jjp			DRYING OVEN 2_221003C : 47		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	1.0	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 30		R179030
3050 EXTRACTABLE METALS												
Aluminum	25700	mg/kg-dry	D	60	60	SW6010B	09/27/22 00:08 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 83		63551
Antimony	ND	mg/kg-dry		10	10	SW6020	09/23/22 23:35 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 388		63551
Arsenic	70	mg/kg-dry		5	1	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Barium	440	mg/kg-dry		5	2	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Beryllium	ND	mg/kg-dry		5	4	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Boron	13	mg/kg-dry		10	10	SW6010B	09/27/22 00:08 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 83		63551
Cadmium	13.7	mg/kg-dry		0.3	0.3	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Chromium	64	mg/kg-dry		10	10	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Cobalt	23	mg/kg-dry		6	6	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Copper	887	mg/kg-dry		10	10	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Iron	36600	mg/kg-dry	D	400	400	SW6010B	09/27/22 00:08 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 83		63551
Lead	233	mg/kg-dry		5	4	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Manganese	8370	mg/kg-dry		6	6	SW6010B	09/27/22 00:08 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 83		63551
Molybdenum	31	mg/kg-dry		5	2	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Nickel	40	mg/kg-dry		5	4	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Selenium	2	mg/kg-dry	J	5	1	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Silver	ND	mg/kg-dry		6	6	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Uranium	6	mg/kg-dry		5	0.2	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Vanadium	106	mg/kg-dry		3	3	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
Zinc	2070	mg/kg-dry	D	30	30	SW6020	09/23/22 13:52 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 339		63551
METALS, TOTAL												
Mercury	0.77	mg/kg-dry		0.10	0.024	SW7471B	09/23/22 13:43 / cfg	09/22/22 11:31	SW7471B	HGCV205-H_220923A : 71		63560

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-033
Collection Date: 09/02/22 09:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	24.1	wt%		0.2	0.02	D2974	09/30/22 10:25 / jjp			DRYING OVEN 2_221003C : 49		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	13.7	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 31		R179030
3050 EXTRACTABLE METALS												
Aluminum	4110	mg/kg-dry	D	20	20	SW6010B	09/27/22 00:11 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 84		63551
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:38 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 389		63551
Arsenic	22	mg/kg-dry		5	0.5	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Barium	95	mg/kg-dry		5	0.9	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Boron	ND	mg/kg-dry		5	5	SW6010B	09/27/22 00:11 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 84		63551
Cadmium	0.8	mg/kg-dry		0.2	0.1	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Chromium	15	mg/kg-dry		5	4	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Cobalt	5	mg/kg-dry		5	2	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Copper	85	mg/kg-dry		5	4	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Iron	20200	mg/kg-dry	D	100	100	SW6010B	09/27/22 00:11 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 84		63551
Lead	44	mg/kg-dry		5	2	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Manganese	886	mg/kg-dry		5	4	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Molybdenum	3.4	mg/kg-dry	J	5	0.8	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Nickel	5	mg/kg-dry	J	5	2	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Selenium	ND	mg/kg-dry		5	0.4	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Uranium	2.6	mg/kg-dry	J	5	0.07	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Vanadium	62	mg/kg-dry		1	1	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
Zinc	225	mg/kg-dry	D	10	10	SW6020	09/23/22 13:55 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 340		63551
METALS, TOTAL												
Mercury	0.07	mg/kg-dry	J	0.10	0.0087	SW7471B	09/23/22 13:45 / cfg	09/22/22 11:31	SW7471B	HGCV205-H_220923A : 72		63560

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-034
Collection Date: 09/02/22 09:45
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	18.4	wt%		0.2	0.02	D2974	09/30/22 10:25 / jjp			DRYING OVEN 2_221003C : 51		PMOIST_220930_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	17.6	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 32		R179030
3050 EXTRACTABLE METALS												
Aluminum	2720	mg/kg-dry	D	20	20	SW6010B	09/27/22 00:15 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 85		63551
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:40 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 390		63551
Arsenic	49	mg/kg-dry		5	0.5	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Barium	106	mg/kg-dry		5	0.8	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Boron	ND	mg/kg-dry		5	5	SW6010B	09/27/22 00:15 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 85		63551
Cadmium	0.5	mg/kg-dry		0.2	0.1	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Chromium	7	mg/kg-dry		5	4	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Cobalt	6	mg/kg-dry		5	2	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Copper	166	mg/kg-dry		5	4	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Iron	7870	mg/kg-dry	D	100	100	SW6010B	09/27/22 00:15 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 85		63551
Lead	17	mg/kg-dry		5	2	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Manganese	1020	mg/kg-dry		5	4	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Molybdenum	2.3	mg/kg-dry	J	5	0.7	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Nickel	5	mg/kg-dry		5	1	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Selenium	ND	mg/kg-dry		5	0.4	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Uranium	1.1	mg/kg-dry	J	5	0.06	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Vanadium	15	mg/kg-dry		1	1	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
Zinc	151	mg/kg-dry	D	9	9	SW6020	09/23/22 13:57 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 341		63551
METALS, TOTAL												
Mercury	0.04	mg/kg-dry	J	0.10	0.0084	SW7471B	09/23/22 13:46 / cfg	09/22/22 11:31	SW7471B	HGCV205-H_220923A : 73		63560

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-035
Collection Date: 09/02/22 09:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	58.6	wt%		0.2	0.02	D2974	09/30/22 10:25 / jjp			DRYING OVEN 2_221003C : 53		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	1.9	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 33		R179030
3050 EXTRACTABLE METALS												
Aluminum	23600	mg/kg-dry	D	40	40	SW6010B	09/27/22 00:19 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 86		63551
Antimony	ND	mg/kg-dry		8	8	SW6020	09/23/22 23:42 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 391		63551
Arsenic	70	mg/kg-dry		5	0.9	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Barium	259	mg/kg-dry		5	2	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Beryllium	ND	mg/kg-dry		5	3	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Boron	ND	mg/kg-dry		9	9	SW6010B	09/27/22 00:19 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 86		63551
Cadmium	124	mg/kg-dry		0.2	0.2	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Chromium	62	mg/kg-dry		7	7	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Cobalt	15	mg/kg-dry		5	4	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Copper	816	mg/kg-dry		8	8	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Iron	29000	mg/kg-dry	D	300	300	SW6010B	09/27/22 00:19 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 86		63551
Lead	232	mg/kg-dry		5	3	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Manganese	2190	mg/kg-dry		7	7	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Molybdenum	11	mg/kg-dry		5	1	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Nickel	36	mg/kg-dry		5	3	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Selenium	3.8	mg/kg-dry	J	5	0.8	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Silver	ND	mg/kg-dry		5	4	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Uranium	16	mg/kg-dry		5	0.1	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Vanadium	98	mg/kg-dry		2	2	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
Zinc	2330	mg/kg-dry	D	20	20	SW6020	09/23/22 14:05 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 344		63551
METALS, TOTAL												
Mercury	0.68	mg/kg-dry		0.10	0.016	SW7471B	09/23/22 13:48 / cfg	09/22/22 11:31	SW7471B	HGCV205-H_220923A : 74		63560

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-036
Collection Date: 09/02/22 09:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	25.1	wt%		0.2	0.02	D2974	09/30/22 10:25 / jjp			DRYING OVEN 2_221003C : 55		PMOIST_220930_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	26.9	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 34		R179030
3050 EXTRACTABLE METALS												
Aluminum	4470	mg/kg-dry	D	20	20	SW6010B	09/27/22 00:22 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 87		63551
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:45 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 392		63551
Arsenic	12	mg/kg-dry		5	0.5	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Barium	112	mg/kg-dry		5	0.9	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Boron	ND	mg/kg-dry		5	5	SW6010B	09/27/22 00:22 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 87		63551
Cadmium	7.0	mg/kg-dry		0.2	0.1	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Chromium	12	mg/kg-dry		5	4	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Cobalt	3	mg/kg-dry	J	5	2	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Copper	62	mg/kg-dry		5	4	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Iron	14600	mg/kg-dry	D	100	100	SW6010B	09/27/22 00:22 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 87		63551
Lead	22	mg/kg-dry		5	2	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Manganese	326	mg/kg-dry		5	4	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Molybdenum	1.1	mg/kg-dry	J	5	0.8	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Nickel	5	mg/kg-dry	J	5	2	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Selenium	ND	mg/kg-dry		5	0.5	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Uranium	2.9	mg/kg-dry	J	5	0.07	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Vanadium	45	mg/kg-dry		1	1	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
Zinc	241	mg/kg-dry	D	10	10	SW6020	09/23/22 14:07 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 345		63551
METALS, TOTAL												
Mercury	0.07	mg/kg-dry	J	0.10	0.0090	SW7471B	09/23/22 13:50 / cfg	09/22/22 11:31	SW7471B	HGCV205-H_220923A : 75		63560

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22090081-037
Collection Date: 09/02/22 09:00
DateReceived: 09/06/22
Report Date: 10/14/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	21.8	wt%		0.2	0.02	D2974	09/30/22 10:26 / jjp			DRYING OVEN 2_221003C : 57		PMOIST_220930_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	18.9	wt%-wet		0.1		SSSA 15-2	09/16/22 13:00 / jjp			MISC SOILS_220916B : 35		R179030
3050 EXTRACTABLE METALS												
Aluminum	3560	mg/kg-dry	D	20	20	SW6010B	09/27/22 00:26 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 88		63551
Antimony	ND	mg/kg-dry		5	4	SW6020	09/23/22 23:47 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 393		63551
Arsenic	18	mg/kg-dry		5	0.5	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Barium	69	mg/kg-dry		5	0.8	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Beryllium	ND	mg/kg-dry		5	1	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Boron	ND	mg/kg-dry		5	5	SW6010B	09/27/22 00:26 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 88		63551
Cadmium	5.2	mg/kg-dry		0.2	0.1	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Chromium	6	mg/kg-dry		5	4	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Cobalt	2	mg/kg-dry	J	5	2	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Copper	63	mg/kg-dry		5	4	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Iron	6710	mg/kg-dry	D	100	100	SW6010B	09/27/22 00:26 / cfg	09/22/22 08:40	SW3050 B	ICP2-HE_220926B : 88		63551
Lead	15	mg/kg-dry		5	2	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Manganese	280	mg/kg-dry		5	4	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Molybdenum	0.9	mg/kg-dry	J	5	0.7	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Nickel	4	mg/kg-dry	J	5	2	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Selenium	ND	mg/kg-dry		5	0.4	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Silver	ND	mg/kg-dry		5	2	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Uranium	1.8	mg/kg-dry	J	5	0.07	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Vanadium	15	mg/kg-dry		1	1	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
Zinc	312	mg/kg-dry	D	9	9	SW6020	09/23/22 14:09 / dck	09/22/22 08:40	SW3050 B	ICPMS205-H_220922B : 346		63551
METALS, TOTAL												
Mercury	0.03	mg/kg-dry	J	0.10	0.0087	SW7471B	09/23/22 13:52 / cfg	09/22/22 11:31	SW7471B	HGCV205-H_220923A : 76		63560

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 220907waLL-hg203
Date: *14-Oct-22*

Run ID :Run Order: **HGCV203-H_220907A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**

Analysis Date: **09/07/22 09:23** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.101	0.0050	0.1	0	101	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **HGCV203-H_220907A: 10** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV1** Method: **E245.1**

Analysis Date: **09/07/22 09:26** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.100	0.0050	0.1	0	100	95	105				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **HGCV203-H_220907A: 41** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E245.1**

Analysis Date: **09/07/22 11:26** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.105	0.0050	0.1	0	105	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **HGCV203-H_220907A: 57** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E245.1**

Analysis Date: **09/07/22 12:18** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.106	0.0050	0.1	0	106	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 220923sa-hg205
Date: *14-Oct-22*

Run ID :Run Order: **HGCV205-H_220923A: 7** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW7471B**

Analysis Date: **09/23/22 11:32** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00095	0.50	0.001	0	95	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **HGCV205-H_220923A: 29** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW7471B**

Analysis Date: **09/23/22 12:28** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0025	0.50	0.0025	0	98	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **HGCV205-H_220923A: 41** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW7471B**

Analysis Date: **09/23/22 12:49** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0025	0.50	0.0025	0	99	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **HGCV205-H_220923A: 59** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW7471B**

Analysis Date: **09/23/22 13:21** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0025	0.50	0.0025	0	99	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 44449
Date: *14-Oct-22*

Run ID :Run Order: **SEAL AA500_220920A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **09/20/22 09:37** Units: **mg/L** **Prep Info:** Prep Date: **1/17/2019** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.248	0.010	0.25	0	99	90	110				

Associated samples: **H22090081-001E**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 50660
Date: *14-Oct-22*

Run ID :Run Order: **SEAL AA500_220914A: 190** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **09/14/22 16:03** Units: **mg/L** **Prep Info:** Prep Date: **3/20/2020** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.0959	0.010	0.1	0	96	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 53408
Date: *14-Oct-22*

Run ID :Run Order: **FIA203-HE_220907A: 188** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **09/07/22 14:07** Units: **mg/L** **Prep Info:** Prep Date: **9/23/2020** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.488	0.10	0.5	0	98	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **FIA203-HE_220907A: 202** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **09/07/22 14:24** Units: **mg/L** **Prep Info:** Prep Date: **9/23/2020** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.491	0.10	0.5	0	98	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 55893
Date: *14-Oct-22*

Run ID :Run Order: **SEAL AA500_220914A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **09/14/22 12:35** Units: **mg/L** **Prep Info:** Prep Date: **4/16/2021** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.250	0.010	0.25	0	**100**	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **SEAL AA500_220914A: 203** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **09/14/22 16:19** Units: **mg/L** **Prep Info:** Prep Date: **4/16/2021** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.0959	0.010	0.1	0	**96**	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63261** **Date:** *14-Oct-22*

Run ID :Run Order: **FIA203-HE_220907A: 16** SampType: **Method Blank** Lab ID: **MB-63261** Method: **A4500 N-C**
Analysis Date: **09/07/22 10:42** Units: **mg/L** **Prep Info:** Prep Date: **9/6/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A**

Run ID :Run Order: **FIA203-HE_220907A: 24** SampType: **Laboratory Control Sample** Lab ID: **LCS-63261** Method: **A4500 N-C**
Analysis Date: **09/07/22 10:52** Units: **mg/L** **Prep Info:** Prep Date: **9/6/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	108	3.0	112	0	96	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A**

Run ID :Run Order: **FIA203-HE_220907A: 31** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63261** Method: **A4500 N-C**
Analysis Date: **09/07/22 11:00** Units: **mg/L** **Prep Info:** Prep Date: **9/6/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.931	0.10	1	0	93	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A**

Run ID :Run Order: **FIA203-HE_220907A: 191** SampType: **Sample Matrix Spike** Lab ID: **H22090073-006AMS** Method: **A4500 N-C**
Analysis Date: **09/07/22 14:11** Units: **mg/L** **Prep Info:** Prep Date: **9/6/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.16	0.10	1	0.2177	94	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A**

Run ID :Run Order: **FIA203-HE_220907A: 192** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090073-006AMSD** Method: **A4500 N-C**
Analysis Date: **09/07/22 14:12** Units: **mg/L** **Prep Info:** Prep Date: **9/6/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.17	0.10	1	0.2177	96	90	110	1.157	1.4	20	

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63270** **Date:** *14-Oct-22*

Run ID :Run Order: **HGCV203-H_220907A: 12** SampType: **Method Blank** Lab ID: **MB-63270** Method: **E245.1**

Analysis Date: **09/07/22 09:52** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.002									

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B**

Run ID :Run Order: **HGCV203-H_220907A: 18** SampType: **Laboratory Control Sample** Lab ID: **LCS-63270** Method: **E245.1**

Analysis Date: **09/07/22 10:12** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0547	0.0050	0.05	0	109	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B**

Run ID :Run Order: **HGCV203-H_220907A: 34** SampType: **Sample Matrix Spike** Lab ID: **H22090081-002CMS** Method: **E245.1**

Analysis Date: **09/07/22 11:03** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0703	0.0050	0.05	0.01147	118	70	130				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B**

Run ID :Run Order: **HGCV203-H_220907A: 35** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-002CMSD** Method: **E245.1**

Analysis Date: **09/07/22 11:07** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0622	0.0050	0.05	0.01147	101	70	130	0.07031	12	20	

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63271** **Date:** *14-Oct-22*

Run ID :Run Order: **HGCV203-H_220907A: 43** SampType: **Method Blank** Lab ID: **MB-63271** Method: **E245.1**

Analysis Date: **09/07/22 11:33** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.002									

Associated samples: **H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **HGCV203-H_220907A: 44** SampType: **Laboratory Control Sample** Lab ID: **LCS-63271** Method: **E245.1**

Analysis Date: **09/07/22 11:36** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0525	0.0050	0.05	0	105	90	110				

Associated samples: **H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **HGCV203-H_220907A: 55** SampType: **Sample Matrix Spike** Lab ID: **H22090081-010BMS** Method: **E245.1**

Analysis Date: **09/07/22 12:12** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0542	0.0050	0.05	0	108	70	130				

Associated samples: **H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **HGCV203-H_220907A: 56** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-010BMSD** Method: **E245.1**

Analysis Date: **09/07/22 12:15** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0538	0.0050	0.05	0	108	70	130	0.05421	0.7	20	

Associated samples: **H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **HGCV203-H_220907A: 60** SampType: **Sample Matrix Spike** Lab ID: **H22090081-010CMS** Method: **E245.1**

Analysis Date: **09/07/22 12:28** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0562	0.0050	0.05	0.00452	103	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 63271
Date: *14-Oct-22*

Run ID :Run Order: **HGCV203-H_220907A: 60** SampType: **Sample Matrix Spike** Lab ID: **H22090081-010CMS** Method: **E245.1**

Analysis Date: **09/07/22 12:28** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **HGCV203-H_220907A: 61** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-010CMSD** Method: **E245.1**

Analysis Date: **09/07/22 12:31** Units: **ug/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0561	0.0050	0.05	0.00452	**103**	70	130	0.05616	**0**	20	

Associated samples: **H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 63272
Date: *14-Oct-22*

Run ID :Run Order: **FIA203-HE_220907A: 25** SampType: **Laboratory Control Sample** Lab ID: **LCS-63272** Method: **A4500 N-C**
Analysis Date: **09/07/22 10:53** Units: **mg/L** **Prep Info:** Prep Date: **9/6/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	110	3.0	112	0	98	90	110				

Associated samples: **H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **FIA203-HE_220907A: 32** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63272** Method: **A4500 N-C**
Analysis Date: **09/07/22 11:01** Units: **mg/L** **Prep Info:** Prep Date: **9/6/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.933	0.10	1	0	93	90	110				

Associated samples: **H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **FIA203-HE_220907A: 35** SampType: **Method Blank** Lab ID: **MB-63272** Method: **A4500 N-C**
Analysis Date: **09/07/22 11:05** Units: **mg/L** **Prep Info:** Prep Date: **9/6/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **FIA203-HE_220907A: 205** SampType: **Sample Matrix Spike** Lab ID: **H22090081-006AMS** Method: **A4500 N-C**
Analysis Date: **09/07/22 14:27** Units: **mg/L** **Prep Info:** Prep Date: **9/6/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.78	0.10	1	0.8473	94	90	110				

Associated samples: **H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **FIA203-HE_220907A: 206** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-006AMSD** Method: **A4500 N-C**
Analysis Date: **09/07/22 14:29** Units: **mg/L** **Prep Info:** Prep Date: **9/6/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.78	0.10	1	0.8473	93	90	110	1.783	0.3	20	

Associated samples: **H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63288** **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220907A: 157** SampType: **Method Blank** Lab ID: **MB-63288** Method: **E200.7**

Analysis Date: **09/08/22 01:22** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.007									
Calcium	ND	0.1									
Magnesium	ND	0.05									
Manganese	ND	0.002									
Potassium	ND	0.1									
Sodium	ND	0.1									

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220907A: 158** SampType: **Laboratory Control Sample** Lab ID: **LCS-63288** Method: **E200.7**

Analysis Date: **09/08/22 01:26** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.482	0.050	0.5	0	**96**	85	115				
Calcium	24.2	1.0	25	0	**97**	85	115				
Magnesium	24.9	1.0	25	0	**100**	85	115				
Manganese	2.39	0.0018	2.5	0	**96**	85	115				
Potassium	26.6	1.0	25	0	**107**	85	115				
Sodium	26.9	1.0	25	0	**107**	85	115				

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220907A: 160** SampType: **Serial Dilution** Lab ID: **H22090073-007CDIL** Method: **E200.7**

Analysis Date: **09/08/22 01:33** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.0457	0.050		0		0	0	0.02498		10	N
Calcium	69.4	1.0		0		0	0	68.81	**0.9**	10	
Magnesium	14.8	1.0		0		0	0	14.8	**0.2**	10	
Manganese	0.0195	0.0089		0		0	0	0.01822		10	N
Potassium	3.77	1.0		0		0	0	3.907		10	N
Sodium	17.0	1.0		0		0	0	16.99	**0.1**	10	

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63288** **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220907A: 162** SampType: **Sample Matrix Spike** Lab ID: **H22090073-007CMS3** Method: **E200.7**

Analysis Date: **09/08/22 01:41** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.512	0.050	0.5	0.02498	**97**	70	130				
Calcium	93.3	1.0	25	68.81	**98**	70	130				
Magnesium	40.3	1.0	25	14.8	**102**	70	130				
Manganese	2.46	0.0018	2.5	0.01822	**98**	70	130				
Potassium	31.1	1.0	25	3.907	**109**	70	130				
Sodium	44.3	1.0	25	16.99	**109**	70	130				

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220907A: 163** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090073-007CMSD3** Method: **E200.7**

Analysis Date: **09/08/22 01:45** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.508	0.050	0.5	0.02498	**97**	70	130	0.512	**0.8**	20	
Calcium	92.7	1.0	25	68.81	**96**	70	130	93.34	**0.6**	20	
Magnesium	39.5	1.0	25	14.8	**99**	70	130	40.29	**2.0**	20	
Manganese	2.41	0.0018	2.5	0.01822	**96**	70	130	2.457	**1.9**	20	
Potassium	30.0	1.0	25	3.907	**104**	70	130	31.1	**3.7**	20	
Sodium	42.8	1.0	25	16.99	**103**	70	130	44.32	**3.4**	20	

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220907A: 186** SampType: **Serial Dilution** Lab ID: **H22090081-004CDIL** Method: **E200.7**

Analysis Date: **09/08/22 03:12** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.104	0.050		0		0	0	0.1024		10	N
Calcium	74.2	1.0		0		0	0	73.14	**1.4**	10	
Magnesium	16.4	1.0		0		0	0	16.9	**2.7**	10	
Manganese	0.136	0.0089		0		0	0	0.1348	**0.9**	10	
Potassium	10.0	1.0		0		0	0	10.48	**4.2**	10	
Sodium	45.9	1.0		0		0	0	47.79	**4.1**	10	

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID:** 63288 **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220907A: 188** SampType: **Sample Matrix Spike** Lab ID: **H22090081-004CMS3** Method: **E200.7**

Analysis Date: **09/08/22 03:20** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.577	0.050	0.5	0.1024	95	70	130				
Calcium	98.0	1.0	25	73.14	100	70	130				
Magnesium	40.2	1.0	25	16.9	93	70	130				
Manganese	2.52	0.0018	2.5	0.1348	95	70	130				
Potassium	36.3	1.0	25	10.48	103	70	130				
Sodium	72.7	1.0	25	47.79	100	70	130				

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220907A: 189** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-004CMSD3** Method: **E200.7**

Analysis Date: **09/08/22 03:23** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.580	0.050	0.5	0.1024	95	70	130	0.5766	0.6	20	
Calcium	100	1.0	25	73.14	107	70	130	98.03	2.0	20	
Magnesium	40.3	1.0	25	16.9	94	70	130	40.19	0.3	20	
Manganese	2.52	0.0018	2.5	0.1348	95	70	130	2.521	0.1	20	
Potassium	34.3	1.0	25	10.48	95	70	130	36.28	5.5	20	
Sodium	69.0	1.0	25	47.79	85	70	130	72.71	5.3	20	

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220908A: 35** SampType: **Method Blank** Lab ID: **MB-63288** Method: **E200.7**

Analysis Date: **09/08/22 12:25** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.007									
Calcium	ND	0.1									
Magnesium	ND	0.05									
Manganese	ND	0.002									
Potassium	ND	0.1									
Sodium	ND	0.1									

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 63288
Date: *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220908A: 36** SampType: **Laboratory Control Sample** Lab ID: **LCS-63288** Method: **E200.7**

Analysis Date: **09/08/22 12:29** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.491	0.050	0.5	0	**98**	85	115				
Calcium	26.3	1.0	25	0	**105**	85	115				
Magnesium	24.0	1.0	25	0	**96**	85	115				
Manganese	2.38	0.0018	2.5	0	**95**	85	115				
Potassium	25.3	1.0	25	0	**101**	85	115				
Sodium	25.6	1.0	25	0	**102**	85	115				

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63288** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 111** SampType: **Method Blank** Lab ID: **MB-63288** Method: **E200.8**

Analysis Date: **09/13/22 21:05** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.006									
Antimony	ND	0.0002									
Arsenic	ND	0.0001									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00003									
Chromium	ND	0.0002									
Cobalt	ND	0.0003									
Copper	ND	0.0003									
Iron	ND	0.009									
Lead	ND	0.0001									
Manganese	ND	0.0003									
Molybdenum	ND	0.0002									
Nickel	ND	0.0002									
Selenium	ND	0.0001									
Silver	ND	0.00006									
Uranium	ND	0.00003									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICPMS205-H_220913A: 112** SampType: **Laboratory Control Sample** Lab ID: **LCS-63288** Method: **E200.8**

Analysis Date: **09/13/22 21:07** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.55	0.030	2.5	0	102	85	115				
Antimony	0.525	0.0010	0.5	0	105	85	115				
Arsenic	0.502	0.0010	0.5	0	100	85	115				
Barium	0.504	0.050	0.5	0	101	85	115				
Beryllium	0.244	0.0010	0.25	0	98	85	115				
Cadmium	0.254	0.0010	0.25	0	102	85	115				
Chromium	0.504	0.0050	0.5	0	101	85	115				
Cobalt	0.517	0.0050	0.5	0	103	85	115				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63288** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 112** SampType: **Laboratory Control Sample** Lab ID: **LCS-63288** Method: **E200.8**

Analysis Date: **09/13/22 21:07** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.499	0.0050	0.5	0	100	85	115				
Iron	2.46	0.020	2.5	0	98	85	115				
Lead	0.507	0.0010	0.5	0	101	85	115				
Manganese	2.50	0.0010	2.5	0	100	85	115				
Molybdenum	0.499	0.0010	0.5	0	100	85	115				
Nickel	0.502	0.0050	0.5	0	100	85	115				
Selenium	0.488	0.0010	0.5	0	98	85	115				
Silver	0.0485	0.0010	0.05	0	97	85	115				
Uranium	0.515	0.00030	0.5	0	103	85	115				
Vanadium	0.500	0.010	0.5	0	100	85	115				
Zinc	0.495	0.010	0.5	0	99	85	115				

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICPMS205-H_220913A: 117** SampType: **Sample Matrix Spike** Lab ID: **H22090073-007CMS3** Method: **E200.8**

Analysis Date: **09/13/22 21:19** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.54	0.030	2.5	0.02326	101	70	130				
Antimony	0.535	0.0010	0.5	0.000322	107	70	130				
Arsenic	0.511	0.0010	0.5	0.01375	99	70	130				
Barium	0.546	0.050	0.5	0.03708	102	70	130				
Beryllium	0.235	0.0010	0.25	0	94	70	130				
Cadmium	0.254	0.0010	0.25	0	101	70	130				
Chromium	0.488	0.0050	0.5	0	98	70	130				
Cobalt	0.502	0.0050	0.5	0	100	70	130				
Copper	0.480	0.0050	0.5	0.005631	95	70	130				
Iron	2.45	0.020	2.5	0.05099	96	70	130				
Lead	0.511	0.0010	0.5	0.0002926	102	70	130				
Manganese	2.43	0.0010	2.5	0.01834	96	70	130				
Molybdenum	0.536	0.0010	0.5	0.02455	102	70	130				
Nickel	0.484	0.0050	0.5	0	97	70	130				
Selenium	0.488	0.0010	0.5	0.0001472	98	70	130				
Silver	0.0487	0.0010	0.05	0	97	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID:** 63288 **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 117** SampType: **Sample Matrix Spike** Lab ID: **H22090073-007CMS3** Method: **E200.8**

Analysis Date: **09/13/22 21:19** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	0.529	0.00030	0.5	0.004468	105	70	130				
Vanadium	0.491	0.010	0.5	0.001168	98	70	130				
Zinc	0.478	0.010	0.5	0.002341	95	70	130				

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICPMS205-H_220913A: 118** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090073-007CMSD3** Method: **E200.8**

Analysis Date: **09/13/22 21:21** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.56	0.030	2.5	0.02326	101	70	130	2.54	0.6	20	
Antimony	0.533	0.0010	0.5	0.000322	107	70	130	0.5346	0.3	20	
Arsenic	0.520	0.0010	0.5	0.01375	101	70	130	0.5112	1.7	20	
Barium	0.546	0.050	0.5	0.03708	102	70	130	0.5465	0.1	20	
Beryllium	0.236	0.0010	0.25	0	94	70	130	0.2349	0.5	20	
Cadmium	0.255	0.0010	0.25	0	102	70	130	0.2537	0.6	20	
Chromium	0.501	0.0050	0.5	0	100	70	130	0.4884	2.5	20	
Cobalt	0.510	0.0050	0.5	0	102	70	130	0.5021	1.6	20	
Copper	0.489	0.0050	0.5	0.005631	97	70	130	0.4801	1.9	20	
Iron	2.51	0.020	2.5	0.05099	98	70	130	2.453	2.3	20	
Lead	0.515	0.0010	0.5	0.0002926	103	70	130	0.5113	0.7	20	
Manganese	2.49	0.0010	2.5	0.01834	99	70	130	2.43	2.5	20	
Molybdenum	0.533	0.0010	0.5	0.02455	102	70	130	0.5362	0.6	20	
Nickel	0.491	0.0050	0.5	0	98	70	130	0.4841	1.4	20	
Selenium	0.490	0.0010	0.5	0.0001472	98	70	130	0.4885	0.3	20	
Silver	0.0487	0.0010	0.05	0	97	70	130	0.04873	0	20	
Uranium	0.531	0.00030	0.5	0.004468	105	70	130	0.5286	0.4	20	
Vanadium	0.501	0.010	0.5	0.001168	100	70	130	0.4906	2.1	20	
Zinc	0.486	0.010	0.5	0.002341	97	70	130	0.4776	1.8	20	

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63288** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 183** SampType: **Sample Matrix Spike** Lab ID: **H22090081-004CMS3** Method: **E200.8**

Analysis Date: **09/14/22 13:14** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.62	0.030	2.5	0.08629	101	70	130				
Antimony	0.518	0.0010	0.5	0.0003716	104	70	130				
Arsenic	0.494	0.0010	0.5	0.007106	97	70	130				
Barium	0.537	0.050	0.5	0.03876	100	70	130				
Beryllium	0.230	0.0010	0.25	0	92	70	130				
Cadmium	0.247	0.0010	0.25	0.0001368	99	70	130				
Chromium	0.482	0.0050	0.5	0	96	70	130				
Cobalt	0.497	0.0050	0.5	0	99	70	130				
Copper	0.490	0.0050	0.5	0.01194	96	70	130				
Iron	2.51	0.020	2.5	0.1307	95	70	130				
Lead	0.502	0.0010	0.5	0.0009112	100	70	130				
Manganese	2.56	0.0010	2.5	0.1376	97	70	130				
Molybdenum	0.514	0.0010	0.5	0.01871	99	70	130				
Nickel	0.482	0.0050	0.5	0.0008759	96	70	130				
Selenium	0.484	0.0010	0.5	0.0007779	97	70	130				
Silver	0.0467	0.0010	0.05	0	93	70	130				
Uranium	0.529	0.00030	0.5	0.005478	105	70	130				
Vanadium	0.490	0.010	0.5	0.003719	97	70	130				
Zinc	0.506	0.010	0.5	0.02902	95	70	130				

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICPMS205-H_220913A: 184** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-004CMSD3** Method: **E200.8**

Analysis Date: **09/14/22 13:16** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.64	0.030	2.5	0.08629	102	70	130	2.621	0.8	20	
Antimony	0.523	0.0010	0.5	0.0003716	104	70	130	0.5184	0.8	20	
Arsenic	0.504	0.0010	0.5	0.007106	99	70	130	0.4943	2.0	20	
Barium	0.537	0.050	0.5	0.03876	100	70	130	0.5367	0.1	20	
Beryllium	0.230	0.0010	0.25	0	92	70	130	0.2301	0.1	20	
Cadmium	0.248	0.0010	0.25	0.0001368	99	70	130	0.2473	0.4	20	
Chromium	0.494	0.0050	0.5	0	99	70	130	0.4822	2.4	20	
Cobalt	0.507	0.0050	0.5	0	101	70	130	0.4968	2.0	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 63288
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 184** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-004CMSD3** Method: **E200.8**

Analysis Date: **09/14/22 13:16** Units: **mg/L** **Prep Info:** Prep Date: **9/7/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.499	0.0050	0.5	0.01194	97	70	130	0.4905	1.8	20	
Iron	2.56	0.020	2.5	0.1307	97	70	130	2.511	1.9	20	
Lead	0.507	0.0010	0.5	0.0009112	101	70	130	0.502	1.0	20	
Manganese	2.62	0.0010	2.5	0.1376	99	70	130	2.563	2.2	20	
Molybdenum	0.515	0.0010	0.5	0.01871	99	70	130	0.5138	0.3	20	
Nickel	0.493	0.0050	0.5	0.0008759	98	70	130	0.4824	2.2	20	
Selenium	0.481	0.0010	0.5	0.0007779	96	70	130	0.4835	0.5	20	
Silver	0.0467	0.0010	0.05	0	93	70	130	0.04671	0	20	
Uranium	0.534	0.00030	0.5	0.005478	106	70	130	0.5292	0.9	20	
Vanadium	0.500	0.010	0.5	0.003719	99	70	130	0.4897	2.1	20	
Zinc	0.521	0.010	0.5	0.02902	98	70	130	0.5055	3.1	20	

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 63335
Date: *14-Oct-22*

Run ID :Run Order: **SEAL AA500_220914A: 21** SampType: **Method Blank** Lab ID: **MB-63335** Method: **E365.1**

Analysis Date: **09/14/22 12:42** Units: **mg/L** **Prep Info:** Prep Date: **9/9/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.001									

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **SEAL AA500_220914A: 29** SampType: **Laboratory Control Sample** Lab ID: **LCS-63335** Method: **E365.1**

Analysis Date: **09/14/22 12:51** Units: **mg/L** **Prep Info:** Prep Date: **9/9/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.409	0.010	0.4	0	102	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **SEAL AA500_220914A: 209** SampType: **Sample Matrix Spike** Lab ID: **H22090081-005DMS** Method: **E365.1**

Analysis Date: **09/14/22 16:28** Units: **mg/L** **Prep Info:** Prep Date: **9/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.217	0.010	0.2	0	108	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **SEAL AA500_220914A: 210** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-005DMSD** Method: **E365.1**

Analysis Date: **09/14/22 16:29** Units: **mg/L** **Prep Info:** Prep Date: **9/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.213	0.010	0.2	0	106	90	110	0.217	1.9	20	

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **SEAL AA500_220914A: 219** SampType: **Sample Matrix Spike** Lab ID: **H22090091-001EMS** Method: **E365.1**

Analysis Date: **09/14/22 16:39** Units: **mg/L** **Prep Info:** Prep Date: **9/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.223	0.010	0.2	0.0083	107	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63335** **Date:** *14-Oct-22*

Run ID :Run Order: **SEAL AA500_220914A: 219** SampType: **Sample Matrix Spike** Lab ID: **H22090091-001EMS** Method: **E365.1**

Analysis Date: **09/14/22 16:39** Units: **mg/L** **Prep Info:** Prep Date: **9/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **SEAL AA500_220914A: 220** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090091-001EMSD** Method: **E365.1**

Analysis Date: **09/14/22 16:40** Units: **mg/L** **Prep Info:** Prep Date: **9/13/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.224	0.010	0.2	0.0083	**108**	90	110	0.2227	**0.7**	20	

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID:** 63456 **Date:** *14-Oct-22*

Run ID :Run Order: **SEAL AA500_220920A: 16** SampType: **Method Blank** Lab ID: **MB-63456** Method: **E365.1**

Analysis Date: **09/20/22 09:39** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.001									

Associated samples: **H22090081-001E**

Run ID :Run Order: **SEAL AA500_220920A: 20** SampType: **Laboratory Control Sample** Lab ID: **LCS-63456** Method: **E365.1**

Analysis Date: **09/20/22 09:43** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.416	0.010	0.4	0	**104**	90	110				

Associated samples: **H22090081-001E**

Run ID :Run Order: **SEAL AA500_220920A: 27** SampType: **Sample Matrix Spike** Lab ID: **H22080152-001Cms** Method: **E365.1**

Analysis Date: **09/20/22 09:51** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.215	0.010	0.2	0.0018	**107**	90	110				

Associated samples: **H22090081-001E**

Run ID :Run Order: **SEAL AA500_220920A: 28** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22080152-001Cmsd** Method: **E365.1**

Analysis Date: **09/20/22 09:52** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.214	0.010	0.2	0.0018	**106**	90	110	0.215	**0.3**	20	

Associated samples: **H22090081-001E**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID:** 63531 **Date:** *14-Oct-22*

Run ID :Run Order: **HGCV205-H_220923A: 11** SampType: **Method Blank** Lab ID: **MB-63531** Method: **SW7471B**
Analysis Date: **09/23/22 11:56** Units: **mg/kg** **Prep Info:** Prep Date: **9/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.007									

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Run ID :Run Order: **HGCV205-H_220923A: 12** SampType: **Laboratory Control Sample** Lab ID: **LCS-63531** Method: **SW7471B**
Analysis Date: **09/23/22 11:57** Units: **mg/kg** **Prep Info:** Prep Date: **9/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.8	0.50	5	0	95	71	126.4				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Run ID :Run Order: **HGCV205-H_220923A: 13** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63531** Method: **SW7471B**
Analysis Date: **09/23/22 11:59** Units: **mg/kg** **Prep Info:** Prep Date: **9/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.19	0.50	0.198	0	98	80	120				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Run ID :Run Order: **HGCV205-H_220923A: 15** SampType: **Serial Dilution** Lab ID: **H22090513-001ADIL** Method: **SW7471B**
Analysis Date: **09/23/22 12:03** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.037	0.0099		0		0	0	0.04407	18	10	R

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Run ID :Run Order: **HGCV205-H_220923A: 16** SampType: **Sample Matrix Spike** Lab ID: **H22090513-001AMS** Method: **SW7471B**
Analysis Date: **09/23/22 12:05** Units: **mg/kg** **Prep Info:** Prep Date: **9/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.22	0.50	0.196	0.04407	89	80	120				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63531** **Date:** *14-Oct-22*

Run ID :Run Order: **HGCV205-H_220923A: 17** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090513-001AMSD** Method: **SW7471B**
Analysis Date: **09/23/22 12:06** Units: **mg/kg** **Prep Info:** Prep Date: **9/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.22	0.050	0.198	0.04407	87	80	120	0.2177	0.3	20	

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Run ID :Run Order: **HGCV205-H_220923A: 20** SampType: **Serial Dilution** Lab ID: **H22090488-013ADIL** Method: **SW7471B**
Analysis Date: **09/23/22 12:12** Units: **mg/kg-dry** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.50		0		0	0	0		10	

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Run ID :Run Order: **HGCV205-H_220923A: 21** SampType: **Sample Matrix Spike** Lab ID: **H22090488-013AMS** Method: **SW7471B**
Analysis Date: **09/23/22 12:14** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.20	0.50	0.2176	0	94	80	120				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Run ID :Run Order: **HGCV205-H_220923A: 33** SampType: **Serial Dilution** Lab ID: **H22090081-012ADIL** Method: **SW7471B**
Analysis Date: **09/23/22 12:35** Units: **mg/kg-dry** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.15	0.050		0		0	0	0.1531	2.9	10	

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Run ID :Run Order: **HGCV205-H_220923A: 34** SampType: **Sample Matrix Spike** Lab ID: **H22090081-012AMS** Method: **SW7471B**
Analysis Date: **09/23/22 12:37** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.43	0.50	0.2719	0.1531	102	80	120				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 63531
Date: *14-Oct-22*

Run ID :Run Order: **HGCV205-H_220923A: 35** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-012AMSD** Method: **SW7471B**

Analysis Date: **09/23/22 12:39** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/21/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.40	0.050	0.2691	0.1531	**93**	80	120	0.4312	**6.8**	20	

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63550** **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220926B: 31** SampType: **Method Blank** Lab ID: **MB-63550** Method: **SW6010B**

Analysis Date: **09/26/22 20:53** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.7									
Iron	ND	20									
Manganese	ND	0.4									

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Run ID :Run Order: **ICP2-HE_220926B: 32** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63550** Method: **SW6010B**

Analysis Date: **09/26/22 20:57** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	255	5.0	245.8	0	**104**	80	120				
Boron	49.3	1.0	49.15	0	**100**	80	120				
Iron	262	22	245.8	0	**106**	80	120				
Manganese	242	1.0	245.8	0	**98**	80	120				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Run ID :Run Order: **ICP2-HE_220926B: 33** SampType: **Laboratory Control Sample** Lab ID: **LCS-63550** Method: **SW6010B**

Analysis Date: **09/26/22 21:01** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9420	18	9830	0	**96**	63.5	122				
Boron	109	3.8	129	0	**85**	63.9	108				
Iron	16500	110	16300	0	**101**	71.9	118				
Manganese	428	1.9	434	0	**99**	74.4	123				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63550** **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220926B: 35** SampType: **Serial Dilution** Lab ID: **H22090081-011ADIL** Method: **SW6010B**

Analysis Date: **09/26/22 21:08** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	21800	340		0		0	0	21690	**0.6**	10	
Boron	ND	74		0		0	0	16.23		10	
Iron	36300	2100		0		0	0	35910	**1.0**	10	
Manganese	2580	37		0		0	0	2576	**0.2**	10	

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Run ID :Run Order: **ICP2-HE_220926B: 36** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22090081-011APDS** Method: **SW6010B**

Analysis Date: **09/26/22 21:12** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	27500	71	5007	21690		75	125				A
Boron	964	15	1001	16.23	**95**	75	125				
Iron	41300	440	5007	35910		75	125				A
Manganese	7380	7.6	5007	2576	**96**	75	125				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Run ID :Run Order: **ICP2-HE_220926B: 37** SampType: **Sample Matrix Spike** Lab ID: **H22090081-011AMS** Method: **SW6010B**

Analysis Date: **09/26/22 21:16** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	27900	69	974.3	21690		75	125				A
Boron	197	15	194.9	16.23	**93**	75	125				
Iron	38300	430	974.3	35910		75	125				A
Manganese	3620	7.4	974.3	2576	**107**	75	125				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 63550
Date: *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220926B: 40** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-011AMSD** Method: **SW6010B**

Analysis Date: **09/26/22 21:27** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	29500	70	983.2	21690		75	125	27920	**5.3**	20	A
Boron	201	15	196.6	16.23	**94**	75	125	197.3	**1.9**	20	
Iron	39500	430	983.2	35910		75	125	38250	**3.3**	20	A
Manganese	3590	7.4	983.2	2576	**104**	75	125	3619	**0.7**	20	

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090081
BatchID: 63550
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 297** SampType: **Method Blank** Lab ID: **MB-63550** Method: **SW6020**
Analysis Date: **09/23/22 12:11** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	3									
Arsenic	ND	0.2									
Barium	ND	0.3									
Beryllium	ND	0.4									
Cadmium	ND	0.04									
Chromium	ND	1									
Cobalt	ND	0.7									
Copper	ND	1									
Lead	ND	0.5									
Manganese	ND	1									
Molybdenum	ND	0.2									
Nickel	ND	0.5									
Selenium	ND	0.1									
Silver	ND	0.7									
Uranium	ND	0.02									
Vanadium	ND	0.3									
Zinc	ND	3									

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Run ID :Run Order: **ICPMS205-H_220922B: 298** SampType: **Laboratory Control Sample** Lab ID: **LCS-63550** Method: **SW6020**
Analysis Date: **09/23/22 12:14** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	59.8	7.8	240	0	**25**	12.8	37.2				
Arsenic	166	1.0	196	0	**85**	66.4	104				
Barium	190	1.0	187	0	**102**	71.8	124				
Beryllium	75.7	1.1	83.6	0	**91**	70	115				
Cadmium	97.8	1.0	99	0	**99**	79.2	121				
Chromium	106	3.1	117	0	**91**	72.5	115				
Cobalt	102	1.8	108	0	**95**	79.4	126				
Copper	119	3.2	137	0	**87**	73.9	113				
Lead	113	1.3	105	0	**108**	71.6	128				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63550** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 298** SampType: **Laboratory Control Sample** Lab ID: **LCS-63550** Method: **SW6020**

Analysis Date: **09/23/22 12:14** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	417	3.0	434	0	96	74.4	123				
Molybdenum	119	1.0	127	0	94	61.3	124				
Nickel	77.1	1.2	86.2	0	89	70.6	116				
Selenium	183	1.0	205	0	89	72.3	111				
Silver	42.4	1.8	42.1	0	101	70.8	133				
Uranium	104	1.0	99.9	0	104	80.1	120.1				
Vanadium	104	1.0	114	0	92	73	116				
Zinc	228	7.7	231	0	99	83.1	125				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Run ID :Run Order: **ICPMS205-H_220922B: 299** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63550** Method: **SW6020**

Analysis Date: **09/23/22 12:16** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.4	7.8	49.15	0	107	80	120				
Arsenic	51.6	1.0	49.15	0	105	80	120				
Barium	53.5	1.0	49.15	0	109	80	120				
Beryllium	25.8	1.1	24.58	0	105	80	120				
Cadmium	25.8	1.0	24.58	0	105	80	120				
Chromium	49.9	3.0	49.15	0	102	80	120				
Cobalt	49.0	1.8	49.15	0	100	80	120				
Copper	50.8	3.2	49.15	0	103	80	120				
Lead	50.9	1.3	49.15	0	104	80	120				
Manganese	251	2.9	245.8	0	102	80	120				
Molybdenum	50.2	1.0	49.15	0	102	80	120				
Nickel	50.4	1.2	49.15	0	102	80	120				
Selenium	46.5	1.0	49.15	0	95	80	120				
Silver	26.1	1.8	24.58	0	106	80	120				
Uranium	52.3	1.0	49.15	0	106	80	120				
Vanadium	49.9	1.0	49.15	0	101	80	120				
Zinc	49.0	7.6	49.15	0	100	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63550** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 299** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63550** Method: **SW6020**

Analysis Date: **09/23/22 12:16** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Run ID :Run Order: **ICPMS205-H_220922B: 302** SampType: **Serial Dilution** Lab ID: **H22090081-011ADIL** Method: **SW6020**

Analysis Date: **09/23/22 12:23** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	150		0		0	0	0		10	
Arsenic	89.2	7.7		0		0	0	85.67	4.0	10	
Barium	236	13		0		0	0	226.7	4.2	10	
Beryllium	ND	21		0		0	0	0		10	
Cadmium	7.44	1.8		0		0	0	6.887		10	N
Chromium	85.8	60		0		0	0	73.51		10	N
Cobalt	ND	36		0		0	0	13.85		10	
Copper	866	62		0		0	0	817.5	5.8	10	
Lead	430	25		0		0	0	414.3	3.7	10	
Manganese	2710	58		0		0	0	2583	4.7	10	
Molybdenum	53.7	12		0		0	0	51.56		10	N
Nickel	47.1	24		0		0	0	42.92		10	N
Selenium	ND	6.7		0		0	0	3.267		10	
Silver	ND	35		0		0	0	0		10	
Uranium	8.96	1.0		0		0	0	8.471		10	N
Vanadium	111	16		0		0	0	105.6		10	N
Zinc	2010	150		0		0	0	1866	7.2	10	

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Run ID :Run Order: **ICPMS205-H_220922B: 303** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22090081-011APDS1** Method: **SW6020**

Analysis Date: **09/23/22 12:26** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.8	31	48.61	0	109	75	125				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090081 **BatchID: 63550** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 303** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22090081-011APDS1** Method: **SW6020**
Analysis Date: **09/23/22 12:26** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	131	1.5	48.61	85.67	94	75	125				
Barium	284	2.7	48.61	226.7		75	125				A
Beryllium	48.2	4.3	48.61	0	99	75	125				
Cadmium	56.7	1.0	48.61	6.887	103	75	125				
Chromium	119	12	48.61	73.51	95	75	125				
Cobalt	61.7	7.1	48.61	13.85	98	75	125				
Copper	857	12	48.61	817.5		75	125				A
Lead	470	5.0	48.61	414.3		75	125				A
Manganese	2580	12	48.61	2583		75	125				A
Molybdenum	103	2.3	48.61	51.56	106	75	125				
Nickel	89.8	4.9	48.61	42.92	96	75	125				
Selenium	49.1	1.3	48.61	3.267	94	75	125				
Silver	25.5	7.1	19.45	0	131	75	125				S
Uranium	56.5	1.0	48.61	8.471	99	75	125				
Vanadium	152	3.2	48.61	105.6	96	75	125				
Zinc	1870	30	48.61	1866		75	125				A

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Run ID :Run Order: **ICPMS205-H_220922B: 304** SampType: **Sample Matrix Spike** Lab ID: **H22090081-011AMS** Method: **SW6020**
Analysis Date: **09/23/22 12:28** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	125	31	194.9	0	64	75	125				S
Arsenic	290	1.5	194.9	85.67	105	75	125				
Barium	468	2.7	194.9	226.7	124	75	125				
Beryllium	95.4	4.3	97.43	0	98	75	125				
Cadmium	108	1.0	97.43	6.887	103	75	125				
Chromium	285	12	194.9	73.51	109	75	125				
Cobalt	206	7.1	194.9	13.85	99	75	125				
Copper	1040	12	194.9	817.5		75	125				A
Lead	638	5.0	194.9	414.3	115	75	125				
Manganese	3740	12	974.3	2583	119	75	125				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63550** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 304** SampType: **Sample Matrix Spike** Lab ID: **H22090081-011AMS** Method: **SW6020**

Analysis Date: **09/23/22 12:28** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	251	2.4	194.9	51.56	102	75	125				
Nickel	246	4.9	194.9	42.92	104	75	125				
Selenium	181	1.3	194.9	3.267	91	75	125				
Silver	107	7.1	97.43	0	109	75	125				
Uranium	212	1.0	194.9	8.471	105	75	125				
Vanadium	311	3.2	194.9	105.6	105	75	125				
Zinc	2120	30	194.9	1866		75	125				A

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Run ID :Run Order: **ICPMS205-H_220922B: 305** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-011AMSD** Method: **SW6020**

Analysis Date: **09/23/22 12:31** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	120	31	196.6	0	61	75	125	124.6	3.6	20	S
Arsenic	291	1.5	196.6	85.67	104	75	125	290.3	0.3	20	
Barium	475	2.7	196.6	226.7	126	75	125	468.4	1.5	20	S
Beryllium	92.9	4.3	98.32	0	95	75	125	95.4	2.6	20	
Cadmium	107	1.0	98.32	6.887	101	75	125	107.7	1.0	20	
Chromium	280	12	196.6	73.51	105	75	125	285.2	1.9	20	
Cobalt	207	7.2	196.6	13.85	98	75	125	206.2	0.3	20	
Copper	1140	13	196.6	817.5		75	125	1038	9.4	20	A
Lead	645	5.1	196.6	414.3	117	75	125	637.7	1.2	20	
Manganese	3730	12	983.2	2583	117	75	125	3741	0.2	20	
Molybdenum	249	2.4	196.6	51.56	100	75	125	250.7	0.8	20	
Nickel	244	4.9	196.6	42.92	102	75	125	245.6	0.5	20	
Selenium	179	1.4	196.6	3.267	89	75	125	180.7	1.2	20	
Silver	106	7.1	98.32	0	108	75	125	106.6	0.2	20	
Uranium	211	1.0	196.6	8.471	103	75	125	212.4	0.8	20	
Vanadium	314	3.2	196.6	105.6	106	75	125	310.8	0.9	20	
Zinc	2170	30	196.6	1866		75	125	2121	2.4	20	A

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: 63550
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 305** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-011AMSD** Method: **SW6020**

Analysis Date: **09/23/22 12:31** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID:** 63551 **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220926B: 72** SampType: **Method Blank** Lab ID: **MB-63551** Method: **SW6010B**

Analysis Date: **09/26/22 23:27** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.8									
Iron	ND	20									
Manganese	ND	0.4									

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICP2-HE_220926B: 73** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63551** Method: **SW6010B**

Analysis Date: **09/26/22 23:31** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	254	5.0	250	0	101	80	120				
Boron	47.6	1.0	50	0	95	80	120				
Iron	237	22	250	0	95	80	120				
Manganese	236	1.0	250	0	94	80	120				

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICP2-HE_220926B: 74** SampType: **Laboratory Control Sample** Lab ID: **LCS-63551** Method: **SW6010B**

Analysis Date: **09/26/22 23:34** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9440	18	9830	0	96	63.5	122				
Boron	106	3.8	129	0	82	63.9	108				
Iron	14500	110	16300	0	89	71.9	118				
Manganese	394	1.9	434	0	91	74.4	123				

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICP2-HE_220926B: 76** SampType: **Serial Dilution** Lab ID: **H22090081-030AIL** Method: **SW6010B**

Analysis Date: **09/26/22 23:42** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5980	120		0		0	0	5505	8.3	10	
Boron	ND	25		0		0	0	0		10	
Iron	15400	720		0		0	0	13810	11	10	R

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63551** **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220926B: 76** SampType: **Serial Dilution** Lab ID: **H22090081-030AIL** Method: **SW6010B**

Analysis Date: **09/26/22 23:42** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	409	12		0		0	0	372.2	**9.5**	10	

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICP2-HE_220926B: 77** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22090081-030APDS** Method: **SW6010B**

Analysis Date: **09/26/22 23:46** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	7780	24	1682	5505	**135**	75	125				S
Boron	296	5.1	336.5	0	**88**	75	125				
Iron	16500	150	1682	13810		75	125				A
Manganese	2090	2.6	1682	372.2	**102**	75	125				

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICP2-HE_220926B: 78** SampType: **Sample Matrix Spike** Lab ID: **H22090081-030AMS** Method: **SW6010B**

Analysis Date: **09/26/22 23:49** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	7610	23	318.8	5505		75	125				A
Boron	59.7	4.9	63.76	0	**94**	75	125				
Iron	14300	140	318.8	13810		75	125				A
Manganese	731	2.4	318.8	372.2	**113**	75	125				

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICP2-HE_220926B: 79** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-030AMSD** Method: **SW6010B**

Analysis Date: **09/26/22 23:53** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	7600	23	325	5505		75	125	7612	**0.1**	20	A
Boron	63.7	4.9	65	0	**98**	75	125	59.71	**6.5**	20	
Iron	15100	140	325	13810		75	125	14350	**4.9**	20	A
Manganese	762	2.5	325	372.2	**120**	75	125	731.1	**4.1**	20	

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63551** **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220927B: 36** SampType: **Method Blank** Lab ID: **MB-63551** Method: **SW6010B**

Analysis Date: **09/27/22 20:17** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.8									
Iron	ND	20									
Manganese	ND	0.4									

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090081
BatchID: 63551
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 328** SampType: **Method Blank** Lab ID: **MB-63551** Method: **SW6020**
Analysis Date: **09/23/22 13:26** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	3									
Arsenic	ND	0.2									
Barium	ND	0.3									
Beryllium	ND	0.4									
Cadmium	ND	0.04									
Chromium	ND	1									
Cobalt	ND	0.7									
Copper	ND	1									
Lead	ND	0.5									
Manganese	ND	1									
Molybdenum	ND	0.2									
Nickel	ND	0.5									
Selenium	ND	0.1									
Silver	ND	0.7									
Uranium	ND	0.02									
Vanadium	ND	0.3									
Zinc	ND	3									

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 329** SampType: **Laboratory Control Sample** Lab ID: **LCS-63551** Method: **SW6020**
Analysis Date: **09/23/22 13:28** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	59.6	7.9	240	0	**25**	12.8	37.2				
Arsenic	160	1.0	196	0	**82**	66.4	104				
Barium	191	1.0	187	0	**102**	71.8	124				
Beryllium	73.6	1.1	83.6	0	**88**	70	115				
Cadmium	99.8	1.0	99	0	**101**	79.2	121				
Chromium	103	3.1	117	0	**88**	72.5	115				
Cobalt	102	1.8	108	0	**94**	79.4	126				
Copper	119	3.2	137	0	**87**	73.9	113				
Lead	109	1.3	105	0	**104**	71.6	128				
Manganese	400	3.0	434	0	**92**	74.4	123				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63551** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 329** SampType: **Laboratory Control Sample** Lab ID: **LCS-63551** Method: **SW6020**

Analysis Date: **09/23/22 13:28** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	124	1.0	127	0	**98**	61.3	124				
Nickel	77.3	1.2	86.2	0	**90**	70.6	116				
Selenium	180	1.0	205	0	**88**	72.3	111				
Silver	42.6	1.8	42.1	0	**101**	70.8	133				
Uranium	105	1.0	99.9	0	**105**	80.1	120.1				
Vanadium	103	1.0	114	0	**90**	73	116				
Zinc	223	7.7	231	0	**97**	83.1	125				

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 330** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63551** Method: **SW6020**

Analysis Date: **09/23/22 13:31** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.8	7.9	50	0	**105**	80	120				
Arsenic	51.4	1.0	50	0	**103**	80	120				
Barium	54.1	1.0	50	0	**108**	80	120				
Beryllium	25.3	1.1	25	0	**101**	80	120				
Cadmium	26.2	1.0	25	0	**105**	80	120				
Chromium	49.8	3.1	50	0	**100**	80	120				
Cobalt	49.4	1.8	50	0	**99**	80	120				
Copper	51.0	3.2	50	0	**102**	80	120				
Lead	51.6	1.3	50	0	**103**	80	120				
Manganese	250	3.0	250	0	**100**	80	120				
Molybdenum	51.3	1.0	50	0	**103**	80	120				
Nickel	50.9	1.2	50	0	**102**	80	120				
Selenium	46.2	1.0	50	0	**92**	80	120				
Silver	26.8	1.8	25	0	**107**	80	120				
Uranium	54.0	1.0	50	0	**108**	80	120				
Vanadium	49.8	1.0	50	0	**100**	80	120				
Zinc	48.8	7.7	50	0	**98**	80	120				

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63551** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 333** SampType: **Serial Dilution** Lab ID: **H22090081-030ADIL** Method: **SW6020**

Analysis Date: **09/23/22 13:38** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	52		0		0	0	0		10	
Arsenic	23.5	2.6		0		0	0	23.52		10	N
Barium	120	4.5		0		0	0	115.6	3.6	10	
Beryllium	ND	7.2		0		0	0	0		10	
Cadmium	1.46	1.0		0		0	0	1.329		10	N
Chromium	ND	20		0		0	0	9.806		10	
Cobalt	ND	12		0		0	0	3.351		10	
Copper	138	21		0		0	0	134.5		10	N
Lead	44.3	8.4		0		0	0	43.09		10	N
Manganese	392	20		0		0	0	386.1	1.6	10	
Molybdenum	ND	3.9		0		0	0	2.413		10	
Nickel	ND	8.2		0		0	0	4.688		10	
Selenium	ND	2.3		0		0	0	0		10	
Silver	ND	12		0		0	0	0		10	
Uranium	2.34	1.0		0		0	0	2.32		10	N
Vanadium	31.6	5.3		0		0	0	31.67		10	N
Zinc	448	50		0		0	0	426.9		10	N

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 334** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22090081-030APDS1** Method: **SW6020**

Analysis Date: **09/23/22 13:40** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	17.5	10	16.33	0	107	75	125				
Arsenic	39.0	1.0	16.33	23.52	95	75	125				
Barium	133	1.0	16.33	115.6		75	125				A
Beryllium	16.4	1.4	16.33	0	100	75	125				
Cadmium	18.4	1.0	16.33	1.329	105	75	125				
Chromium	26.2	4.0	16.33	9.806	100	75	125				
Cobalt	20.1	2.4	16.33	3.351	103	75	125				
Copper	150	4.2	16.33	134.5		75	125				A
Lead	60.1	1.7	16.33	43.09	104	75	125				
Manganese	397	3.9	16.33	386.1		75	125				A

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63551** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 334** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22090081-030APDS1** Method: **SW6020**

Analysis Date: **09/23/22 13:40** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.8	1.0	16.33	2.413	106	75	125				
Nickel	21.7	1.6	16.33	4.688	104	75	125				
Selenium	15.6	1.0	16.33	0	96	75	125				
Silver	7.39	2.4	6.533	0	113	75	125				
Uranium	19.2	1.0	16.33	2.32	103	75	125				
Vanadium	47.7	1.1	16.33	31.67	98	75	125				
Zinc	435	10	16.33	426.9		75	125				A

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 335** SampType: **Sample Matrix Spike** Lab ID: **H22090081-030AMS** Method: **SW6020**

Analysis Date: **09/23/22 13:43** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	45.4	10	63.76	0	71	75	125				S
Arsenic	92.9	1.0	63.76	23.52	109	75	125				
Barium	215	1.0	63.76	115.6	156	75	125				S
Beryllium	31.3	1.4	31.88	0	98	75	125				
Cadmium	36.3	1.0	31.88	1.329	110	75	125				
Chromium	76.6	3.9	63.76	9.806	105	75	125				
Cobalt	69.2	2.3	63.76	3.351	103	75	125				
Copper	226	4.1	63.76	134.5	143	75	125				S
Lead	103	1.6	63.76	43.09	94	75	125				
Manganese	800	3.8	318.8	386.1	130	75	125				S
Molybdenum	68.0	1.0	63.76	2.413	103	75	125				
Nickel	72.1	1.6	63.76	4.688	106	75	125				
Selenium	59.6	1.0	63.76	0	93	75	125				
Silver	36.8	2.3	31.88	0	115	75	125				
Uranium	72.7	1.0	63.76	2.32	110	75	125				
Vanadium	103	1.0	63.76	31.67	112	75	125				
Zinc	725	9.8	63.76	426.9		75	125				A

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63551** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 336** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-030AMSD** Method: **SW6020**

Analysis Date: **09/23/22 13:45** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	45.5	10	65	0	70	75	125	45.4	0.1	20	S
Arsenic	89.4	1.0	65	23.52	101	75	125	92.93	3.9	20	
Barium	242	1.0	65	115.6	195	75	125	215.2	12	20	S
Beryllium	31.0	1.4	32.5	0	95	75	125	31.32	1.1	20	
Cadmium	35.6	1.0	32.5	1.329	105	75	125	36.34	2.1	20	
Chromium	77.0	4.0	65	9.806	103	75	125	76.64	0.4	20	
Cobalt	68.6	2.4	65	3.351	100	75	125	69.24	0.9	20	
Copper	204	4.2	65	134.5	107	75	125	225.8	10	20	
Lead	122	1.7	65	43.09	121	75	125	102.9	17	20	
Manganese	808	3.9	325	386.1	130	75	125	800.2	1.0	20	S
Molybdenum	68.1	1.0	65	2.413	101	75	125	68.03	0	20	
Nickel	72.1	1.6	65	4.688	104	75	125	72.14	0	20	
Selenium	59.9	1.0	65	0	92	75	125	59.55	0.5	20	
Silver	36.1	2.4	32.5	0	111	75	125	36.76	1.7	20	
Uranium	73.3	1.0	65	2.32	109	75	125	72.69	0.9	20	
Vanadium	103	1.1	65	31.67	110	75	125	103	0.4	20	
Zinc	643	10	65	426.9		75	125	725.3	12	20	A

Associated samples: **H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID:** 63559 **Date:** *14-Oct-22*

Run ID :Run Order: **HGCV205-H_220923A: 43** SampType: **Method Blank** Lab ID: **MB-63559** Method: **SW7471B**
Analysis Date: **09/23/22 12:53** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.007									

Associated samples: **H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A**

Run ID :Run Order: **HGCV205-H_220923A: 44** SampType: **Laboratory Control Sample** Lab ID: **LCS-63559** Method: **SW7471B**
Analysis Date: **09/23/22 12:55** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.0	0.50	4.95	0	101	71	126.4				

Associated samples: **H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A**

Run ID :Run Order: **HGCV205-H_220923A: 45** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63559** Method: **SW7471B**
Analysis Date: **09/23/22 12:56** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.19	0.50	0.196	0	96	80	120				

Associated samples: **H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A**

Run ID :Run Order: **HGCV205-H_220923A: 47** SampType: **Serial Dilution** Lab ID: **H22090081-018ADIL** Method: **SW7471B**
Analysis Date: **09/23/22 13:00** Units: **mg/kg-dry** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.066	0.014		0		0	0	0.06659	1.1	10	

Associated samples: **H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A**

Run ID :Run Order: **HGCV205-H_220923A: 48** SampType: **Sample Matrix Spike** Lab ID: **H22090081-018AMS** Method: **SW7471B**
Analysis Date: **09/23/22 13:02** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.33	0.50	0.2725	0.06659	96	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63559** **Date:** *14-Oct-22*

Run ID :Run Order: **HGCV205-H_220923A: 48** SampType: **Sample Matrix Spike** Lab ID: **H22090081-018AMS** Method: **SW7471B**

Analysis Date: **09/23/22 13:02** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A**

Run ID :Run Order: **HGCV205-H_220923A: 49** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-018AMSD** Method: **SW7471B**

Analysis Date: **09/23/22 13:04** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.31	0.050	0.2725	0.06659	**91**	80	120	0.329	**4.8**	20	

Associated samples: **H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63560** **Date:** *14-Oct-22*

Run ID :Run Order: **HGCV205-H_220923A: 61** SampType: **Method Blank** Lab ID: **MB-63560** Method: **SW7471B**
Analysis Date: **09/23/22 13:25** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.007									

Associated samples: **H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **HGCV205-H_220923A: 62** SampType: **Laboratory Control Sample** Lab ID: **LCS-63560** Method: **SW7471B**
Analysis Date: **09/23/22 13:27** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.9	0.50	4.95	0	100	71	126.4				

Associated samples: **H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **HGCV205-H_220923A: 63** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63560** Method: **SW7471B**
Analysis Date: **09/23/22 13:29** Units: **mg/kg** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.19	0.50	0.198	0	95	80	120				

Associated samples: **H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **HGCV205-H_220923A: 65** SampType: **Serial Dilution** Lab ID: **H22090081-028ADIL** Method: **SW7471B**
Analysis Date: **09/23/22 13:32** Units: **mg/kg-dry** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.071	0.013		0		0	0	0.04883	37	10	R

Associated samples: **H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **HGCV205-H_220923A: 66** SampType: **Sample Matrix Spike** Lab ID: **H22090081-028AMS** Method: **SW7471B**
Analysis Date: **09/23/22 13:34** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.28	0.50	0.2587	0.04883	88	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63560** **Date:** *14-Oct-22*

Run ID :Run Order: **HGCV205-H_220923A: 66** SampType: **Sample Matrix Spike** Lab ID: **H22090081-028AMS** Method: **SW7471B**

Analysis Date: **09/23/22 13:34** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **HGCV205-H_220923A: 67** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-028AMSD** Method: **SW7471B**

Analysis Date: **09/23/22 13:36** Units: **mg/kg-dry** **Prep Info:** Prep Date: **9/22/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.32	0.050	0.2614	0.04883	**102**	80	120	0.2765	**14**	20	

Associated samples: **H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63605** **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220927B: 44** SampType: **Method Blank** Lab ID: **MB-63605** Method: **SW6010B**

Analysis Date: **09/27/22 20:48** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.8									
Iron	ND	20									
Manganese	ND	0.4									

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICP2-HE_220927B: 45** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63605** Method: **SW6010B**

Analysis Date: **09/27/22 20:52** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	266	5.0	247.5	0	107	80	120				
Boron	47.8	1.0	49.5	0	97	80	120				
Iron	244	22	247.5	0	98	80	120				
Manganese	237	1.0	247.5	0	96	80	120				

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICP2-HE_220927B: 46** SampType: **Laboratory Control Sample** Lab ID: **LCS-63605** Method: **SW6010B**

Analysis Date: **09/27/22 20:55** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9650	18	9801	0	98	63.5	122				
Boron	106	3.8	128.6	0	83	63.9	108				
Iron	15300	110	16250	0	94	71.9	118				
Manganese	392	1.9	432.7	0	91	74.4	123				

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICP2-HE_220927B: 49** SampType: **Serial Dilution** Lab ID: **H22090686-001ADIL** Method: **SW6010B**

Analysis Date: **09/27/22 21:06** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4880	88		0		0	0	5042	3.3	10	
Boron	ND	19		0		0	0	0		10	
Iron	6710	550		0		0	0	6633	1.1	10	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63605** **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220927B: 49** SampType: **Serial Dilution** Lab ID: **H22090686-001ADIL** Method: **SW6010B**

Analysis Date: **09/27/22 21:06** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.1	9.4		0		0	0	98.16	**0**	10	

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICP2-HE_220927B: 50** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22090686-001APDS** Method: **SW6010B**

Analysis Date: **09/27/22 21:10** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	6510	18	1277	5042	**115**	75	125				
Boron	218	3.9	255.4	0	**85**	75	125				
Iron	7510	110	1277	6633		75	125				A
Manganese	1230	1.9	1277	98.16	**88**	75	125				

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICP2-HE_220927B: 51** SampType: **Sample Matrix Spike** Lab ID: **H22090686-001AMS** Method: **SW6010B**

Analysis Date: **09/27/22 21:14** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	6080	18	247.2	5042		75	125				A
Boron	43.8	3.8	49.45	0	**89**	75	125				
Iron	7050	110	247.2	6633		75	125				A
Manganese	323	1.9	247.2	98.16	**91**	75	125				

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICP2-HE_220927B: 52** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090686-001AMSD** Method: **SW6010B**

Analysis Date: **09/27/22 21:17** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5960	18	248.5	5042		75	125	6083	**2.0**	20	A
Boron	44.1	3.8	49.7	0	**89**	75	125	43.81	**0.6**	20	
Iron	7090	110	248.5	6633		75	125	7050	**0.6**	20	A
Manganese	342	1.9	248.5	98.16	**98**	75	125	322.8	**5.7**	20	

Associated samples: **H22090081-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090081
BatchID: 63605
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220928B: 22** SampType: **Method Blank** Lab ID: **MB-63605** Method: **SW6020**
Analysis Date: **09/28/22 12:04** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	3									
Arsenic	ND	0.2									
Barium	ND	0.3									
Beryllium	ND	0.4									
Cadmium	ND	0.04									
Chromium	ND	1									
Cobalt	ND	0.7									
Copper	ND	1									
Lead	ND	0.5									
Manganese	ND	1									
Molybdenum	ND	0.2									
Nickel	ND	0.5									
Selenium	ND	0.1									
Silver	ND	0.7									
Uranium	ND	0.02									
Vanadium	ND	0.3									
Zinc	ND	3									

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICPMS205-H_220928B: 23** SampType: **Laboratory Control Sample** Lab ID: **LCS-63605** Method: **SW6020**
Analysis Date: **09/28/22 12:07** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	61.6	7.9	239.3	0	**26**	12.8	37.2				
Arsenic	162	1.0	195.4	0	**83**	66.4	104				
Barium	186	1.0	186.4	0	**100**	71.8	124				
Beryllium	77.0	1.1	83.35	0	**92**	70	115				
Cadmium	100	1.0	98.7	0	**101**	79.2	121				
Chromium	108	3.1	116.6	0	**93**	72.5	115				
Cobalt	103	1.8	107.7	0	**96**	79.4	126				
Copper	122	3.2	136.6	0	**89**	73.9	113				
Lead	106	1.3	104.7	0	**101**	71.6	128				
Manganese	404	3.0	432.7	0	**93**	74.4	123				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63605** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220928B: 23** SampType: **Laboratory Control Sample** Lab ID: **LCS-63605** Method: **SW6020**

Analysis Date: **09/28/22 12:07** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	122	1.0	126.6	0	**97**	61.3	124				
Nickel	79.3	1.2	85.94	0	**92**	70.6	116				
Selenium	187	1.0	204.4	0	**91**	72.3	111				
Silver	43.8	1.8	41.97	0	**104**	70.8	133				
Uranium	99.8	1.0	99.6	0	**100**	80.1	120.1				
Vanadium	107	1.0	113.7	0	**94**	73	116				
Zinc	229	7.7	230.3	0	**99**	83.1	125				

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICPMS205-H_220928B: 24** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-63605** Method: **SW6020**

Analysis Date: **09/28/22 12:09** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.0	3.1	49.5	0	**105**	80	120				
Arsenic	48.5	1.0	49.5	0	**98**	80	120				
Barium	52.4	1.0	49.5	0	**106**	80	120				
Beryllium	25.4	1.0	24.75	0	**103**	80	120				
Cadmium	26.1	1.0	24.75	0	**105**	80	120				
Chromium	50.3	1.2	49.5	0	**102**	80	120				
Cobalt	48.8	1.0	49.5	0	**99**	80	120				
Copper	49.7	1.3	49.5	0	**100**	80	120				
Lead	52.3	1.0	49.5	0	**106**	80	120				
Manganese	244	1.2	247.5	0	**99**	80	120				
Molybdenum	52.9	1.0	49.5	0	**107**	80	120				
Nickel	50.5	1.0	49.5	0	**102**	80	120				
Selenium	42.4	1.0	49.5	0	**86**	80	120				
Silver	27.2	1.0	24.75	0	**110**	80	120				
Uranium	53.1	1.0	49.5	0	**107**	80	120				
Vanadium	50.0	1.0	49.5	0	**101**	80	120				
Zinc	46.0	3.1	49.5	0	**93**	80	120				

Associated samples: **H22090081-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090081 **BatchID: 63605** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220928B: 29** SampType: **Serial Dilution** Lab ID: **H22090686-001ADIL** Method: **SW6020**
Analysis Date: **09/28/22 12:21** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	16		0		0	0	0		10	
Arsenic	3.19	1.0		0		0	0	2.754		10	N
Barium	46.7	1.4		0		0	0	46.29	**0.8**	10	
Beryllium	ND	2.2		0		0	0	0		10	
Cadmium	ND	1.0		0		0	0	0.05638		10	
Chromium	ND	6.1		0		0	0	3.394		10	
Cobalt	ND	3.6		0		0	0	0.7384		10	
Copper	7.04	6.4		0		0	0	6.239		10	N
Lead	4.89	2.6		0		0	0	4.989		10	N
Manganese	105	5.9		0		0	0	95.71	**9.1**	10	
Molybdenum	ND	1.2		0		0	0	0		10	
Nickel	4.36	2.5		0		0	0	3.947		10	N
Selenium	ND	1.0		0		0	0	0.1452		10	
Silver	ND	3.6		0		0	0	0		10	
Uranium	1.17	1.0		0		0	0	1.22	**4.0**	10	
Vanadium	7.79	1.6		0		0	0	6.771		10	N
Zinc	39.2	15		0		0	0	34.41		10	N

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICPMS205-H_220928B: 30** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22090686-001APDS1** Method: **SW6020**
Analysis Date: **09/28/22 12:24** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	5.30	3.1	4.96	0	**107**	75	125				
Arsenic	7.26	1.0	4.96	2.754	**91**	75	125				
Barium	52.7	1.0	4.96	46.29		75	125				A
Beryllium	4.48	1.0	4.96	0	**90**	75	125				
Cadmium	5.31	1.0	4.96	0.05638	**106**	75	125				
Chromium	8.23	1.2	4.96	3.394	**97**	75	125				
Cobalt	5.52	1.0	4.96	0.7384	**96**	75	125				
Copper	11.2	1.3	4.96	6.239	**100**	75	125				
Lead	10.3	1.0	4.96	4.989	**108**	75	125				
Manganese	102	1.2	4.96	95.71		75	125				A

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63605** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220928B: 30** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22090686-001APDS1** Method: **SW6020**

Analysis Date: **09/28/22 12:24** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	5.72	1.0	4.96	0	115	75	125				
Nickel	8.91	1.0	4.96	3.947	100	75	125				
Selenium	4.35	1.0	4.96	0.1452	85	75	125				
Silver	2.23	1.0	1.984	0	112	75	125				
Uranium	6.42	1.0	4.96	1.22	105	75	125				
Vanadium	11.8	1.0	4.96	6.771	101	75	125				
Zinc	39.3	3.1	4.96	34.41		75	125				A

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICPMS205-H_220928B: 31** SampType: **Sample Matrix Spike** Lab ID: **H22090686-001AMS** Method: **SW6020**

Analysis Date: **09/28/22 12:26** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	23.7	3.1	49.45	0	48	75	125				S
Arsenic	47.6	1.0	49.45	2.754	91	75	125				
Barium	96.6	1.0	49.45	46.29	102	75	125				E
Beryllium	20.4	1.0	24.72	0	83	75	125				
Cadmium	25.8	1.0	24.72	0.05638	104	75	125				
Chromium	49.9	1.2	49.45	3.394	94	75	125				
Cobalt	45.3	1.0	49.45	0.7384	90	75	125				
Copper	53.0	1.3	49.45	6.239	94	75	125				
Lead	57.6	1.0	49.45	4.989	106	75	125				
Manganese	327	1.2	247.2	95.71	93	75	125				
Molybdenum	51.0	1.0	49.45	0	103	75	125				
Nickel	50.3	1.0	49.45	3.947	94	75	125				
Selenium	41.4	1.0	49.45	0.1452	83	75	125				
Silver	25.9	1.0	24.72	0	105	75	125				
Uranium	54.4	1.0	49.45	1.22	108	75	125				
Vanadium	54.4	1.0	49.45	6.771	96	75	125				
Zinc	75.8	3.1	49.45	34.41	84	75	125				

Associated samples: **H22090081-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: 63605** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220928B: 32** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090686-001AMSD** Method: **SW6020**

Analysis Date: **09/28/22 12:29** Units: **mg/kg** **Prep Info:** Prep Date: **9/26/2022** Prep Method: **SW3050 B**

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	24.1	3.1	49.7	0	48	75	125	23.66	1.8	20	S
Arsenic	48.3	1.0	49.7	2.754	92	75	125	47.62	1.4	20	
Barium	98.5	1.0	49.7	46.29	105	75	125	96.56	1.9	20	E
Beryllium	20.7	1.0	24.85	0	83	75	125	20.44	1.3	20	
Cadmium	26.3	1.0	24.85	0.05638	106	75	125	25.79	2.1	20	
Chromium	50.6	1.2	49.7	3.394	95	75	125	49.86	1.5	20	
Cobalt	46.4	1.0	49.7	0.7384	92	75	125	45.25	2.6	20	
Copper	52.8	1.3	49.7	6.239	94	75	125	52.96	0.4	20	
Lead	58.2	1.0	49.7	4.989	107	75	125	57.62	1.0	20	
Manganese	338	1.2	248.5	95.71	97	75	125	326.6	3.3	20	
Molybdenum	51.9	1.0	49.7	0	105	75	125	50.98	1.9	20	
Nickel	51.7	1.0	49.7	3.947	96	75	125	50.25	2.9	20	
Selenium	42.1	1.0	49.7	0.1452	84	75	125	41.42	1.5	20	
Silver	26.5	1.0	24.85	0	106	75	125	25.88	2.2	20	
Uranium	55.5	1.0	49.7	1.22	109	75	125	54.45	2.0	20	
Vanadium	54.3	1.0	49.7	6.771	96	75	125	54.38	0.2	20	
Zinc	77.3	3.1	49.7	34.41	86	75	125	75.83	2.0	20	

Associated samples: **H22090081-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID:** PMOIST_220930_A **Date:** *14-Oct-22*

Run ID :Run Order: **SOIL DRYING OVEN 2_221003C: 2** SampType: **Sample Duplicate** Lab ID: **H22090081-020A DUP** Method: **D2974**

Analysis Date: **09/30/22 10:22** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	60.0	0.20		0				63.78	**6.0**	20	

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **SOIL DRYING OVEN 2_221003C: 4** SampType: **Sample Duplicate** Lab ID: **H22090081-030A DUP** Method: **D2974**

Analysis Date: **09/30/22 10:24** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	21.2	0.20		0				23.62	**11**	20	

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-028A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178009** **Date:** *14-Oct-22*

Run ID :Run Order: **PHSC_101-H_220907A: 38** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **09/07/22 12:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **PHSC_101-H_220907A: 39** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **09/07/22 12:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	600	4.0	600	0	**100**	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **PHSC_101-H_220907A: 44** SampType: **Sample Duplicate** Lab ID: **H22090063-001ADUP** Method: **A2320 B**

Analysis Date: **09/07/22 14:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	190	4.0		0				185.8	**0.6**	10	
Bicarbonate as HCO3	220	4.0		0				219.5	**0.6**	10	

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **PHSC_101-H_220907A: 82** SampType: **Sample Duplicate** Lab ID: **H22090081-003ADUP** Method: **A2320 B**

Analysis Date: **09/07/22 16:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	120	4.0		0				119.5	**1.0**	10	
Bicarbonate as HCO3	100	4.0		0				104.7	**2.1**	10	

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **PHSC_101-H_220907A: 84** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **09/07/22 17:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178009
Date: *14-Oct-22*

Run ID :Run Order: **PHSC_101-H_220907A: 84** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **09/07/22 17:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **PHSC_101-H_220907A: 85** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **09/07/22 17:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	600	4.0	600	0	**101**	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **PHSC_101-H_220907A: 92** SampType: **Sample Duplicate** Lab ID: **H22090081-004ADUP** Method: **A2320 B**

Analysis Date: **09/07/22 18:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	130	4.0		0				131.4	**0.1**	10	
Bicarbonate as HCO3	140	4.0		0				144.8	**0.2**	10	

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178029
Date: *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220907A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **09/07/22 10:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.789	0.10	0.8	0	99	95	105				
Calcium	40.2	1.0	40	0	101	95	105				
Magnesium	39.6	1.0	40	0	99	95	105				
Potassium	40.2	1.0	40	0	101	95	105				
Sodium	40.5	1.0	40	0	101	95	105				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220907A: 13** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**

Analysis Date: **09/07/22 10:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.004									
Calcium	ND	0.1									
Magnesium	ND	0.02									
Potassium	ND	0.06									
Sodium	ND	0.02									

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Run ID :Run Order: **ICP2-HE_220907A: 14** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**

Analysis Date: **09/07/22 10:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.962	0.10	1	0	96	85	115				
Calcium	53.1	1.0	50	0	106	85	115				
Magnesium	51.9	1.0	50	0	104	85	115				
Potassium	52.4	1.0	50	0	105	85	115				
Sodium	52.5	1.0	50	0	105	85	115				

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178029
Date: *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220907A: 86** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/07/22 15:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.46	0.10	2.5	0	**98**	90	110				
Calcium	25.2	1.0	25	0	**101**	90	110				
Magnesium	25.3	1.0	25	0	**101**	90	110				
Potassium	24.5	1.0	25	0	**98**	90	110				
Sodium	24.6	1.0	25	0	**99**	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220907A: 92** SampType: **Sample Matrix Spike** Lab ID: **H22090081-001BMS2** Method: **E200.7**

Analysis Date: **09/07/22 15:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.09	0.050	1	0.1143	**97**	70	130				
Calcium	98.9	1.0	50	49.04	**100**	70	130				
Magnesium	65.6	1.0	50	13.61	**104**	70	130				
Potassium	64.5	1.0	50	10.4	**108**	70	130				
Sodium	99.8	1.0	50	45.26	**109**	70	130				

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Run ID :Run Order: **ICP2-HE_220907A: 93** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-001BMSD2** Method: **E200.7**

Analysis Date: **09/07/22 15:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.05	0.050	1	0.1143	**94**	70	130	1.088	**3.5**	20	
Calcium	100	1.0	50	49.04	**102**	70	130	98.94	**1.2**	20	
Magnesium	67.0	1.0	50	13.61	**107**	70	130	65.61	**2.1**	20	
Potassium	63.8	1.0	50	10.4	**107**	70	130	64.51	**1.0**	20	
Sodium	97.7	1.0	50	45.26	**105**	70	130	99.81	**2.2**	20	

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178029
Date: *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220907A: 98** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/07/22 15:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.50	0.10	2.5	0	**100**	90	110				
Calcium	24.8	1.0	25	0	**99**	90	110				
Magnesium	25.4	1.0	25	0	**101**	90	110				
Potassium	25.1	1.0	25	0	**101**	90	110				
Sodium	25.1	1.0	25	0	**100**	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220907A: 106** SampType: **Sample Matrix Spike** Lab ID: **H22090081-010BMS2** Method: **E200.7**

Analysis Date: **09/07/22 16:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.04	0.050	1	0.07571	**96**	70	130				
Calcium	116	1.0	50	65.17	**101**	70	130				
Magnesium	67.8	1.0	50	13.86	**108**	70	130				
Potassium	59.9	1.0	50	6.597	**107**	70	130				
Sodium	93.5	1.0	50	41.17	**105**	70	130				

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Run ID :Run Order: **ICP2-HE_220907A: 107** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-010BMSD2** Method: **E200.7**

Analysis Date: **09/07/22 16:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.03	0.050	1	0.07571	**95**	70	130	1.04	**1.1**	20	
Calcium	116	1.0	50	65.17	**101**	70	130	115.5	**0.2**	20	
Magnesium	67.4	1.0	50	13.86	**107**	70	130	67.82	**0.6**	20	
Potassium	58.4	1.0	50	6.597	**104**	70	130	59.95	**2.6**	20	
Sodium	91.5	1.0	50	41.17	**101**	70	130	93.46	**2.1**	20	

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178029
Date: *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220907A: 164** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/08/22 01:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.50	0.10	2.5	0	100	90	110				
Calcium	25.0	1.0	25	0	100	90	110				
Magnesium	25.3	1.0	25	0	101	90	110				
Potassium	26.9	1.0	25	0	108	90	110				
Sodium	27.1	1.0	25	0	108	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220907A: 183** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/08/22 03:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.52	0.10	2.5	0	101	90	110				
Calcium	25.4	1.0	25	0	101	90	110				
Magnesium	25.3	1.0	25	0	101	90	110				
Potassium	25.5	1.0	25	0	102	90	110				
Sodium	25.5	1.0	25	0	102	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220907A: 195** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/08/22 03:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.51	0.10	2.5	0	101	90	110				
Calcium	25.4	1.0	25	0	102	90	110				
Magnesium	25.3	1.0	25	0	101	90	110				
Potassium	26.2	1.0	25	0	105	90	110				
Sodium	26.3	1.0	25	0	105	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178042
Date: *14-Oct-22*

Run ID :Run Order: **IC METROHM_220907A: 2** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **09/07/22 10:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.06									

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **IC METROHM_220907A: 3** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **09/07/22 11:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98.7	1.0	100	0	99	90	110				
Sulfate	386	1.0	400	0	97	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **IC METROHM_220907A: 4** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **09/07/22 11:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.3	1.0	25	0	97	90	110				
Sulfate	101	1.0	100	0	101	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **IC METROHM_220907A: 20** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **09/07/22 15:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.5	1.0	50	0	99	90	110				
Sulfate	202	1.0	200	0	101	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178042
Date: *14-Oct-22*

Run ID :Run Order: **IC METROHM_220907A: 32** SampType: **Sample Matrix Spike** Lab ID: **H22090081-005AMS** Method: **E300.0**

Analysis Date: **09/07/22 18:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.9	1.0	25	0	100	90	110				
Sulfate	102	1.0	100	0	102	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **IC METROHM_220907A: 33** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-005AMSD** Method: **E300.0**

Analysis Date: **09/07/22 18:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.9	1.0	25	0	100	90	110	24.92	0.1	20	
Sulfate	103	1.0	100	0	103	90	110	102.2	0.6	20	

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **IC METROHM_220907A: 34** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **09/07/22 18:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.6	1.0	50	0	99	90	110				
Sulfate	201	1.0	200	0	100	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **IC METROHM_220907A: 41** SampType: **Sample Matrix Spike** Lab ID: **H22090081-010AMS** Method: **E300.0**

Analysis Date: **09/07/22 20:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	66.3	1.0	25	41.75	98	90	110				
Sulfate	212	1.0	100	112.3	99	90	110				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178042
Date: *14-Oct-22*

Run ID :Run Order: **IC METROHM_220907A: 42** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-010AMSD** Method: **E300.0**

Analysis Date: **09/07/22 21:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	66.6	1.0	25	41.75	**99**	90	110	66.33	**0.4**	20	
Sulfate	214	1.0	100	112.3	**101**	90	110	211.7	**0.9**	20	

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178065
Date: *14-Oct-22*

Run ID :Run Order: **FIA203-HE_220908A: 10** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E353.2**

Analysis Date: **09/08/22 11:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.994	0.010	1	0	99	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220908A: 11** SampType: **Method Blank** Lab ID: **MBLK** Method: **E353.2**

Analysis Date: **09/08/22 11:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	ND	0.008									

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220908A: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E353.2**

Analysis Date: **09/08/22 11:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.989	0.011	1	0	99	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220908A: 97** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **09/08/22 13:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.488	0.010	0.5	0	98	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220908A: 103** SampType: **Sample Matrix Spike** Lab ID: **H22090081-005DMS** Method: **E353.2**

Analysis Date: **09/08/22 13:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.03	0.011	1	0	103	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178065
Date: *14-Oct-22*

Run ID :Run Order: **FIA203-HE_220908A: 103** SampType: **Sample Matrix Spike** Lab ID: **H22090081-005DMS** Method: **E353.2**

Analysis Date: **09/08/22 13:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220908A: 104** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-005DMSD** Method: **E353.2**

Analysis Date: **09/08/22 13:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.03	0.011	1	0	103	90	110	1.031	0.4	10	

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220908A: 122** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E353.2**

Analysis Date: **09/08/22 15:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.987	0.010	1	0	99	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220908A: 124** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E353.2**

Analysis Date: **09/08/22 15:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.971	0.011	1	0	97	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220908A: 151** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **09/08/22 15:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.473	0.010	0.5	0	95	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178065
Date: *14-Oct-22*

Run ID :Run Order: **FIA203-HE_220908A: 155** SampType: **Sample Matrix Spike** Lab ID: **H22090081-006DMS** Method: **E353.2**

Analysis Date: **09/08/22 17:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.41	0.011	1	0.4528	95	90	110				

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220908A: 156** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-006DMSD** Method: **E353.2**

Analysis Date: **09/08/22 17:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.41	0.011	1	0.4528	96	90	110	1.408	0.3	10	

Associated samples: **H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178136
Date: *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220908A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **09/08/22 10:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	3.88	0.010	4	0	97	95	105				
Potassium	39.7	1.0	40	0	99	95	105				
Sodium	40.0	1.0	40	0	100	95	105				

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220908A: 7** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV1** Method: **E200.7**

Analysis Date: **09/08/22 10:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	2.44	0.010	2.5	0	97	95	105				
Potassium	25.4	1.0	25	0	101	95	105				
Sodium	25.4	1.0	25	0	102	95	105				

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220908A: 43** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/08/22 12:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	2.37	0.010	2.5	0	95	90	110				
Potassium	24.0	1.0	25	0	96	90	110				
Sodium	24.3	1.0	25	0	97	90	110				

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Run ID :Run Order: **ICP2-HE_220908A: 55** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/08/22 13:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	2.40	0.010	2.5	0	96	90	110				
Potassium	25.1	1.0	25	0	100	90	110				
Sodium	25.4	1.0	25	0	102	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178136
Date: *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220908A: 55** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/08/22 13:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes **3**	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-001C, H22090081-002C, H22090081-003C, H22090081-004C, H22090081-005C, H22090081-006C, H22090081-007C, H22090081-008C, H22090081-009C, H22090081-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178164
Date: *14-Oct-22*

Run ID :Run Order: **FIA203-HE_220912A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E350.1**
Analysis Date: **09/12/22 15:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.973	0.050	1	0	97	90	110				

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220912A: 10** SampType: **Method Blank** Lab ID: **MBLK** Method: **E350.1**
Analysis Date: **09/12/22 15:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	ND	0.03									

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220912A: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E350.1**
Analysis Date: **09/12/22 15:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	1.00	0.050	1	0	100	90	110				

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220912A: 25** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E350.1**
Analysis Date: **09/12/22 15:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.497	0.050	0.5	0	99	90	110				

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220912A: 28** SampType: **Sample Matrix Spike** Lab ID: **H22090081-002DMS** Method: **E350.1**
Analysis Date: **09/12/22 15:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.918	0.050	1	0	92	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID:** R178164 **Date:** *14-Oct-22*

Run ID :Run Order: **FIA203-HE_220912A: 28** SampType: **Sample Matrix Spike** Lab ID: **H22090081-002DMS** Method: **E350.1**

Analysis Date: **09/12/22 15:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220912A: 29** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-002DMSD** Method: **E350.1**

Analysis Date: **09/12/22 15:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.908	0.050	1	0	91	80	120	0.9177	1.0	10	

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220912A: 43** SampType: **Sample Matrix Spike** Lab ID: **H22090118-001BMS** Method: **E350.1**

Analysis Date: **09/12/22 15:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.754	0.050	1	0	75	80	120				S

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220912A: 44** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090118-001BMSD** Method: **E350.1**

Analysis Date: **09/12/22 15:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.759	0.050	1	0	76	80	120	0.7542	0.6	10	S

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220912A: 80** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E350.1**

Analysis Date: **09/12/22 16:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.500	0.050	0.5	0	100	90	110				

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178164
Date: *14-Oct-22*

Run ID :Run Order: **FIA203-HE_220912A: 83** SampType: **Sample Matrix Spike** Lab ID: **H22090252-002DMS** Method: **E350.1**

Analysis Date: **09/12/22 16:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.928	0.050	1	0	93	80	120				

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Run ID :Run Order: **FIA203-HE_220912A: 84** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090252-002DMSD** Method: **E350.1**

Analysis Date: **09/12/22 16:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.920	0.050	1	0	92	80	120	0.9284	0.9	10	

Associated samples: **H22090081-001E, H22090081-002D, H22090081-003D, H22090081-004D, H22090081-005D, H22090081-006D, H22090081-007D, H22090081-008D, H22090081-009D, H22090081-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178196** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **09/13/22 16:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.312	0.10	0.3	0	104	90	110				
Antimony	0.0543	0.050	0.06	0	90	90	110				
Arsenic	0.0621	0.0050	0.06	0	104	90	110				
Barium	0.0592	0.10	0.06	0	99	90	110				
Beryllium	0.0298	0.0010	0.03	0	99	90	110				
Cadmium	0.0307	0.0010	0.03	0	102	90	110				
Chromium	0.0611	0.010	0.06	0	102	90	110				
Cobalt	0.0601	0.010	0.06	0	100	90	110				
Copper	0.0609	0.010	0.06	0	101	90	110				
Iron	0.294	0.020	0.3	0	98	90	110				
Lead	0.0595	0.010	0.06	0	99	90	110				
Manganese	0.304	0.010	0.3	0	101	90	110				
Molybdenum	0.0589	0.0050	0.06	0	98	90	110				
Nickel	0.0612	0.010	0.06	0	102	90	110				
Selenium	0.0610	0.0050	0.06	0	102	90	110				
Silver	0.0306	0.0050	0.03	0	102	90	110				
Uranium	0.0582	0.00030	0.06	0	97	90	110				
Vanadium	0.0605	0.10	0.06	0	101	90	110				
Zinc	0.0616	0.010	0.06	0	103	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **ICPMS205-H_220913A: 24** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **09/13/22 17:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Antimony	ND	0.0002									
Arsenic	ND	0.0002									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00002									
Chromium	ND	0.0001									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178196** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 24** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **09/13/22 17:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	0.001									
Copper	ND	0.0001									
Iron	ND	0.004									
Lead	ND	0.0001									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Nickel	ND	0.0002									
Selenium	ND	0.00007									
Silver	ND	0.00008									
Uranium	ND	0.00002									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Run ID :Run Order: **ICPMS205-H_220913A: 25** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **09/13/22 17:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0542	0.10	0.05	0	**108**	85	115				
Antimony	0.0513	0.050	0.05	0	**103**	85	115				
Arsenic	0.0502	0.0050	0.05	0	**100**	85	115				
Barium	0.0492	0.10	0.05	0	**98**	85	115				
Beryllium	0.0503	0.0010	0.05	0	**101**	85	115				
Cadmium	0.0509	0.0010	0.05	0	**102**	85	115				
Chromium	0.0511	0.010	0.05	0	**102**	85	115				
Cobalt	0.0515	0.010	0.05	0	**103**	85	115				
Copper	0.0511	0.010	0.05	0	**102**	85	115				
Iron	0.149	0.020	0.15	0	**99**	85	115				
Lead	0.0500	0.010	0.05	0	**100**	85	115				
Manganese	0.0511	0.010	0.05	0	**102**	85	115				
Molybdenum	0.0502	0.0050	0.05	0	**100**	85	115				
Nickel	0.0516	0.010	0.05	0	**103**	85	115				
Selenium	0.0504	0.0050	0.05	0	**101**	85	115				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178196** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 25** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **09/13/22 17:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0205	0.0050	0.02	0	103	85	115				
Uranium	0.0483	0.00030	0.05	0	97	85	115				
Vanadium	0.0508	0.10	0.05	0	102	85	115				
Zinc	0.0522	0.010	0.05	0	104	85	115				

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Run ID :Run Order: **ICPMS205-H_220913A: 133** SampType: **Sample Matrix Spike** Lab ID: **H22090074-001BMS** Method: **E200.8**

Analysis Date: **09/13/22 21:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0558	0.030	0.05	0	112	70	130				
Antimony	0.0511	0.0010	0.05	0	102	70	130				
Arsenic	0.0520	0.0010	0.05	0.000501	103	70	130				
Barium	0.262	0.050	0.05	0.2118		70	130				A
Beryllium	0.0497	0.0010	0.05	0	99	70	130				
Cadmium	0.0525	0.0010	0.05	0	105	70	130				
Chromium	0.0519	0.0050	0.05	0	104	70	130				
Cobalt	0.0514	0.0050	0.05	0	103	70	130				
Copper	0.0547	0.0050	0.05	0.003537	102	70	130				
Iron	0.261	0.020	0.15	0.1117	99	70	130				
Lead	0.0520	0.0010	0.05	0.0001163	104	70	130				
Manganese	0.0567	0.0010	0.05	0.004904	104	70	130				
Molybdenum	0.0526	0.0010	0.05	0.001577	102	70	130				
Nickel	0.0516	0.0050	0.05	0	103	70	130				
Selenium	0.0520	0.0010	0.05	0	104	70	130				
Silver	0.0212	0.0010	0.02	0	106	70	130				
Uranium	0.0507	0.00030	0.05	0.0007134	100	70	130				
Vanadium	0.0511	0.010	0.05	0.0001136	102	70	130				
Zinc	0.0555	0.010	0.05	0.00211	107	70	130				

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090081
BatchID: R178196
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 134** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090074-001BMSD** Method: **E200.8**
Analysis Date: **09/13/22 22:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0520	0.030	0.05	0	104	70	130	0.05585	7.2	20	
Antimony	0.0517	0.0010	0.05	0	103	70	130	0.05112	1.1	20	
Arsenic	0.0528	0.0010	0.05	0.000501	105	70	130	0.05196	1.5	20	
Barium	0.260	0.050	0.05	0.2118		70	130	0.262	0.8	20	A
Beryllium	0.0498	0.0010	0.05	0	100	70	130	0.04968	0.3	20	
Cadmium	0.0521	0.0010	0.05	0	104	70	130	0.05249	0.8	20	
Chromium	0.0521	0.0050	0.05	0	104	70	130	0.05186	0.5	20	
Cobalt	0.0520	0.0050	0.05	0	104	70	130	0.05135	1.2	20	
Copper	0.0551	0.0050	0.05	0.003537	103	70	130	0.05468	0.7	20	
Iron	0.262	0.020	0.15	0.1117	100	70	130	0.2607	0.3	20	
Lead	0.0517	0.0010	0.05	0.0001163	103	70	130	0.05196	0.6	20	
Manganese	0.0564	0.0010	0.05	0.004904	103	70	130	0.05674	0.7	20	
Molybdenum	0.0525	0.0010	0.05	0.001577	102	70	130	0.05259	0.1	20	
Nickel	0.0519	0.0050	0.05	0	104	70	130	0.05155	0.7	20	
Selenium	0.0527	0.0010	0.05	0	105	70	130	0.05202	1.3	20	
Silver	0.0211	0.0010	0.02	0	106	70	130	0.02119	0.2	20	
Uranium	0.0507	0.00030	0.05	0.0007134	100	70	130	0.05071	0.0	20	
Vanadium	0.0515	0.010	0.05	0.0001136	103	70	130	0.05106	0.9	20	
Zinc	0.0552	0.010	0.05	0.00211	106	70	130	0.05549	0.5	20	

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Run ID :Run Order: **ICPMS205-H_220913A: 138** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**
Analysis Date: **09/13/22 22:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0511	0.10	0.05	0	102	90	110				
Antimony	0.0501	0.050	0.05	0	100	90	110				
Arsenic	0.0507	0.0050	0.05	0	101	90	110				
Barium	0.0503	0.10	0.05	0	101	90	110				
Beryllium	0.0492	0.0010	0.05	0	98	90	110				
Cadmium	0.0509	0.0010	0.05	0	102	90	110				
Chromium	0.0511	0.010	0.05	0	102	90	110				
Cobalt	0.0509	0.010	0.05	0	102	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178196** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 138** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/13/22 22:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0510	0.010	0.05	0	102	90	110				
Iron	1.34	0.020	1.3	0	103	90	110				
Lead	0.0503	0.010	0.05	0	101	90	110				
Manganese	0.0509	0.010	0.05	0	102	90	110				
Molybdenum	0.0519	0.0050	0.05	0	104	90	110				
Nickel	0.0510	0.010	0.05	0	102	90	110				
Selenium	0.0518	0.0050	0.05	0	104	90	110				
Silver	0.0208	0.0050	0.02	0	104	90	110				
Uranium	0.0493	0.00030	0.05	0	99	90	110				
Vanadium	0.0508	0.10	0.05	0	102	90	110				
Zinc	0.0514	0.010	0.05	0	103	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **ICPMS205-H_220913A: 168** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/14/22 12:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0534	0.10	0.05	0	107	90	110				
Antimony	0.0497	0.050	0.05	0	99	90	110				
Arsenic	0.0500	0.0050	0.05	0	100	90	110				
Barium	0.0497	0.10	0.05	0	99	90	110				
Beryllium	0.0482	0.0010	0.05	0	96	90	110				
Cadmium	0.0510	0.0010	0.05	0	102	90	110				
Chromium	0.0499	0.010	0.05	0	100	90	110				
Cobalt	0.0510	0.010	0.05	0	102	90	110				
Copper	0.0514	0.010	0.05	0	103	90	110				
Iron	1.30	0.020	1.3	0	100	90	110				
Lead	0.0501	0.010	0.05	0	100	90	110				
Manganese	0.0504	0.010	0.05	0	101	90	110				
Molybdenum	0.0508	0.0050	0.05	0	102	90	110				
Nickel	0.0515	0.010	0.05	0	103	90	110				
Selenium	0.0503	0.0050	0.05	0	101	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178196
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 168** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/14/22 12:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0206	0.0050	0.02	0	103	90	110				
Uranium	0.0500	0.00030	0.05	0	100	90	110				
Vanadium	0.0498	0.10	0.05	0	100	90	110				
Zinc	0.0518	0.010	0.05	0	104	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **ICPMS205-H_220913A: 172** SampType: **Sample Matrix Spike** Lab ID: **H22090065-001BMS** Method: **E200.8**

Analysis Date: **09/14/22 12:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0552	0.030	0.05	0.007659	95	70	130				
Antimony	0.0520	0.0010	0.05	0	104	70	130				
Arsenic	0.0555	0.0010	0.05	0.004995	101	70	130				
Barium	0.0738	0.050	0.05	0.02182	104	70	130				
Beryllium	0.0494	0.0010	0.05	0	99	70	130				
Cadmium	0.0513	0.0010	0.05	0.0001391	102	70	130				
Chromium	0.0512	0.0050	0.05	0.0007396	101	70	130				
Cobalt	0.0509	0.0050	0.05	0	102	70	130				
Copper	0.0521	0.0050	0.05	0.001655	101	70	130				
Iron	0.148	0.020	0.15	0	98	70	130				
Lead	0.0516	0.0010	0.05	0	103	70	130				
Manganese	0.0506	0.0010	0.05	0	101	70	130				
Molybdenum	0.0595	0.0010	0.05	0.008409	102	70	130				
Nickel	0.0510	0.0050	0.05	0.0002474	102	70	130				
Selenium	0.0518	0.0010	0.05	0.002335	99	70	130				
Silver	0.0205	0.0010	0.02	0	103	70	130				
Uranium	0.0568	0.00030	0.05	0.005104	103	70	130				
Vanadium	0.0602	0.010	0.05	0.009869	101	70	130				
Zinc	0.0567	0.010	0.05	0.003129	107	70	130				

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178196** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 173** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090065-001BMSD** Method: **E200.8**

Analysis Date: **09/14/22 12:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0515	0.030	0.05	0.007659	88	70	130	0.05525	7.0	20	
Antimony	0.0505	0.0010	0.05	0	101	70	130	0.05196	2.9	20	
Arsenic	0.0541	0.0010	0.05	0.004995	98	70	130	0.05551	2.6	20	
Barium	0.0709	0.050	0.05	0.02182	98	70	130	0.0738	4.0	20	
Beryllium	0.0442	0.0010	0.05	0	88	70	130	0.04938	11	20	
Cadmium	0.0497	0.0010	0.05	0.0001391	99	70	130	0.0513	3.2	20	
Chromium	0.0497	0.0050	0.05	0.0007396	98	70	130	0.0512	3.0	20	
Cobalt	0.0495	0.0050	0.05	0	99	70	130	0.05089	2.7	20	
Copper	0.0513	0.0050	0.05	0.001655	99	70	130	0.0521	1.5	20	
Iron	0.144	0.020	0.15	0	96	70	130	0.1475	2.2	20	
Lead	0.0509	0.0010	0.05	0	102	70	130	0.0516	1.4	20	
Manganese	0.0494	0.0010	0.05	0	99	70	130	0.05059	2.4	20	
Molybdenum	0.0579	0.0010	0.05	0.008409	99	70	130	0.05954	2.8	20	
Nickel	0.0497	0.0050	0.05	0.0002474	99	70	130	0.05104	2.6	20	
Selenium	0.0452	0.0010	0.05	0.002335	86	70	130	0.05176	13	20	
Silver	0.0201	0.0010	0.02	0	100	70	130	0.02051	2.1	20	
Uranium	0.0558	0.00030	0.05	0.005104	101	70	130	0.05677	1.7	20	
Vanadium	0.0586	0.010	0.05	0.009869	98	70	130	0.06019	2.6	20	
Zinc	0.0540	0.010	0.05	0.003129	102	70	130	0.05668	4.8	20	

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Run ID :Run Order: **ICPMS205-H_220913A: 186** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/14/22 13:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0530	0.10	0.05	0	106	90	110				
Antimony	0.0493	0.050	0.05	0	99	90	110				
Arsenic	0.0493	0.0050	0.05	0	99	90	110				
Barium	0.0494	0.10	0.05	0	99	90	110				
Beryllium	0.0458	0.0010	0.05	0	92	90	110				
Cadmium	0.0511	0.0010	0.05	0	102	90	110				
Chromium	0.0498	0.010	0.05	0	100	90	110				
Cobalt	0.0502	0.010	0.05	0	100	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178196** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 186** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/14/22 13:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0512	0.010	0.05	0	102	90	110				
Iron	1.28	0.020	1.3	0	99	90	110				
Lead	0.0500	0.010	0.05	0	100	90	110				
Manganese	0.0495	0.010	0.05	0	99	90	110				
Molybdenum	0.0512	0.0050	0.05	0	102	90	110				
Nickel	0.0513	0.010	0.05	0	103	90	110				
Selenium	0.0489	0.0050	0.05	0	98	90	110				
Silver	0.0207	0.0050	0.02	0	104	90	110				
Uranium	0.0500	0.00030	0.05	0	100	90	110				
Vanadium	0.0498	0.10	0.05	0	100	90	110				
Zinc	0.0508	0.010	0.05	0	102	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **ICPMS205-H_220913A: 193** SampType: **Sample Matrix Spike** Lab ID: **H22090081-007BMS** Method: **E200.8**

Analysis Date: **09/14/22 13:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0541	0.030	0.05	0	108	70	130				
Antimony	0.0514	0.0010	0.05	0.0002817	102	70	130				
Arsenic	0.0591	0.0010	0.05	0.007814	103	70	130				
Barium	0.0710	0.050	0.05	0.02033	101	70	130				
Beryllium	0.0473	0.0010	0.05	0	95	70	130				
Cadmium	0.0513	0.0010	0.05	0.0001136	102	70	130				
Chromium	0.0501	0.0050	0.05	0	100	70	130				
Cobalt	0.0509	0.0050	0.05	0	102	70	130				
Copper	0.0588	0.0050	0.05	0.00835	101	70	130				
Iron	0.154	0.020	0.15	0.008792	97	70	130				
Lead	0.0520	0.0010	0.05	0.0001516	104	70	130				
Manganese	0.0719	0.0010	0.05	0.02115	101	70	130				
Molybdenum	0.0764	0.0010	0.05	0.02555	102	70	130				
Nickel	0.0512	0.0050	0.05	0.0006631	101	70	130				
Selenium	0.0524	0.0010	0.05	0.0004388	104	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178196** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 193** SampType: **Sample Matrix Spike** Lab ID: **H22090081-007BMS** Method: **E200.8**

Analysis Date: **09/14/22 13:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0183	0.0010	0.02	0	92	70	130				
Uranium	0.0560	0.00030	0.05	0.004667	103	70	130				
Vanadium	0.0529	0.010	0.05	0.003337	99	70	130				
Zinc	0.0700	0.010	0.05	0.01786	104	70	130				

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Run ID :Run Order: **ICPMS205-H_220913A: 194** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090081-007BMSD** Method: **E200.8**

Analysis Date: **09/14/22 13:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0500	0.030	0.05	0	100	70	130	0.05406	7.7	20	
Antimony	0.0522	0.0010	0.05	0.0002817	104	70	130	0.05138	1.6	20	
Arsenic	0.0588	0.0010	0.05	0.007814	102	70	130	0.05908	0.4	20	
Barium	0.0720	0.050	0.05	0.02033	103	70	130	0.07095	1.5	20	
Beryllium	0.0483	0.0010	0.05	0	97	70	130	0.04729	2.0	20	
Cadmium	0.0512	0.0010	0.05	0.0001136	102	70	130	0.05133	0.3	20	
Chromium	0.0498	0.0050	0.05	0	100	70	130	0.0501	0.6	20	
Cobalt	0.0508	0.0050	0.05	0	102	70	130	0.05094	0.2	20	
Copper	0.0584	0.0050	0.05	0.00835	100	70	130	0.05884	0.8	20	
Iron	0.154	0.020	0.15	0.008792	97	70	130	0.1542	0.3	20	
Lead	0.0524	0.0010	0.05	0.0001516	104	70	130	0.05197	0.8	20	
Manganese	0.0700	0.0010	0.05	0.02115	98	70	130	0.07188	2.6	20	
Molybdenum	0.0764	0.0010	0.05	0.02555	102	70	130	0.07638	0.1	20	
Nickel	0.0509	0.0050	0.05	0.0006631	100	70	130	0.0512	0.6	20	
Selenium	0.0526	0.0010	0.05	0.0004388	104	70	130	0.0524	0.3	20	
Silver	0.0187	0.0010	0.02	0	94	70	130	0.01832	2.1	20	
Uranium	0.0561	0.00030	0.05	0.004667	103	70	130	0.05604	0	20	
Vanadium	0.0532	0.010	0.05	0.003337	100	70	130	0.05292	0.5	20	
Zinc	0.0700	0.010	0.05	0.01786	104	70	130	0.07	0.1	20	

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090081
BatchID: R178196
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 201** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**
Analysis Date: **09/14/22 13:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0485	0.10	0.05	0	97	90	110				
Antimony	0.0504	0.050	0.05	0	101	90	110				
Arsenic	0.0491	0.0050	0.05	0	98	90	110				
Barium	0.0498	0.10	0.05	0	100	90	110				
Beryllium	0.0495	0.0010	0.05	0	99	90	110				
Cadmium	0.0517	0.0010	0.05	0	103	90	110				
Chromium	0.0504	0.010	0.05	0	101	90	110				
Cobalt	0.0510	0.010	0.05	0	102	90	110				
Copper	0.0514	0.010	0.05	0	103	90	110				
Iron	1.31	0.020	1.3	0	100	90	110				
Lead	0.0502	0.010	0.05	0	100	90	110				
Manganese	0.0502	0.010	0.05	0	100	90	110				
Molybdenum	0.0522	0.0050	0.05	0	104	90	110				
Nickel	0.0514	0.010	0.05	0	103	90	110				
Selenium	0.0511	0.0050	0.05	0	102	90	110				
Silver	0.0210	0.0050	0.02	0	105	90	110				
Uranium	0.0502	0.00030	0.05	0	100	90	110				
Vanadium	0.0504	0.10	0.05	0	101	90	110				
Zinc	0.0512	0.010	0.05	0	102	90	110				

Associated samples: **H22090081-001B, H22090081-001C, H22090081-002B, H22090081-002C, H22090081-003B, H22090081-003C, H22090081-004B, H22090081-004C, H22090081-005B, H22090081-005C, H22090081-006B, H22090081-006C, H22090081-007B, H22090081-007C, H22090081-008B, H22090081-008C, H22090081-009B, H22090081-009C, H22090081-010B, H22090081-010C**

Run ID :Run Order: **ICPMS205-H_220913A: 214** SampType: **Sample Matrix Spike** Lab ID: **H22090210-001CMS** Method: **E200.8**
Analysis Date: **09/14/22 14:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.151	0.030	0.05	0.09535	111	70	130				
Antimony	0.0599	0.0010	0.05	0.01059	99	70	130				
Arsenic	0.368	0.0010	0.05	0.3202		70	130				A
Barium	0.243	0.050	0.05	0.1976	92	70	130				
Beryllium	0.0412	0.0010	0.05	0	82	70	130				
Cadmium	0.0457	0.0010	0.05	0.00003275	91	70	130				
Chromium	0.0482	0.0050	0.05	0	96	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178196** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 214** SampType: **Sample Matrix Spike** Lab ID: **H22090210-001CMS** Method: **E200.8**

Analysis Date: **09/14/22 14:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	0.0622	0.0050	0.05	0.01594	93	70	130				
Copper	0.0473	0.0050	0.05	0.003285	88	70	130				
Iron	0.188	0.020	0.15	0.05171	91	70	130				
Lead	0.0515	0.0010	0.05	0	103	70	130				
Manganese	0.181	0.0010	0.05	0.1291	103	70	130				
Molybdenum	0.414	0.0010	0.05	0.3687		70	130				A
Nickel	0.0479	0.0050	0.05	0.003141	90	70	130				
Selenium	0.0684	0.0010	0.05	0.01668	103	70	130				
Silver	0.0147	0.0010	0.02	0	73	70	130				
Uranium	0.0557	0.00030	0.05	0.005238	101	70	130				
Vanadium	0.0505	0.010	0.05	0.000851	99	70	130				
Zinc	0.0551	0.010	0.05	0.00775	95	70	130				

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Run ID :Run Order: **ICPMS205-H_220913A: 215** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090210-001CMSD** Method: **E200.8**

Analysis Date: **09/14/22 14:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.147	0.030	0.05	0.09535	103	70	130	0.1508	2.8	20	
Antimony	0.0597	0.0010	0.05	0.01059	98	70	130	0.05986	0.3	20	
Arsenic	0.364	0.0010	0.05	0.3202		70	130	0.3677	1.0	20	A
Barium	0.243	0.050	0.05	0.1976	91	70	130	0.2434	0.1	20	
Beryllium	0.0414	0.0010	0.05	0	83	70	130	0.04123	0.4	20	
Cadmium	0.0453	0.0010	0.05	0.00003275	91	70	130	0.0457	0.9	20	
Chromium	0.0478	0.0050	0.05	0	96	70	130	0.04821	0.9	20	
Cobalt	0.0614	0.0050	0.05	0.01594	91	70	130	0.06224	1.4	20	
Copper	0.0459	0.0050	0.05	0.003285	85	70	130	0.04729	3.0	20	
Iron	0.187	0.020	0.15	0.05171	90	70	130	0.1882	0.7	20	
Lead	0.0515	0.0010	0.05	0	103	70	130	0.05148	0	20	
Manganese	0.180	0.0010	0.05	0.1291	103	70	130	0.1807	0.2	20	
Molybdenum	0.409	0.0010	0.05	0.3687		70	130	0.4144	1.2	20	A
Nickel	0.0472	0.0050	0.05	0.003141	88	70	130	0.04791	1.4	20	
Selenium	0.0683	0.0010	0.05	0.01668	103	70	130	0.06843	0.1	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178196
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220913A: 215** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090210-001CMSD** Method: **E200.8**

Analysis Date: **09/14/22 14:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0146	0.0010	0.02	0	**73**	70	130	0.01469	**0.4**	20	
Uranium	0.0551	0.00030	0.05	0.005238	**100**	70	130	0.05566	**1.0**	20	
Vanadium	0.0498	0.010	0.05	0.000851	**98**	70	130	0.0505	**1.4**	20	
Zinc	0.0543	0.010	0.05	0.00775	**93**	70	130	0.05513	**1.5**	20	

Associated samples: **H22090081-001B, H22090081-002B, H22090081-003B, H22090081-004B, H22090081-005B, H22090081-006B, H22090081-007B, H22090081-008B, H22090081-009B, H22090081-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**

Analysis Date: **09/22/22 14:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0557	0.0010	0.06	0	**93**	90	110				
Arsenic	0.0640	0.0010	0.06	0	**107**	90	110				
Barium	0.0607	0.0010	0.06	0	**101**	90	110				
Beryllium	0.0307	0.0010	0.03	0	**102**	90	110				
Cadmium	0.0312	0.0010	0.03	0	**104**	90	110				
Chromium	0.0625	0.0010	0.06	0	**104**	90	110				
Cobalt	0.0614	0.0011	0.06	0	**102**	90	110				
Copper	0.0629	0.0010	0.06	0	**105**	90	110				
Lead	0.0603	0.0010	0.06	0	**101**	90	110				
Manganese	0.307	0.0010	0.3	0	**102**	90	110				
Molybdenum	0.0596	0.0010	0.06	0	**99**	90	110				
Nickel	0.0645	0.0010	0.06	0	**108**	90	110				
Selenium	0.0608	0.0010	0.06	0	**101**	90	110				
Silver	0.0311	0.0010	0.03	0	**104**	90	110				
Uranium	0.0602	0.00030	0.06	0	**100**	90	110				
Vanadium	0.0609	0.0010	0.06	0	**102**	90	110				
Zinc	0.0640	0.0013	0.06	0	**107**	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **09/22/22 14:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000946	0.0010		0							
Arsenic	0.0000351	0.0010		0							
Barium	0.000243	0.0010		0							
Beryllium	-0.000181	0.0010		0							
Cadmium	0.0000685	0.0010		0							
Chromium	0.00193	0.0010		0							
Cobalt	-0.0000498	0.0011		0							
Copper	0.0000679	0.0010		0							
Lead	-0.000147	0.0010		0							

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **09/22/22 14:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.000340	0.0010		0		0	0				
Molybdenum	0.843	0.0010	0.8	0	105	70	130				
Nickel	-0.000212	0.0010		0		0	0				
Selenium	0.000120	0.0010		0							
Silver	-2.57E-06	0.0010		0							
Uranium	0.0000250	0.00030		0							
Vanadium	-3.22E-06	0.0010		0		0	0				
Zinc	0.000724	0.0013		0							

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **09/22/22 14:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000506	0.0010		0		0	0				
Arsenic	0.0112	0.0010	0.01	0	112	70	130				
Barium	0.000148	0.0010		0		0	0				
Beryllium	-0.000186	0.0010		0		0	0				
Cadmium	0.0110	0.0010	0.01	0	109	70	130				
Chromium	0.0237	0.0010	0.02	0	119	70	130				
Cobalt	0.0217	0.0011	0.02	0	108	70	130				
Copper	0.0215	0.0010	0.02	0	108	70	130				
Lead	-0.000151	0.0010		0		0	0				
Manganese	0.0219	0.0010	0.02	0	109	70	130				
Molybdenum	0.880	0.0010	0.8	0	110	70	130				
Nickel	0.0219	0.0010	0.02	0	110	70	130				
Selenium	0.00997	0.0010	0.01	0	100	70	130				
Silver	0.0214	0.0010	0.02	0	107	70	130				
Uranium	0.0000213	0.00030		0		0	0				
Vanadium	0.0220	0.0010	0.02	0	110	70	130				
Zinc	0.0114	0.0013	0.01	0	114	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **09/22/22 14:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 147** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**

Analysis Date: **09/22/22 20:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0569	0.0010	0.06	0	**95**	90	110				
Arsenic	0.0628	0.0010	0.06	0	**105**	90	110				
Barium	0.0609	0.0010	0.06	0	**101**	90	110				
Beryllium	0.0300	0.0010	0.03	0	**100**	90	110				
Cadmium	0.0306	0.0010	0.03	0	**102**	90	110				
Chromium	0.0602	0.0010	0.06	0	**100**	90	110				
Cobalt	0.0592	0.0011	0.06	0	**99**	90	110				
Copper	0.0611	0.0010	0.06	0	**102**	90	110				
Lead	0.0601	0.0010	0.06	0	**100**	90	110				
Manganese	0.303	0.0010	0.3	0	**101**	90	110				
Molybdenum	0.0594	0.0010	0.06	0	**99**	90	110				
Nickel	0.0609	0.0010	0.06	0	**102**	90	110				
Selenium	0.0611	0.0010	0.06	0	**102**	90	110				
Silver	0.0307	0.0010	0.03	0	**102**	90	110				
Uranium	0.0599	0.00030	0.06	0	**100**	90	110				
Vanadium	0.0597	0.0010	0.06	0	**99**	90	110				
Zinc	0.0628	0.0013	0.06	0	**105**	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 150** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **09/22/22 20:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.000140	0.0010		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 150** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **09/22/22 20:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0000223	0.0010		0							
Barium	0.000145	0.0010		0							
Beryllium	0.0000192	0.0010		0							
Cadmium	0.0000686	0.0010		0							
Chromium	0.00193	0.0010		0							
Cobalt	0.0000758	0.0011		0							
Copper	0.0000883	0.0010		0							
Lead	0.0000493	0.0010		0							
Manganese	0.000424	0.0010		0		0	0				
Molybdenum	0.834	0.0010	0.8	0	104	70	130				
Nickel	-0.000192	0.0010		0		0	0				
Selenium	0.0000946	0.0010		0							
Silver	0.0000126	0.0010		0							
Uranium	0.0000247	0.00030		0							
Vanadium	-0.0000127	0.0010		0		0	0				
Zinc	0.00103	0.0013		0							

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 152** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **09/22/22 20:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000701	0.0010		0		0	0				
Arsenic	0.0104	0.0010	0.01	0	104	70	130				
Barium	0.000130	0.0010		0		0	0				
Beryllium	0.0000266	0.0010		0		0	0				
Cadmium	0.0105	0.0010	0.01	0	105	70	130				
Chromium	0.0217	0.0010	0.02	0	108	70	130				
Cobalt	0.0204	0.0011	0.02	0	102	70	130				
Copper	0.0202	0.0010	0.02	0	101	70	130				
Lead	0.0000582	0.0010		0		0	0				
Manganese	0.0210	0.0010	0.02	0	105	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090081
BatchID: R178530
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 152** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**
Analysis Date: **09/22/22 20:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.858	0.0010	0.8	0	107	70	130				
Nickel	0.0204	0.0010	0.02	0	102	70	130				
Selenium	0.00982	0.0010	0.01	0	98	70	130				
Silver	0.0207	0.0010	0.02	0	104	70	130				
Uranium	0.0000249	0.00030		0		0	0				
Vanadium	0.0210	0.0010	0.02	0	105	70	130				
Zinc	0.0116	0.0013	0.01	0	116	70	130				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 237** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**
Analysis Date: **09/23/22 08:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000521	0.0010		0							
Arsenic	0.0000592	0.0010		0							
Barium	0.0000964	0.0010		0							
Beryllium	0.0000400	0.0010		0							
Cadmium	0.0000526	0.0010		0							
Chromium	0.00191	0.0010		0							
Cobalt	0.0000497	0.0011		0							
Copper	0.000173	0.0010		0							
Lead	0.0000646	0.0010		0							
Manganese	0.000515	0.0010		0		0	0				
Molybdenum	0.823	0.0010	0.8	0	103	70	130				
Nickel	-0.000114	0.0010		0		0	0				
Selenium	0.0000980	0.0010		0							
Silver	0.0000129	0.0010		0							
Uranium	0.0000303	0.00030		0							
Vanadium	-0.0000285	0.0010		0		0	0				
Zinc	0.000910	0.0013		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 237** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **09/23/22 08:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 239** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **09/23/22 08:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000451	0.0010		0		0	0				
Arsenic	0.0103	0.0010	0.01	0	103	70	130				
Barium	0.000234	0.0010		0		0	0				
Beryllium	9.46E-06	0.0010		0		0	0				
Cadmium	0.0102	0.0010	0.01	0	102	70	130				
Chromium	0.0217	0.0010	0.02	0	108	70	130				
Cobalt	0.0201	0.0011	0.02	0	101	70	130				
Copper	0.0198	0.0010	0.02	0	99	70	130				
Lead	0.0000658	0.0010		0		0	0				
Manganese	0.0211	0.0010	0.02	0	106	70	130				
Molybdenum	0.840	0.0010	0.8	0	105	70	130				
Nickel	0.0200	0.0010	0.02	0	100	70	130				
Selenium	0.00970	0.0010	0.01	0	97	70	130				
Silver	0.0202	0.0010	0.02	0	101	70	130				
Uranium	0.0000278	0.00030		0		0	0				
Vanadium	0.0208	0.0010	0.02	0	104	70	130				
Zinc	0.0112	0.0013	0.01	0	112	70	130				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 295** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 12:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0515	0.0010	0.05	0	103	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 295** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 12:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0505	0.0010	0.05	0	101	90	110				
Barium	0.0520	0.0010	0.05	0	104	90	110				
Beryllium	0.0494	0.0010	0.05	0	99	90	110				
Cadmium	0.0503	0.0010	0.05	0	101	90	110				
Chromium	0.0495	0.0010	0.05	0	99	90	110				
Cobalt	0.0500	0.0011	0.05	0	100	90	110				
Copper	0.0503	0.0010	0.05	0	101	90	110				
Lead	0.0509	0.0010	0.05	0	102	90	110				
Manganese	0.0514	0.0010	0.05	0	103	90	110				
Molybdenum	0.0507	0.0010	0.05	0	101	90	110				
Nickel	0.0503	0.0010	0.05	0	101	90	110				
Selenium	0.0484	0.0010	0.05	0	97	90	110				
Silver	0.0200	0.0010	0.02	0	100	90	110				
Uranium	0.0508	0.00030	0.05	0	102	90	110				
Vanadium	0.0507	0.0010	0.05	0	101	90	110				
Zinc	0.0510	0.0013	0.05	0	102	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 313** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 12:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0513	0.0010	0.05	0	103	90	110				
Arsenic	0.0500	0.0010	0.05	0	100	90	110				
Barium	0.0522	0.0010	0.05	0	104	90	110				
Beryllium	0.0496	0.0010	0.05	0	99	90	110				
Cadmium	0.0509	0.0010	0.05	0	102	90	110				
Chromium	0.0492	0.0010	0.05	0	98	90	110				
Cobalt	0.0497	0.0011	0.05	0	99	90	110				
Copper	0.0502	0.0010	0.05	0	100	90	110				
Lead	0.0506	0.0010	0.05	0	101	90	110				
Manganese	0.0504	0.0010	0.05	0	101	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 313** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 12:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.0508	0.0010	0.05	0	102	90	110				
Nickel	0.0490	0.0010	0.05	0	98	90	110				
Selenium	0.0490	0.0010	0.05	0	98	90	110				
Silver	0.0202	0.0010	0.02	0	101	90	110				
Uranium	0.0503	0.00030	0.05	0	101	90	110				
Vanadium	0.0492	0.0010	0.05	0	98	90	110				
Zinc	0.0498	0.0013	0.05	0	99	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 326** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 13:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0514	0.0010	0.05	0	103	90	110				
Arsenic	0.0508	0.0010	0.05	0	102	90	110				
Barium	0.0518	0.0010	0.05	0	104	90	110				
Beryllium	0.0489	0.0010	0.05	0	98	90	110				
Cadmium	0.0502	0.0010	0.05	0	100	90	110				
Chromium	0.0494	0.0010	0.05	0	99	90	110				
Cobalt	0.0502	0.0011	0.05	0	100	90	110				
Copper	0.0509	0.0010	0.05	0	102	90	110				
Lead	0.0505	0.0010	0.05	0	101	90	110				
Manganese	0.0519	0.0010	0.05	0	104	90	110				
Molybdenum	0.0504	0.0010	0.05	0	101	90	110				
Nickel	0.0505	0.0010	0.05	0	101	90	110				
Selenium	0.0492	0.0010	0.05	0	98	90	110				
Silver	0.0201	0.0010	0.02	0	100	90	110				
Uranium	0.0505	0.00030	0.05	0	101	90	110				
Vanadium	0.0508	0.0010	0.05	0	102	90	110				
Zinc	0.0517	0.0013	0.05	0	103	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178530
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 326** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 13:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 342** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 14:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0509	0.0010	0.05	0	102	90	110				
Arsenic	0.0506	0.0010	0.05	0	101	90	110				
Barium	0.0532	0.0010	0.05	0	106	90	110				
Beryllium	0.0497	0.0010	0.05	0	99	90	110				
Cadmium	0.0514	0.0010	0.05	0	103	90	110				
Chromium	0.0500	0.0010	0.05	0	100	90	110				
Cobalt	0.0506	0.0011	0.05	0	101	90	110				
Copper	0.0515	0.0010	0.05	0	103	90	110				
Lead	0.0508	0.0010	0.05	0	102	90	110				
Manganese	0.0513	0.0010	0.05	0	103	90	110				
Molybdenum	0.0507	0.0010	0.05	0	101	90	110				
Nickel	0.0511	0.0010	0.05	0	102	90	110				
Selenium	0.0495	0.0010	0.05	0	99	90	110				
Silver	0.0204	0.0010	0.02	0	102	90	110				
Uranium	0.0508	0.00030	0.05	0	102	90	110				
Vanadium	0.0504	0.0010	0.05	0	101	90	110				
Zinc	0.0517	0.0013	0.05	0	103	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 357** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **09/23/22 20:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000590	0.0010		0							

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 357** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **09/23/22 20:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0000346	0.0010		0							
Barium	0.000265	0.0010		0							
Beryllium	0.0000198	0.0010		0							
Cadmium	0.0000596	0.0010		0							
Chromium	0.00178	0.0010		0							
Cobalt	0.0000497	0.0011		0							
Copper	0.000124	0.0010		0							
Lead	0.0000459	0.0010		0							
Manganese	0.000502	0.0010		0		0	0				
Molybdenum	0.796	0.0010	0.8	0	100	70	130				
Nickel	-0.000286	0.0010		0		0	0				
Selenium	0.0000980	0.0010		0							
Silver	0.0000142	0.0010		0							
Uranium	0.0000256	0.00030		0							
Vanadium	-0.0000256	0.0010		0		0	0				
Zinc	0.000786	0.0013		0							

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 359** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **09/23/22 20:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000361	0.0010		0		0	0				
Arsenic	0.0106	0.0010	0.01	0	106	70	130				
Barium	0.000229	0.0010		0		0	0				
Beryllium	0.0000150	0.0010		0		0	0				
Cadmium	0.0104	0.0010	0.01	0	104	70	130				
Chromium	0.0219	0.0010	0.02	0	109	70	130				
Cobalt	0.0204	0.0011	0.02	0	102	70	130				
Copper	0.0198	0.0010	0.02	0	99	70	130				
Lead	0.0000518	0.0010		0		0	0				
Manganese	0.0215	0.0010	0.02	0	107	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 359** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **09/23/22 20:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.825	0.0010	0.8	0	103	70	130				
Nickel	0.0197	0.0010	0.02	0	99	70	130				
Selenium	0.0100	0.0010	0.01	0	101	70	130				
Silver	0.0197	0.0010	0.02	0	98	70	130				
Uranium	0.0000271	0.00030		0		0	0				
Vanadium	0.0210	0.0010	0.02	0	105	70	130				
Zinc	0.0114	0.0013	0.01	0	114	70	130				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 362** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 22:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0516	0.0010	0.05	0	103	90	110				
Arsenic	0.0484	0.0010	0.05	0	97	90	110				
Barium	0.0513	0.0010	0.05	0	103	90	110				
Beryllium	0.0471	0.0010	0.05	0	94	90	110				
Cadmium	0.0502	0.0010	0.05	0	100	90	110				
Chromium	0.0474	0.0010	0.05	0	95	90	110				
Cobalt	0.0483	0.0011	0.05	0	97	90	110				
Copper	0.0486	0.0010	0.05	0	97	90	110				
Lead	0.0496	0.0010	0.05	0	99	90	110				
Manganese	0.0490	0.0010	0.05	0	98	90	110				
Molybdenum	0.0492	0.0010	0.05	0	98	90	110				
Nickel	0.0482	0.0010	0.05	0	96	90	110				
Selenium	0.0495	0.0010	0.05	0	99	90	110				
Silver	0.0196	0.0010	0.02	0	98	90	110				
Uranium	0.0502	0.00030	0.05	0	100	90	110				
Vanadium	0.0481	0.0010	0.05	0	96	90	110				
Zinc	0.0498	0.0013	0.05	0	100	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 362** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 22:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 374** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 23:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0503	0.0010	0.05	0	**101**	90	110				
Arsenic	0.0494	0.0010	0.05	0	**99**	90	110				
Barium	0.0518	0.0010	0.05	0	**104**	90	110				
Beryllium	0.0463	0.0010	0.05	0	**93**	90	110				
Cadmium	0.0491	0.0010	0.05	0	**98**	90	110				
Chromium	0.0474	0.0010	0.05	0	**95**	90	110				
Cobalt	0.0487	0.0011	0.05	0	**97**	90	110				
Copper	0.0494	0.0010	0.05	0	**99**	90	110				
Lead	0.0497	0.0010	0.05	0	**99**	90	110				
Manganese	0.0506	0.0010	0.05	0	**101**	90	110				
Molybdenum	0.0489	0.0010	0.05	0	**98**	90	110				
Nickel	0.0484	0.0010	0.05	0	**97**	90	110				
Selenium	0.0484	0.0010	0.05	0	**97**	90	110				
Silver	0.0196	0.0010	0.02	0	**98**	90	110				
Uranium	0.0502	0.00030	0.05	0	**100**	90	110				
Vanadium	0.0481	0.0010	0.05	0	**96**	90	110				
Zinc	0.0498	0.0013	0.05	0	**100**	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICPMS205-H_220922B: 386** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 23:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0505	0.0010	0.05	0	**101**	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178530** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922B: 386** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/23/22 23:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0490	0.0010	0.05	0	**98**	90	110				
Barium	0.0529	0.0010	0.05	0	**106**	90	110				
Beryllium	0.0458	0.0010	0.05	0	**92**	90	110				
Cadmium	0.0498	0.0010	0.05	0	**100**	90	110				
Chromium	0.0488	0.0010	0.05	0	**98**	90	110				
Cobalt	0.0490	0.0011	0.05	0	**98**	90	110				
Copper	0.0505	0.0010	0.05	0	**101**	90	110				
Lead	0.0500	0.0010	0.05	0	**100**	90	110				
Manganese	0.0518	0.0010	0.05	0	**104**	90	110				
Molybdenum	0.0494	0.0010	0.05	0	**99**	90	110				
Nickel	0.0494	0.0010	0.05	0	**99**	90	110				
Selenium	0.0484	0.0010	0.05	0	**97**	90	110				
Silver	0.0198	0.0010	0.02	0	**99**	90	110				
Uranium	0.0506	0.00030	0.05	0	**101**	90	110				
Vanadium	0.0487	0.0010	0.05	0	**97**	90	110				
Zinc	0.0507	0.0013	0.05	0	**101**	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178599** **Date:** *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220926B: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6010B**

Analysis Date: **09/26/22 14:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4.06	0.10	4	0	**102**	90	110				
Boron	0.823	0.10	0.8	0	**103**	90	110				
Iron	4.01	0.030	4	0	**100**	90	110				
Manganese	3.90	0.010	4	0	**98**	90	110				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICP2-HE_220926B: 10** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6010B**

Analysis Date: **09/26/22 15:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	531	0.10	500	0	**106**	80	120				
Boron	0.0102	0.10		0		0	0				
Iron	186	0.030	200	0	**93**	80	120				
Manganese	-0.000890	0.010		0		0	0				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Run ID :Run Order: **ICP2-HE_220926B: 11** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6010B**

Analysis Date: **09/26/22 15:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	529	0.10	500	0	**106**	80	120				
Boron	0.994	0.10	1	0	**99**	80	120				
Iron	186	0.030	200	0	**93**	80	120				
Manganese	0.466	0.010	0.5	0	**93**	80	120				

Associated samples: **H22090081-011A, H22090081-012A, H22090081-013A, H22090081-014A, H22090081-015A, H22090081-016A, H22090081-017A, H22090081-018A, H22090081-019A, H22090081-020A, H22090081-021A, H22090081-022A, H22090081-023A, H22090081-024A, H22090081-025A, H22090081-026A, H22090081-027A, H22090081-029A, H22090081-030A, H22090081-031A, H22090081-032A, H22090081-033A, H22090081-034A, H22090081-035A, H22090081-036A, H22090081-037A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178640
Date: *14-Oct-22*

Run ID :Run Order: **ICP2-HE_220927B: 15** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6010B**

Analysis Date: **09/27/22 11:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4.08	0.10	4	0	**102**	90	110				
Boron	0.808	0.10	0.8	0	**101**	90	110				
Iron	3.91	0.030	4	0	**98**	90	110				
Manganese	3.97	0.010	4	0	**99**	90	110				

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICP2-HE_220927B: 19** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6010B**

Analysis Date: **09/27/22 11:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	531	0.10	500	0	**106**	80	120				
Boron	0.00201	0.10		0		0	0				
Iron	183	0.030	200	0	**91**	80	120				
Manganese	0.000240	0.010		0		0	0				

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICP2-HE_220927B: 20** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6010B**

Analysis Date: **09/27/22 11:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	536	0.10	500	0	**107**	80	120				
Boron	0.999	0.10	1	0	**100**	80	120				
Iron	182	0.030	200	0	**91**	80	120				
Manganese	0.467	0.010	0.5	0	**93**	80	120				

Associated samples: **H22090081-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090081
BatchID: R178660
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220928B: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**
Analysis Date: **09/28/22 11:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0563	0.0010	0.06	0	**94**	90	110				
Arsenic	0.0635	0.0010	0.06	0	**106**	90	110				
Barium	0.0611	0.0010	0.06	0	**102**	90	110				
Beryllium	0.0301	0.0010	0.03	0	**100**	90	110				
Cadmium	0.0310	0.0010	0.03	0	**103**	90	110				
Chromium	0.0613	0.0010	0.06	0	**102**	90	110				
Cobalt	0.0599	0.0011	0.06	0	**100**	90	110				
Copper	0.0613	0.0010	0.06	0	**102**	90	110				
Lead	0.0597	0.0010	0.06	0	**99**	90	110				
Manganese	0.306	0.0010	0.3	0	**102**	90	110				
Molybdenum	0.0584	0.0010	0.06	0	**97**	90	110				
Nickel	0.0613	0.0010	0.06	0	**102**	90	110				
Selenium	0.0611	0.0010	0.06	0	**102**	90	110				
Silver	0.0307	0.0010	0.03	0	**102**	90	110				
Uranium	0.0589	0.00030	0.06	0	**98**	90	110				
Vanadium	0.0604	0.0010	0.06	0	**101**	90	110				
Zinc	0.0627	0.0013	0.06	0	**105**	90	110				

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICPMS205-H_220928B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**
Analysis Date: **09/28/22 11:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.000139	0.0010		0							
Arsenic	0.0000167	0.0010		0							
Barium	0.000228	0.0010		0							
Beryllium	-0.000176	0.0010		0							
Cadmium	0.0000901	0.0010		0							
Chromium	0.00208	0.0010		0							
Cobalt	-9.65E-06	0.0011		0							
Copper	0.0000522	0.0010		0							
Lead	-0.000118	0.0010		0							
Manganese	0.000451	0.0010		0		0	0				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R178660** **Date:** *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220928B: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **09/28/22 11:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.875	0.0010	0.8	0	**109**	70	130				
Nickel	-0.000132	0.0010		0		0	0				
Selenium	0.000685	0.0010		0							
Silver	0.0000114	0.0010		0							
Uranium	0.0000294	0.00030		0							
Vanadium	-0.0000463	0.0010		0		0	0				
Zinc	0.00120	0.0013		0							

Associated samples: **H22090081-028A**

Run ID :Run Order: **ICPMS205-H_220928B: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **09/28/22 11:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000685	0.0010		0		0	0				
Arsenic	0.0110	0.0010	0.01	0	**110**	70	130				
Barium	0.000145	0.0010		0		0	0				
Beryllium	-0.000151	0.0010		0		0	0				
Cadmium	0.0114	0.0010	0.01	0	**114**	70	130				
Chromium	0.0243	0.0010	0.02	0	**122**	70	130				
Cobalt	0.0225	0.0011	0.02	0	**112**	70	130				
Copper	0.0219	0.0010	0.02	0	**110**	70	130				
Lead	-0.0000994	0.0010		0		0	0				
Manganese	0.0231	0.0010	0.02	0	**116**	70	130				
Molybdenum	0.899	0.0010	0.8	0	**112**	70	130				
Nickel	0.0222	0.0010	0.02	0	**111**	70	130				
Selenium	0.0115	0.0010	0.01	0	**115**	70	130				
Silver	0.0219	0.0010	0.02	0	**109**	70	130				
Uranium	0.0000278	0.00030		0		0	0				
Vanadium	0.0227	0.0010	0.02	0	**113**	70	130				
Zinc	0.0116	0.0013	0.01	0	**117**	70	130				

Associated samples: **H22090081-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R178660
Date: *14-Oct-22*

Run ID :Run Order: **ICPMS205-H_220928B: 20** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **09/28/22 12:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 17	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0523	0.0010	0.05	0	**105**	90	110				
Arsenic	0.0508	0.0010	0.05	0	**102**	90	110				
Barium	0.0542	0.0010	0.05	0	**108**	90	110				
Beryllium	0.0511	0.0010	0.05	0	**102**	90	110				
Cadmium	0.0522	0.0010	0.05	0	**104**	90	110				
Chromium	0.0523	0.0010	0.05	0	**105**	90	110				
Cobalt	0.0520	0.0011	0.05	0	**104**	90	110				
Copper	0.0526	0.0010	0.05	0	**105**	90	110				
Lead	0.0518	0.0010	0.05	0	**104**	90	110				
Manganese	0.0524	0.0010	0.05	0	**105**	90	110				
Molybdenum	0.0523	0.0010	0.05	0	**105**	90	110				
Nickel	0.0528	0.0010	0.05	0	**106**	90	110				
Selenium	0.0511	0.0010	0.05	0	**102**	90	110				
Silver	0.0213	0.0010	0.02	0	**106**	90	110				
Uranium	0.0517	0.00030	0.05	0	**103**	90	110				
Vanadium	0.0516	0.0010	0.05	0	**103**	90	110				
Zinc	0.0518	0.0013	0.05	0	**104**	90	110				

Associated samples: **H22090081-028A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081 **BatchID: R179106** **Date:** *14-Oct-22*

Run ID :Run Order: **FIA203-HE_221012A: 10** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E353.2**
Analysis Date: **10/12/22 10:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.03	0.010	1	0	**103**	90	110				

Associated samples: **H22090081-001E**

Run ID :Run Order: **FIA203-HE_221012A: 11** SampType: **Method Blank** Lab ID: **MBLK** Method: **E353.2**
Analysis Date: **10/12/22 10:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	ND	0.008									

Associated samples: **H22090081-001E**

Run ID :Run Order: **FIA203-HE_221012A: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E353.2**
Analysis Date: **10/12/22 10:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.995	0.011	1	0	**100**	90	110				

Associated samples: **H22090081-001E**

Run ID :Run Order: **FIA203-HE_221012A: 16** SampType: **Sample Duplicate** Lab ID: **H22090081-001EDUP** Method: **E353.2**
Analysis Date: **10/12/22 10:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.22	0.010		0				1.219	**0.1**	10	

Associated samples: **H22090081-001E**

Run ID :Run Order: **FIA203-HE_221012A: 19** SampType: **Sample Matrix Spike** Lab ID: **H22100066-001CMS** Method: **E353.2**
Analysis Date: **10/12/22 10:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.990	0.011	1	0	**99**	90	110				

Associated samples: **H22090081-001E**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: R179106
Date: *14-Oct-22*

Run ID :Run Order: **FIA203-HE_221012A: 20** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22100066-001CMSD** Method: **E353.2**

Analysis Date: **10/12/22 10:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.999	0.011	1	0	**100**	90	110	0.9896	**1.0**	10	

Associated samples: **H22090081-001E**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090081
BatchID: **TSS220908A**
Date: *14-Oct-22*

Run ID :Run Order: **ACCU-124 (14410200)_220908A: 1** SampType: **Method Blank** Lab ID: **MB-1_220908A** Method: **A2540 D**

Analysis Date: **09/08/22 13:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	0.3									

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **ACCU-124 (14410200)_220908A: 2** SampType: **Laboratory Control Sample** Lab ID: **LCS-2_220908A** Method: **A2540 D**

Analysis Date: **09/08/22 13:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	96.0	10	100	0	**96**	80	120				

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Run ID :Run Order: **ACCU-124 (14410200)_220908A: 15** SampType: **Sample Duplicate** Lab ID: **H22090081-007A DUP** Method: **A2540 D**

Analysis Date: **09/08/22 13:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	34.8	10		0				34.75	**0.0**	5	

Associated samples: **H22090081-001A, H22090081-002A, H22090081-003A, H22090081-004A, H22090081-005A, H22090081-006A, H22090081-007A, H22090081-008A, H22090081-009A, H22090081-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22090081

Login completed by: Rebecca A. Tooke
Date Received: 9/6/2022

Reviewed by: tjones
Received by: amh

Reviewed Date: 9/26/2022
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

Cooler 1 was received at 3.2 °C and Cooler 2 at 3.3 °C both with temperature blanks and on ice. Box 1 received at 6.9°C no Temp Blank and no ice. Left in locked entry.
Sediment container IDs are SS-16B and SS-16B QD-FD. COC says SS-17D and SS-16D Duplicate. Used IDs from COC and contacted client for clarification. 9/6/22 rt

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Chain of Custody & Analytical Request Record

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Page 1 of 2

Account Information (Billing Information)

Company/Name	MTDEQ
Contact	Ben Quinones
Phone	(404) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (If different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; tanner.traxler@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

~~Box1 - 5.2 TB @ ice~~ AJ
Box2 - 6.9 @ TB @ ice
C1 - 3.2 TB ice
C2 - 3.3 TB ice

Project Information

Project Name, PWSID, Permit, etc.	Silver Bow Creek SSTOU Monitoring
Sampler Name	T. Traxler, J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ■ No

MINING CLIENTS: please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes: A - Air; W - Water; S - Soils/Solids; V - Vegetation; B - Bioassay; O - Other; DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	TR Metals (see list)	Diss Metals (see list)	TPN	NH3, NO3+NO2, TP	TSS	Hardness (TR Ca & Mg)	Tot. Alkalinity, HCO3	SO4, Cl, K, Na	Tot Metals, dry weight (see list)	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
C2	1 SS-07	9/2/22	1600	5	W	✓	✓	✓	✓	✓	✓	✓	✓				H220900 87
C2	2 SS-10A	9/2/22	1430	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C2	3 [redacted] SS-10A Duplicate	9/2/22	1430	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	4 SS-13 [redacted]	9/2/22	1330	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	5 Field Blank #1 SS-14	9/2/22	1300	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C2	6 SS-14	9/2/22	1245	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	7 SS-15A-2	9/2/22	1200	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	8 SS-16B	9/2/22	1030	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	9 SS-17D	9/2/22	0945	5	W	✓	✓	✓	✓	✓	✓	✓	✓				
C1	10 SS-19	9/2/22	0900	5	W	✓	✓	✓	✓	✓	✓	✓	✓				

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tanner Traxler	9/6/22 1755	[signature]			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print): [signature]	Date/Time 9/6/22 0805	Signature [signature]

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp °C	Temp Blank	Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand	4	Y N C B	Y N	Comments	Y N	Y N	CC Cash Check_____	$	

left in locked entry

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

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Chain of Custody & Analytical Request Record

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Page 2 of 2

Account Information (Billing information)

Company/Name	MTDEQ
Contact	Ben Quinones
Phone	(404) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (If different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; tanner.traxler@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

lab to sieve sediment samples into 3 size fractions, report as dry weight concentrations

~~Box 1 - 52 @ TB ice~~ 48
Box 2 - 69 @ TB ice
C1 - 3.2 TB ice
C2 - 3.3 TB ice

Project Information

Project Name, PWSID, Permit, etc.	Silver Bow Creek SSTOU Monitoring
Sampler Name	T. Traxler, J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ■ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Tot Metals, dry weight (see list)	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	SS-07	9/2/22	1600	1	S	✓			H2209008/
2	SS-10A	9/2/22	1430	1	S	✓			
3	SS-13	9/2/22	1330	1	S	✓			
4	SS-14	9/2/22	1245	1	S	✓			
5	SS-15A-2	9/2/22	1200	1	S	✓			
6	SS-16B	9/2/22	1030	1	S	✓			
7	SS-16B Duplicate	9/2/22	1030	1	S	✓			
8	SS-17D	9/2/22	0945	1	S	✓			
9	SS-19	9/2/22	0900	1	S	✓			
10									

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Toddef Traxler	9/6/22 1735				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				A. Sargent	9/6/22 0800	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand	4	(Y) N (B)	(Y) N	°C	(Y) N	(Y) N	CC Cash Check_____	$	
				Comments					

left in locked entry

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

September 30, 2022

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22090366 Quote ID: H1526

Project Name: SSTOU Repository Vadose Zone

Energy Laboratories Inc Helena MT received the following 13 samples for MT DEQ-Federal Superfund on 9/14/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22090366-001	SS-07-0.5	09/02/22 19:00	09/14/22	Aqueous	Metals by ICP/ICPMS, Tot. Rec. Metals pH check by the Laboratory FIRST Metals Digestion by E200.2
H22090366-002	SS-07-1.0	09/02/22 17:20	09/14/22	Aqueous	Metals by ICP/ICPMS, Tot. Rec. Metals Digestion by E200.2
H22090366-003	SS-07-1.5	09/02/22 17:30	09/14/22	Aqueous	Same As Above
H22090366-004	SS-07-2.0	09/02/22 17:40	09/14/22	Aqueous	Same As Above
H22090366-005	SS-07-2.5	09/02/22 17:50	09/14/22	Aqueous	Same As Above
H22090366-006	SS-07-3.0	09/02/22 17:55	09/14/22	Aqueous	Same As Above
H22090366-007	SS-07-3.5	09/02/22 18:00	09/14/22	Aqueous	Same As Above
H22090366-008	SS-07-4.0	09/02/22 18:10	09/14/22	Aqueous	Same As Above
H22090366-009	SS-07-4.5	09/02/22 18:20	09/14/22	Aqueous	Same As Above
H22090366-010	SS-07-5.0	09/02/22 18:30	09/14/22	Aqueous	Same As Above
H22090366-011	SS-07-5.3	09/02/22 18:40	09/14/22	Aqueous	Same As Above
H22090366-012	SS-07-2.0 QC-FD	09/02/22 17:40	09/14/22	Aqueous	Same As Above
H22090366-013	SS-07-1.0 QC-FB	09/02/22 17:20	09/14/22	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-0.5
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-001
Collection Date: 09/02/22 19:00
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.007	mg/L		0.001	0.0003	E200.8	09/21/22 04:12 / dck	09/16/22 11:34	E200.2	ICPMS205-H_220920B	91	63449

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-1.0
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-002
Collection Date: 09/02/22 17:20
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.008	mg/L		0.001	0.0003	E200.8	09/17/22 01:38 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	178	63426

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-1.5
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-003
Collection Date: 09/02/22 17:30
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.007	mg/L		0.001	0.0003	E200.8	09/17/22 01:41 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	179	63426

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-2.0
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-004
Collection Date: 09/02/22 17:40
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.006	mg/L		0.001	0.0003	E200.8	09/17/22 01:58 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	186	63426

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-2.5
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-005
Collection Date: 09/02/22 17:50
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.008	mg/L		0.001	0.0003	E200.8	09/17/22 02:01 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	187	63426

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-3.0
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-006
Collection Date: 09/02/22 17:55
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.008	mg/L		0.001	0.0003	E200.8	09/17/22 02:03 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	188	63427

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-3.5
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-007
Collection Date: 09/02/22 18:00
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.018	mg/L		0.001	0.0003	E200.8	09/17/22 02:15 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	193	63427

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-4.0
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-008
Collection Date: 09/02/22 18:10
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.018	mg/L		0.001	0.0003	E200.8	09/17/22 02:18 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	194	63427

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-4.5
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-009
Collection Date: 09/02/22 18:20
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.019	mg/L		0.001	0.0003	E200.8	09/17/22 02:20 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	195	63427

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-5.0
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-010
Collection Date: 09/02/22 18:30
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.017	mg/L		0.001	0.0003	E200.8	09/17/22 02:23 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	196	63427

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-5.3
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-011
Collection Date: 09/02/22 18:40
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.018	mg/L		0.001	0.0003	E200.8	09/17/22 02:25 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	197	63427

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-2.0 QC-FD
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-012
Collection Date: 09/02/22 17:40
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	0.006	mg/L		0.001	0.0003	E200.8	09/17/22 02:28 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	198	63427

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07-1.0 QC-FB
Project: SSTOU Repository Vadose Zone
Matrix: Aqueous

Lab ID: H22090366-013
Collection Date: 09/02/22 17:20
DateReceived: 09/14/22
Report Date: 09/30/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Copper	ND	mg/L		0.001	0.0003	E200.8	09/17/22 02:30 / dck	09/15/22 09:36	E200.2	ICPMS205-H_220915E	: 199	63427

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090366 **BatchID:** 63426 **Date:** *30-Sep-22*

Run ID :Run Order: **ICPMS205-H_220915E: 108** SampType: **Method Blank** Lab ID: **MB-63426** Method: **E200.8**
Analysis Date: **09/16/22 22:44** Units: **mg/L** **Prep Info:** Prep Date: **9/15/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0003									

Associated samples: **H22090366-002A, H22090366-003A, H22090366-004A, H22090366-005A**

Run ID :Run Order: **ICPMS205-H_220915E: 109** SampType: **Laboratory Control Sample** Lab ID: **LCS-63426** Method: **E200.8**
Analysis Date: **09/16/22 22:46** Units: **mg/L** **Prep Info:** Prep Date: **9/15/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.507	0.0050	0.5	0	101	85	115				

Associated samples: **H22090366-002A, H22090366-003A, H22090366-004A, H22090366-005A**

Run ID :Run Order: **ICPMS205-H_220915E: 114** SampType: **Sample Matrix Spike** Lab ID: **H22090343-002DMS3** Method: **E200.8**
Analysis Date: **09/16/22 22:59** Units: **mg/L** **Prep Info:** Prep Date: **9/15/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.968	0.0050	1	0.00897	96	70	130				

Associated samples: **H22090366-002A, H22090366-003A, H22090366-004A, H22090366-005A**

Run ID :Run Order: **ICPMS205-H_220915E: 115** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090343-002DMSD3** Method: **E200.8**
Analysis Date: **09/16/22 23:01** Units: **mg/L** **Prep Info:** Prep Date: **9/15/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.976	0.0050	1	0.00897	97	70	130	0.9684	0.8	20	

Associated samples: **H22090366-002A, H22090366-003A, H22090366-004A, H22090366-005A**

Run ID :Run Order: **ICPMS205-H_220915E: 162** SampType: **Sample Matrix Spike** Lab ID: **H22090364-005BMS3** Method: **E200.8**
Analysis Date: **09/17/22 00:58** Units: **mg/L** **Prep Info:** Prep Date: **9/15/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.488	0.0050	0.5	0.001331	97	70	130				

Associated samples: **H22090366-002A, H22090366-003A, H22090366-004A, H22090366-005A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090366
BatchID: 63426
Date: *30-Sep-22*

Run ID :Run Order: **ICPMS205-H_220915E: 163** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090364-005BMSD3** Method: **E200.8**
Analysis Date: **09/17/22 01:01** Units: **mg/L** **Prep Info:** Prep Date: **9/15/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.498	0.0050	0.5	0.001331	**99**	70	130	0.4875	**2.2**	20	

Associated samples: **H22090366-002A, H22090366-003A, H22090366-004A, H22090366-005A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090366
BatchID: 63427
Date: *30-Sep-22*

Run ID :Run Order: **ICPMS205-H_220915E: 182** SampType: **Method Blank** Lab ID: **MB-63427** Method: **E200.8**
Analysis Date: **09/17/22 01:48** Units: **mg/L** **Prep Info:** Prep Date: **9/15/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0003									

Associated samples: **H22090366-006A, H22090366-007A, H22090366-008A, H22090366-009A, H22090366-010A, H22090366-011A, H22090366-012A, H22090366-013A**

Run ID :Run Order: **ICPMS205-H_220915E: 183** SampType: **Laboratory Control Sample** Lab ID: **LCS-63427** Method: **E200.8**
Analysis Date: **09/17/22 01:51** Units: **mg/L** **Prep Info:** Prep Date: **9/15/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.509	0.0050	0.5	0	102	85	115				

Associated samples: **H22090366-006A, H22090366-007A, H22090366-008A, H22090366-009A, H22090366-010A, H22090366-011A, H22090366-012A, H22090366-013A**

Run ID :Run Order: **ICPMS205-H_220915E: 189** SampType: **Sample Matrix Spike** Lab ID: **H22090366-006AMS3** Method: **E200.8**
Analysis Date: **09/17/22 02:06** Units: **mg/L** **Prep Info:** Prep Date: **9/15/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.509	0.0050	0.5	0.007636	100	70	130				

Associated samples: **H22090366-006A, H22090366-007A, H22090366-008A, H22090366-009A, H22090366-010A, H22090366-011A, H22090366-012A, H22090366-013A**

Run ID :Run Order: **ICPMS205-H_220915E: 190** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090366-006AMSD3** Method: **E200.8**
Analysis Date: **09/17/22 02:08** Units: **mg/L** **Prep Info:** Prep Date: **9/15/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.502	0.0050	0.5	0.007636	99	70	130	0.5091	1.5	20	

Associated samples: **H22090366-006A, H22090366-007A, H22090366-008A, H22090366-009A, H22090366-010A, H22090366-011A, H22090366-012A, H22090366-013A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090366
BatchID: 63449
Date: *30-Sep-22*

Run ID :Run Order: **ICPMS205-H_220920B: 88** SampType: **Method Blank** Lab ID: **MB-63449** Method: **E200.8**
Analysis Date: **09/21/22 04:04** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0003									

Associated samples: **H22090366-001A**

Run ID :Run Order: **ICPMS205-H_220920B: 89** SampType: **Laboratory Control Sample** Lab ID: **LCS-63449** Method: **E200.8**
Analysis Date: **09/21/22 04:07** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.490	0.0050	0.5	0	98	85	115				

Associated samples: **H22090366-001A**

Run ID :Run Order: **ICPMS205-H_220920B: 92** SampType: **Sample Matrix Spike** Lab ID: **H22090366-001AMS3** Method: **E200.8**
Analysis Date: **09/21/22 04:14** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.486	0.0050	0.5	0.007074	96	70	130				

Associated samples: **H22090366-001A**

Run ID :Run Order: **ICPMS205-H_220920B: 93** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090366-001AMSD3** Method: **E200.8**
Analysis Date: **09/21/22 04:17** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2022** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.493	0.0050	0.5	0.007074	97	70	130	0.486	1.4	20	

Associated samples: **H22090366-001A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090366
BatchID: R178313
Date: *30-Sep-22*

Run ID :Run Order: **ICPMS205-H_220915E: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **09/16/22 18:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0603	0.010	0.06	0	100	90	110				

Associated samples: **H22090366-002A, H22090366-003A, H22090366-004A, H22090366-005A, H22090366-006A, H22090366-007A, H22090366-008A, H22090366-009A, H22090366-010A, H22090366-011A, H22090366-012A, H22090366-013A**

Run ID :Run Order: **ICPMS205-H_220915E: 165** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/17/22 01:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0508	0.010	0.05	0	102	90	110				

Associated samples: **H22090366-002A, H22090366-003A, H22090366-004A, H22090366-005A, H22090366-006A, H22090366-007A, H22090366-008A, H22090366-009A, H22090366-010A, H22090366-011A, H22090366-012A, H22090366-013A**

Run ID :Run Order: **ICPMS205-H_220915E: 180** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/17/22 01:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0519	0.010	0.05	0	104	90	110				

Associated samples: **H22090366-002A, H22090366-003A, H22090366-004A, H22090366-005A, H22090366-006A, H22090366-007A, H22090366-008A, H22090366-009A, H22090366-010A, H22090366-011A, H22090366-012A, H22090366-013A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090366
BatchID: **R178421**
Date: *30-Sep-22*

Run ID :Run Order: **ICPMS205-H_220920B: 51** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **09/21/22 02:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0607	0.010	0.06	0	101	90	110				

Associated samples: **H22090366-001A**

Run ID :Run Order: **ICPMS205-H_220920B: 76** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/21/22 03:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0509	0.010	0.05	0	102	90	110				

Associated samples: **H22090366-001A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22090366

Login completed by: Wanda Johnson
Date Received: 9/14/2022

Reviewed by: tjones
Received by: RMF

Reviewed Date: 9/27/2022
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	0.1°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

Metals sample for SS-07-0.5 was preserved to pH <2 in laboratory upon receipt. In accordance with the Clean Water Act, these samples must be held for 24 hours prior to analysis. wjj 9/14/2022

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Chain of Custody & Analytical Request Record

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Account Information (Billing information)

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (If different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other_____

Comments

P

Project Information

Project Name, PWSID, Permit, etc.	SSTOU Repository Vadose Zone
Sampler Name	J. Naughton
Sampler Phone	(406) 214-4478
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Total recoverable copper	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	SS-07-0.5	9/2/22	7:00 pm	1	W	✓			L22090366
2	SS-07-1.0	9/2/22	5:20 pm	1	W	✓			
3	SS-07-1.5	9/2/22	5:30 pm	1	W	✓			
4	SS-07-2.0	9/2/22	5:40 pm	1	W	✓			
5	SS-07-2.5	9/2/22	5:50 pm	1	W	✓			
6	SS-07-3.0	9/2/22	5:55 pm	1	W	✓			
7	SS-07-3.5	9/2/22	6:00 pm	1	W	✓			
8	SS-07-4.0	9/2/22	6:10 pm	1	W	✓			
9	SS-07-4.5	9/2/22	6:20 pm	1	W	✓			
10	SS-07-5.0	9/2/22	6:30 pm	1	W	✓			

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Joe Naughton	9/13/22 12:30				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Kristy Tessedel	9/19/22 8:46	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
FedEx Ground	1	Y N B	Y N	0.1 °C	Y N	Y N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Page 2 of 2

Account Information (Billing information)

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other_____

Comments

P

Project Information

Project Name, PWSID, Permit, etc.	SSTOU Repository Vadose Zone
Sampler Name	J. Naughton
Sampler Phone	(406) 214-4478
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Total recoverable copper	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	SS-07-5.3	9/2/22	6:40 pm	1	W	✓			H220903-66
2	SS-07-2.0 QC-FD	9/2/22	5:40 pm	1	W	✓			
3	SS-07-1.0 QC-FB	9/2/22	5:20 pm	1	W	✓			
4									
5									
6									
7									
8									
9									
10									

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Joe Naughton	9/13/22 12:30				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Kristi Pollard	9/14/22 0810	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
FedEx Gr	Y	Y N B	Y N	0.1 °C	Y N	Y N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.
This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

October 07, 2022

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22090494 Quote ID: H1526

Project Name: SSTOU Repository Vadose Zone

Energy Laboratories Inc Helena MT received the following 19 samples for MT DEQ-Federal Superfund on 9/16/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22090494-001	P-39R	09/15/22 16:05	09/16/22	Groundwater	Metals by ICP/ICPMS, Dissolved Alkalinity to pH 4.5 Conductivity Mercury, Dissolved Hardness Anions by Ion Chromatography Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1
H22090494-002	P-37A	09/15/22 16:30	09/16/22	Groundwater	Same As Above
H22090494-003	GW-RM-SS	09/15/22 17:00	09/16/22	Groundwater	Same As Above
H22090494-004	GW-RM-NS	09/15/22 17:30	09/16/22	Groundwater	Same As Above
H22090494-005	GW-MC-NS	09/15/22 18:45	09/16/22	Groundwater	Same As Above
H22090494-006	GW-MC-BG	09/15/22 18:10	09/16/22	Groundwater	Same As Above
H22090494-007	GW-MC-SS	09/15/22 19:30	09/16/22	Groundwater	Same As Above
H22090494-008	GW-WG-NS QC-FD	09/15/22 10:15	09/16/22	Groundwater	Same As Above
H22090494-009	GW-RR-BG QC-FB	09/15/22 13:20	09/16/22	Groundwater	Same As Above
H22090494-010	GW-1010R	09/15/22 9:45	09/16/22	Groundwater	Same As Above
H22090494-011	GW-WG-SS	09/15/22 10:45	09/16/22	Groundwater	Same As Above
H22090494-012	GW-WG-NS	09/15/22 10:15	09/16/22	Groundwater	Same As Above
H22090494-013	GW-RK-BG	09/15/22 13:15	09/16/22	Groundwater	Same As Above
H22090494-014	MW-10	09/15/22 11:45	09/16/22	Groundwater	Same As Above
H22090494-015	MW-01	09/15/22 12:30	09/16/22	Groundwater	Same As Above
H22090494-016	GW-1003R	09/15/22 14:10	09/16/22	Groundwater	Same As Above
H22090494-017	1GW-1004A	09/15/22 14:40	09/16/22	Groundwater	Same As Above
H22090494-018	P-58A	09/15/22 15:00	09/16/22	Groundwater	Same As Above
H22090494-019	P-114	09/15/22 15:40	09/16/22	Groundwater	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

ANALYTICAL SUMMARY REPORT

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

CLIENT: MT DEQ-Federal Superfund
Project: SSTOU Repository Vadose Zone
Work Order: H22090494

Report Date: 10/07/22

CASE NARRATIVE

Alkalinity was confirmed for samples GW-WG-NS and MW-10. The results of the re-analysis were outside of the method recommended holding time. The results were confirmed by a third analysis, which was within duplication of the reported values. abc 10/7/2022

All "J" qualified analyte concentrations are below the laboratory minimum recommended Reporting Limit (RL) and above the calculated method detection limit (MDL). Inorganic analytes reported with "J" qualifiers should be verified against the corresponding method blank and continuing calibration blanks. Inorganic "J" quantitations near the MDL may be suspect due to possible method background levels, sample matrix effects, and/or daily variability in instrument signal-to-noise levels.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: P-39R
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-001
Collection Date: 09/15/22 16:05
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	280	mg/L		4	2	A2320 B	09/20/22 16:19 / ljs			PHSC_101-H_220920A : 123		R178363
Bicarbonate as HCO3	340	mg/L		4	3	A2320 B	09/20/22 16:19 / ljs			PHSC_101-H_220920A : 123		R178363
Chloride	31	mg/L		1	0.02	E300.0	09/23/22 11:46 / SR			IC METROHM_220922A : 105		R178564
Sulfate	140	mg/L		1	0.06	E300.0	09/23/22 11:46 / SR			IC METROHM_220922A : 105		R178564
Hardness as CaCO3	306	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A : 7		R178594
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Arsenic	0.012	mg/L		0.001	0.0002	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Barium	0.063	mg/L		0.003	0.0002	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Boron	0.4	mg/L		0.1	0.004	E200.7	09/22/22 13:22 / sld	09/21/22 12:13		ICP2-HE_220922B : 37		R178593
Cadmium	0.00005	mg/L		0.00003	0.00002	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Calcium	94	mg/L		1	0.2	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Copper	0.026	mg/L		0.001	0.0001	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Magnesium	17	mg/L		1	0.01	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Manganese	0.0006	mg/L	J	0.001	0.0003	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	09/23/22 13:31 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 15		63495
Molybdenum	0.009	mg/L		0.005	0.0003	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Potassium	10	mg/L		1	0.04	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Selenium	0.001	mg/L		0.001	0.00007	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Sodium	76	mg/L		1	0.04	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Uranium	0.0476	mg/L		0.0002	0.00002	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Vanadium	0.0090	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	09/23/22 00:00 / dck	09/21/22 12:13		ICPMS205-H_220922C : 106		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: P-37A
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-002
Collection Date: 09/15/22 16:30
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	09/20/22 16:27 / ljs			PHSC_101-H_220920A : 125		R178363
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	09/20/22 16:27 / ljs			PHSC_101-H_220920A : 125		R178363
Chloride	74	mg/L		1	0.02	E300.0	09/23/22 12:01 / SR			IC METROHM_220922A : 106		R178564
Sulfate	234	mg/L		1	0.06	E300.0	09/23/22 12:01 / SR			IC METROHM_220922A : 106		R178564
Hardness as CaCO3	285	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A : 8		R178594
METALS, DISSOLVED												
Aluminum	0.004	mg/L	J	0.009	0.003	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Barium	0.019	mg/L		0.003	0.0002	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Boron	0.080	mg/L	J	0.1	0.004	E200.7	09/22/22 13:37 / sld	09/21/22 12:13		ICP2-HE_220922B : 41		R178593
Cadmium	0.00156	mg/L		0.00003	0.00002	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Calcium	89	mg/L		1	0.2	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Cobalt	0.003	mg/L	J	0.01	0.001	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Copper	0.023	mg/L		0.001	0.0001	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Iron	0.007	mg/L	J	0.02	0.004	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Magnesium	15	mg/L		1	0.01	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Manganese	2.43	mg/L		0.001	0.0003	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Mercury	0.005	ug/L	J	0.005	0.002	E245.1	09/23/22 13:35 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 16		63495
Molybdenum	0.0018	mg/L	J	0.005	0.0003	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Nickel	0.0020	mg/L	J	0.002	0.0002	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Potassium	7	mg/L		1	0.04	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Sodium	84	mg/L		1	0.04	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Uranium	0.0018	mg/L		0.0002	0.00002	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536
Zinc	0.422	mg/L		0.008	0.001	E200.8	09/23/22 00:03 / dck	09/21/22 12:13		ICPMS205-H_220922C : 107		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-RM-SS
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-003
Collection Date: 09/15/22 17:00
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	150	mg/L		4	2	A2320 B	09/20/22 16:35 / ljs			PHSC_101-H_220920A : 127		R178363
Bicarbonate as HCO3	180	mg/L		4	3	A2320 B	09/20/22 16:35 / ljs			PHSC_101-H_220920A : 127		R178363
Chloride	22	mg/L		1	0.02	E300.0	09/23/22 12:15 / SR			IC METROHM_220922A : 107		R178564
Sulfate	59	mg/L		1	0.06	E300.0	09/23/22 12:15 / SR			IC METROHM_220922A : 107		R178564
Hardness as CaCO3	168	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A : 9		R178594
METALS, DISSOLVED												
Aluminum	0.005	mg/L	J	0.009	0.003	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Barium	0.054	mg/L		0.003	0.0002	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Boron	0.028	mg/L	J	0.1	0.004	E200.7	09/22/22 13:40 / sld	09/21/22 12:13		ICP2-HE_220922B : 42		R178593
Cadmium	0.00003	mg/L		0.00003	0.00002	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Calcium	50	mg/L		1	0.2	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Copper	0.0008	mg/L	J	0.001	0.0001	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Magnesium	10	mg/L		1	0.01	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Manganese	0.0009	mg/L	J	0.001	0.0003	E200.8	09/23/22 18:07 / dck	09/21/22 12:13		ICPMS205-H_220922C : 329		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 13:38 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 17		63495
Molybdenum	0.0012	mg/L	J	0.005	0.0003	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Nickel	0.0002	mg/L	J	0.002	0.0002	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Potassium	7	mg/L		1	0.04	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Selenium	0.00023	mg/L	J	0.001	0.00007	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Sodium	30	mg/L		1	0.04	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Uranium	0.0082	mg/L		0.0002	0.00002	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Vanadium	0.0066	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 00:05 / dck	09/21/22 12:13		ICPMS205-H_220922C : 108		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-RM-NS
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-004
Collection Date: 09/15/22 17:30
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	09/20/22 16:42 / ljs			PHSC_101-H_220920A	129	R178363
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	09/20/22 16:42 / ljs			PHSC_101-H_220920A	129	R178363
Chloride	19	mg/L		1	0.02	E300.0	09/23/22 12:29 / SR			IC METROHM_220922A	108	R178564
Sulfate	57	mg/L		1	0.06	E300.0	09/23/22 12:29 / SR			IC METROHM_220922A	108	R178564
Hardness as CaCO3	158	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A	10	R178594
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Barium	0.049	mg/L		0.003	0.0002	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Boron	0.022	mg/L	J	0.1	0.004	E200.7	09/22/22 13:44 / sld	09/21/22 12:13		ICP2-HE_220922B	43	R178593
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Calcium	48	mg/L		1	0.2	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Copper	0.0007	mg/L	J	0.001	0.0001	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Magnesium	9	mg/L		1	0.01	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Manganese	0.001	mg/L		0.001	0.0003	E200.8	09/23/22 18:09 / dck	09/21/22 12:13		ICPMS205-H_220922C	330	R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 13:41 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	18	63495
Molybdenum	0.0012	mg/L	J	0.005	0.0003	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Potassium	7	mg/L		1	0.04	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Selenium	0.00018	mg/L	J	0.001	0.00007	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Sodium	29	mg/L		1	0.04	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Uranium	0.0071	mg/L		0.0002	0.00002	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Vanadium	0.0065	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 00:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	109	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-MC-NS
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-005
Collection Date: 09/15/22 18:45
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	3	mg/L	J	4	2	A2320 B	09/20/22 16:50 / ljs			PHSC_101-H_220920A : 131		R178363
Bicarbonate as HCO3	3	mg/L	J	4	3	A2320 B	09/20/22 16:50 / ljs			PHSC_101-H_220920A : 131		R178363
Chloride	62	mg/L		1	0.05	E300.0	09/23/22 12:44 / SR			IC METROHM_220922A : 109		R178564
Sulfate	506	mg/L		1	0.1	E300.0	09/23/22 12:44 / SR			IC METROHM_220922A : 109		R178564
Hardness as CaCO3	431	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A : 11		R178594
METALS, DISSOLVED												
Aluminum	0.475	mg/L		0.009	0.003	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Barium	0.020	mg/L		0.003	0.0002	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Beryllium	0.0004	mg/L	J	0.0008	0.0002	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Boron	0.054	mg/L	J	0.1	0.004	E200.7	09/22/22 13:48 / sld	09/21/22 12:13		ICP2-HE_220922B : 44		R178593
Cadmium	0.0525	mg/L		0.00003	0.00002	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Calcium	124	mg/L		1	0.2	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Cobalt	0.03	mg/L		0.01	0.001	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Copper	1.80	mg/L		0.001	0.0001	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Iron	0.02	mg/L		0.02	0.004	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Lead	0.0018	mg/L		0.0003	0.0001	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Magnesium	29	mg/L		1	0.01	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Manganese	8.42	mg/L		0.001	0.0003	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 13:44 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 19		63495
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Nickel	0.022	mg/L		0.002	0.0002	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Potassium	8	mg/L		1	0.04	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Sodium	63	mg/L		1	0.04	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Uranium	0.0019	mg/L		0.0002	0.00002	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 00:10 / dck	09/21/22 12:13		ICPMS205-H_220922C : 110		R178536
Zinc	13.2	mg/L		0.008	0.003	E200.7	09/22/22 13:48 / sld	09/21/22 12:13		ICP2-HE_220922B : 44		R178593

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-MC-BG
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-006
Collection Date: 09/15/22 18:10
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	290	mg/L		4	2	A2320 B	09/20/22 16:54 / ljs			PHSC_101-H_220920A : 133		R178363
Bicarbonate as HCO3	350	mg/L		4	3	A2320 B	09/20/22 16:54 / ljs			PHSC_101-H_220920A : 133		R178363
Chloride	96	mg/L		1	0.05	E300.0	09/23/22 12:58 / SR			IC METROHM_220922A : 110		R178564
Sulfate	290	mg/L		1	0.1	E300.0	09/23/22 12:58 / SR			IC METROHM_220922A : 110		R178564
Hardness as CaCO3	149	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A : 12		R178594
METALS, DISSOLVED												
Aluminum	0.028	mg/L		0.009	0.003	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Arsenic	0.040	mg/L		0.001	0.0002	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Barium	0.022	mg/L		0.003	0.0002	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Boron	0.066	mg/L	J	0.1	0.004	E200.7	09/22/22 13:59 / sld	09/21/22 12:13		ICP2-HE_220922B : 47		R178593
Cadmium	0.00009	mg/L		0.00003	0.00002	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Calcium	43	mg/L		1	0.2	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Copper	0.008	mg/L		0.001	0.0001	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Iron	0.012	mg/L	J	0.02	0.004	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Lead	0.0004	mg/L		0.0003	0.0001	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Magnesium	10	mg/L		1	0.01	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Manganese	0.003	mg/L		0.001	0.0003	E200.8	09/23/22 18:14 / dck	09/21/22 12:13		ICPMS205-H_220922C : 332		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 13:48 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 20		63495
Molybdenum	0.057	mg/L		0.005	0.0003	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Nickel	0.0009	mg/L	J	0.002	0.0002	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Potassium	6	mg/L		1	0.04	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Selenium	0.00028	mg/L	J	0.001	0.00007	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Sodium	269	mg/L		1	0.04	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Uranium	0.0067	mg/L		0.0002	0.00002	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Vanadium	0.0061	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536
Zinc	0.004	mg/L	J	0.008	0.001	E200.8	09/23/22 00:12 / dck	09/21/22 12:13		ICPMS205-H_220922C : 111		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-MC-SS
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-007
Collection Date: 09/15/22 19:30
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	09/20/22 17:01 / ljs			PHSC_101-H_220920A	135	R178363
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	09/20/22 17:01 / ljs			PHSC_101-H_220920A	135	R178363
Chloride	61	mg/L		1	0.02	E300.0	09/23/22 13:12 / SR			IC METROHM_220922A	111	R178564
Sulfate	146	mg/L		1	0.06	E300.0	09/23/22 13:12 / SR			IC METROHM_220922A	111	R178564
Hardness as CaCO3	252	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A	13	R178594
METALS, DISSOLVED												
Aluminum	0.187	mg/L		0.009	0.003	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Antimony	0.0005	mg/L	J	0.0005	0.0002	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Barium	0.051	mg/L		0.003	0.0002	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Boron	0.072	mg/L	J	0.1	0.004	E200.7	09/22/22 14:03 / sld	09/21/22 12:13		ICP2-HE_220922B	48	R178593
Cadmium	0.0532	mg/L		0.00003	0.00002	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Calcium	83	mg/L		1	0.2	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Copper	0.115	mg/L		0.001	0.0001	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Iron	0.20	mg/L		0.02	0.004	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Lead	0.0003	mg/L		0.0003	0.0001	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Magnesium	11	mg/L		1	0.01	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Manganese	2.75	mg/L		0.001	0.0003	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Mercury	0.008	ug/L		0.005	0.002	E245.1	09/23/22 13:51 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	21	63495
Molybdenum	0.186	mg/L		0.005	0.0003	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Nickel	0.005	mg/L		0.002	0.0002	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Potassium	8	mg/L		1	0.04	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Selenium	0.00010	mg/L	J	0.001	0.00007	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Sodium	42	mg/L		1	0.04	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Uranium	0.0055	mg/L		0.0002	0.00002	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Vanadium	0.0070	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536
Zinc	1.88	mg/L		0.008	0.001	E200.8	09/23/22 00:15 / dck	09/21/22 12:13		ICPMS205-H_220922C	112	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-WG-NS QC-FD
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-008
Collection Date: 09/15/22 10:15
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	150	mg/L		4	2	A2320 B	09/20/22 17:08 / ljs			PHSC_101-H_220920A : 137		R178363
Bicarbonate as HCO3	190	mg/L		4	3	A2320 B	09/20/22 17:08 / ljs			PHSC_101-H_220920A : 137		R178363
Chloride	38	mg/L		1	0.05	E300.0	09/23/22 13:27 / SR			IC METROHM_220922A : 112		R178564
Sulfate	419	mg/L		1	0.1	E300.0	09/23/22 13:27 / SR			IC METROHM_220922A : 112		R178564
Hardness as CaCO3	469	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A : 14		R178594
METALS, DISSOLVED												
Aluminum	0.008	mg/L	J	0.009	0.003	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Arsenic	0.0010	mg/L	J	0.001	0.0002	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Barium	0.029	mg/L		0.003	0.0002	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Boron	0.1	mg/L		0.1	0.004	E200.7	09/22/22 14:07 / sld	09/21/22 12:13		ICP2-HE_220922B : 49		R178593
Cadmium	0.00019	mg/L		0.00003	0.00002	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Calcium	151	mg/L		1	0.2	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Cobalt	0.003	mg/L	J	0.01	0.001	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Copper	0.0009	mg/L	J	0.001	0.0001	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Iron	0.013	mg/L	J	0.02	0.004	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Magnesium	22	mg/L		1	0.01	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Manganese	3.98	mg/L		0.001	0.0003	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Mercury	0.003	ug/L	J	0.005	0.003	E245.1	09/23/22 13:54 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 22		63495
Molybdenum	0.030	mg/L		0.005	0.0003	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Potassium	8	mg/L		1	0.04	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Selenium	0.00009	mg/L	J	0.001	0.00007	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Sodium	82	mg/L		1	0.04	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Uranium	0.0096	mg/L		0.0002	0.00002	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Vanadium	0.0001	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536
Zinc	0.607	mg/L		0.008	0.001	E200.8	09/23/22 00:22 / dck	09/21/22 12:13		ICPMS205-H_220922C : 115		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-RR-BG QC-FB
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-009
Collection Date: 09/15/22 13:20
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	3	mg/L	J	4	2	A2320 B	09/20/22 17:16 / ljs			PHSC_101-H_220920A	139	R178363
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	09/20/22 17:16 / ljs			PHSC_101-H_220920A	139	R178363
Chloride	ND	mg/L		1	0.02	E300.0	09/23/22 13:41 / SR			IC METROHM_220922A	113	R178564
Sulfate	ND	mg/L		1	0.06	E300.0	09/23/22 13:41 / SR			IC METROHM_220922A	113	R178564
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A	15	R178594
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Arsenic	ND	mg/L		0.001	0.0002	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Barium	ND	mg/L		0.003	0.0002	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Boron	0.035	mg/L	J	0.1	0.004	E200.7	09/22/22 14:11 / sld	09/21/22 12:13		ICP2-HE_220922B	50	R178593
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Calcium	ND	mg/L		1	0.2	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Copper	ND	mg/L		0.001	0.0001	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Magnesium	ND	mg/L		1	0.01	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Manganese	0.0003	mg/L	J	0.001	0.0003	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 14:04 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	25	63495
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Potassium	ND	mg/L		1	0.04	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Sodium	0.05	mg/L	J	1	0.04	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Uranium	ND	mg/L		0.0002	0.00002	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 00:32 / dck	09/21/22 12:13		ICPMS205-H_220922C	119	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-1010R
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-010
Collection Date: 09/15/22 09:45
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	250	mg/L		4	2	A2320 B	09/20/22 18:07 / ljs			PHSC_101-H_220920A	145	R178363
Bicarbonate as HCO3	310	mg/L		4	3	A2320 B	09/20/22 18:07 / ljs			PHSC_101-H_220920A	145	R178363
Chloride	26	mg/L		1	0.05	E300.0	09/23/22 15:08 / SR			IC METROHM_220922A	118	R178564
Sulfate	387	mg/L		1	0.1	E300.0	09/23/22 15:08 / SR			IC METROHM_220922A	118	R178564
Hardness as CaCO3	374	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A	16	R178594
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Barium	0.028	mg/L		0.003	0.0002	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Boron	0.1	mg/L		0.1	0.004	E200.7	09/22/22 14:15 / sld	09/21/22 12:13		ICP2-HE_220922B	51	R178593
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Calcium	114	mg/L		1	0.2	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Chromium	0.0005	mg/L	J	0.01	0.0001	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Copper	0.003	mg/L		0.001	0.0001	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Magnesium	22	mg/L		1	0.01	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Manganese	0.003	mg/L		0.001	0.0003	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 14:13 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	28	63495
Molybdenum	0.009	mg/L		0.005	0.0003	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Potassium	7	mg/L		1	0.04	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Selenium	0.00009	mg/L	J	0.001	0.00007	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Sodium	146	mg/L		1	0.04	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Uranium	0.0827	mg/L		0.0002	0.00002	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Vanadium	0.0009	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536
Zinc	0.004	mg/L	J	0.008	0.001	E200.8	09/23/22 00:34 / dck	09/21/22 12:13		ICPMS205-H_220922C	120	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-WG-SS
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-011
Collection Date: 09/15/22 10:45
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	09/20/22 18:24 / ljs			PHSC_101-H_220920A	149	R178363
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	09/20/22 18:24 / ljs			PHSC_101-H_220920A	149	R178363
Chloride	16	mg/L		1	0.02	E300.0	09/23/22 15:22 / SR			IC METROHM_220922A	119	R178564
Sulfate	162	mg/L		1	0.06	E300.0	09/23/22 15:22 / SR			IC METROHM_220922A	119	R178564
Hardness as CaCO3	156	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A	17	R178594
METALS, DISSOLVED												
Aluminum	0.013	mg/L		0.009	0.003	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Antimony	0.0012	mg/L		0.0005	0.0002	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Arsenic	0.021	mg/L		0.001	0.0002	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Barium	0.005	mg/L		0.003	0.0002	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Boron	0.095	mg/L	J	0.1	0.004	E200.7	09/22/22 14:18 / sld	09/21/22 12:13		ICP2-HE_220922B	52	R178593
Cadmium	0.00008	mg/L		0.00003	0.00002	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Calcium	50	mg/L		1	0.2	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Chromium	0.0003	mg/L	J	0.01	0.0001	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Copper	0.001	mg/L		0.001	0.0001	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Iron	0.04	mg/L		0.02	0.004	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Magnesium	7	mg/L		1	0.01	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Manganese	0.0008	mg/L	J	0.001	0.0003	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 14:17 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	29	63495
Molybdenum	0.026	mg/L		0.005	0.0003	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Potassium	6	mg/L		1	0.04	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Selenium	0.00026	mg/L	J	0.001	0.00007	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Sodium	84	mg/L		1	0.04	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Uranium	0.0097	mg/L		0.0002	0.00002	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Vanadium	0.0011	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	09/23/22 00:36 / dck	09/21/22 12:13		ICPMS205-H_220922C	121	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-WG-NS
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-012
Collection Date: 09/15/22 10:15
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	160	mg/L	H	4	2	A2320 B	10/03/22 15:06 / ljs			PHSC_101-H_221003A : 74		R178793
Bicarbonate as HCO3	190	mg/L	H	4	3	A2320 B	10/03/22 15:06 / ljs			PHSC_101-H_221003A : 74		R178793
Chloride	38	mg/L		1	0.05	E300.0	09/23/22 15:37 / SR			IC METROHM_220922A : 120		R178564
Sulfate	419	mg/L		1	0.1	E300.0	09/23/22 15:37 / SR			IC METROHM_220922A : 120		R178564
Hardness as CaCO3	445	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A : 18		R178594
METALS, DISSOLVED												
Aluminum	0.006	mg/L	J	0.009	0.003	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Arsenic	0.001	mg/L		0.001	0.0002	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Barium	0.030	mg/L		0.003	0.0002	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Boron	0.1	mg/L		0.1	0.004	E200.7	09/22/22 14:33 / sld	09/21/22 12:13		ICP2-HE_220922B : 56		R178593
Cadmium	0.00020	mg/L		0.00003	0.00002	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Calcium	141	mg/L		1	0.2	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Cobalt	0.003	mg/L	J	0.01	0.001	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Copper	0.0009	mg/L	J	0.001	0.0001	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Iron	0.012	mg/L	J	0.02	0.004	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Magnesium	23	mg/L		1	0.01	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Manganese	3.98	mg/L		0.001	0.0003	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Mercury	0.003	ug/L	J	0.005	0.002	E245.1	09/23/22 14:20 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 30		63495
Molybdenum	0.031	mg/L		0.005	0.0003	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Potassium	8	mg/L		1	0.04	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Sodium	84	mg/L		1	0.04	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Uranium	0.0099	mg/L		0.0002	0.00002	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Vanadium	0.0002	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536
Zinc	0.593	mg/L		0.008	0.001	E200.8	09/23/22 00:39 / dck	09/21/22 12:13		ICPMS205-H_220922C : 122		R178536

Report Definitions:
RL - Analyte Reporting Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-RK-BG
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-013
Collection Date: 09/15/22 13:15
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	160	mg/L		4	2	A2320 B	09/20/22 18:38 / ljs			PHSC_101-H_220920A : 153		R178363
Bicarbonate as HCO3	190	mg/L		4	3	A2320 B	09/20/22 18:38 / ljs			PHSC_101-H_220920A : 153		R178363
Chloride	40	mg/L		1	0.02	E300.0	09/23/22 15:51 / SR			IC METROHM_220922A : 121		R178564
Sulfate	126	mg/L		1	0.06	E300.0	09/23/22 15:51 / SR			IC METROHM_220922A : 121		R178564
Hardness as CaCO3	240	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A : 19		R178594
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Barium	0.079	mg/L		0.003	0.0002	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Boron	0.041	mg/L	J	0.1	0.004	E200.7	09/22/22 14:44 / sld	09/21/22 12:13		ICP2-HE_220922B : 59		R178593
Cadmium	0.00002	mg/L	J	0.00003	0.00002	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Calcium	70	mg/L		1	0.2	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Chromium	0.0003	mg/L	J	0.01	0.0001	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Copper	0.0005	mg/L	J	0.001	0.0001	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Magnesium	16	mg/L		1	0.01	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Manganese	0.0005	mg/L	J	0.001	0.0003	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Mercury	ND	ug/L		0.005	0.003	E245.1	09/23/22 14:23 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 31		63495
Molybdenum	0.013	mg/L		0.005	0.0003	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Potassium	6	mg/L		1	0.04	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Selenium	0.00095	mg/L	J	0.001	0.00007	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Sodium	44	mg/L		1	0.04	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Uranium	0.0085	mg/L		0.0002	0.00002	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Vanadium	0.0051	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 00:41 / dck	09/21/22 12:13		ICPMS205-H_220922C : 123		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-10
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-014
Collection Date: 09/15/22 11:45
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L	H	4	2	A2320 B	10/05/22 16:40 / ljs			PHSC_101-H_221005A	100	R178878
Bicarbonate as HCO3	ND	mg/L	H	4	3	A2320 B	10/05/22 16:40 / ljs			PHSC_101-H_221005A	100	R178878
Chloride	103	mg/L		1	0.02	E300.0	09/23/22 16:06 / SR			IC METROHM_220922A	122	R178564
Sulfate	307	mg/L		1	0.06	E300.0	09/23/22 16:06 / SR			IC METROHM_220922A	122	R178564
Hardness as CaCO3	292	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A	20	R178594
METALS, DISSOLVED												
Aluminum	0.146	mg/L		0.009	0.003	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Barium	0.024	mg/L		0.003	0.0002	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Beryllium	0.0002	mg/L	J	0.0008	0.0002	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Boron	0.088	mg/L	J	0.1	0.004	E200.7	09/22/22 14:48 / sld	09/21/22 12:13		ICP2-HE_220922B	60	R178593
Cadmium	0.00560	mg/L		0.00003	0.00002	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Calcium	82	mg/L		1	0.2	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Cobalt	0.04	mg/L		0.01	0.001	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Copper	0.081	mg/L		0.001	0.0001	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Iron	24.1	mg/L		0.02	0.004	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Lead	0.0003	mg/L		0.0003	0.0001	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Magnesium	21	mg/L		1	0.01	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Manganese	15.8	mg/L		0.001	0.001	E200.7	09/22/22 14:48 / sld	09/21/22 12:13		ICP2-HE_220922B	60	R178593
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 14:33 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	34	63495
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Nickel	0.013	mg/L		0.002	0.0002	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Potassium	7	mg/L		1	0.04	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Sodium	39	mg/L		1	0.04	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Uranium	0.0006	mg/L		0.0002	0.00002	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536
Zinc	6.92	mg/L		0.008	0.001	E200.8	09/23/22 00:44 / dck	09/21/22 12:13		ICPMS205-H_220922C	124	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
H - Analysis performed past the method holding time
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-01
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-015
Collection Date: 09/15/22 12:30
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	160	mg/L		4	2	A2320 B	09/20/22 18:54 / ljs			PHSC_101-H_220920A	157	R178363
Bicarbonate as HCO3	200	mg/L		4	3	A2320 B	09/20/22 18:54 / ljs			PHSC_101-H_220920A	157	R178363
Chloride	19	mg/L		1	0.02	E300.0	09/23/22 16:20 / SR			IC METROHM_220922A	123	R178564
Sulfate	151	mg/L		1	0.06	E300.0	09/23/22 16:20 / SR			IC METROHM_220922A	123	R178564
Hardness as CaCO3	297	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A	21	R178594
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Arsenic	0.011	mg/L		0.001	0.0002	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Barium	0.025	mg/L		0.003	0.0002	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Boron	0.1	mg/L		0.1	0.004	E200.7	09/22/22 14:52 / sld	09/21/22 12:13		ICP2-HE_220922B	61	R178593
Cadmium	0.00139	mg/L		0.00003	0.00002	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Calcium	92	mg/L		1	0.2	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Copper	0.077	mg/L		0.001	0.0001	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Iron	0.007	mg/L	J	0.02	0.004	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Magnesium	16	mg/L		1	0.01	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Manganese	0.544	mg/L		0.001	0.0003	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 14:36 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	35	63495
Molybdenum	0.0039	mg/L	J	0.005	0.0003	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Nickel	0.0009	mg/L	J	0.002	0.0002	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Potassium	8	mg/L		1	0.04	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Selenium	0.00009	mg/L	J	0.001	0.00007	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Sodium	23	mg/L		1	0.04	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Uranium	0.0094	mg/L		0.0002	0.00002	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Vanadium	0.0006	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536
Zinc	0.302	mg/L		0.008	0.001	E200.8	09/23/22 00:46 / dck	09/21/22 12:13		ICPMS205-H_220922C	125	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-1003R
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-016
Collection Date: 09/15/22 14:10
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	09/20/22 19:01 / ljs			PHSC_101-H_220920A	159	R178363
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	09/20/22 19:01 / ljs			PHSC_101-H_220920A	159	R178363
Chloride	15	mg/L		1	0.02	E300.0	09/23/22 16:35 / SR			IC METROHM_220922A	124	R178564
Sulfate	52	mg/L		1	0.06	E300.0	09/23/22 16:35 / SR			IC METROHM_220922A	124	R178564
Hardness as CaCO3	119	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A	22	R178594
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Arsenic	0.012	mg/L		0.001	0.0002	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Barium	0.044	mg/L		0.003	0.0002	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Boron	0.039	mg/L	J	0.1	0.004	E200.7	09/22/22 14:56 / sld	09/21/22 12:13		ICP2-HE_220922B	62	R178593
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Calcium	36	mg/L		1	0.2	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Copper	0.0008	mg/L	J	0.001	0.0001	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Magnesium	7	mg/L		1	0.01	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Manganese	0.0009	mg/L	J	0.001	0.0003	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 14:39 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	36	63495
Molybdenum	0.011	mg/L		0.005	0.0003	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Potassium	6	mg/L		1	0.04	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Selenium	0.00032	mg/L	J	0.001	0.00007	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Sodium	33	mg/L		1	0.04	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Uranium	0.0031	mg/L		0.0002	0.00002	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Vanadium	0.0056	mg/L	J	0.1	0.0001	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 00:49 / dck	09/21/22 12:13		ICPMS205-H_220922C	126	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: 1GW-1004A
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-017
Collection Date: 09/15/22 14:40
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4	2	A2320 B	09/20/22 19:08 / ljs			PHSC_101-H_220920A	161	R178363
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	09/20/22 19:08 / ljs			PHSC_101-H_220920A	161	R178363
Chloride	76	mg/L		1	0.05	E300.0	09/23/22 16:49 / SR			IC METROHM_220922A	125	R178564
Sulfate	467	mg/L		1	0.1	E300.0	09/23/22 16:49 / SR			IC METROHM_220922A	125	R178564
Hardness as CaCO3	355	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A	23	R178594
METALS, DISSOLVED												
Aluminum	0.680	mg/L		0.009	0.003	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Arsenic	0.0002	mg/L	J	0.001	0.0002	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Barium	0.010	mg/L		0.003	0.0002	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Beryllium	0.0004	mg/L	J	0.0008	0.0002	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Boron	0.097	mg/L	J	0.1	0.004	E200.7	09/22/22 14:59 / sld	09/21/22 12:13		ICP2-HE_220922B	63	R178593
Cadmium	0.00433	mg/L		0.00003	0.00002	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Calcium	81	mg/L		1	0.2	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Cobalt	0.04	mg/L		0.01	0.001	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Copper	0.198	mg/L		0.001	0.0001	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Iron	27.8	mg/L		0.02	0.004	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Lead	0.0416	mg/L		0.0003	0.0001	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Magnesium	37	mg/L		1	0.01	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Manganese	15.9	mg/L		0.001	0.001	E200.7	09/22/22 14:59 / sld	09/21/22 12:13		ICP2-HE_220922B	63	R178593
Mercury	0.006	ug/L		0.005	0.002	E245.1	09/23/22 14:43 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	37	63495
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Nickel	0.015	mg/L		0.002	0.0002	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Potassium	7	mg/L		1	0.04	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Sodium	59	mg/L		1	0.04	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Uranium	0.0014	mg/L		0.0002	0.00002	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536
Zinc	5.68	mg/L		0.008	0.001	E200.8	09/23/22 00:51 / dck	09/21/22 12:13		ICPMS205-H_220922C	127	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: P-58A
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-018
Collection Date: 09/15/22 15:00
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4	2	A2320 B	09/20/22 19:12 / ljs			PHSC_101-H_220920A	163	R178363
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	09/20/22 19:12 / ljs			PHSC_101-H_220920A	163	R178363
Chloride	61	mg/L		1	0.02	E300.0	09/23/22 17:04 / SR			IC METROHM_220922A	126	R178564
Sulfate	377	mg/L		1	0.06	E300.0	09/23/22 17:04 / SR			IC METROHM_220922A	126	R178564
Hardness as CaCO3	271	mg/L		1	1	A2340 B	09/27/22 08:24 / sld			WATERCALC_220927A	24	R178594
METALS, DISSOLVED												
Aluminum	3.76	mg/L		0.009	0.003	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Barium	0.030	mg/L		0.003	0.0002	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Beryllium	0.0020	mg/L		0.0008	0.0002	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Boron	0.067	mg/L	J	0.1	0.004	E200.7	09/22/22 15:03 / sld	09/21/22 12:13		ICP2-HE_220922B	64	R178593
Cadmium	0.0236	mg/L		0.00003	0.00002	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Calcium	78	mg/L		1	0.2	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Cobalt	0.05	mg/L		0.01	0.001	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Copper	2.70	mg/L		0.001	0.0001	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Iron	29.2	mg/L		0.02	0.004	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Lead	0.0011	mg/L		0.0003	0.0001	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Magnesium	19	mg/L		1	0.01	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Manganese	12.4	mg/L		0.001	0.001	E200.7	09/22/22 15:03 / sld	09/21/22 12:13		ICP2-HE_220922B	64	R178593
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 14:46 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	38	63495
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Nickel	0.028	mg/L		0.002	0.0002	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Potassium	8	mg/L		1	0.04	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Selenium	0.00015	mg/L	J	0.001	0.00007	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Sodium	32	mg/L		1	0.04	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Uranium	0.0178	mg/L		0.0002	0.00002	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 01:08 / dck	09/21/22 12:13		ICPMS205-H_220922C	134	R178536
Zinc	8.80	mg/L		0.008	0.003	E200.7	09/22/22 15:03 / sld	09/21/22 12:13		ICP2-HE_220922B	64	R178593

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: P-114
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090494-019
Collection Date: 09/15/22 15:40
DateReceived: 09/16/22
Report Date: 10/07/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	200	mg/L		4	2	A2320 B	09/20/22 19:15 / ljs			PHSC_101-H_220920A : 165		R178363
Bicarbonate as HCO3	240	mg/L		4	3	A2320 B	09/20/22 19:15 / ljs			PHSC_101-H_220920A : 165		R178363
Chloride	45	mg/L		1	0.02	E300.0	09/23/22 17:18 / SR			IC METROHM_220922A : 127		R178564
Sulfate	162	mg/L		1	0.06	E300.0	09/23/22 17:18 / SR			IC METROHM_220922A : 127		R178564
Hardness as CaCO3	190	mg/L		1	1	A2340 B	09/28/22 12:04 / sld			WATERCALC_220928A : 1		R178651
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Barium	0.022	mg/L		0.003	0.0002	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Boron	0.072	mg/L	J	0.1	0.004	E200.7	09/22/22 15:07 / sld	09/21/22 12:13		ICP2-HE_220922B : 65		R178593
Cadmium	0.00005	mg/L		0.00003	0.00002	E200.8	09/23/22 18:24 / dck	09/21/22 12:13		ICPMS205-H_220922C : 336		R178536
Calcium	65	mg/L		1	0.2	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Copper	0.004	mg/L		0.001	0.0001	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Magnesium	7	mg/L		1	0.01	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Manganese	0.0009	mg/L	J	0.001	0.0003	E200.8	09/27/22 17:11 / dck	09/21/22 12:13		ICPMS205-H_220927A : 100		R178608
Mercury	0.018	ug/L		0.005	0.002	E245.1	09/23/22 14:49 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 39		63495
Molybdenum	0.007	mg/L		0.005	0.0003	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Potassium	5	mg/L		1	0.04	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Selenium	0.00091	mg/L	J	0.001	0.00007	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Sodium	108	mg/L		1	0.04	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Uranium	0.0036	mg/L		0.0002	0.00002	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Vanadium	0.0002	mg/L	J	0.1	0.0001	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	09/23/22 01:17 / dck	09/21/22 12:13		ICPMS205-H_220922C : 138		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090494
BatchID: 220923waLL-hg203
Date: *07-Oct-22*

Run ID :Run Order: **HGCV203-H_220923A: 10** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**
Analysis Date: **09/23/22 12:46** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.102	0.0050	0.1	0	102	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **HGCV203-H_220923A: 11** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV1** Method: **E245.1**
Analysis Date: **09/23/22 12:49** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.104	0.0050	0.1	0	104	95	105				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **HGCV203-H_220923A: 26** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E245.1**
Analysis Date: **09/23/22 14:07** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.101	0.0050	0.1	0	101	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID:** 63495 **Date:** *07-Oct-22*

Run ID :Run Order: **HGCV203-H_220923A: 13** SampType: **Method Blank** Lab ID: **MB-63495** Method: **E245.1**

Analysis Date: **09/23/22 13:25** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.002									

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **HGCV203-H_220923A: 14** SampType: **Laboratory Control Sample** Lab ID: **LCS-63495** Method: **E245.1**

Analysis Date: **09/23/22 13:28** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0511	0.0050	0.05	0	102	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **HGCV203-H_220923A: 23** SampType: **Sample Matrix Spike** Lab ID: **H22090494-008BMS** Method: **E245.1**

Analysis Date: **09/23/22 13:57** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.102	0.0050	0.1	0.00348	98	70	130				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **HGCV203-H_220923A: 24** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-008BMSD** Method: **E245.1**

Analysis Date: **09/23/22 14:01** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.102	0.0050	0.1	0.00348	99	70	130	0.1018	0.6	20	

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494
BatchID: 63495
Date: *07-Oct-22*

Run ID :Run Order: **HGCV203-H_220923A: 32** SampType: **Sample Matrix Spike** Lab ID: **H22090494-013BMS** Method: **E245.1**

Analysis Date: **09/23/22 14:26** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0950	0.0050	0.1	0	**95**	70	130				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **HGCV203-H_220923A: 33** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-013BMSD** Method: **E245.1**

Analysis Date: **09/23/22 14:30** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0936	0.0050	0.1	0	**94**	70	130	0.09502	**1.5**	20	

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID:** R178363 **Date:** *07-Oct-22*

Run ID :Run Order: **PHSC_101-H_220920A: 97** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **09/20/22 14:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-013A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **PHSC_101-H_220920A: 98** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **09/20/22 14:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	580	4.0	600	0	96	90	110				

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-013A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **PHSC_101-H_220920A: 101** SampType: **Sample Duplicate** Lab ID: **H22090486-020BDUP** Method: **A2320 B**

Analysis Date: **09/20/22 15:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	140	4.0		0				133.5	3.9	10	
Bicarbonate as HCO3	170	4.0		0				159.3	4.1	10	

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-013A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **PHSC_101-H_220920A: 141** SampType: **Sample Duplicate** Lab ID: **H22090494-009ADUP** Method: **A2320 B**

Analysis Date: **09/20/22 17:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	4.0		0				2.55		10	
Bicarbonate as HCO3	ND	4.0		0				0		10	

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-013A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **PHSC_101-H_220920A: 143** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **09/20/22 17:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178363** **Date:** *07-Oct-22*

Run ID :Run Order: **PHSC_101-H_220920A: 143** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **09/20/22 17:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-013A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **PHSC_101-H_220920A: 144** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **09/20/22 17:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	580	4.0	600	0	**97**	90	110				

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-013A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **PHSC_101-H_220920A: 147** SampType: **Sample Duplicate** Lab ID: **H22090494-010ADUP** Method: **A2320 B**

Analysis Date: **09/20/22 18:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	250	4.0		0				253.2	**0.1**	10	
Bicarbonate as HCO3	310	4.0		0				308.4	**0.1**	10	

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-013A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **PHSC_101-H_220920A: 187** SampType: **Sample Duplicate** Lab ID: **H22090497-009ADUP** Method: **A2320 B**

Analysis Date: **09/20/22 20:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	17	4.0		0				16	**8.1**	10	
Bicarbonate as HCO3	21	4.0		0				18.91	**8.3**	10	

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-013A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178536** **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **09/22/22 20:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.286	0.10	0.3	0	**95**	90	110				
Antimony	0.0569	0.050	0.06	0	**95**	90	110				
Arsenic	0.0628	0.0050	0.06	0	**105**	90	110				
Barium	0.0609	0.10	0.06	0	**101**	90	110				
Beryllium	0.0300	0.0010	0.03	0	**100**	90	110				
Cadmium	0.0306	0.0010	0.03	0	**102**	90	110				
Calcium	2.97	0.50	3	0	**99**	90	110				
Chromium	0.0602	0.010	0.06	0	**100**	90	110				
Cobalt	0.0592	0.010	0.06	0	**99**	90	110				
Copper	0.0611	0.010	0.06	0	**102**	90	110				
Iron	0.296	0.020	0.3	0	**99**	90	110				
Lead	0.0601	0.010	0.06	0	**100**	90	110				
Magnesium	2.99	0.50	3	0	**100**	90	110				
Manganese	0.303	0.010	0.3	0	**101**	90	110				
Molybdenum	0.0594	0.0050	0.06	0	**99**	90	110				
Nickel	0.0609	0.010	0.06	0	**102**	90	110				
Potassium	2.98	0.50	3	0	**99**	90	110				
Selenium	0.0611	0.0050	0.06	0	**102**	90	110				
Silver	0.0307	0.0050	0.03	0	**102**	90	110				
Sodium	2.98	0.50	3	0	**99**	90	110				
Uranium	0.0599	0.00030	0.06	0	**100**	90	110				
Vanadium	0.0597	0.10	0.06	0	**99**	90	110				
Zinc	0.0628	0.010	0.06	0	**105**	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 22** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **09/22/22 20:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Antimony	ND	0.0002									
Arsenic	ND	0.0002									

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limit; N - Analyte concentration was not sufficiently high to calculate RPD
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090494
BatchID: R178536
Date: *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 22** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **09/22/22 20:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00002									
Calcium	ND	0.2									
Chromium	ND	0.0001									
Cobalt	ND	0.001									
Copper	ND	0.0001									
Iron	ND	0.004									
Lead	ND	0.0001									
Magnesium	ND	0.01									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Nickel	ND	0.0002									
Potassium	ND	0.04									
Selenium	ND	0.00007									
Silver	ND	0.00008									
Sodium	ND	0.04									
Uranium	ND	0.00002									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**
Analysis Date: **09/22/22 20:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0491	0.10	0.05	0	98	85	115				
Antimony	0.0509	0.050	0.05	0	102	85	115				
Arsenic	0.0500	0.0050	0.05	0	100	85	115				
Barium	0.0508	0.10	0.05	0	102	85	115				
Beryllium	0.0513	0.0010	0.05	0	103	85	115				
Cadmium	0.0523	0.0010	0.05	0	105	85	115				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID:** R178536 **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **09/22/22 20:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.05	0.50	1	0	105	85	115				
Chromium	0.0499	0.010	0.05	0	100	85	115				
Cobalt	0.0502	0.010	0.05	0	100	85	115				
Copper	0.0509	0.010	0.05	0	102	85	115				
Iron	0.149	0.020	0.15	0	99	85	115				
Lead	0.0506	0.010	0.05	0	101	85	115				
Magnesium	1.03	0.50	1	0	103	85	115				
Manganese	0.0502	0.010	0.05	0	100	85	115				
Molybdenum	0.0509	0.0050	0.05	0	102	85	115				
Nickel	0.0504	0.010	0.05	0	101	85	115				
Potassium	1.00	0.50	1	0	101	85	115				
Selenium	0.0522	0.0050	0.05	0	104	85	115				
Silver	0.0209	0.0050	0.02	0	104	85	115				
Sodium	1.01	0.50	1	0	101	85	115				
Uranium	0.0492	0.00030	0.05	0	98	85	115				
Vanadium	0.0492	0.10	0.05	0	98	85	115				
Zinc	0.0543	0.010	0.05	0	109	85	115				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 98** SampType: **Sample Matrix Spike** Lab ID: **H22090486-031GMS** Method: **E200.8**

Analysis Date: **09/22/22 23:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0536	0.030	0.05	0	107	70	130				
Antimony	0.0513	0.0010	0.05	0.0001632	102	70	130				
Arsenic	0.0544	0.0010	0.05	0.0005634	108	70	130				
Barium	0.122	0.050	0.05	0.06953	104	70	130				
Beryllium	0.0488	0.0010	0.05	0	98	70	130				
Cadmium	0.0520	0.0010	0.05	0	104	70	130				
Calcium	50.0	1.0	1	49.24		70	130				A
Chromium	0.0521	0.0050	0.05	0	104	70	130				
Cobalt	0.0517	0.0050	0.05	0	103	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID:** R178536 **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 98** SampType: **Sample Matrix Spike** Lab ID: **H22090486-031GMS** Method: **E200.8**

Analysis Date: **09/22/22 23:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0523	0.0050	0.05	0.0006314	103	70	130				
Iron	0.155	0.020	0.15	0	103	70	130				
Lead	0.0530	0.0010	0.05	0	106	70	130				
Magnesium	31.5	1.0	1	30.49		70	130				A
Manganese	0.0545	0.0010	0.05	0.002616	104	70	130				
Molybdenum	0.0530	0.0010	0.05	0.001528	103	70	130				
Nickel	0.0528	0.0050	0.05	0.0006985	104	70	130				
Potassium	3.00	1.0	1	1.956	105	70	130				
Selenium	0.0536	0.0010	0.05	0.001273	105	70	130				
Silver	0.0206	0.0010	0.02	0	103	70	130				
Sodium	43.3	1.0	1	42.33		70	130				A
Uranium	0.0542	0.00030	0.05	0.001793	105	70	130				
Vanadium	0.0523	0.010	0.05	0.0002475	104	70	130				
Zinc	0.0545	0.010	0.05	0	109	70	130				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 99** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090486-031GMSD** Method: **E200.8**

Analysis Date: **09/22/22 23:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0488	0.030	0.05	0	98	70	130	0.05355	9.2	20	
Antimony	0.0508	0.0010	0.05	0.0001632	101	70	130	0.05126	0.9	20	
Arsenic	0.0522	0.0010	0.05	0.0005634	103	70	130	0.05441	4.1	20	
Barium	0.122	0.050	0.05	0.06953	105	70	130	0.1215	0.2	20	
Beryllium	0.0522	0.0010	0.05	0	104	70	130	0.04882	6.7	20	
Cadmium	0.0522	0.0010	0.05	0	104	70	130	0.05204	0.3	20	
Calcium	52.5	1.0	1	49.24		70	130	49.95	5.0	20	A
Chromium	0.0506	0.0050	0.05	0	101	70	130	0.05214	3.1	20	
Cobalt	0.0505	0.0050	0.05	0	101	70	130	0.05169	2.4	20	
Copper	0.0514	0.0050	0.05	0.0006314	101	70	130	0.05229	1.8	20	
Iron	0.151	0.020	0.15	0	100	70	130	0.1549	2.8	20	
Lead	0.0522	0.0010	0.05	0	104	70	130	0.05301	1.6	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178536** **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 99** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090486-031GMSD** Method: **E200.8**

Analysis Date: **09/22/22 23:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	31.3	1.0	1	30.49		70	130	31.49	0.6	20	A
Manganese	0.0544	0.0010	0.05	0.002616	104	70	130	0.05448	0.2	20	
Molybdenum	0.0540	0.0010	0.05	0.001528	105	70	130	0.05298	1.8	20	
Nickel	0.0516	0.0050	0.05	0.0006985	102	70	130	0.05276	2.2	20	
Potassium	2.99	1.0	1	1.956	104	70	130	3.005	0.4	20	
Selenium	0.0563	0.0010	0.05	0.001273	110	70	130	0.05357	5.0	20	
Silver	0.0207	0.0010	0.02	0	103	70	130	0.02056	0.7	20	
Sodium	42.8	1.0	1	42.33		70	130	43.34	1.2	20	A
Uranium	0.0531	0.00030	0.05	0.001793	103	70	130	0.05415	1.9	20	
Vanadium	0.0512	0.010	0.05	0.0002475	102	70	130	0.05234	2.1	20	
Zinc	0.0527	0.010	0.05	0	105	70	130	0.05448	3.4	20	

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 100** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/22/22 23:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0514	0.10	0.05	0	103	90	110				
Antimony	0.0499	0.050	0.05	0	100	90	110				
Arsenic	0.0495	0.0050	0.05	0	99	90	110				
Barium	0.0498	0.10	0.05	0	100	90	110				
Beryllium	0.0517	0.0010	0.05	0	103	90	110				
Cadmium	0.0507	0.0010	0.05	0	101	90	110				
Calcium	13.2	0.50	12.5	0	105	90	110				
Chromium	0.0507	0.010	0.05	0	101	90	110				
Cobalt	0.0502	0.010	0.05	0	100	90	110				
Copper	0.0514	0.010	0.05	0	103	90	110				
Iron	1.30	0.020	1.3	0	100	90	110				
Lead	0.0503	0.010	0.05	0	101	90	110				
Magnesium	12.8	0.50	12.5	0	103	90	110				
Manganese	0.0512	0.010	0.05	0	102	90	110				
Molybdenum	0.0514	0.0050	0.05	0	103	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID:** R178536 **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 100** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/22/22 23:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0507	0.010	0.05	0	101	90	110				
Potassium	12.8	0.50	12.5	0	102	90	110				
Selenium	0.0520	0.0050	0.05	0	104	90	110				
Silver	0.0203	0.0050	0.02	0	102	90	110				
Sodium	13.0	0.50	12.5	0	104	90	110				
Uranium	0.0496	0.00030	0.05	0	99	90	110				
Vanadium	0.0511	0.10	0.05	0	102	90	110				
Zinc	0.0533	0.010	0.05	0	107	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 113** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 00:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0488	0.10	0.05	0	98	90	110				
Antimony	0.0501	0.050	0.05	0	100	90	110				
Arsenic	0.0508	0.0050	0.05	0	102	90	110				
Barium	0.0500	0.10	0.05	0	100	90	110				
Beryllium	0.0492	0.0010	0.05	0	98	90	110				
Cadmium	0.0512	0.0010	0.05	0	102	90	110				
Calcium	12.9	0.50	12.5	0	104	90	110				
Chromium	0.0510	0.010	0.05	0	102	90	110				
Cobalt	0.0504	0.010	0.05	0	101	90	110				
Copper	0.0509	0.010	0.05	0	102	90	110				
Iron	1.31	0.020	1.3	0	101	90	110				
Lead	0.0509	0.010	0.05	0	102	90	110				
Magnesium	12.9	0.50	12.5	0	103	90	110				
Manganese	0.0532	0.010	0.05	0	106	90	110				
Molybdenum	0.0520	0.0050	0.05	0	104	90	110				
Nickel	0.0508	0.010	0.05	0	102	90	110				
Potassium	12.9	0.50	12.5	0	103	90	110				
Selenium	0.0508	0.0050	0.05	0	102	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178536** **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 113** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 00:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0205	0.0050	0.02	0	102	90	110				
Sodium	13.1	0.50	12.5	0	105	90	110				
Uranium	0.0501	0.00030	0.05	0	100	90	110				
Vanadium	0.0515	0.10	0.05	0	103	90	110				
Zinc	0.0528	0.010	0.05	0	106	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 116** SampType: **Sample Matrix Spike** Lab ID: **H22090494-008BMS** Method: **E200.8**

Analysis Date: **09/23/22 00:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0516	0.030	0.05	0.008132	87	70	130				
Antimony	0.0513	0.0010	0.05	0	103	70	130				
Arsenic	0.0523	0.0010	0.05	0.00095	103	70	130				
Barium	0.0797	0.050	0.05	0.02926	101	70	130				
Beryllium	0.0476	0.0010	0.05	0	95	70	130				
Cadmium	0.0510	0.0010	0.05	0.0001857	102	70	130				
Calcium	140	1.0	1	150.9		70	130				A
Chromium	0.0505	0.0050	0.05	0	101	70	130				
Cobalt	0.0532	0.0050	0.05	0.003194	100	70	130				
Copper	0.0511	0.0050	0.05	0.0009456	100	70	130				
Iron	0.161	0.020	0.15	0.01296	98	70	130				
Lead	0.0513	0.0010	0.05	0	103	70	130				
Magnesium	23.2	1.0	1	22.29		70	130				A
Manganese	4.03	0.0010	0.05	3.978		70	130				A
Molybdenum	0.0828	0.0010	0.05	0.03013	105	70	130				
Nickel	0.0512	0.0050	0.05	0.0007732	101	70	130				
Potassium	8.76	1.0	1	7.728		70	130				A
Selenium	0.0508	0.0010	0.05	0.00009128	101	70	130				
Silver	0.0202	0.0010	0.02	0	101	70	130				
Sodium	82.7	1.0	1	82.17		70	130				A
Uranium	0.0607	0.00030	0.05	0.009556	102	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178536** **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 116** SampType: **Sample Matrix Spike** Lab ID: **H22090494-008BMS** Method: **E200.8**

Analysis Date: **09/23/22 00:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	0.0516	0.010	0.05	0.0001284	103	70	130				
Zinc	0.662	0.010	0.05	0.6068		70	130				A

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 117** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-008BMSD** Method: **E200.8**

Analysis Date: **09/23/22 00:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0503	0.030	0.05	0.008132	84	70	130	0.05157	2.5	20	
Antimony	0.0502	0.0010	0.05	0	100	70	130	0.05131	2.2	20	
Arsenic	0.0509	0.0010	0.05	0.00095	100	70	130	0.05231	2.8	20	
Barium	0.0790	0.050	0.05	0.02926	100	70	130	0.07966	0.8	20	
Beryllium	0.0480	0.0010	0.05	0	96	70	130	0.04757	0.9	20	
Cadmium	0.0508	0.0010	0.05	0.0001857	101	70	130	0.05105	0.4	20	
Calcium	139	1.0	1	150.9		70	130	139.5	0.5	20	A
Chromium	0.0498	0.0050	0.05	0	100	70	130	0.05046	1.2	20	
Cobalt	0.0520	0.0050	0.05	0.003194	98	70	130	0.0532	2.2	20	
Copper	0.0504	0.0050	0.05	0.0009456	99	70	130	0.05106	1.2	20	
Iron	0.158	0.020	0.15	0.01296	97	70	130	0.1607	1.7	20	
Lead	0.0511	0.0010	0.05	0	102	70	130	0.05131	0.4	20	
Magnesium	23.0	1.0	1	22.29		70	130	23.18	0.9	20	A
Manganese	3.94	0.0010	0.05	3.978		70	130	4.033	2.3	20	A
Molybdenum	0.0825	0.0010	0.05	0.03013	105	70	130	0.08278	0.3	20	
Nickel	0.0501	0.0050	0.05	0.0007732	99	70	130	0.05121	2.2	20	
Potassium	8.55	1.0	1	7.728		70	130	8.76	2.4	20	A
Selenium	0.0512	0.0010	0.05	0.00009128	102	70	130	0.05082	0.7	20	
Silver	0.0200	0.0010	0.02	0	100	70	130	0.0202	1.1	20	
Sodium	82.1	1.0	1	82.17		70	130	82.66	0.7	20	A
Uranium	0.0605	0.00030	0.05	0.009556	102	70	130	0.06073	0.4	20	
Vanadium	0.0507	0.010	0.05	0.0001284	101	70	130	0.05165	1.9	20	
Zinc	0.645	0.010	0.05	0.6068		70	130	0.6616	2.5	20	A

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178536** **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 117** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-008BMSD** Method: **E200.8**

Analysis Date: **09/23/22 00:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 128** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 00:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0511	0.10	0.05	0	102	90	110				
Antimony	0.0492	0.050	0.05	0	98	90	110				
Arsenic	0.0500	0.0050	0.05	0	100	90	110				
Barium	0.0499	0.10	0.05	0	100	90	110				
Beryllium	0.0485	0.0010	0.05	0	97	90	110				
Cadmium	0.0508	0.0010	0.05	0	102	90	110				
Calcium	12.9	0.50	12.5	0	103	90	110				
Chromium	0.0500	0.010	0.05	0	100	90	110				
Cobalt	0.0496	0.010	0.05	0	99	90	110				
Copper	0.0502	0.010	0.05	0	100	90	110				
Iron	1.29	0.020	1.3	0	99	90	110				
Lead	0.0501	0.010	0.05	0	100	90	110				
Magnesium	12.9	0.50	12.5	0	103	90	110				
Manganese	0.0524	0.010	0.05	0	105	90	110				
Molybdenum	0.0511	0.0050	0.05	0	102	90	110				
Nickel	0.0502	0.010	0.05	0	100	90	110				
Potassium	12.8	0.50	12.5	0	102	90	110				
Selenium	0.0507	0.0050	0.05	0	101	90	110				
Silver	0.0203	0.0050	0.02	0	102	90	110				
Sodium	13.2	0.50	12.5	0	105	90	110				
Uranium	0.0494	0.00030	0.05	0	99	90	110				
Vanadium	0.0503	0.10	0.05	0	101	90	110				
Zinc	0.0526	0.010	0.05	0	105	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178536** **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 135** SampType: **Sample Matrix Spike** Lab ID: **H22090494-018BMS** Method: **E200.8**

Analysis Date: **09/23/22 01:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.80	0.030	0.05	3.757		70	130				A
Antimony	0.0515	0.0010	0.05	0	103	70	130				
Arsenic	0.0536	0.0010	0.05	0.002451	102	70	130				
Barium	0.0816	0.050	0.05	0.03032	102	70	130				
Beryllium	0.0495	0.0010	0.05	0.001958	95	70	130				
Cadmium	0.0754	0.0010	0.05	0.02356	104	70	130				
Calcium	77.9	1.0	1	78.05		70	130				A
Chromium	0.0509	0.0050	0.05	0	102	70	130				
Cobalt	0.0986	0.0050	0.05	0.04798	101	70	130				
Copper	2.75	0.0050	0.05	2.704		70	130				A
Iron	29.2	0.020	0.15	29.22		70	130				A
Lead	0.0528	0.0010	0.05	0.001126	103	70	130				
Magnesium	19.4	1.0	1	18.57		70	130				A
Manganese	14.0	0.0010	0.05	14.14		70	130				AE
Molybdenum	0.0530	0.0010	0.05	0	106	70	130				
Nickel	0.0797	0.0050	0.05	0.02844	102	70	130				
Potassium	8.82	1.0	1	7.851		70	130				A
Selenium	0.0503	0.0010	0.05	0.000148	100	70	130				
Silver	0.0196	0.0010	0.02	0	98	70	130				
Sodium	32.2	1.0	1	31.5		70	130				A
Uranium	0.0691	0.00030	0.05	0.01778	103	70	130				
Vanadium	0.0510	0.010	0.05	0	102	70	130				
Zinc	9.93	0.010	0.05	9.961		70	130				AE

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 136** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-018BMSD** Method: **E200.8**

Analysis Date: **09/23/22 01:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.77	0.030	0.05	3.757		70	130	3.795	0.6	20	A
Antimony	0.0511	0.0010	0.05	0	102	70	130	0.05146	0.8	20	
Arsenic	0.0539	0.0010	0.05	0.002451	103	70	130	0.05358	0.6	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178536** **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 136** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-018BMSD** Method: **E200.8**

Analysis Date: **09/23/22 01:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.0807	0.050	0.05	0.03032	101	70	130	0.08157	1.1	20	
Beryllium	0.0492	0.0010	0.05	0.001958	95	70	130	0.04946	0.5	20	
Cadmium	0.0751	0.0010	0.05	0.02356	103	70	130	0.07541	0.4	20	
Calcium	77.8	1.0	1	78.05		70	130	77.9	0.2	20	A
Chromium	0.0518	0.0050	0.05	0	104	70	130	0.0509	1.7	20	
Cobalt	0.101	0.0050	0.05	0.04798	106	70	130	0.09857	2.3	20	
Copper	2.81	0.0050	0.05	2.704		70	130	2.75	2.3	20	A
Iron	29.8	0.020	0.15	29.22		70	130	29.21	2.0	20	A
Lead	0.0534	0.0010	0.05	0.001126	104	70	130	0.0528	1.1	20	
Magnesium	19.4	1.0	1	18.57		70	130	19.39	0.2	20	A
Manganese	14.4	0.0010	0.05	14.14		70	130	14.05	2.5	20	AE
Molybdenum	0.0524	0.0010	0.05	0	105	70	130	0.053	1.1	20	
Nickel	0.0809	0.0050	0.05	0.02844	105	70	130	0.07968	1.6	20	
Potassium	9.04	1.0	1	7.851		70	130	8.822	2.5	20	A
Selenium	0.0502	0.0010	0.05	0.000148	100	70	130	0.05028	0.1	20	
Silver	0.0197	0.0010	0.02	0	99	70	130	0.0196	0.7	20	
Sodium	32.2	1.0	1	31.5		70	130	32.2	0.1	20	A
Uranium	0.0695	0.00030	0.05	0.01778	103	70	130	0.06908	0.5	20	
Vanadium	0.0520	0.010	0.05	0	104	70	130	0.05103	1.9	20	
Zinc	10.1	0.010	0.05	9.961		70	130	9.928	1.8	20	AE

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 327** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 18:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0485	0.10	0.05	0	97	90	110				
Antimony	0.0507	0.050	0.05	0	101	90	110				
Arsenic	0.0494	0.0050	0.05	0	99	90	110				
Barium	0.0517	0.10	0.05	0	103	90	110				
Beryllium	0.0464	0.0010	0.05	0	93	90	110				
Cadmium	0.0501	0.0010	0.05	0	100	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178536** **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 327** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 18:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	12.8	0.50	12.5	0	102	90	110				
Chromium	0.0483	0.010	0.05	0	97	90	110				
Cobalt	0.0488	0.010	0.05	0	98	90	110				
Copper	0.0497	0.010	0.05	0	99	90	110				
Iron	1.26	0.020	1.3	0	97	90	110				
Lead	0.0506	0.010	0.05	0	101	90	110				
Magnesium	12.5	0.50	12.5	0	100	90	110				
Manganese	0.0497	0.010	0.05	0	99	90	110				
Molybdenum	0.0495	0.0050	0.05	0	99	90	110				
Nickel	0.0495	0.010	0.05	0	99	90	110				
Potassium	11.9	0.50	12.5	0	95	90	110				
Selenium	0.0500	0.0050	0.05	0	100	90	110				
Silver	0.0199	0.0050	0.02	0	100	90	110				
Sodium	12.2	0.50	12.5	0	98	90	110				
Uranium	0.0506	0.00030	0.05	0	101	90	110				
Vanadium	0.0493	0.10	0.05	0	99	90	110				
Zinc	0.0507	0.010	0.05	0	101	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 337** SampType: **Sample Matrix Spike** Lab ID: **H22090494-018BMS** Method: **E200.8**

Analysis Date: **09/23/22 18:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.86	0.030	0.05	3.863		70	130				A
Antimony	0.0512	0.0010	0.05	0	102	70	130				
Arsenic	0.0505	0.0010	0.05	0.002474	96	70	130				
Barium	0.0824	0.050	0.05	0.0311	103	70	130				
Beryllium	0.0472	0.0010	0.05	0.001882	91	70	130				
Cadmium	0.0730	0.0010	0.05	0.02278	101	70	130				
Calcium	78.7	1.0	1	79.19		70	130				A
Chromium	0.0471	0.0050	0.05	0	94	70	130				
Cobalt	0.0917	0.0050	0.05	0.04764	88	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID:** R178536 **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 337** SampType: **Sample Matrix Spike** Lab ID: **H22090494-018BMS** Method: **E200.8**

Analysis Date: **09/23/22 18:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	2.64	0.0050	0.05	2.736		70	130				A
Iron	27.7	0.020	0.15	29.56		70	130				A
Lead	0.0522	0.0010	0.05	0.001133	102	70	130				
Magnesium	18.9	1.0	1	18.31		70	130				A
Manganese	13.6	0.0010	0.05	14.34		70	130				AE
Molybdenum	0.0503	0.0010	0.05	0	101	70	130				
Nickel	0.0748	0.0050	0.05	0.0276	94	70	130				
Potassium	8.19	1.0	1	7.73		70	130				A
Selenium	0.0494	0.0010	0.05	0.0001101	99	70	130				
Silver	0.0192	0.0010	0.02	0	96	70	130				
Sodium	31.2	1.0	1	30.76		70	130				A
Uranium	0.0683	0.00030	0.05	0.01775	101	70	130				
Vanadium	0.0486	0.010	0.05	0	97	70	130				
Zinc	8.99	0.010	0.05	9.674		70	130				A

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220922C: 338** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-018BMSD** Method: **E200.8**

Analysis Date: **09/23/22 18:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.91	0.030	0.05	3.863		70	130	3.859	1.4	20	A
Antimony	0.0514	0.0010	0.05	0	103	70	130	0.05118	0.4	20	
Arsenic	0.0511	0.0010	0.05	0.002474	97	70	130	0.05054	1.1	20	
Barium	0.0830	0.050	0.05	0.0311	104	70	130	0.0824	0.8	20	
Beryllium	0.0475	0.0010	0.05	0.001882	91	70	130	0.04721	0.5	20	
Cadmium	0.0742	0.0010	0.05	0.02278	103	70	130	0.07304	1.5	20	
Calcium	78.1	1.0	1	79.19		70	130	78.67	0.7	20	A
Chromium	0.0485	0.0050	0.05	0	97	70	130	0.0471	2.9	20	
Cobalt	0.0952	0.0050	0.05	0.04764	95	70	130	0.09168	3.7	20	
Copper	2.71	0.0050	0.05	2.736		70	130	2.644	2.4	20	A
Iron	28.6	0.020	0.15	29.56		70	130	27.71	3.2	20	A
Lead	0.0525	0.0010	0.05	0.001133	103	70	130	0.0522	0.6	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178536** **Date:** *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 338** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-018BMSD** Method: **E200.8**

Analysis Date: **09/23/22 18:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	19.3	1.0	1	18.31		70	130	18.94	**1.7**	20	A
Manganese	13.9	0.0010	0.05	14.34		70	130	13.55	**2.6**	20	AE
Molybdenum	0.0504	0.0010	0.05	0	**101**	70	130	0.05032	**0.2**	20	
Nickel	0.0775	0.0050	0.05	0.0276	**100**	70	130	0.07476	**3.7**	20	
Potassium	8.43	1.0	1	7.73		70	130	8.187	**2.9**	20	A
Selenium	0.0490	0.0010	0.05	0.0001101	**98**	70	130	0.04939	**0.8**	20	
Silver	0.0196	0.0010	0.02	0	**98**	70	130	0.01922	**2.0**	20	
Sodium	31.5	1.0	1	30.76		70	130	31.15	**1.2**	20	A
Uranium	0.0691	0.00030	0.05	0.01775	**103**	70	130	0.06828	**1.2**	20	
Vanadium	0.0496	0.010	0.05	0	**99**	70	130	0.04855	**2.2**	20	
Zinc	9.26	0.010	0.05	9.674		70	130	8.988	**2.9**	20	AE

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178564** **Date:** *07-Oct-22*

Run ID :Run Order: **IC METROHM_220922A: 2** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **09/22/22 09:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.06									

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-012A, H22090494-013A, H22090494-014A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **IC METROHM_220922A: 3** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **09/22/22 09:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98.4	1.0	100	0	**98**	90	110				
Sulfate	391	1.0	400	0	**98**	90	110				

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-012A, H22090494-013A, H22090494-014A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **IC METROHM_220922A: 4** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **09/22/22 09:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23.9	1.0	25	0	**96**	90	110				
Sulfate	99.8	1.0	100	0	**100**	90	110				

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-012A, H22090494-013A, H22090494-014A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **IC METROHM_220922A: 102** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **09/23/22 10:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	50.6	1.0	50	0	**101**	90	110				
Sulfate	208	1.0	200	0	**104**	90	110				

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-012A, H22090494-013A, H22090494-014A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID:** R178564 **Date:** *07-Oct-22*

Run ID :Run Order: **IC METROHM_220922A: 114** SampType: **Sample Matrix Spike** Lab ID: **H22090494-009AMS** Method: **E300.0**

Analysis Date: **09/23/22 13:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25.0	1.0	25	0	**100**	90	110				
Sulfate	103	1.0	100	0	**103**	90	110				

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-012A, H22090494-013A, H22090494-014A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **IC METROHM_220922A: 115** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-009AMSD** Method: **E300.0**

Analysis Date: **09/23/22 14:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.9	1.0	25	0	**99**	90	110	25.02	**0.6**	20	
Sulfate	103	1.0	100	0	**103**	90	110	103.2	**0.4**	20	

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-012A, H22090494-013A, H22090494-014A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **IC METROHM_220922A: 116** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **09/23/22 14:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51.3	1.0	50	0	**103**	90	110				
Sulfate	207	1.0	200	0	**103**	90	110				

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-012A, H22090494-013A, H22090494-014A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Run ID :Run Order: **IC METROHM_220922A: 128** SampType: **Sample Matrix Spike** Lab ID: **H22090494-019AMS** Method: **E300.0**

Analysis Date: **09/23/22 17:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	69.5	1.0	25	44.71	**99**	90	110				
Sulfate	262	1.0	100	161.9	**100**	90	110				

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-012A, H22090494-013A, H22090494-014A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494
BatchID: R178564
Date: *07-Oct-22*

Run ID :Run Order: **IC METROHM_220922A: 129** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-019AMSD** Method: **E300.0**

Analysis Date: **09/23/22 17:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	69.6	1.0	25	44.71	**100**	90	110	69.49	**0.2**	20	
Sulfate	263	1.0	100	161.9	**101**	90	110	262	**0.3**	20	

Associated samples: **H22090494-001A, H22090494-002A, H22090494-003A, H22090494-004A, H22090494-005A, H22090494-006A, H22090494-007A, H22090494-008A, H22090494-009A, H22090494-010A, H22090494-011A, H22090494-012A, H22090494-013A, H22090494-014A, H22090494-015A, H22090494-016A, H22090494-017A, H22090494-018A, H22090494-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178593** **Date:** *07-Oct-22*

Run ID :Run Order: **ICP2-HE_220922B: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **09/22/22 08:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.838	0.10	0.8	0	105	95	105				
Manganese	4.02	0.010	4	0	100	95	105				
Zinc	0.840	0.010	0.8	0	105	95	105				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 7** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **09/22/22 08:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.797	0.10	0.8	0	100	95	105				
Manganese	3.90	0.010	4	0	97	95	105				
Zinc	0.799	0.010	0.8	0	100	95	105				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **09/22/22 08:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.829	0.10	0.8	0	104	95	105				
Manganese	4.09	0.010	4	0	102	95	105				
Zinc	0.831	0.010	0.8	0	104	95	105				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 15** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **09/22/22 08:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.763	0.10	0.8	0	95	95	105				
Manganese	3.92	0.010	4	0	98	95	105				

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limit; R - RPD outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494
BatchID: R178593
Date: *07-Oct-22*

Run ID :Run Order: **ICP2-HE_220922B: 15** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **09/22/22 08:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.766	0.010	0.8	0	96	95	105				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 16** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **09/22/22 08:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.46	0.10	2.5	0	98	95	105				
Manganese	2.48	0.010	2.5	0	99	95	105				
Zinc	2.49	0.010	2.5	0	100	95	105				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 22** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**

Analysis Date: **09/22/22 09:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.004									
Manganese	ND	0.001									
Zinc	ND	0.003									

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**

Analysis Date: **09/22/22 09:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.955	0.10	1	0	96	85	115				
Manganese	5.18	0.010	5	0	104	85	115				
Zinc	0.967	0.010	1	0	97	85	115				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178593** **Date:** *07-Oct-22*

Run ID :Run Order: **ICP2-HE_220922B: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**

Analysis Date: **09/22/22 09:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 33** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/22/22 13:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.52	0.10	2.5	0	101	90	110				
Manganese	2.52	0.010	2.5	0	101	90	110				
Zinc	2.54	0.010	2.5	0	102	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 39** SampType: **Sample Matrix Spike** Lab ID: **H22090494-001BMS2** Method: **E200.7**

Analysis Date: **09/22/22 13:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.36	0.050	1	0.3974	96	70	130				
Manganese	4.95	0.0014	5	0	99	70	130				
Zinc	0.959	0.010	1	0.00446	95	70	130				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 40** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-001BMSD2** Method: **E200.7**

Analysis Date: **09/22/22 13:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.35	0.050	1	0.3974	95	70	130	1.359	0.8	20	
Manganese	5.02	0.0014	5	0	100	70	130	4.954	1.3	20	
Zinc	0.949	0.010	1	0.00446	94	70	130	0.9587	1.0	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178593** **Date:** *07-Oct-22*

Run ID :Run Order: **ICP2-HE_220922B: 40** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-001BMSD2** Method: **E200.7**

Analysis Date: **09/22/22 13:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 45** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/22/22 13:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.41	0.10	2.5	0	97	90	110				
Manganese	2.47	0.010	2.5	0	99	90	110				
Zinc	2.44	0.010	2.5	0	98	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 54** SampType: **Sample Matrix Spike** Lab ID: **H22090494-011BMS2** Method: **E200.7**

Analysis Date: **09/22/22 14:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.07	0.050	1	0.095	97	70	130				
Manganese	4.93	0.0014	5	0	99	70	130				
Zinc	0.973	0.010	1	0.0029	97	70	130				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 55** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-011BMSD2** Method: **E200.7**

Analysis Date: **09/22/22 14:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.09	0.050	1	0.095	99	70	130	1.066	1.8	20	
Manganese	5.04	0.0014	5	0	101	70	130	4.927	2.3	20	
Zinc	0.992	0.010	1	0.0029	99	70	130	0.9733	1.9	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22090494 **BatchID: R178593** **Date:** *07-Oct-22*

Run ID :Run Order: **ICP2-HE_220922B: 55** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-011BMSD2** Method: **E200.7**

Analysis Date: **09/22/22 14:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 57** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/22/22 14:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.63	0.10	2.5	0	105	90	110				
Manganese	2.44	0.010	2.5	0	97	90	110				
Zinc	2.59	0.010	2.5	0	104	90	110				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 67** SampType: **Sample Matrix Spike** Lab ID: **H22090494-019BMS2** Method: **E200.7**

Analysis Date: **09/22/22 15:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.970	0.050	1	0.07238	90	70	130				
Manganese	4.67	0.0014	5	0.00166	93	70	130				
Zinc	0.925	0.010	1	0.00415	92	70	130				

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Run ID :Run Order: **ICP2-HE_220922B: 68** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-019BMSD2** Method: **E200.7**

Analysis Date: **09/22/22 15:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.01	0.050	1	0.07238	94	70	130	0.9699	3.9	20	
Manganese	4.82	0.0014	5	0.00166	96	70	130	4.665	3.2	20	
Zinc	0.966	0.010	1	0.00415	96	70	130	0.9252	4.3	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494
BatchID: R178593
Date: *07-Oct-22*

Run ID :Run Order: **ICP2-HE_220922B: 68** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-019BMSD2** Method: **E200.7**

Analysis Date: **09/22/22 15:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes **3**	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090494-001B, H22090494-002B, H22090494-003B, H22090494-004B, H22090494-005B, H22090494-006B, H22090494-007B, H22090494-008B, H22090494-009B, H22090494-010B, H22090494-011B, H22090494-012B, H22090494-013B, H22090494-014B, H22090494-015B, H22090494-016B, H22090494-017B, H22090494-018B, H22090494-019B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494
BatchID: R178608
Date: *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220927A: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **09/27/22 11:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.301	0.010	0.3	0	100	90	110				

Associated samples: **H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220927A: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**
Analysis Date: **09/27/22 12:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0518	0.010	0.05	0	104	85	115				

Associated samples: **H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220927A: 86** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **09/27/22 16:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.302	0.010	0.3	0	101	90	110				

Associated samples: **H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220927A: 94** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**
Analysis Date: **09/27/22 16:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0508	0.010	0.05	0	102	90	110				

Associated samples: **H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220927A: 96** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **09/27/22 17:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.0003									

Associated samples: **H22090494-019B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494
BatchID: R178608
Date: *07-Oct-22*

Run ID :Run Order: **ICPMS205-H_220927A: 97** SampType: **Method Blank** Lab ID: **MB-63536** Method: **E200.8**
Analysis Date: **09/27/22 17:04** Units: **mg/L** **Prep Info:** Prep Date: **9/21/2022** Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.0003									

Associated samples: **H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220927A: 98** SampType: **Method Blank** Lab ID: **MB-63553** Method: **E200.8**
Analysis Date: **09/27/22 17:06** Units: **mg/L** **Prep Info:** Prep Date: **9/22/2022** Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.0003									

Associated samples: **H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220927A: 101** SampType: **Sample Matrix Spike** Lab ID: **H22090494-019BMS** Method: **E200.8**
Analysis Date: **09/27/22 17:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0514	0.0010	0.05	0.0009452	101	70	130				

Associated samples: **H22090494-019B**

Run ID :Run Order: **ICPMS205-H_220927A: 102** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-019BMSD** Method: **E200.8**
Analysis Date: **09/27/22 17:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0526	0.0010	0.05	0.0009452	103	70	130	0.05139	2.3	20	

Associated samples: **H22090494-019B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090494
BatchID: R178793
Date: *07-Oct-22*

Run ID :Run Order: **PHSC_101-H_221003A: 71** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **10/03/22 14:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22090494-012A**

Run ID :Run Order: **PHSC_101-H_221003A: 72** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **10/03/22 14:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	580	4.0	600	0	**97**	90	110				

Associated samples: **H22090494-012A**

Run ID :Run Order: **PHSC_101-H_221003A: 76** SampType: **Sample Duplicate** Lab ID: **H22090494-012ADUP** Method: **A2320 B**

Analysis Date: **10/03/22 15:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	150	4.0		0				156	**0.9**	10	
Bicarbonate as HCO3	190	4.0		0				189.8	**0.9**	10	

Associated samples: **H22090494-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090494
BatchID: R178878
Date: *07-Oct-22*

Run ID :Run Order: **PHSC_101-H_221005A: 98** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**
Analysis Date: **10/05/22 16:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22090494-014A**

Run ID :Run Order: **PHSC_101-H_221005A: 99** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**
Analysis Date: **10/05/22 16:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	580	4.0	600	0	97	90	110				

Associated samples: **H22090494-014A**

Run ID :Run Order: **PHSC_101-H_221005A: 102** SampType: **Sample Duplicate** Lab ID: **H22090494-014ADUP** Method: **A2320 B**
Analysis Date: **10/05/22 16:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	4.0		0				0		10	
Bicarbonate as HCO3	ND	4.0		0				0		10	

Associated samples: **H22090494-014A**

Run ID :Run Order: **PHSC_101-H_221005A: 114** SampType: **Sample Duplicate** Lab ID: **H22090695-009ADUP** Method: **A2320 B**
Analysis Date: **10/05/22 17:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	110	4.0		0				104.3	1.7	10	
Bicarbonate as HCO3	130	4.0		0				126.6	1.7	10	

Associated samples: **H22090494-014A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22090494

Login completed by: Taylor K. Jones
Date Received: 9/16/2022

Reviewed by: acarlson
Received by: amh

Reviewed Date: 10/7/2022
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	0.7°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

Cooler 1 was received at 0.4 °C and Cooler 2 at 0.7 °C.

Samples for Dissolved Metals/Hardness were subsampled, filtered, and preserved to pH <2 with 2 mL of Nitric acid per 250 mL in the laboratory. According to 40CFR136, samples for Dissolved Metals should be filtered and preserved within 15 minutes of collection.

Collection time on COC for MW-01 is 14:40 - bottles have time of 12:30. Used time from sample container.
tj 9/19/22

Chain of Custody & Analytical Request Record

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www.energylab.com

Account Information (Billing Information)

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (If different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other

Comments

Please filter all samples in the laboratory to 0.45 um (all samples are submitted raw). If water quantity is insufficient for all analyses, please prioritize dissolved metals first, then dissolved Hg, then common ions (anions before cations), and then alkalinity.

Project Information

Project Name, PWSID, Permit, etc.	SSTOU Repository Vadose Zone
Sampler Name	J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes: A - Air; W - Water; S - Soils/Solids; V - Vegetation; B - Bioassay; O - Other; DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Dissolved As, Cd, Cu, Pb, Hg, Zn	Dissolved Al, Sb, Ba, Be, B, Cr, Co, Fe	Dissolved Mn, Mb, ni, Se, Ag, U, V	Alkalinity/Bicarbonate	Hardness	Ca, Mg, Cl, K, Na, SO4	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	P-39R	9/15/22	1605	1	W	✓	✓	✓	✓	✓	✓			H22090494
2	P-37A	9/15/22	1630	1	W	✓	✓	✓	✓	✓	✓			
3	GW-RM-SS	9/15/22	1700	1	W	✓	✓	✓	✓	✓	✓			
4	GW-RM-NS	9/15/22	1730	1	W	✓	✓	✓	✓	✓	✓			
5	GW-MC-NS	9/15/22	1845	1	W	✓	✓	✓	✓	✓	✓			
6	GW-MC-BG	9/15/22	1810	1	W	✓	✓	✓	✓	✓	✓			
7	GW-MC-SS	9/15/22	1930	1	W	✓	✓	✓	✓	✓	✓			
8	GW-WG-NS QC-FD	9/15/22	1015	1	W	✓	✓	✓	✓	✓	✓			
9	GW-RK-BG QC-FB	9/15/22	1320	1	W	✓	✓	✓	✓	✓	✓			
10														

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Joe Naughton	9/16/22 1700				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
					9/16/22 1700	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand	4	Y (N) C B	Y N	4.0 °C 2.0-7	(Y) N	(Y) N	CC Cash Check	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

Chain of Custody & Analytical Request Record

ENERGY LABORATORIES — Trust our People. Trust our Data.

www.energylab.com

Account Information (Billing information)

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (If different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other

Comments

Please filter all samples in the laboratory to 0.45 um (all samples are submitted raw).

Project Information

Project Name, PWSID, Permit, etc.	SSTOU Repository Groundwater
Sampler Name	J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes: A - Air; W - Water; S - Soils/Solids; V - Vegetation; B - Bioassay; O - Other; DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling -- See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Dissolved As, Cd, Cu, Pb, Hg, Zn	Dissolved Al, Sb, Ba, Be, B, Cr, Co, Fe	Dissolved Mn, Mb, Ni, Se, Ag, U, V	Dissolved Ca, Mg, K, Na	Hardness	Chloride, Sulfate	Alkalinity/Bicarbonate			See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	GW-1010R	9/15/22	0945	1	W	✓	✓	✓	✓	✓	✓	✓					H220904 94
2	GW-WG-SS	9/15/22	1045	1	W	✓	✓	✓	✓	✓	✓	✓					
3	GW-WG-NS	9/15/22	1015	1	W	✓	✓	✓	✓	✓	✓	✓					
4	GW-RK-BG	9/15/22	1315	1	W	✓	✓	✓	✓	✓	✓	✓					
5	MW-10	9/15/22	1145	1	W	✓	✓	✓	✓	✓	✓	✓					
6	MW-01	9/15/22	1440	1	W	✓	✓	✓	✓	✓	✓	✓					
7	GW-1003R	9/15/22	1410	1	W	✓	✓	✓	✓	✓	✓	✓					
8	1GW-1004A	9/15/22	1440	1	W	✓	✓	✓	✓	✓	✓	✓					
9	P-58A	9/15/22	1500	1	W	✓	✓	✓	✓	✓	✓	✓					
10	P-114	9/15/22	1540	1	W	✓	✓	✓	✓	✓	✓	✓					

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Joe Naughton	9/16/22 1900				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Hanson	9/19/22 7:00	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand	4	Y (N) C B	Y N	4.3 °C	Y N	Y N	CC Cash Check	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

October 11, 2022

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22090497 Quote ID: H1526

Project Name: SSTOU Repository Vadose Zone

Energy Laboratories Inc Helena MT received the following 22 samples for MT DEQ-Federal Superfund on 9/16/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22090497-001	GW-FM-WS	09/16/22 9:00	09/16/22	Groundwater	Metals by ICP/ICPMS, Dissolved Alkalinity to pH 4.5 Conductivity Mercury, Dissolved Hardness Anions by Ion Chromatography Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1
H22090497-002	GW-FM-ES	09/16/22 8:30	09/16/22	Groundwater	Same As Above
H22090497-003	GW-FM-BG	09/16/22 9:30	09/16/22	Groundwater	Same As Above
H22090497-004	GW-CR-BG QC-FD	09/16/22 10:15	09/16/22	Groundwater	Same As Above
H22090497-005	GW-CR-BG	09/16/22 10:15	09/16/22	Groundwater	Same As Above
H22090497-006	GW-CR-WS	09/16/22 10:30	09/16/22	Groundwater	Same As Above
H22090497-007	GW-CR-ES	09/16/22 11:30	09/16/22	Groundwater	Same As Above
H22090497-008	GW-ST-BG QC-FB	09/16/22 12:10	09/16/22	Groundwater	Same As Above
H22090497-009	GW-ST-BG	09/16/22 12:20	09/16/22	Groundwater	Same As Above
H22090497-010	GW-ST-ES	09/16/22 12:45	09/16/22	Groundwater	Same As Above
H22090497-011	GW-ST-WS	09/16/22 13:20	09/16/22	Groundwater	Same As Above
H22090497-012	GW-FR-ES	09/16/22 15:10	09/16/22	Groundwater	Same As Above
H22090497-013	GW-FR-BG	09/16/22 14:00	09/16/22	Groundwater	Same As Above
H22090497-014	GW-FR-WS	09/16/22 14:35	09/16/22	Groundwater	Same As Above
H22090497-015	1GW-1056	09/14/22 15:10	09/16/22	Groundwater	Same As Above
H22090497-016	LYP-07	09/14/22 16:20	09/16/22	Groundwater	Same As Above
H22090497-017	MW-2A	09/14/22 13:00	09/16/22	Groundwater	Same As Above
H22090497-018	MW-2B	09/14/22 13:40	09/16/22	Groundwater	Same As Above
H22090497-019	MW-2C	09/14/22 17:55	09/16/22	Groundwater	Same As Above
H22090497-020	MW-2D	09/14/22 14:40	09/16/22	Groundwater	Same As Above
H22090497-021	MW-2A QC-FB	09/14/22 18:30	09/16/22	Groundwater	Same As Above
H22090497-022	MW-2C QC-FD	09/14/22 17:15	09/16/22	Groundwater	Same As Above

ANALYTICAL SUMMARY REPORT

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

CLIENT: MT DEQ-Federal Superfund
Project: SSTOU Repository Vadose Zone
Work Order: H22090497

Report Date: 10/11/22

CASE NARRATIVE

Boron was confirmed for GW-ST-BG QC-FB by duplicate analysis. Additionally, an aliquot from the unfiltered/unpreserved container was analyzed to verify the boron was not due to filtering. abc 10/11/2022

All "J" qualified analyte concentrations are below the laboratory minimum recommended Reporting Limit (RL) and above the calculated method detection limit (MDL). Inorganic analytes reported with "J" qualifiers should be verified against the corresponding method blank and continuing calibration blanks. Inorganic "J" quantitations near the MDL may be suspect due to possible method background levels, sample matrix effects, and/or daily variability in instrument signal-to-noise levels.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-FM-WS
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-001
Collection Date: 09/16/22 09:00
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	09/20/22 19:27 / ljs			PHSC_101-H_220920A : 169		R178363
Bicarbonate as HCO3	140	mg/L		4	3	A2320 B	09/20/22 19:27 / ljs			PHSC_101-H_220920A : 169		R178363
Chloride	39	mg/L		1	0.02	E300.0	09/23/22 18:59 / SR			IC METROHM_220922A : 133		R178564
Sulfate	261	mg/L		1	0.06	E300.0	09/23/22 18:59 / SR			IC METROHM_220922A : 133		R178564
Hardness as CaCO3	348	mg/L		1	1	A2340 B	09/28/22 12:04 / sld			WATERCALC_220928A : 2		R178651
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Arsenic	0.001	mg/L		0.001	0.0002	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Barium	0.159	mg/L		0.003	0.0002	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Boron	0.056	mg/L	J	0.1	0.004	E200.7	09/26/22 15:24 / cfg	09/22/22 08:58		ICP2-HE_220926A : 16		R178595
Cadmium	0.00010	mg/L		0.00003	0.00002	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Calcium	108	mg/L		1	0.2	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Copper	0.0009	mg/L	J	0.001	0.0001	E200.8	09/27/22 17:23 / dck	09/22/22 08:58		ICPMS205-H_220927A : 105		R178608
Iron	0.007	mg/L	J	0.02	0.004	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Magnesium	19	mg/L		1	0.01	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Manganese	3.26	mg/L		0.001	0.0003	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 15:09 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 45		63496
Molybdenum	0.065	mg/L		0.005	0.0003	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Nickel	0.0016	mg/L	J	0.002	0.0002	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Potassium	5	mg/L		1	0.04	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Selenium	0.00014	mg/L	J	0.001	0.00007	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Sodium	35	mg/L		1	0.04	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Uranium	0.0022	mg/L		0.0002	0.00002	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Vanadium	0.0014	mg/L	J	0.1	0.0001	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536
Zinc	0.172	mg/L		0.008	0.001	E200.8	09/23/22 18:38 / dck	09/22/22 08:58		ICPMS205-H_220922C : 342		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-FM-ES
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-002
Collection Date: 09/16/22 08:30
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	110	mg/L		4	2	A2320 B	09/20/22 19:35 / ljs			PHSC_101-H_220920A : 171		R178363
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	09/20/22 19:35 / ljs			PHSC_101-H_220920A : 171		R178363
Chloride	47	mg/L		1	0.02	E300.0	09/23/22 19:13 / SR			IC METROHM_220922A : 134		R178564
Sulfate	224	mg/L		1	0.06	E300.0	09/23/22 19:13 / SR			IC METROHM_220922A : 134		R178564
Hardness as CaCO3	295	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 1		R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Arsenic	0.001	mg/L		0.001	0.0002	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Barium	0.062	mg/L		0.003	0.0002	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Boron	0.063	mg/L	J	0.1	0.004	E200.7	09/26/22 15:46 / cfg	09/22/22 08:58		ICP2-HE_220926A : 22		R178595
Cadmium	0.00005	mg/L		0.00003	0.00002	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Calcium	90	mg/L		1	0.2	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Cobalt	0.003	mg/L	J	0.01	0.001	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Copper	0.002	mg/L		0.001	0.0001	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Iron	0.009	mg/L	J	0.02	0.004	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Magnesium	17	mg/L		1	0.01	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Manganese	1.85	mg/L		0.001	0.0003	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Mercury	ND	ug/L		0.005	0.003	E245.1	09/23/22 15:12 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 46		63496
Molybdenum	0.098	mg/L		0.005	0.0003	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Nickel	0.0019	mg/L	J	0.002	0.0002	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Potassium	6	mg/L		1	0.04	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Sodium	41	mg/L		1	0.04	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Uranium	0.0006	mg/L		0.0002	0.00002	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536
Zinc	0.424	mg/L		0.008	0.001	E200.8	09/23/22 18:41 / dck	09/22/22 08:58		ICPMS205-H_220922C : 343		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-FM-BG
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-003
Collection Date: 09/16/22 09:30
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	40	mg/L		4	2	A2320 B	09/20/22 19:42 / ljs			PHSC_101-H_220920A : 173		R178363
Bicarbonate as HCO3	48	mg/L		4	3	A2320 B	09/20/22 19:42 / ljs			PHSC_101-H_220920A : 173		R178363
Chloride	27	mg/L		1	0.02	E300.0	09/23/22 19:28 / SR			IC METROHM_220922A : 135		R178564
Sulfate	106	mg/L		1	0.06	E300.0	09/23/22 19:28 / SR			IC METROHM_220922A : 135		R178564
Hardness as CaCO3	119	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 2		R178596
METALS, DISSOLVED												
Aluminum	0.007	mg/L	J	0.009	0.003	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Arsenic	0.001	mg/L		0.001	0.0002	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Barium	0.041	mg/L		0.003	0.0002	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Beryllium	0.0004	mg/L	J	0.0008	0.0002	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Boron	0.033	mg/L	J	0.1	0.004	E200.7	09/26/22 15:50 / cfg	09/22/22 08:58		ICP2-HE_220926A : 23		R178595
Cadmium	0.00081	mg/L		0.00003	0.00002	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Calcium	35	mg/L		1	0.2	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Copper	0.002	mg/L		0.001	0.0001	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Iron	0.06	mg/L		0.02	0.004	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Magnesium	8	mg/L		1	0.01	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Manganese	0.594	mg/L		0.001	0.0003	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	09/23/22 15:22 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 49		63496
Molybdenum	0.0003	mg/L	J	0.005	0.0003	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Nickel	0.007	mg/L		0.002	0.0002	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Potassium	5	mg/L		1	0.04	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Selenium	0.00046	mg/L	J	0.001	0.00007	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Sodium	26	mg/L		1	0.04	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Uranium	0.0003	mg/L		0.0002	0.00002	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Vanadium	0.0015	mg/L	J	0.1	0.0001	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536
Zinc	0.018	mg/L		0.008	0.001	E200.8	09/23/22 18:43 / dck	09/22/22 08:58		ICPMS205-H_220922C : 344		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-CR-BG QC-FD
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-004
Collection Date: 09/16/22 10:15
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	09/20/22 19:48 / ljs			PHSC_101-H_220920A : 175		R178363
Bicarbonate as HCO3	160	mg/L		4	3	A2320 B	09/20/22 19:48 / ljs			PHSC_101-H_220920A : 175		R178363
Chloride	27	mg/L		1	0.02	E300.0	09/23/22 19:42 / SR			IC METROHM_220922A : 136		R178564
Sulfate	150	mg/L		1	0.06	E300.0	09/23/22 19:42 / SR			IC METROHM_220922A : 136		R178564
Hardness as CaCO3	63	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 3		R178596
METALS, DISSOLVED												
Aluminum	0.013	mg/L		0.009	0.003	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Antimony	0.0011	mg/L		0.0005	0.0002	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Arsenic	0.023	mg/L		0.001	0.0002	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Barium	0.015	mg/L		0.003	0.0002	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Boron	0.2	mg/L		0.1	0.004	E200.7	09/26/22 15:54 / cfg	09/22/22 08:58		ICP2-HE_220926A : 24		R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Calcium	20	mg/L		1	0.2	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Copper	0.003	mg/L		0.001	0.0001	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Iron	0.010	mg/L	J	0.02	0.004	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Magnesium	3	mg/L		1	0.01	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Manganese	0.0007	mg/L	J	0.001	0.0003	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	09/23/22 15:25 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 50		63496
Molybdenum	0.021	mg/L		0.005	0.0003	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Potassium	4	mg/L		1	0.04	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Selenium	0.00015	mg/L	J	0.001	0.00007	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Sodium	130	mg/L		1	0.04	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Uranium	0.0020	mg/L		0.0002	0.00002	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Vanadium	0.0050	mg/L	J	0.1	0.0001	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 18:45 / dck	09/22/22 08:58		ICPMS205-H_220922C : 345		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-CR-BG
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-005
Collection Date: 09/16/22 10:15
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	09/20/22 19:56 / ljs			PHSC_101-H_220920A : 177		R178363
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	09/20/22 19:56 / ljs			PHSC_101-H_220920A : 177		R178363
Chloride	27	mg/L		1	0.02	E300.0	09/23/22 19:57 / SR			IC METROHM_220922A : 137		R178564
Sulfate	151	mg/L		1	0.06	E300.0	09/23/22 19:57 / SR			IC METROHM_220922A : 137		R178564
Hardness as CaCO3	63	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 4		R178596
METALS, DISSOLVED												
Aluminum	0.009	mg/L	J	0.009	0.003	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Antimony	0.0011	mg/L		0.0005	0.0002	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Arsenic	0.023	mg/L		0.001	0.0002	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Barium	0.017	mg/L		0.003	0.0002	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Boron	0.2	mg/L		0.1	0.004	E200.7	09/26/22 15:58 / cfg	09/22/22 08:58		ICP2-HE_220926A : 25		R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Calcium	21	mg/L		1	0.2	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Copper	0.002	mg/L		0.001	0.0001	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Magnesium	3	mg/L		1	0.01	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Manganese	0.0006	mg/L	J	0.001	0.0003	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	09/23/22 15:28 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 51		63496
Molybdenum	0.021	mg/L		0.005	0.0003	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Nickel	0.0003	mg/L	J	0.002	0.0002	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Potassium	4	mg/L		1	0.04	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Selenium	0.00014	mg/L	J	0.001	0.00007	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Sodium	130	mg/L		1	0.04	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Uranium	0.0021	mg/L		0.0002	0.00002	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Vanadium	0.0054	mg/L	J	0.1	0.0001	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 18:48 / dck	09/22/22 08:58		ICPMS205-H_220922C : 346		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-CR-WS
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-006
Collection Date: 09/16/22 10:30
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	110	mg/L		4	2	A2320 B	09/20/22 20:03 / ljs			PHSC_101-H_220920A : 179		R178363
Bicarbonate as HCO3	140	mg/L		4	3	A2320 B	09/20/22 20:03 / ljs			PHSC_101-H_220920A : 179		R178363
Chloride	47	mg/L		1	0.02	E300.0	09/23/22 20:11 / SR			IC METROHM_220922A : 138		R178564
Sulfate	281	mg/L		1	0.06	E300.0	09/23/22 20:11 / SR			IC METROHM_220922A : 138		R178564
Hardness as CaCO3	345	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 5		R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Arsenic	0.008	mg/L		0.001	0.0002	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Barium	0.064	mg/L		0.003	0.0002	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Boron	0.077	mg/L	J	0.1	0.004	E200.7	09/26/22 16:01 / cfg	09/22/22 08:58		ICP2-HE_220926A : 26		R178595
Cadmium	0.0164	mg/L		0.00003	0.00002	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Calcium	110	mg/L		1	0.2	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Cobalt	0.004	mg/L	J	0.01	0.001	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Copper	0.034	mg/L		0.001	0.0001	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Iron	0.008	mg/L	J	0.02	0.004	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Magnesium	17	mg/L		1	0.01	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Manganese	3.11	mg/L		0.001	0.0003	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Mercury	0.013	ug/L		0.005	0.002	E245.1	09/23/22 15:31 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 52		63496
Molybdenum	0.093	mg/L		0.005	0.0003	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Nickel	0.002	mg/L		0.002	0.0002	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Potassium	6	mg/L		1	0.04	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Sodium	58	mg/L		1	0.04	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Uranium	0.0097	mg/L		0.0002	0.00002	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536
Zinc	0.263	mg/L		0.008	0.001	E200.8	09/23/22 18:50 / dck	09/22/22 08:58		ICPMS205-H_220922C : 347		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-CR-ES
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-007
Collection Date: 09/16/22 11:30
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	110	mg/L		4	2	A2320 B	09/20/22 20:10 / ljs			PHSC_101-H_220920A : 181		R178363
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	09/20/22 20:10 / ljs			PHSC_101-H_220920A : 181		R178363
Chloride	50	mg/L		1	0.02	E300.0	09/23/22 20:25 / SR			IC METROHM_220922A : 139		R178564
Sulfate	172	mg/L		1	0.06	E300.0	09/23/22 20:25 / SR			IC METROHM_220922A : 139		R178564
Hardness as CaCO3	247	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 6		R178596
METALS, DISSOLVED												
Aluminum	0.009	mg/L		0.009	0.003	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Arsenic	0.0009	mg/L	J	0.001	0.0002	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Barium	0.021	mg/L		0.003	0.0002	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Boron	0.069	mg/L	J	0.1	0.004	E200.7	09/26/22 16:05 / cfg	09/22/22 08:58		ICP2-HE_220926A : 27		R178595
Cadmium	0.00202	mg/L		0.00003	0.00002	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Calcium	78	mg/L		1	0.2	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Copper	0.004	mg/L		0.001	0.0001	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Magnesium	13	mg/L		1	0.01	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Manganese	0.007	mg/L		0.001	0.0003	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Mercury	0.003	ug/L	J	0.005	0.002	E245.1	09/23/22 15:35 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 53		63496
Molybdenum	0.046	mg/L		0.005	0.0003	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Nickel	0.002	mg/L		0.002	0.0002	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Potassium	3	mg/L		1	0.04	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Selenium	0.00015	mg/L	J	0.001	0.00007	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Sodium	54	mg/L		1	0.04	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Uranium	0.0028	mg/L		0.0002	0.00002	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Vanadium	0.0023	mg/L	J	0.1	0.0001	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536
Zinc	0.433	mg/L		0.008	0.001	E200.8	09/23/22 18:53 / dck	09/22/22 08:58		ICPMS205-H_220922C : 348		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-ST-BG QC-FB
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-008
Collection Date: 09/16/22 12:10
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4	2	A2320 B	09/20/22 20:17 / ljs			PHSC_101-H_220920A : 183		R178363
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	09/20/22 20:17 / ljs			PHSC_101-H_220920A : 183		R178363
Chloride	ND	mg/L		1	0.02	E300.0	09/23/22 20:40 / SR			IC METROHM_220922A : 140		R178564
Sulfate	ND	mg/L		1	0.06	E300.0	09/23/22 20:40 / SR			IC METROHM_220922A : 140		R178564
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 7		R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Arsenic	ND	mg/L		0.001	0.0002	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Barium	0.0003	mg/L	J	0.003	0.0002	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Boron	0.2	mg/L		0.1	0.004	E200.7	09/26/22 16:09 / cfg	09/22/22 08:58		ICP2-HE_220926A : 28		R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Calcium	ND	mg/L		1	0.2	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Copper	ND	mg/L		0.001	0.0001	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Magnesium	ND	mg/L		1	0.01	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Manganese	0.0003	mg/L	J	0.001	0.0003	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 15:38 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 54		63496
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Potassium	ND	mg/L		1	0.04	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Sodium	0.08	mg/L	J	1	0.04	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Uranium	ND	mg/L		0.0002	0.00002	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 18:55 / dck	09/22/22 08:58		ICPMS205-H_220922C : 349		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-ST-BG
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-009
Collection Date: 09/16/22 12:20
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	16	mg/L		4	2	A2320 B	09/20/22 20:23 / ljs			PHSC_101-H_220920A : 185		R178363
Bicarbonate as HCO3	19	mg/L		4	3	A2320 B	09/20/22 20:23 / ljs			PHSC_101-H_220920A : 185		R178363
Chloride	46	mg/L		1	0.02	E300.0	09/23/22 20:54 / SR			IC METROHM_220922A : 141		R178564
Sulfate	281	mg/L		1	0.06	E300.0	09/23/22 20:54 / SR			IC METROHM_220922A : 141		R178564
Hardness as CaCO3	302	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 8		R178596
METALS, DISSOLVED												
Aluminum	0.029	mg/L		0.009	0.003	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Barium	0.027	mg/L		0.003	0.0002	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Beryllium	0.0003	mg/L	J	0.0008	0.0002	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Boron	0.076	mg/L	J	0.1	0.004	E200.7	09/26/22 16:13 / cfg	09/22/22 08:58		ICP2-HE_220926A : 29		R178595
Cadmium	0.00300	mg/L		0.00003	0.00002	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Calcium	89	mg/L		1	0.2	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Chromium	0.0003	mg/L	J	0.01	0.0001	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Copper	0.004	mg/L		0.001	0.0001	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Magnesium	19	mg/L		1	0.01	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Manganese	0.524	mg/L		0.001	0.0003	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	09/23/22 15:41 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 55		63496
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Nickel	0.027	mg/L		0.002	0.0002	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Potassium	4	mg/L		1	0.04	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Sodium	28	mg/L		1	0.04	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Uranium	0.00010	mg/L	J	0.0002	0.00002	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Vanadium	0.0013	mg/L	J	0.1	0.0001	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536
Zinc	1.76	mg/L		0.008	0.001	E200.8	09/23/22 18:58 / dck	09/22/22 08:58		ICPMS205-H_220922C : 350		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-ST-ES
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-010
Collection Date: 09/16/22 12:45
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	10	mg/L		4	2	A2320 B	09/20/22 21:16 / ljs			PHSC_101-H_220920A : 191		R178363
Bicarbonate as HCO3	11	mg/L		4	3	A2320 B	09/20/22 21:16 / ljs			PHSC_101-H_220920A : 191		R178363
Chloride	41	mg/L		1	0.02	E300.0	09/23/22 22:20 / SR			IC METROHM_220922A : 146		R178564
Sulfate	332	mg/L		1	0.06	E300.0	09/23/22 22:20 / SR			IC METROHM_220922A : 146		R178564
Hardness as CaCO3	293	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 9		R178596
METALS, DISSOLVED												
Aluminum	0.491	mg/L		0.009	0.003	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Arsenic	0.0003	mg/L	J	0.001	0.0002	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Barium	0.017	mg/L		0.003	0.0002	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Beryllium	0.0012	mg/L		0.0008	0.0002	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Boron	0.058	mg/L	J	0.1	0.004	E200.7	09/26/22 16:17 / cfg	09/22/22 08:58		ICP2-HE_220926A : 30		R178595
Cadmium	0.0394	mg/L		0.00003	0.00002	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Calcium	96	mg/L		1	0.2	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Cobalt	0.01	mg/L		0.01	0.001	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Copper	2.20	mg/L		0.001	0.0001	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Iron	0.008	mg/L	J	0.02	0.004	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Lead	0.0027	mg/L		0.0003	0.0001	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Magnesium	13	mg/L		1	0.01	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Manganese	2.54	mg/L		0.001	0.0003	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	09/23/22 15:45 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 56		63496
Molybdenum	0.0022	mg/L	J	0.005	0.0003	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Nickel	0.016	mg/L		0.002	0.0002	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Potassium	7	mg/L		1	0.04	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Selenium	0.00021	mg/L	J	0.001	0.00007	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Sodium	40	mg/L		1	0.04	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Uranium	0.0054	mg/L		0.0002	0.00002	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Vanadium	0.0002	mg/L	J	0.1	0.0001	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536
Zinc	5.26	mg/L		0.008	0.001	E200.8	09/23/22 19:00 / dck	09/22/22 08:58		ICPMS205-H_220922C : 351		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-ST-WS
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-011
Collection Date: 09/16/22 13:20
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	45	mg/L		4	2	A2320 B	09/20/22 21:29 / ljs			PHSC_101-H_220920A : 195		R178363
Bicarbonate as HCO3	54	mg/L		4	3	A2320 B	09/20/22 21:29 / ljs			PHSC_101-H_220920A : 195		R178363
Chloride	48	mg/L		1	0.02	E300.0	09/23/22 22:35 / SR			IC METROHM_220922A : 147		R178564
Sulfate	214	mg/L		1	0.06	E300.0	09/23/22 22:35 / SR			IC METROHM_220922A : 147		R178564
Hardness as CaCO3	226	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 10		R178596
METALS, DISSOLVED												
Aluminum	0.056	mg/L		0.009	0.003	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Barium	0.033	mg/L		0.003	0.0002	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Beryllium	0.0004	mg/L	J	0.0008	0.0002	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Boron	0.066	mg/L	J	0.1	0.004	E200.7	09/26/22 16:28 / cfg	09/22/22 08:58		ICP2-HE_220926A : 33		R178595
Cadmium	0.0369	mg/L		0.00003	0.00002	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Calcium	73	mg/L		1	0.2	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Cobalt	0.01	mg/L		0.01	0.001	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Copper	0.207	mg/L		0.001	0.0001	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Magnesium	11	mg/L		1	0.01	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Manganese	2.86	mg/L		0.001	0.0003	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Mercury	0.006	ug/L		0.005	0.002	E245.1	09/23/22 15:54 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 59		63496
Molybdenum	0.083	mg/L		0.005	0.0003	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Nickel	0.019	mg/L		0.002	0.0002	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Potassium	7	mg/L		1	0.04	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Selenium	0.00015	mg/L	J	0.001	0.00007	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Sodium	36	mg/L		1	0.04	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Uranium	0.0030	mg/L		0.0002	0.00002	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Vanadium	0.0024	mg/L	J	0.1	0.0001	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536
Zinc	5.42	mg/L		0.008	0.001	E200.8	09/23/22 19:12 / dck	09/22/22 08:58		ICPMS205-H_220922C : 356		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-FR-ES
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-012
Collection Date: 09/16/22 15:10
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	09/20/22 21:35 / ljs			PHSC_101-H_220920A : 197		R178363
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	09/20/22 21:35 / ljs			PHSC_101-H_220920A : 197		R178363
Chloride	19	mg/L		1	0.02	E300.0	09/23/22 22:49 / SR			IC METROHM_220922A : 148		R178564
Sulfate	203	mg/L		1	0.06	E300.0	09/23/22 22:49 / SR			IC METROHM_220922A : 148		R178564
Hardness as CaCO3	285	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 11		R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Barium	0.047	mg/L		0.003	0.0002	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Boron	0.031	mg/L	J	0.1	0.004	E200.7	09/26/22 16:42 / cfg	09/22/22 08:58		ICP2-HE_220926A : 37		R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Calcium	86	mg/L		1	0.2	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Copper	0.0006	mg/L	J	0.001	0.0001	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Iron	0.10	mg/L		0.02	0.004	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Magnesium	17	mg/L		1	0.01	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Manganese	0.063	mg/L		0.001	0.0003	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	09/23/22 15:58 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 60		63496
Molybdenum	0.011	mg/L		0.005	0.0003	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Potassium	3	mg/L		1	0.04	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Selenium	0.00007	mg/L	J	0.001	0.00007	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Sodium	22	mg/L		1	0.04	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Uranium	0.0053	mg/L		0.0002	0.00002	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 19:14 / dck	09/22/22 08:58		ICPMS205-H_220922C : 357		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-FR-BG
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-013
Collection Date: 09/16/22 14:00
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	190	mg/L		4	2	A2320 B	09/20/22 21:45 / ljs			PHSC_101-H_220920A	199	R178363
Bicarbonate as HCO3	230	mg/L		4	3	A2320 B	09/20/22 21:45 / ljs			PHSC_101-H_220920A	199	R178363
Chloride	1	mg/L		1	0.02	E300.0	09/23/22 23:03 / SR			IC METROHM_220922A	149	R178564
Sulfate	27	mg/L		1	0.06	E300.0	09/23/22 23:03 / SR			IC METROHM_220922A	149	R178564
Hardness as CaCO3	120	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B	12	R178596
METALS, DISSOLVED												
Aluminum	0.005	mg/L	J	0.009	0.003	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Antimony	0.0014	mg/L		0.0005	0.0002	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Arsenic	0.008	mg/L		0.001	0.0002	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Barium	0.039	mg/L		0.003	0.0002	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Boron	0.009	mg/L	J	0.1	0.004	E200.7	09/26/22 16:46 / cfg	09/22/22 08:58		ICP2-HE_220926A	38	R178595
Cadmium	0.00005	mg/L		0.00003	0.00002	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Calcium	36	mg/L		1	0.2	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Copper	0.003	mg/L		0.001	0.0001	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Iron	0.009	mg/L	J	0.02	0.004	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Magnesium	7	mg/L		1	0.01	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Manganese	0.237	mg/L		0.001	0.0003	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Mercury	0.003	ug/L	J	0.005	0.002	E245.1	09/23/22 16:01 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	61	63496
Molybdenum	0.0040	mg/L	J	0.005	0.0003	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Potassium	1	mg/L		1	0.04	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Selenium	0.00033	mg/L	J	0.001	0.00007	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Sodium	8	mg/L		1	0.04	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Uranium	0.0025	mg/L		0.0002	0.00002	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Vanadium	0.0068	mg/L	J	0.1	0.0001	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 19:17 / dck	09/22/22 08:58		ICPMS205-H_220922C	358	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: GW-FR-WS
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-014
Collection Date: 09/16/22 14:35
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	09/20/22 22:07 / ljs			PHSC_101-H_220920A : 201		R178363
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	09/20/22 22:07 / ljs			PHSC_101-H_220920A : 201		R178363
Chloride	1	mg/L		1	0.02	E300.0	09/23/22 23:18 / SR			IC METROHM_220922A : 150		R178564
Sulfate	24	mg/L		1	0.06	E300.0	09/23/22 23:18 / SR			IC METROHM_220922A : 150		R178564
Hardness as CaCO3	142	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 13		R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Antimony	0.0005	mg/L		0.0005	0.0002	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Arsenic	0.009	mg/L		0.001	0.0002	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Barium	0.043	mg/L		0.003	0.0002	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Boron	0.013	mg/L	J	0.1	0.004	E200.7	09/26/22 16:50 / cfg	09/22/22 08:58		ICP2-HE_220926A : 39		R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Calcium	43	mg/L		1	0.2	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Copper	0.001	mg/L		0.001	0.0001	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Iron	0.007	mg/L	J	0.02	0.004	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Magnesium	8	mg/L		1	0.01	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Manganese	0.008	mg/L		0.001	0.0003	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 16:04 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 62		63496
Molybdenum	0.005	mg/L		0.005	0.0003	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Potassium	2	mg/L		1	0.04	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Selenium	0.00013	mg/L	J	0.001	0.00007	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Sodium	10	mg/L		1	0.04	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Uranium	0.0096	mg/L		0.0002	0.00002	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Vanadium	0.0034	mg/L	J	0.1	0.0001	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 19:19 / dck	09/22/22 08:58		ICPMS205-H_220922C : 359		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: 1GW-1056
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-015
Collection Date: 09/14/22 15:10
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	09/20/22 22:13 / ljs			PHSC_101-H_220920A	203	R178363
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	09/20/22 22:13 / ljs			PHSC_101-H_220920A	203	R178363
Chloride	39	mg/L		1	0.02	E300.0	09/23/22 23:32 / SR			IC METROHM_220922A	151	R178564
Sulfate	171	mg/L		1	0.06	E300.0	09/23/22 23:32 / SR			IC METROHM_220922A	151	R178564
Hardness as CaCO3	295	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B	14	R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Barium	0.036	mg/L		0.003	0.0002	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Boron	0.057	mg/L	J	0.1	0.004	E200.7	09/26/22 16:54 / cfg	09/22/22 08:58		ICP2-HE_220926A	40	R178595
Cadmium	0.00002	mg/L	J	0.00003	0.00002	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Calcium	89	mg/L		1	0.2	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Copper	0.0008	mg/L	J	0.001	0.0001	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Magnesium	18	mg/L		1	0.01	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Manganese	0.009	mg/L		0.001	0.0003	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Mercury	ND	ug/L		0.005	0.003	E245.1	09/23/22 16:07 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A	63	63496
Molybdenum	0.007	mg/L		0.005	0.0003	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Nickel	0.0003	mg/L	J	0.002	0.0002	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Potassium	3	mg/L		1	0.04	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Selenium	0.004	mg/L		0.001	0.00007	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Sodium	29	mg/L		1	0.04	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Uranium	0.0419	mg/L		0.0002	0.00002	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Vanadium	0.0028	mg/L	J	0.1	0.0001	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 19:22 / dck	09/22/22 08:58		ICPMS205-H_220922C	360	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYP-07
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-016
Collection Date: 09/14/22 16:20
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	180	mg/L		4	2	A2320 B	09/20/22 22:19 / ljs			PHSC_101-H_220920A : 205		R178363
Bicarbonate as HCO3	220	mg/L		4	3	A2320 B	09/20/22 22:19 / ljs			PHSC_101-H_220920A : 205		R178363
Chloride	45	mg/L		1	0.02	E300.0	09/23/22 23:47 / SR			IC METROHM_220922A : 152		R178564
Sulfate	181	mg/L		1	0.06	E300.0	09/23/22 23:47 / SR			IC METROHM_220922A : 152		R178564
Hardness as CaCO3	338	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 15		R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Antimony	0.0010	mg/L		0.0005	0.0002	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Barium	0.065	mg/L		0.003	0.0002	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Boron	0.057	mg/L	J	0.1	0.004	E200.7	09/26/22 16:58 / cfg	09/22/22 08:58		ICP2-HE_220926A : 41		R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Calcium	104	mg/L		1	0.2	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Cobalt	0.001	mg/L	J	0.01	0.001	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Copper	0.0002	mg/L	J	0.001	0.0001	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Iron	0.010	mg/L	J	0.02	0.004	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Magnesium	19	mg/L		1	0.01	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Manganese	0.051	mg/L		0.001	0.0003	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 16:17 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 66		63496
Molybdenum	0.011	mg/L		0.005	0.0003	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Nickel	0.004	mg/L		0.002	0.0002	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Potassium	5	mg/L		1	0.04	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Selenium	0.003	mg/L		0.001	0.00007	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Sodium	35	mg/L		1	0.04	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Uranium	0.120	mg/L		0.0002	0.00002	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Vanadium	0.0004	mg/L	J	0.1	0.0001	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536
Zinc	0.005	mg/L	J	0.008	0.001	E200.8	09/23/22 19:24 / dck	09/22/22 08:58		ICPMS205-H_220922C : 361		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2A
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-017
Collection Date: 09/14/22 13:00
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	09/20/22 22:25 / ljs			PHSC_101-H_220920A : 207		R178363
Bicarbonate as HCO3	140	mg/L		4	3	A2320 B	09/20/22 22:25 / ljs			PHSC_101-H_220920A : 207		R178363
Chloride	8	mg/L		1	0.02	E300.0	09/24/22 00:01 / SR			IC METROHM_220922A : 153		R178564
Sulfate	191	mg/L		1	0.06	E300.0	09/24/22 00:01 / SR			IC METROHM_220922A : 153		R178564
Hardness as CaCO3	279	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 16		R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Arsenic	0.014	mg/L		0.001	0.0002	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Barium	0.012	mg/L		0.003	0.0002	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Boron	0.034	mg/L	J	0.1	0.004	E200.7	09/26/22 17:01 / cfg	09/22/22 08:58		ICP2-HE_220926A : 42		R178595
Cadmium	0.00002	mg/L	J	0.00003	0.00002	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Calcium	91	mg/L		1	0.2	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Copper	0.004	mg/L		0.001	0.0001	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Magnesium	12	mg/L		1	0.01	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Manganese	0.0009	mg/L	J	0.001	0.0003	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 16:21 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 67		63496
Molybdenum	0.009	mg/L		0.005	0.0003	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Potassium	3	mg/L		1	0.04	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Selenium	0.009	mg/L		0.001	0.00007	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Sodium	26	mg/L		1	0.04	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Uranium	0.0399	mg/L		0.0002	0.00002	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Vanadium	0.0022	mg/L	J	0.1	0.0001	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	09/23/22 19:26 / dck	09/22/22 08:58		ICPMS205-H_220922C : 362		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2B
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-018
Collection Date: 09/14/22 13:40
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	100	mg/L		4	2	A2320 B	09/20/22 22:31 / ljs			PHSC_101-H_220920A : 209		R178363
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	09/20/22 22:31 / ljs			PHSC_101-H_220920A : 209		R178363
Chloride	33	mg/L		1	0.02	E300.0	09/24/22 00:16 / SR			IC METROHM_220922A : 154		R178564
Sulfate	109	mg/L		1	0.06	E300.0	09/24/22 00:16 / SR			IC METROHM_220922A : 154		R178564
Hardness as CaCO3	212	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 17		R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Arsenic	0.013	mg/L		0.001	0.0002	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Barium	0.031	mg/L		0.003	0.0002	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Boron	0.045	mg/L	J	0.1	0.004	E200.7	09/26/22 17:13 / cfg	09/22/22 08:58		ICP2-HE_220926A : 45		R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Calcium	61	mg/L		1	0.2	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Copper	0.002	mg/L		0.001	0.0001	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Iron	0.005	mg/L	J	0.02	0.004	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Magnesium	15	mg/L		1	0.01	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Manganese	0.0005	mg/L	J	0.001	0.0003	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 16:24 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 68		63496
Molybdenum	0.0027	mg/L	J	0.005	0.0003	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Potassium	3	mg/L		1	0.04	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Selenium	0.002	mg/L		0.001	0.00007	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Sodium	25	mg/L		1	0.04	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Uranium	0.0092	mg/L		0.0002	0.00002	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Vanadium	0.0033	mg/L	J	0.1	0.0001	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 19:29 / dck	09/22/22 08:58		ICPMS205-H_220922C : 363		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2C
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-019
Collection Date: 09/14/22 17:55
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	100	mg/L		4	2	A2320 B	09/20/22 22:38 / ljs			PHSC_101-H_220920A : 211		R178363
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	09/20/22 22:38 / ljs			PHSC_101-H_220920A : 211		R178363
Chloride	36	mg/L		1	0.02	E300.0	09/24/22 00:30 / SR			IC METROHM_220922A : 155		R178564
Sulfate	143	mg/L		1	0.06	E300.0	09/24/22 00:30 / SR			IC METROHM_220922A : 155		R178564
Hardness as CaCO3	234	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 18		R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Barium	0.020	mg/L		0.003	0.0002	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Boron	0.052	mg/L	J	0.1	0.004	E200.7	09/26/22 17:16 / cfg	09/22/22 08:58		ICP2-HE_220926A : 46		R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Calcium	69	mg/L		1	0.2	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Copper	0.001	mg/L		0.001	0.0001	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Magnesium	15	mg/L		1	0.01	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Manganese	0.0010	mg/L	J	0.001	0.0003	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 16:27 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 69		63496
Molybdenum	0.0017	mg/L	J	0.005	0.0003	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Potassium	3	mg/L		1	0.04	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Selenium	0.002	mg/L		0.001	0.00007	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Sodium	31	mg/L		1	0.04	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Uranium	0.0075	mg/L		0.0002	0.00002	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Vanadium	0.0024	mg/L	J	0.1	0.0001	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	09/23/22 19:31 / dck	09/22/22 08:58		ICPMS205-H_220922C : 364		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2D
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-020
Collection Date: 09/14/22 14:40
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	150	mg/L		4	2	A2320 B	09/20/22 22:44 / ljs			PHSC_101-H_220920A : 213		R178363
Bicarbonate as HCO3	180	mg/L		4	3	A2320 B	09/20/22 22:44 / ljs			PHSC_101-H_220920A : 213		R178363
Chloride	50	mg/L		1	0.02	E300.0	09/24/22 01:57 / SR			IC METROHM_220922A : 160		R178564
Sulfate	173	mg/L		1	0.06	E300.0	09/24/22 01:57 / SR			IC METROHM_220922A : 160		R178564
Hardness as CaCO3	332	mg/L		1	1	A2340 B	09/28/22 12:04 / sld			WATERCALC_220928A : 3		R178651
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Barium	0.046	mg/L		0.003	0.0002	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Boron	0.060	mg/L	J	0.1	0.004	E200.7	09/26/22 17:20 / cfg	09/22/22 08:58		ICP2-HE_220926A : 47		R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Calcium	100	mg/L		1	0.2	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Copper	0.001	mg/L		0.001	0.0001	E200.8	09/27/22 17:28 / dck	09/22/22 08:58		ICPMS205-H_220927A : 107		R178608
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Magnesium	20	mg/L		1	0.01	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Manganese	0.0010	mg/L	J	0.001	0.0003	E200.8	09/27/22 17:28 / dck	09/22/22 08:58		ICPMS205-H_220927A : 107		R178608
Mercury	ND	ug/L		0.005	0.002	E245.1	09/23/22 16:30 / cfg	09/23/22 11:35	E245.1	HGCV203-H_220923A : 70		63496
Molybdenum	0.006	mg/L		0.005	0.0003	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Potassium	4	mg/L		1	0.04	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Selenium	0.004	mg/L		0.001	0.00007	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Sodium	29	mg/L		1	0.04	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Uranium	0.0498	mg/L		0.0002	0.00002	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Vanadium	0.0026	mg/L	J	0.1	0.0001	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	09/23/22 19:34 / dck	09/22/22 08:58		ICPMS205-H_220922C : 365		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2A QC-FB
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-021
Collection Date: 09/14/22 18:30
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	3	mg/L	J	4	2	A2320 B	09/20/22 22:50 / ljs			PHSC_101-H_220920A : 215		R178363
Bicarbonate as HCO3	3	mg/L	J	4	3	A2320 B	09/20/22 22:50 / ljs			PHSC_101-H_220920A : 215		R178363
Chloride	ND	mg/L		1	0.02	E300.0	09/24/22 02:11 / SR			IC METROHM_220922A : 161		R178564
Sulfate	ND	mg/L		1	0.06	E300.0	09/24/22 02:11 / SR			IC METROHM_220922A : 161		R178564
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B : 19		R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Arsenic	ND	mg/L		0.001	0.0002	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Barium	ND	mg/L		0.003	0.0002	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Boron	ND	mg/L		0.1	0.004	E200.7	09/26/22 17:28 / cfg	09/22/22 08:59		ICP2-HE_220926A : 49		R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Calcium	ND	mg/L		1	0.2	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Copper	ND	mg/L		0.001	0.0001	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Magnesium	ND	mg/L		1	0.01	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Manganese	ND	mg/L		0.001	0.0003	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/26/22 14:27 / cfg	09/19/22 11:39	E245.1	HGCV203-H_220926A : 14		63497
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Potassium	ND	mg/L		1	0.04	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Selenium	ND	mg/L		0.001	0.00007	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Sodium	0.04	mg/L	J	1	0.04	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Uranium	ND	mg/L		0.0002	0.00002	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Vanadium	ND	mg/L		0.1	0.0001	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536
Zinc	ND	mg/L		0.008	0.001	E200.8	09/23/22 20:03 / dck	09/22/22 08:59		ICPMS205-H_220922C : 377		R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: MW-2C QC-FD
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22090497-022
Collection Date: 09/14/22 17:15
DateReceived: 09/16/22
Report Date: 10/11/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	100	mg/L		4	2	A2320 B	09/20/22 22:56 / ljs			PHSC_101-H_220920A	217	R178363
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	09/20/22 22:56 / ljs			PHSC_101-H_220920A	217	R178363
Chloride	35	mg/L		1	0.02	E300.0	09/24/22 02:26 / SR			IC METROHM_220922A	162	R178564
Sulfate	139	mg/L		1	0.06	E300.0	09/24/22 02:26 / SR			IC METROHM_220922A	162	R178564
Hardness as CaCO3	235	mg/L		1	1	A2340 B	09/27/22 08:57 / sld			WATERCALC_220927B	20	R178596
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Antimony	ND	mg/L		0.0005	0.0002	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Barium	0.021	mg/L		0.003	0.0002	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Boron	0.051	mg/L	J	0.1	0.004	E200.7	09/26/22 17:43 / cfg	09/22/22 08:59		ICP2-HE_220926A	53	R178595
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Calcium	69	mg/L		1	0.2	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Chromium	ND	mg/L		0.01	0.0001	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Cobalt	ND	mg/L		0.01	0.001	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Copper	0.001	mg/L		0.001	0.0001	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Iron	ND	mg/L		0.02	0.004	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Lead	ND	mg/L		0.0003	0.0001	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Magnesium	15	mg/L		1	0.01	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Manganese	0.0006	mg/L	J	0.001	0.0003	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Mercury	ND	ug/L		0.005	0.002	E245.1	09/26/22 14:30 / cfg	09/19/22 11:39	E245.1	HGCV203-H_220926A	15	63497
Molybdenum	0.0017	mg/L	J	0.005	0.0003	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Nickel	ND	mg/L		0.002	0.0002	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Potassium	3	mg/L		1	0.04	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Selenium	0.002	mg/L		0.001	0.00007	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Silver	ND	mg/L		0.0002	0.00008	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Sodium	31	mg/L		1	0.04	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Uranium	0.0076	mg/L		0.0002	0.00002	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Vanadium	0.0025	mg/L	J	0.1	0.0001	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	09/23/22 20:05 / dck	09/22/22 08:59		ICPMS205-H_220922C	378	R178536

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497
BatchID: 220923waLL-hg203
Date: *11-Oct-22*

Run ID :Run Order: **HGCV203-H_220923A: 10** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**

Analysis Date: **09/23/22 12:46** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.102	0.0050	0.1	0	102	90	110				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B**

Run ID :Run Order: **HGCV203-H_220923A: 11** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV1** Method: **E245.1**

Analysis Date: **09/23/22 12:49** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.104	0.0050	0.1	0	104	95	105				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B**

Run ID :Run Order: **HGCV203-H_220923A: 41** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E245.1**

Analysis Date: **09/23/22 14:56** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.103	0.0050	0.1	0	103	90	110				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B**

Run ID :Run Order: **HGCV203-H_220923A: 57** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E245.1**

Analysis Date: **09/23/22 15:48** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.107	0.0050	0.1	0	107	90	110				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090497
BatchID: 220926waLL-hg203
Date: *11-Oct-22*

Run ID :Run Order: **HGCV203-H_220926A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**
Analysis Date: **09/26/22 13:55** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0983	0.0050	0.1	0	**98**	90	110				

Associated samples: **H22090497-021B, H22090497-022B**

Run ID :Run Order: **HGCV203-H_220926A: 10** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV1** Method: **E245.1**
Analysis Date: **09/26/22 13:59** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.100	0.0050	0.1	0	**100**	95	105				

Associated samples: **H22090497-021B, H22090497-022B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID:** 63496 **Date:** *11-Oct-22*

Run ID :Run Order: **HGCV203-H_220923A: 43** SampType: **Method Blank** Lab ID: **MB-63496** Method: **E245.1**

Analysis Date: **09/23/22 15:02** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.002									

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B**

Run ID :Run Order: **HGCV203-H_220923A: 44** SampType: **Laboratory Control Sample** Lab ID: **LCS-63496** Method: **E245.1**

Analysis Date: **09/23/22 15:05** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0477	0.0050	0.05	0	95	90	110				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B**

Run ID :Run Order: **HGCV203-H_220923A: 47** SampType: **Sample Matrix Spike** Lab ID: **H22090497-002BMS** Method: **E245.1**

Analysis Date: **09/23/22 15:15** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.103	0.0050	0.1	0	103	70	130				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B**

Run ID :Run Order: **HGCV203-H_220923A: 48** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090497-002BMSD** Method: **E245.1**

Analysis Date: **09/23/22 15:18** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.101	0.0050	0.1	0	101	70	130	0.1031	1.9	20	

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497
BatchID: 63496
Date: *11-Oct-22*

Run ID :Run Order: **HGCV203-H_220923A: 64** SampType: **Sample Matrix Spike** Lab ID: **H22090497-015BMS** Method: **E245.1**

Analysis Date: **09/23/22 16:11** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.105	0.0050	0.1	0	**105**	70	130				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B**

Run ID :Run Order: **HGCV203-H_220923A: 65** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090497-015BMSD** Method: **E245.1**

Analysis Date: **09/23/22 16:14** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.104	0.0050	0.1	0	**104**	70	130	0.105	**0.6**	20	

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497
BatchID: 63497
Date: *11-Oct-22*

Run ID :Run Order: **HGCV203-H_220926A: 12** SampType: **Method Blank** Lab ID: **MB-63497** Method: **E245.1**
Analysis Date: **09/26/22 14:20** Units: **ug/L** **Prep Info:** Prep Date: **9/19/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.002									

Associated samples: **H22090497-021B, H22090497-022B**

Run ID :Run Order: **HGCV203-H_220926A: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-63497** Method: **E245.1**
Analysis Date: **09/26/22 14:24** Units: **ug/L** **Prep Info:** Prep Date: **9/19/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0479	0.0050	0.05	0	96	90	110				

Associated samples: **H22090497-021B, H22090497-022B**

Run ID :Run Order: **HGCV203-H_220926A: 17** SampType: **Sample Matrix Spike** Lab ID: **H22090600-001BMS** Method: **E245.1**
Analysis Date: **09/26/22 14:36** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0474	0.0050	0.05	0	95	70	130				

Associated samples: **H22090497-021B, H22090497-022B**

Run ID :Run Order: **HGCV203-H_220926A: 18** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090600-001BMSD** Method: **E245.1**
Analysis Date: **09/26/22 14:40** Units: **ug/L** **Prep Info:** Prep Date: **9/23/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0477	0.0050	0.05	0	95	70	130	0.04743	0.5	20	

Associated samples: **H22090497-021B, H22090497-022B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497
BatchID: R178363
Date: *11-Oct-22*

Run ID :Run Order: **PHSC_101-H_220920A: 51** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **09/20/22 11:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **PHSC_101-H_220920A: 52** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **09/20/22 11:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	590	4.0	600	0	99	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **PHSC_101-H_220920A: 143** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **09/20/22 17:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **PHSC_101-H_220920A: 144** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **09/20/22 17:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	580	4.0	600	0	97	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID:** R178363 **Date:** *11-Oct-22*

Run ID :Run Order: **PHSC_101-H_220920A: 147** SampType: **Sample Duplicate** Lab ID: **H22090494-010ADUP** Method: **A2320 B**

Analysis Date: **09/20/22 18:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	250	4.0		0				253.2	0.1	10	
Bicarbonate as HCO3	310	4.0		0				308.4	0.1	10	

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **PHSC_101-H_220920A: 187** SampType: **Sample Duplicate** Lab ID: **H22090497-009ADUP** Method: **A2320 B**

Analysis Date: **09/20/22 20:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	17	4.0		0				16	8.1	10	
Bicarbonate as HCO3	21	4.0		0				18.91	8.3	10	

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **PHSC_101-H_220920A: 189** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **09/20/22 20:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **PHSC_101-H_220920A: 190** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **09/20/22 20:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	590	4.0	600	0	98	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497
BatchID: **R178363**
Date: *11-Oct-22*

Run ID :Run Order: **PHSC_101-H_220920A: 193** SampType: **Sample Duplicate** Lab ID: **H22090497-010ADUP** Method: **A2320 B**

Analysis Date: **09/20/22 21:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	7.8	4.0		0				9.6	20	10	R
Bicarbonate as HCO3	9.0	4.0		0				11.1	21	10	R

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID: R178536** **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **09/22/22 20:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.286	0.10	0.3	0	**95**	90	110				
Antimony	0.0569	0.050	0.06	0	**95**	90	110				
Arsenic	0.0628	0.0050	0.06	0	**105**	90	110				
Barium	0.0609	0.10	0.06	0	**101**	90	110				
Beryllium	0.0300	0.0010	0.03	0	**100**	90	110				
Cadmium	0.0306	0.0010	0.03	0	**102**	90	110				
Calcium	2.97	0.50	3	0	**99**	90	110				
Chromium	0.0602	0.010	0.06	0	**100**	90	110				
Cobalt	0.0592	0.010	0.06	0	**99**	90	110				
Copper	0.0611	0.010	0.06	0	**102**	90	110				
Iron	0.296	0.020	0.3	0	**99**	90	110				
Lead	0.0601	0.010	0.06	0	**100**	90	110				
Magnesium	2.99	0.50	3	0	**100**	90	110				
Manganese	0.303	0.010	0.3	0	**101**	90	110				
Molybdenum	0.0594	0.0050	0.06	0	**99**	90	110				
Nickel	0.0609	0.010	0.06	0	**102**	90	110				
Potassium	2.98	0.50	3	0	**99**	90	110				
Selenium	0.0611	0.0050	0.06	0	**102**	90	110				
Silver	0.0307	0.0050	0.03	0	**102**	90	110				
Sodium	2.98	0.50	3	0	**99**	90	110				
Uranium	0.0599	0.00030	0.06	0	**100**	90	110				
Vanadium	0.0597	0.10	0.06	0	**99**	90	110				
Zinc	0.0628	0.010	0.06	0	**105**	90	110				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICPMS205-H_220922C: 22** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **09/22/22 20:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Antimony	ND	0.0002									
Arsenic	ND	0.0002									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22090497
BatchID: R178536
Date: *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 22** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **09/22/22 20:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00002									
Calcium	ND	0.2									
Chromium	ND	0.0001									
Cobalt	ND	0.001									
Copper	ND	0.0001									
Iron	ND	0.004									
Lead	ND	0.0001									
Magnesium	ND	0.01									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Nickel	ND	0.0002									
Potassium	ND	0.04									
Selenium	ND	0.00007									
Silver	ND	0.00008									
Sodium	ND	0.04									
Uranium	ND	0.00002									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICPMS205-H_220922C: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**
Analysis Date: **09/22/22 20:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0491	0.10	0.05	0	98	85	115				
Antimony	0.0509	0.050	0.05	0	102	85	115				
Arsenic	0.0500	0.0050	0.05	0	100	85	115				
Barium	0.0508	0.10	0.05	0	102	85	115				
Beryllium	0.0513	0.0010	0.05	0	103	85	115				
Cadmium	0.0523	0.0010	0.05	0	105	85	115				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID:** R178536 **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **09/22/22 20:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.05	0.50	1	0	105	85	115				
Chromium	0.0499	0.010	0.05	0	100	85	115				
Cobalt	0.0502	0.010	0.05	0	100	85	115				
Copper	0.0509	0.010	0.05	0	102	85	115				
Iron	0.149	0.020	0.15	0	99	85	115				
Lead	0.0506	0.010	0.05	0	101	85	115				
Magnesium	1.03	0.50	1	0	103	85	115				
Manganese	0.0502	0.010	0.05	0	100	85	115				
Molybdenum	0.0509	0.0050	0.05	0	102	85	115				
Nickel	0.0504	0.010	0.05	0	101	85	115				
Potassium	1.00	0.50	1	0	101	85	115				
Selenium	0.0522	0.0050	0.05	0	104	85	115				
Silver	0.0209	0.0050	0.02	0	104	85	115				
Sodium	1.01	0.50	1	0	101	85	115				
Uranium	0.0492	0.00030	0.05	0	98	85	115				
Vanadium	0.0492	0.10	0.05	0	98	85	115				
Zinc	0.0543	0.010	0.05	0	109	85	115				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICPMS205-H_220922C: 337** SampType: **Sample Matrix Spike** Lab ID: **H22090494-018BMS** Method: **E200.8**

Analysis Date: **09/23/22 18:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.86	0.030	0.05	3.863		70	130				A
Antimony	0.0512	0.0010	0.05	0	102	70	130				
Arsenic	0.0505	0.0010	0.05	0.002474	96	70	130				
Barium	0.0824	0.050	0.05	0.0311	103	70	130				
Beryllium	0.0472	0.0010	0.05	0.001882	91	70	130				
Cadmium	0.0730	0.0010	0.05	0.02278	101	70	130				
Calcium	78.7	1.0	1	79.19		70	130				A
Chromium	0.0471	0.0050	0.05	0	94	70	130				
Cobalt	0.0917	0.0050	0.05	0.04764	88	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID:** R178536 **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 337** SampType: **Sample Matrix Spike** Lab ID: **H22090494-018BMS** Method: **E200.8**

Analysis Date: **09/23/22 18:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	2.64	0.0050	0.05	2.736		70	130				A
Iron	27.7	0.020	0.15	29.56		70	130				A
Lead	0.0522	0.0010	0.05	0.001133	102	70	130				
Magnesium	18.9	1.0	1	18.31		70	130				A
Manganese	13.6	0.0010	0.05	14.34		70	130				AE
Molybdenum	0.0503	0.0010	0.05	0	101	70	130				
Nickel	0.0748	0.0050	0.05	0.0276	94	70	130				
Potassium	8.19	1.0	1	7.73		70	130				A
Selenium	0.0494	0.0010	0.05	0.0001101	99	70	130				
Silver	0.0192	0.0010	0.02	0	96	70	130				
Sodium	31.2	1.0	1	30.76		70	130				A
Uranium	0.0683	0.00030	0.05	0.01775	101	70	130				
Vanadium	0.0486	0.010	0.05	0	97	70	130				
Zinc	8.99	0.010	0.05	9.674		70	130				A

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICPMS205-H_220922C: 338** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-018BMSD** Method: **E200.8**

Analysis Date: **09/23/22 18:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.91	0.030	0.05	3.863		70	130	3.859	1.4	20	A
Antimony	0.0514	0.0010	0.05	0	103	70	130	0.05118	0.4	20	
Arsenic	0.0511	0.0010	0.05	0.002474	97	70	130	0.05054	1.1	20	
Barium	0.0830	0.050	0.05	0.0311	104	70	130	0.0824	0.8	20	
Beryllium	0.0475	0.0010	0.05	0.001882	91	70	130	0.04721	0.5	20	
Cadmium	0.0742	0.0010	0.05	0.02278	103	70	130	0.07304	1.5	20	
Calcium	78.1	1.0	1	79.19		70	130	78.67	0.7	20	A
Chromium	0.0485	0.0050	0.05	0	97	70	130	0.0471	2.9	20	
Cobalt	0.0952	0.0050	0.05	0.04764	95	70	130	0.09168	3.7	20	
Copper	2.71	0.0050	0.05	2.736		70	130	2.644	2.4	20	A
Iron	28.6	0.020	0.15	29.56		70	130	27.71	3.2	20	A
Lead	0.0525	0.0010	0.05	0.001133	103	70	130	0.0522	0.6	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID: R178536** **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 338** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-018BMSD** Method: **E200.8**

Analysis Date: **09/23/22 18:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	19.3	1.0	1	18.31		70	130	18.94	1.7	20	A
Manganese	13.9	0.0010	0.05	14.34		70	130	13.55	2.6	20	AE
Molybdenum	0.0504	0.0010	0.05	0	101	70	130	0.05032	0.2	20	
Nickel	0.0775	0.0050	0.05	0.0276	100	70	130	0.07476	3.7	20	
Potassium	8.43	1.0	1	7.73		70	130	8.187	2.9	20	A
Selenium	0.0490	0.0010	0.05	0.0001101	98	70	130	0.04939	0.8	20	
Silver	0.0196	0.0010	0.02	0	98	70	130	0.01922	2.0	20	
Sodium	31.5	1.0	1	30.76		70	130	31.15	1.2	20	A
Uranium	0.0691	0.00030	0.05	0.01775	103	70	130	0.06828	1.2	20	
Vanadium	0.0496	0.010	0.05	0	99	70	130	0.04855	2.2	20	
Zinc	9.26	0.010	0.05	9.674		70	130	8.988	2.9	20	AE

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICPMS205-H_220922C: 339** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 18:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0492	0.10	0.05	0	98	90	110				
Antimony	0.0505	0.050	0.05	0	101	90	110				
Arsenic	0.0499	0.0050	0.05	0	100	90	110				
Barium	0.0504	0.10	0.05	0	101	90	110				
Beryllium	0.0467	0.0010	0.05	0	93	90	110				
Cadmium	0.0498	0.0010	0.05	0	100	90	110				
Calcium	12.7	0.50	12.5	0	101	90	110				
Chromium	0.0486	0.010	0.05	0	97	90	110				
Cobalt	0.0494	0.010	0.05	0	99	90	110				
Copper	0.0502	0.010	0.05	0	100	90	110				
Iron	1.26	0.020	1.3	0	97	90	110				
Lead	0.0496	0.010	0.05	0	99	90	110				
Magnesium	12.4	0.50	12.5	0	99	90	110				
Manganese	0.0504	0.010	0.05	0	101	90	110				
Molybdenum	0.0494	0.0050	0.05	0	99	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID:** R178536 **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 339** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 18:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0494	0.010	0.05	0	**99**	90	110				
Potassium	12.1	0.50	12.5	0	**97**	90	110				
Selenium	0.0499	0.0050	0.05	0	**100**	90	110				
Silver	0.0195	0.0050	0.02	0	**98**	90	110				
Sodium	12.2	0.50	12.5	0	**98**	90	110				
Uranium	0.0497	0.00030	0.05	0	**99**	90	110				
Vanadium	0.0493	0.10	0.05	0	**99**	90	110				
Zinc	0.0504	0.010	0.05	0	**101**	90	110				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICPMS205-H_220922C: 352** SampType: **Sample Matrix Spike** Lab ID: **H22090497-010BMS** Method: **E200.8**

Analysis Date: **09/23/22 19:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.536	0.030	0.05	0.4907		70	130				A
Antimony	0.0514	0.0010	0.05	0	**103**	70	130				
Arsenic	0.0489	0.0010	0.05	0.0002912	**97**	70	130				
Barium	0.0677	0.050	0.05	0.01713	**101**	70	130				
Beryllium	0.0479	0.0010	0.05	0.001238	**93**	70	130				
Cadmium	0.0905	0.0010	0.05	0.03935	**102**	70	130				
Calcium	95.8	1.0	1	95.58		70	130				A
Chromium	0.0479	0.0050	0.05	0	**96**	70	130				
Cobalt	0.0609	0.0050	0.05	0.01341	**95**	70	130				
Copper	2.17	0.0050	0.05	2.201		70	130				A
Iron	0.151	0.020	0.15	0.008383	**95**	70	130				
Lead	0.0537	0.0010	0.05	0.00266	**102**	70	130				
Magnesium	14.1	1.0	1	13.15		70	130				A
Manganese	2.53	0.0010	0.05	2.537		70	130				A
Molybdenum	0.0525	0.0010	0.05	0.002177	**101**	70	130				
Nickel	0.0638	0.0050	0.05	0.01625	**95**	70	130				
Potassium	7.48	1.0	1	6.853		70	130				A
Selenium	0.0498	0.0010	0.05	0.0002143	**99**	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID:** R178536 **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 352** SampType: **Sample Matrix Spike** Lab ID: **H22090497-010BMS** Method: **E200.8**

Analysis Date: **09/23/22 19:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0198	0.0010	0.02	0	99	70	130				
Sodium	41.0	1.0	1	40.08		70	130				A
Uranium	0.0566	0.00030	0.05	0.005418	102	70	130				
Vanadium	0.0483	0.010	0.05	0.0001716	96	70	130				
Zinc	5.13	0.010	0.05	5.259		70	130				A

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICPMS205-H_220922C: 353** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090497-010BMSD** Method: **E200.8**

Analysis Date: **09/23/22 19:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.544	0.030	0.05	0.4907		70	130	0.5365	1.5	20	A
Antimony	0.0512	0.0010	0.05	0	102	70	130	0.05144	0.5	20	
Arsenic	0.0517	0.0010	0.05	0.0002912	103	70	130	0.04891	5.5	20	
Barium	0.0692	0.050	0.05	0.01713	104	70	130	0.06767	2.3	20	
Beryllium	0.0482	0.0010	0.05	0.001238	94	70	130	0.04788	0.6	20	
Cadmium	0.0910	0.0010	0.05	0.03935	103	70	130	0.09052	0.5	20	
Calcium	95.0	1.0	1	95.58		70	130	95.76	0.8	20	A
Chromium	0.0499	0.0050	0.05	0	100	70	130	0.04793	4.1	20	
Cobalt	0.0637	0.0050	0.05	0.01341	101	70	130	0.06088	4.6	20	
Copper	2.26	0.0050	0.05	2.201		70	130	2.168	4.2	20	A
Iron	0.156	0.020	0.15	0.008383	98	70	130	0.1507	3.4	20	
Lead	0.0537	0.0010	0.05	0.00266	102	70	130	0.05369	0.0	20	
Magnesium	14.1	1.0	1	13.15		70	130	14.13	0.5	20	A
Manganese	2.62	0.0010	0.05	2.537		70	130	2.531	3.5	20	A
Molybdenum	0.0529	0.0010	0.05	0.002177	102	70	130	0.05252	0.8	20	
Nickel	0.0663	0.0050	0.05	0.01625	100	70	130	0.06381	3.8	20	
Potassium	7.82	1.0	1	6.853		70	130	7.483	4.5	20	A
Selenium	0.0496	0.0010	0.05	0.0002143	99	70	130	0.04983	0.6	20	
Silver	0.0199	0.0010	0.02	0	99	70	130	0.01975	0.7	20	
Sodium	40.8	1.0	1	40.08		70	130	40.99	0.3	20	A
Uranium	0.0566	0.00030	0.05	0.005418	102	70	130	0.05662	0	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID: R178536** **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 353** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090497-010BMSD** Method: **E200.8**

Analysis Date: **09/23/22 19:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	0.0507	0.010	0.05	0.0001716	**101**	70	130	0.04828	**4.9**	20	
Zinc	5.33	0.010	0.05	5.259		70	130	5.131	**3.8**	20	A

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICPMS205-H_220922C: 354** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 19:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0470	0.10	0.05	0	**94**	90	110				
Antimony	0.0511	0.050	0.05	0	**102**	90	110				
Arsenic	0.0492	0.0050	0.05	0	**98**	90	110				
Barium	0.0509	0.10	0.05	0	**102**	90	110				
Beryllium	0.0466	0.0010	0.05	0	**93**	90	110				
Cadmium	0.0498	0.0010	0.05	0	**100**	90	110				
Calcium	12.9	0.50	12.5	0	**103**	90	110				
Chromium	0.0476	0.010	0.05	0	**95**	90	110				
Cobalt	0.0482	0.010	0.05	0	**96**	90	110				
Copper	0.0486	0.010	0.05	0	**97**	90	110				
Iron	1.24	0.020	1.3	0	**96**	90	110				
Lead	0.0493	0.010	0.05	0	**99**	90	110				
Magnesium	12.4	0.50	12.5	0	**99**	90	110				
Manganese	0.0496	0.010	0.05	0	**99**	90	110				
Molybdenum	0.0495	0.0050	0.05	0	**99**	90	110				
Nickel	0.0480	0.010	0.05	0	**96**	90	110				
Potassium	12.1	0.50	12.5	0	**97**	90	110				
Selenium	0.0493	0.0050	0.05	0	**99**	90	110				
Silver	0.0196	0.0050	0.02	0	**98**	90	110				
Sodium	12.4	0.50	12.5	0	**99**	90	110				
Uranium	0.0491	0.00030	0.05	0	**98**	90	110				
Vanadium	0.0489	0.10	0.05	0	**98**	90	110				
Zinc	0.0494	0.010	0.05	0	**99**	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID: R178536** **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 354** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 19:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICPMS205-H_220922C: 366** SampType: **Sample Matrix Spike** Lab ID: **H22090497-020BMS** Method: **E200.8**

Analysis Date: **09/23/22 19:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0539	0.030	0.05	0	108	70	130				
Antimony	0.0515	0.0010	0.05	0.0001749	103	70	130				
Arsenic	0.0582	0.0010	0.05	0.006956	103	70	130				
Barium	0.0986	0.050	0.05	0.04627	105	70	130				
Beryllium	0.0449	0.0010	0.05	0	90	70	130				
Cadmium	0.0504	0.0010	0.05	0	101	70	130				
Calcium	101	1.0	1	99.75		70	130				A
Chromium	0.0487	0.0050	0.05	0	97	70	130				
Cobalt	0.0481	0.0050	0.05	0	96	70	130				
Copper	0.0497	0.0050	0.05	0.001293	97	70	130				
Iron	0.143	0.020	0.15	0	96	70	130				
Lead	0.0509	0.0010	0.05	0	102	70	130				
Magnesium	21.0	1.0	1	20.12		70	130				A
Manganese	0.0514	0.0010	0.05	0.001134	100	70	130				
Molybdenum	0.0556	0.0010	0.05	0.005507	100	70	130				
Nickel	0.0479	0.0050	0.05	0	96	70	130				
Potassium	4.72	1.0	1	3.836	88	70	130				
Selenium	0.0541	0.0010	0.05	0.004034	100	70	130				
Silver	0.0196	0.0010	0.02	0	98	70	130				
Sodium	29.8	1.0	1	29.15		70	130				A
Uranium	0.101	0.00030	0.05	0.04982	103	70	130				
Vanadium	0.0521	0.010	0.05	0.002595	99	70	130				
Zinc	0.0530	0.010	0.05	0.002381	101	70	130				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID: R178536** **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 367** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090497-020BMSD** Method: **E200.8**

Analysis Date: **09/23/22 19:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0524	0.030	0.05	0	105	70	130	0.05386	2.8	20	
Antimony	0.0510	0.0010	0.05	0.0001749	102	70	130	0.05147	1.0	20	
Arsenic	0.0573	0.0010	0.05	0.006956	101	70	130	0.05821	1.5	20	
Barium	0.0959	0.050	0.05	0.04627	99	70	130	0.09858	2.8	20	
Beryllium	0.0458	0.0010	0.05	0	91	70	130	0.04493	1.8	20	
Cadmium	0.0504	0.0010	0.05	0	101	70	130	0.05038	0.1	20	
Calcium	99.8	1.0	1	99.75		70	130	101	1.1	20	A
Chromium	0.0488	0.0050	0.05	0	98	70	130	0.04873	0.2	20	
Cobalt	0.0483	0.0050	0.05	0	97	70	130	0.04806	0.4	20	
Copper	0.0501	0.0050	0.05	0.001293	98	70	130	0.0497	0.8	20	
Iron	0.142	0.020	0.15	0	95	70	130	0.1434	0.7	20	
Lead	0.0508	0.0010	0.05	0	102	70	130	0.05087	0.1	20	
Magnesium	20.8	1.0	1	20.12		70	130	21.03	1.0	20	A
Manganese	0.0518	0.0010	0.05	0.001134	101	70	130	0.05137	0.8	20	
Molybdenum	0.0555	0.0010	0.05	0.005507	100	70	130	0.0556	0.2	20	
Nickel	0.0479	0.0050	0.05	0	96	70	130	0.04793	0	20	
Potassium	4.78	1.0	1	3.836	94	70	130	4.716	1.2	20	
Selenium	0.0550	0.0010	0.05	0.004034	102	70	130	0.05407	1.7	20	
Silver	0.0197	0.0010	0.02	0	99	70	130	0.01963	0.5	20	
Sodium	29.5	1.0	1	29.15		70	130	29.8	0.9	20	A
Uranium	0.102	0.00030	0.05	0.04982	103	70	130	0.1011	0.4	20	
Vanadium	0.0521	0.010	0.05	0.002595	99	70	130	0.05213	0	20	
Zinc	0.0516	0.010	0.05	0.002381	98	70	130	0.05297	2.7	20	

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICPMS205-H_220922C: 368** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 19:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0512	0.10	0.05	0	102	90	110				
Antimony	0.0509	0.050	0.05	0	102	90	110				
Arsenic	0.0488	0.0050	0.05	0	98	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID: R178536** **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220922C: 368** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/23/22 19:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 23	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.0508	0.10	0.05	0	**102**	90	110				
Beryllium	0.0466	0.0010	0.05	0	**93**	90	110				
Cadmium	0.0507	0.0010	0.05	0	**101**	90	110				
Calcium	12.9	0.50	12.5	0	**103**	90	110				
Chromium	0.0486	0.010	0.05	0	**97**	90	110				
Cobalt	0.0483	0.010	0.05	0	**97**	90	110				
Copper	0.0489	0.010	0.05	0	**98**	90	110				
Iron	1.25	0.020	1.3	0	**96**	90	110				
Lead	0.0495	0.010	0.05	0	**99**	90	110				
Magnesium	12.4	0.50	12.5	0	**99**	90	110				
Manganese	0.0491	0.010	0.05	0	**98**	90	110				
Molybdenum	0.0498	0.0050	0.05	0	**100**	90	110				
Nickel	0.0483	0.010	0.05	0	**97**	90	110				
Potassium	12.1	0.50	12.5	0	**97**	90	110				
Selenium	0.0498	0.0050	0.05	0	**100**	90	110				
Silver	0.0199	0.0050	0.02	0	**99**	90	110				
Sodium	12.2	0.50	12.5	0	**98**	90	110				
Uranium	0.0497	0.00030	0.05	0	**99**	90	110				
Vanadium	0.0485	0.10	0.05	0	**97**	90	110				
Zinc	0.0510	0.010	0.05	0	**102**	90	110				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID: R178564** **Date:** *11-Oct-22*

Run ID :Run Order: **IC METROHM_220922A: 2** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **09/22/22 09:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.06									

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **IC METROHM_220922A: 3** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **09/22/22 09:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98.4	1.0	100	0	98	90	110				
Sulfate	391	1.0	400	0	98	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **IC METROHM_220922A: 4** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **09/22/22 09:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23.9	1.0	25	0	96	90	110				
Sulfate	99.8	1.0	100	0	100	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **IC METROHM_220922A: 128** SampType: **Sample Matrix Spike** Lab ID: **H22090494-019AMS** Method: **E300.0**

Analysis Date: **09/23/22 17:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	69.5	1.0	25	44.71	99	90	110				
Sulfate	262	1.0	100	161.9	100	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID: R178564** **Date:** *11-Oct-22*

Run ID :Run Order: **IC METROHM_220922A: 129** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-019AMSD** Method: **E300.0**

Analysis Date: **09/23/22 17:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	69.6	1.0	25	44.71	100	90	110	69.49	0.2	20	
Sulfate	263	1.0	100	161.9	101	90	110	262	0.3	20	

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **IC METROHM_220922A: 130** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **09/23/22 18:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51.2	1.0	50	0	102	90	110				
Sulfate	210	1.0	200	0	105	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **IC METROHM_220922A: 142** SampType: **Sample Matrix Spike** Lab ID: **H22090497-009AMS** Method: **E300.0**

Analysis Date: **09/23/22 21:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	70.4	1.0	25	45.85	98	90	110				
Sulfate	386	1.0	100	281.2	104	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **IC METROHM_220922A: 143** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090497-009AMSD** Method: **E300.0**

Analysis Date: **09/23/22 21:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	70.7	1.0	25	45.85	99	90	110	70.36	0.5	20	
Sulfate	389	1.0	100	281.2	108	90	110	385.6	0.8	20	

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID: R178564** **Date:** *11-Oct-22*

Run ID :Run Order: **IC METROHM_220922A: 144** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **09/23/22 21:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51.7	1.0	50	0	103	90	110				
Sulfate	212	1.0	200	0	106	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **IC METROHM_220922A: 156** SampType: **Sample Matrix Spike** Lab ID: **H22090497-019AMS** Method: **E300.0**

Analysis Date: **09/24/22 00:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	60.9	1.0	25	35.9	100	90	110				
Sulfate	244	1.0	100	142.7	101	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **IC METROHM_220922A: 157** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090497-019AMSD** Method: **E300.0**

Analysis Date: **09/24/22 00:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	60.9	1.0	25	35.9	100	90	110	60.86	0.1	20	
Sulfate	245	1.0	100	142.7	102	90	110	243.9	0.4	20	

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Run ID :Run Order: **IC METROHM_220922A: 158** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **09/24/22 01:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	50.6	1.0	50	0	101	90	110				
Sulfate	207	1.0	200	0	103	90	110				

Associated samples: **H22090497-001A, H22090497-002A, H22090497-003A, H22090497-004A, H22090497-005A, H22090497-006A, H22090497-007A, H22090497-008A, H22090497-009A, H22090497-010A, H22090497-011A, H22090497-012A, H22090497-013A, H22090497-014A, H22090497-015A, H22090497-016A, H22090497-017A, H22090497-018A, H22090497-019A, H22090497-020A, H22090497-021A, H22090497-022A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497
BatchID: R178595
Date: *11-Oct-22*

Run ID :Run Order: **ICP2-HE_220926A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **09/26/22 14:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.823	0.10	0.8	0	103	95	105				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICP2-HE_220926A: 7** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **09/26/22 14:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.44	0.10	2.5	0	97	95	105				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICP2-HE_220926A: 13** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**

Analysis Date: **09/26/22 15:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.004									

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICP2-HE_220926A: 14** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**

Analysis Date: **09/26/22 15:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.969	0.10	1	0	97	85	115				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497
BatchID: R178595
Date: *11-Oct-22*

Run ID :Run Order: **ICP2-HE_220926A: 18** SampType: **Sample Matrix Spike** Lab ID: **H22090497-001BMS2** Method: **E200.7**

Analysis Date: **09/26/22 15:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.00	0.050	1	0.05607	94	70	130				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICP2-HE_220926A: 19** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/26/22 15:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.45	0.10	2.5	0	98	90	110				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICP2-HE_220926A: 21** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090497-001BMSD2** Method: **E200.7**

Analysis Date: **09/26/22 15:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.00	0.050	1	0.05607	94	70	130	1	0.1	20	

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICP2-HE_220926A: 31** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/26/22 16:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.50	0.10	2.5	0	100	90	110				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497
BatchID: R178595
Date: *11-Oct-22*

Run ID :Run Order: **ICP2-HE_220926A: 35** SampType: **Sample Matrix Spike** Lab ID: **H22090497-011BMS2** Method: **E200.7**

Analysis Date: **09/26/22 16:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.980	0.050	1	0.06622	91	70	130				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICP2-HE_220926A: 36** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090497-011BMSD2** Method: **E200.7**

Analysis Date: **09/26/22 16:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.01	0.050	1	0.06622	94	70	130	0.9803	2.6	20	

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICP2-HE_220926A: 43** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **09/26/22 17:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.45	0.10	2.5	0	98	90	110				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Run ID :Run Order: **ICP2-HE_220926A: 51** SampType: **Sample Matrix Spike** Lab ID: **H22090497-021BMS2** Method: **E200.7**

Analysis Date: **09/26/22 17:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.960	0.050	1	0	96	70	130				

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497
BatchID: R178595
Date: *11-Oct-22*

Run ID :Run Order: **ICP2-HE_220926A: 52** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090497-021BMSD2** Method: **E200.7**

Analysis Date: **09/26/22 17:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.924	0.050	1	0	**92**	70	130	0.9604	**3.9**	20	

Associated samples: **H22090497-001B, H22090497-002B, H22090497-003B, H22090497-004B, H22090497-005B, H22090497-006B, H22090497-007B, H22090497-008B, H22090497-009B, H22090497-010B, H22090497-011B, H22090497-012B, H22090497-013B, H22090497-014B, H22090497-015B, H22090497-016B, H22090497-017B, H22090497-018B, H22090497-019B, H22090497-020B, H22090497-021B, H22090497-022B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497 **BatchID: R178608** **Date:** *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220927A: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **09/27/22 12:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0526	0.010	0.05	0	105	85	115				
Manganese	0.0518	0.010	0.05	0	104	85	115				

Associated samples: **H22090497-001B, H22090497-020B**

Run ID :Run Order: **ICPMS205-H_220927A: 86** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **09/27/22 16:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0607	0.010	0.06	0	101	90	110				
Manganese	0.302	0.010	0.3	0	101	90	110				

Associated samples: **H22090497-001B, H22090497-020B**

Run ID :Run Order: **ICPMS205-H_220927A: 94** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/27/22 16:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0504	0.010	0.05	0	101	90	110				
Manganese	0.0508	0.010	0.05	0	102	90	110				

Associated samples: **H22090497-001B, H22090497-020B**

Run ID :Run Order: **ICPMS205-H_220927A: 96** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **09/27/22 17:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0001									
Manganese	ND	0.0003									

Associated samples: **H22090497-001B, H22090497-020B**

Run ID :Run Order: **ICPMS205-H_220927A: 101** SampType: **Sample Matrix Spike** Lab ID: **H22090494-019BMS** Method: **E200.8**

Analysis Date: **09/27/22 17:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0536	0.0050	0.05	0.003183	101	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22090497
BatchID: R178608
Date: *11-Oct-22*

Run ID :Run Order: **ICPMS205-H_220927A: 101** SampType: **Sample Matrix Spike** Lab ID: **H22090494-019BMS** Method: **E200.8**

Analysis Date: **09/27/22 17:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0514	0.0010	0.05	0.0009452	101	70	130				

Associated samples: **H22090497-001B, H22090497-020B**

Run ID :Run Order: **ICPMS205-H_220927A: 102** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090494-019BMSD** Method: **E200.8**

Analysis Date: **09/27/22 17:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0536	0.0050	0.05	0.003183	101	70	130	0.05356	0.0	20	
Manganese	0.0526	0.0010	0.05	0.0009452	103	70	130	0.05139	2.3	20	

Associated samples: **H22090497-001B, H22090497-020B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22090497

Login completed by: Taylor K. Jones
Date Received: 9/16/2022

Reviewed by: acarlson
Received by: amh

Reviewed Date: 10/10/2022
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	0.7°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

Cooler 1 was received at 0.4 °C and Cooler 2 at 0.7 °C.

Samples for Dissolved Metals/Hardness were subsampled, filtered, and preserved to pH <2 with 2 mL of Nitric acid per 250 mL in the laboratory. According to 40CFR136, samples for Dissolved Metals should be filtered and preserved within 15 minutes of collection.

Collection time on COC for MW-2A is 13:00 - bottles have time of 18:20. Used time from COC.

Collection time on COC for MW-2C is 17:55 - bottles have time of 17:15. Used time from container labels.

Work Order Receipt Checklist - Continued

MT DEQ-Federal Superfund H22090497

tj 9/19/22

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Chain of Custody & Analytical Request Record

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Account Information (Billing information)

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other_____

Comments

Please filter all samples in the laboratory to 0.45 um (all samples are submitted raw). If water quantity is insufficient for all analyses, please prioritize dissolved metals first, then dissolved Hg, then common ions (anions before cations), and then alkalinity.

Project Information

Project Name, PWSID, Permit, etc.	SSTOU Repository Vadose Zone
Sampler Name	J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Dissolved As, Cd, Cu, Pb, Hg, Zn	Dissolved Al, Sb, Ba, Be, B, Cr, Co, Fe	Dissolved Mn, Mb, ni, Se, Ag, U, V	Alkalinity/Bicarbonate	Hardness	Ca, Mg, Cl, K, Na, SO4				See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1 GW-FM-WS	9/16/22	0900	1	W	✓	✓	✓	✓	✓	✓						H22090497
2 GW-FM-ES	9/16/22	0830	1	W	✓	✓	✓	✓	✓	✓						
3 GW-FM-BG	9/16/22	0930	1	W	✓	✓	✓	✓	✓	✓						
4 GW-CR-BG QC-FD	9/16/22	1015	1	W	✓	✓	✓	✓	✓	✓						
5 GW-CR-BG	9/16/22	1015	1	W	✓	✓	✓	✓	✓	✓						
6 GW-CR-WS	9/16/22	1050	1	W	✓	✓	✓	✓	✓	✓						
7 GW-CR-ES	9/16/22	1130	1	W	✓	✓	✓	✓	✓	✓						
8 GW-ST-BG QC-FB	9/16/22	1210	1	W	✓	✓	✓	✓	✓	✓						
9 GW-ST-BG	9/16/22	1220	1	W	x	x	x	x	x	x						
10 GW-ST-ES	9/16/22	1245	1	W	x	x	x	x	x	x						

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Joy Naughton	9/16/22 1700				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
					9/16/22 Mon	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
Land	4	Y (N) C B	Y N	9.4 °C 2.7	Y N	Y N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

Chain of Custody & Analytical Request Record

ENERGY LABORATORIES — Trust our People. Trust our Data.

www.energylab.com

Account Information (Billing information)

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other_____

Comments

Please filter all samples in the laboratory to 0.45 um (all samples are submitted raw). If water quantity is insufficient for all analyses, please prioritize dissolved metals first, then dissolved Hg, then common ions (anions before cations), and then alkalinity.

Project Information

Project Name, PWSID, Permit, etc.	SSTOU Repository Vadose Zone
Sampler Name	J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes: A - Air; W - Water; S - Soils/Solids; V - Vegetation; B - Bioassay; O - Other; DW - Drinking Water

All turnaround times are standard unless marked as RUSH.

Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Dissolved As, Cd, Cu, Pb, Hg, Zn	Dissolved Al, Sb, Ba, Be, B, Cr, Co, Fe	Dissolved Mn, Mb, ni, Se, Ag, U, V	Alkalinity/Bicarbonate	Hardness	Ca, Mg, Cl, K, Na, SO4				See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	BW-ST-WS	9/16/22	1320	1	W	✓	✓	✓	✓	✓	✓						1722090497
2	GW-FR-CS	9/16/22	1510	1	W	✓	✓	✓	✓	✓	✓						
3	GW-FR-BG	9/16/22	1400	1	W	✓	✓	✓	✓	✓	✓						
4	GW-FR-WS	9/16/22	1435	1	W	✓	✓	✓	✓	✓	✓						
5				1	W	✓	✓	✓	✓	✓	✓						
6				1	W	✓	✓	✓	✓	✓	✓						
7				1	W	✓	✓	✓	✓	✓	✓						
8				1	W	✓	✓	✓	✓	✓	✓						
9																	
10																	

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Joe Naughton	9/16/22 1700				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Aaron	9/16/22 1700	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand	4	Y (N) C B	Y N	0.7 °C	(Y) N	(Y) N	CC Cash Check_____	$	

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Chain of Custody & Analytical Request Record

www.energylab.com

Account Information (Billing information)

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other_____

Comments

Please filter all samples in the laboratory to 0.45 um (all samples are submitted raw).

Project Information

Project Name, PWSID, Permit, etc.	SSTOU Repository Groundwater
Sampler Name	T. Traxler, J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Dissolved As, Cd, Cu, Pb, Hg, Zn	Dissolved Al, Sb, Ba, Be, B, Cr, Co, Fe	Dissolved Mn, Mb, Ni, Se, Ag, U, V	Dissolved Ca, Mg, K, Na	Hardness	Chloride, Sulfate	Alkalinity/Bicarbonate			See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1 1GW-1056	9/14/22	1510	1	W	✓	✓	✓	✓	✓	✓	✓					H22090497
2 LYP-07	9/14/22	1620	1	W	✓	✓	✓	✓	✓	✓	✓					
3 MW-2A	9/14/22	1300	1	W	✓	✓	✓	✓	✓	✓	✓					
4 MW-2B	9/14/22	1340	1	W	✓	✓	✓	✓	✓	✓	✓					
5 MW-2C	9/14/22	1755	1	W	✓	✓	✓	✓	✓	✓	✓					
6 MW-2D	9/14/22	1440	1	W	✓	✓	✓	✓	✓	✓	✓					
7 MW-2A QC-FB	9/14/22	1830	1	W	✓	✓	✓	✓	✓	✓	✓					
8 MW-2C QC-FD	9/14/22	1755	1	W	✓	✓	—	—	✓	—	✓					
9																
10																

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	[illegible]	9/16/22 1700	Joe Naughton			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Hayley	9/16/22 1700	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand	4	Y (N) C B	Y N	4.4 °C 2.7	Y N	Y N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

November 15, 2022

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22100742 Quote ID: H1526

Project Name: SSTOU Repository Vadose Zone

Energy Laboratories Inc Helena MT received the following 5 samples for MT DEQ-Federal Superfund on 10/25/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22100742-001	LYS-01	10/25/22 12:42	10/25/22	Groundwater	Metals by ICP/ICPMS, Dissolved Alkalinity to pH 4.5 Mercury, Dissolved Hardness Anions by Ion Chromatography Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1
H22100742-002	LYS-02	10/25/22 12:55	10/25/22	Groundwater	Metals by ICP/ICPMS, Dissolved Mercury, Dissolved Hardness Anions by Ion Chromatography Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1
H22100742-003	LYS-03	10/25/22 12:25	10/25/22	Groundwater	Metals by ICP/ICPMS, Dissolved Hardness Preparation, Dissolved Filtration MCAWW
H22100742-004	LYS-06	10/25/22 12:35	10/25/22	Groundwater	Metals by ICP/ICPMS, Dissolved Mercury, Dissolved Hardness Anions by Ion Chromatography Preparation, Dissolved Filtration MCAWW Mercury Digestion by E245.1
H22100742-005	LYS-07	10/25/22 12:15	10/25/22	Groundwater	Metals by ICP/ICPMS, Dissolved Hardness Preparation, Dissolved Filtration MCAWW

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-01
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22100742-001
Collection Date: 10/25/22 12:42
DateReceived: 10/25/22
Report Date: 11/15/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Alkalinity, Total as CaCO3	220	mg/L		4	2	A2320 B	11/01/22 10:40 / ljs			PHSC_101-H_221101A : 12		R179664
Bicarbonate as HCO3	270	mg/L		4	3	A2320 B	11/01/22 10:40 / ljs			PHSC_101-H_221101A : 12		R179664
Chloride	70	mg/L		1	0.05	E300.0	10/29/22 00:54 / SR			IC METROHM_221024A : 428		R179457
Sulfate	291	mg/L		1	0.1	E300.0	10/29/22 00:54 / SR			IC METROHM_221024A : 428		R179457
Hardness as CaCO3	508	mg/L		1	1	A2340 B	11/01/22 05:43 / SR			CALC_221102B : 443		R179708
METALS, DISSOLVED												
Aluminum	0.004	mg/L	J	0.009	0.003	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Antimony	ND	mg/L		0.0005	0.0002	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Barium	0.056	mg/L		0.003	0.0002	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Boron	0.066	mg/L	J	0.1	0.004	E200.7	11/01/22 05:43 / sld	10/28/22 11:22		ICP2-HE_221031C : 173		R179671
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Calcium	150	mg/L		1	0.1	E200.7	11/01/22 05:43 / sld	10/28/22 11:22		ICP2-HE_221031C : 173		R179671
Chromium	ND	mg/L		0.01	0.0001	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Cobalt	ND	mg/L		0.01	0.001	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Copper	0.002	mg/L		0.001	0.0001	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Iron	ND	mg/L		0.02	0.004	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Lead	ND	mg/L		0.0003	0.0001	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Magnesium	32	mg/L		1	0.02	E200.7	11/01/22 05:43 / sld	10/28/22 11:22		ICP2-HE_221031C : 173		R179671
Manganese	ND	mg/L		0.001	0.0003	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Mercury	ND	ug/L		0.005	0.002	E245.1	10/28/22 15:48 / cfg	10/28/22 09:17	E245.1	HGCV203-H_221028A : 40		64091
Molybdenum	0.007	mg/L		0.005	0.0003	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Nickel	0.0002	mg/L	J	0.002	0.0002	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Potassium	3	mg/L		1	0.06	E200.7	11/01/22 05:43 / sld	10/28/22 11:22		ICP2-HE_221031C : 173		R179671
Selenium	0.007	mg/L		0.001	0.00007	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Silver	ND	mg/L		0.0002	0.00008	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Sodium	48	mg/L		1	0.02	E200.7	11/01/22 05:43 / sld	10/28/22 11:22		ICP2-HE_221031C : 173		R179671
Uranium	0.160	mg/L		0.0002	0.00002	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Vanadium	0.0030	mg/L	J	0.1	0.0001	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	11/01/22 21:09 / dck	10/28/22 11:22		ICPMS205-H_221101A : 207		R179684

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-02
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22100742-002
Collection Date: 10/25/22 12:55
DateReceived: 10/25/22
Report Date: 11/15/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Chloride	658	mg/L		1	0.5	E300.0	10/29/22 02:20 / SR			IC METROHM_221024A : 433		R179457
Sulfate	10400	mg/L	D	2	1	E300.0	10/29/22 02:20 / SR			IC METROHM_221024A : 433		R179457
Hardness as CaCO3	3440	mg/L		1	1	A2340 B	11/02/22 10:24 / sld			WATERCALC_221102B : 2		R179709
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Antimony	0.0009	mg/L		0.0005	0.0002	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Arsenic	0.020	mg/L		0.001	0.0002	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Barium	0.015	mg/L		0.003	0.0002	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Boron	0.8	mg/L		0.1	0.004	E200.7	11/01/22 05:47 / sld	10/28/22 11:22		ICP2-HE_221031C : 174		R179671
Cadmium	0.00003	mg/L		0.00003	0.00002	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Calcium	495	mg/L		1	0.1	E200.7	11/01/22 05:47 / sld	10/28/22 11:22		ICP2-HE_221031C : 174		R179671
Chromium	0.0017	mg/L	J	0.01	0.0001	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Cobalt	ND	mg/L		0.01	0.001	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Copper	0.019	mg/L		0.001	0.0001	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Iron	ND	mg/L		0.02	0.004	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Lead	ND	mg/L		0.0003	0.0001	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Magnesium	535	mg/L		1	0.2	E200.7	11/01/22 05:47 / sld	10/28/22 11:22		ICP2-HE_221031C : 174		R179671
Manganese	ND	mg/L		0.001	0.0003	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Mercury	0.032	ug/L		0.005	0.002	E245.1	10/28/22 15:51 / cfg	10/28/22 09:17	E245.1	HGCV203-H_221028A : 41		64091
Molybdenum	0.077	mg/L		0.005	0.0003	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Nickel	0.0014	mg/L	J	0.002	0.0002	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Potassium	5	mg/L		1	0.06	E200.7	11/01/22 05:47 / sld	10/28/22 11:22		ICP2-HE_221031C : 174		R179671
Selenium	0.059	mg/L		0.001	0.00007	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Silver	ND	mg/L		0.0002	0.00008	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Sodium	3840	mg/L		1	0.5	E200.7	11/01/22 17:41 / sld	10/28/22 11:22		ICP2-HE_221101B : 24		R179701
Uranium	2.37	mg/L		0.0002	0.00002	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Vanadium	0.042	mg/L	J	0.1	0.0001	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684
Zinc	0.020	mg/L		0.008	0.001	E200.8	11/01/22 21:12 / dck	10/28/22 11:22		ICPMS205-H_221101A : 208		R179684

Report Definitions:

RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-03
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22100742-003
Collection Date: 10/25/22 12:25
DateReceived: 10/25/22
Report Date: 11/15/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Hardness as CaCO3	367	mg/L		1	1	A2340 B	11/02/22 10:24 / sld			WATERCALC_221102B : 3		R179709
METALS, DISSOLVED												
Aluminum	0.004	mg/L	J	0.009	0.003	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Antimony	0.0016	mg/L		0.0005	0.0002	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Arsenic	0.312	mg/L		0.001	0.0002	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Barium	0.066	mg/L		0.003	0.0002	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Boron	1.1	mg/L		0.1	0.008	E200.7	11/01/22 05:51 / sld	10/28/22 11:22		ICP2-HE_221031C : 175		R179671
Cadmium	0.00002	mg/L	J	0.00003	0.00002	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Calcium	71	mg/L		1	0.3	E200.7	11/01/22 05:51 / sld	10/28/22 11:22		ICP2-HE_221031C : 175		R179671
Chromium	0.0050	mg/L	J	0.01	0.0001	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Cobalt	ND	mg/L		0.01	0.001	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Copper	0.005	mg/L		0.001	0.0001	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Iron	ND	mg/L		0.02	0.004	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Lead	ND	mg/L		0.0003	0.0001	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Magnesium	46	mg/L		1	0.05	E200.7	11/01/22 05:51 / sld	10/28/22 11:22		ICP2-HE_221031C : 175		R179671
Manganese	0.0004	mg/L	J	0.001	0.0003	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Molybdenum	0.120	mg/L		0.005	0.0003	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Potassium	1	mg/L		1	0.1	E200.7	11/01/22 05:51 / sld	10/28/22 11:22		ICP2-HE_221031C : 175		R179671
Selenium	0.003	mg/L		0.001	0.00007	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Silver	ND	mg/L		0.0002	0.00008	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Sodium	208	mg/L		1	0.04	E200.7	11/01/22 05:51 / sld	10/28/22 11:22		ICP2-HE_221031C : 175		R179671
Uranium	0.0254	mg/L		0.0002	0.00002	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Vanadium	0.3	mg/L		0.1	0.0001	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684
Zinc	ND	mg/L		0.008	0.001	E200.8	11/01/22 21:14 / dck	10/28/22 11:22		ICPMS205-H_221101A : 209		R179684

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-06
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22100742-004
Collection Date: 10/25/22 12:35
DateReceived: 10/25/22
Report Date: 11/15/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Chloride	65	mg/L		1	0.2	E300.0	10/29/22 02:35 / SR			IC METROHM_221024A : 434		R179457
Sulfate	1300	mg/L		1	0.6	E300.0	10/29/22 02:35 / SR			IC METROHM_221024A : 434		R179457
Hardness as CaCO3	753	mg/L		1	1	A2340 B	11/02/22 10:24 / sld			WATERCALC_221102B : 4		R179709
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Antimony	0.0006	mg/L		0.0005	0.0002	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Barium	0.016	mg/L		0.003	0.0002	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Boron	0.2	mg/L		0.1	0.008	E200.7	11/01/22 05:55 / sld	10/28/22 11:22		ICP2-HE_221031C : 176		R179671
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Calcium	232	mg/L		1	0.3	E200.7	11/01/22 05:55 / sld	10/28/22 11:22		ICP2-HE_221031C : 176		R179671
Chromium	0.0012	mg/L	J	0.01	0.0001	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Cobalt	ND	mg/L		0.01	0.001	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Copper	0.015	mg/L		0.001	0.0001	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Iron	ND	mg/L		0.02	0.004	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Lead	ND	mg/L		0.0003	0.0001	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Magnesium	42	mg/L		1	0.05	E200.7	11/01/22 05:55 / sld	10/28/22 11:22		ICP2-HE_221031C : 176		R179671
Manganese	0.0010	mg/L	J	0.001	0.0003	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Mercury	0.020	ug/L		0.005	0.003	E245.1	10/28/22 16:03 / cfg	10/28/22 09:17	E245.1	HGCV203-H_221028A : 44		64091
Molybdenum	0.019	mg/L		0.005	0.0003	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Nickel	0.0013	mg/L	J	0.002	0.0002	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Potassium	0.2	mg/L	J	1	0.1	E200.7	11/01/22 05:55 / sld	10/28/22 11:22		ICP2-HE_221031C : 176		R179671
Selenium	0.075	mg/L		0.001	0.00007	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Silver	ND	mg/L		0.0002	0.00008	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Sodium	270	mg/L		1	0.04	E200.7	11/01/22 05:55 / sld	10/28/22 11:22		ICP2-HE_221031C : 176		R179671
Uranium	0.0084	mg/L		0.0002	0.00002	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Vanadium	0.014	mg/L	J	0.1	0.0001	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684
Zinc	0.012	mg/L		0.008	0.001	E200.8	11/01/22 21:19 / dck	10/28/22 11:22		ICPMS205-H_221101A : 211		R179684

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: LYS-07
Project: SSTOU Repository Vadose Zone
Matrix: Groundwater

Lab ID: H22100742-005
Collection Date: 10/25/22 12:15
DateReceived: 10/25/22
Report Date: 11/15/22

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Hardness as CaCO3	1990	mg/L		1	1	A2340 B	11/02/22 10:24 / sld			WATERCALC_221102B : 5		R179709
METALS, DISSOLVED												
Aluminum	0.011	mg/L		0.009	0.003	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Barium	0.008	mg/L		0.003	0.0002	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Boron	0.2	mg/L		0.1	0.008	E200.7	11/01/22 05:59 / sld	10/28/22 11:22		ICP2-HE_221031C : 177		R179671
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Calcium	573	mg/L		1	0.3	E200.7	11/01/22 05:59 / sld	10/28/22 11:22		ICP2-HE_221031C : 177		R179671
Chromium	0.0014	mg/L	J	0.01	0.0001	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Cobalt	ND	mg/L		0.01	0.001	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Copper	0.005	mg/L		0.001	0.0001	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Iron	ND	mg/L		0.02	0.004	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Lead	ND	mg/L		0.0003	0.0001	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Magnesium	136	mg/L		1	0.05	E200.7	11/01/22 05:59 / sld	10/28/22 11:22		ICP2-HE_221031C : 177		R179671
Manganese	0.0006	mg/L	J	0.001	0.0003	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Molybdenum	0.082	mg/L		0.005	0.0003	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Nickel	0.0003	mg/L	J	0.002	0.0002	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Potassium	14	mg/L		1	0.1	E200.7	11/01/22 05:59 / sld	10/28/22 11:22		ICP2-HE_221031C : 177		R179671
Selenium	0.003	mg/L		0.001	0.00007	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Silver	ND	mg/L		0.0002	0.00008	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Sodium	623	mg/L		1	0.04	E200.7	11/01/22 05:59 / sld	10/28/22 11:22		ICP2-HE_221031C : 177		R179671
Uranium	0.343	mg/L		0.0002	0.00002	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Vanadium	0.0033	mg/L	J	0.1	0.0001	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684
Zinc	0.004	mg/L	J	0.008	0.001	E200.8	11/01/22 21:22 / dck	10/28/22 11:22		ICPMS205-H_221101A : 212		R179684

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22100742
BatchID: 221028waLL-hg203
Date: *15-Nov-22*

Run ID :Run Order: **HGCV203-H_221028A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**
Analysis Date: **10/28/22 14:39** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0965	0.0050	0.1	0	**97**	90	110				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-004B**

Run ID :Run Order: **HGCV203-H_221028A: 10** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV1** Method: **E245.1**
Analysis Date: **10/28/22 14:42** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.100	0.0050	0.1	0	**100**	95	105				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-004B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22100742 **BatchID: 64091** **Date:** *15-Nov-22*

Run ID :Run Order: **HGCV203-H_221028A: 12** SampType: **Method Blank** Lab ID: **MB-64091** Method: **E245.1**

Analysis Date: **10/28/22 15:16** Units: **ug/L** **Prep Info:** Prep Date: **10/28/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.002									

Associated samples: **H22100742-001B, H22100742-002B, H22100742-004B**

Run ID :Run Order: **HGCV203-H_221028A: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-64091** Method: **E245.1**

Analysis Date: **10/28/22 15:20** Units: **ug/L** **Prep Info:** Prep Date: **10/28/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0498	0.0050	0.05	0	100	90	110				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-004B**

Run ID :Run Order: **HGCV203-H_221028A: 15** SampType: **Sample Matrix Spike** Lab ID: **H22090073-002CMS** Method: **E245.1**

Analysis Date: **10/28/22 15:26** Units: **ug/L** **Prep Info:** Prep Date: **10/28/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0540	0.0050	0.05	0.00474	98	70	130				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-004B**

Run ID :Run Order: **HGCV203-H_221028A: 16** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22090073-002CMSD** Method: **E245.1**

Analysis Date: **10/28/22 15:29** Units: **ug/L** **Prep Info:** Prep Date: **10/28/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0534	0.0050	0.05	0.00474	97	70	130	0.05397	1.2	20	

Associated samples: **H22100742-001B, H22100742-002B, H22100742-004B**

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22100742 **BatchID:** R179457 **Date:** *15-Nov-22*

Run ID :Run Order: **IC METROHM_221024A: 2** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **10/24/22 11:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.06									

Associated samples: **H22100742-001A, H22100742-002A, H22100742-004A**

Run ID :Run Order: **IC METROHM_221024A: 3** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **10/24/22 11:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	104	1.0	100	0	104	90	110				
Sulfate	417	1.0	400	0	104	90	110				

Associated samples: **H22100742-001A, H22100742-002A, H22100742-004A**

Run ID :Run Order: **IC METROHM_221024A: 4** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **10/24/22 12:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25.2	1.0	25	0	101	90	110				
Sulfate	107	1.0	100	0	107	90	110				

Associated samples: **H22100742-001A, H22100742-002A, H22100742-004A**

Run ID :Run Order: **IC METROHM_221024A: 417** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **10/28/22 22:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51.8	1.0	50	0	104	90	110				
Sulfate	213	1.0	200	0	107	90	110				

Associated samples: **H22100742-001A, H22100742-002A, H22100742-004A**

Run ID :Run Order: **IC METROHM_221024A: 429** SampType: **Sample Matrix Spike** Lab ID: **H22100742-001AMS** Method: **E300.0**

Analysis Date: **10/29/22 01:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	121	1.0	50	69.96	103	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22100742
BatchID: R179457
Date: *15-Nov-22*

Run ID :Run Order: **IC METROHM_221024A: 429** SampType: **Sample Matrix Spike** Lab ID: **H22100742-001AMS** Method: **E300.0**

Analysis Date: **10/29/22 01:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	496	1.0	200	291	103	90	110				

Associated samples: **H22100742-001A, H22100742-002A, H22100742-004A**

Run ID :Run Order: **IC METROHM_221024A: 430** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22100742-001AMSD** Method: **E300.0**

Analysis Date: **10/29/22 01:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	121	1.0	50	69.96	102	90	110	121.3	0.1	20	
Sulfate	498	1.0	200	291	104	90	110	496	0.4	20	

Associated samples: **H22100742-001A, H22100742-002A, H22100742-004A**

Run ID :Run Order: **IC METROHM_221024A: 431** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **10/29/22 01:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51.2	1.0	50	0	102	90	110				
Sulfate	209	1.0	200	0	104	90	110				

Associated samples: **H22100742-001A, H22100742-002A, H22100742-004A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22100742 **BatchID:** R179664 **Date:** *15-Nov-22*

Run ID :Run Order: **PHSC_101-H_221101A: 6** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **11/01/22 09:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H22100742-001A**

Run ID :Run Order: **PHSC_101-H_221101A: 7** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **11/01/22 09:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	600	4.0	600	0	**99**	90	110				

Associated samples: **H22100742-001A**

Run ID :Run Order: **PHSC_101-H_221101A: 16** SampType: **Sample Duplicate** Lab ID: **H22100790-007ADUP** Method: **A2320 B**

Analysis Date: **11/01/22 10:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	4.0		0				0		10	
Bicarbonate as HCO3	ND	4.0		0				0		10	

Associated samples: **H22100742-001A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22100742
BatchID: R179671
Date: *15-Nov-22*

Run ID :Run Order: **ICP2-HE_221031C: 15** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**
Analysis Date: **10/31/22 13:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.781	0.10	0.8	0	98	95	105				
Calcium	39.9	1.0	40	0	100	95	105				
Magnesium	40.1	1.0	40	0	100	95	105				
Potassium	40.9	1.0	40	0	102	95	105				
Sodium	41.1	1.0	40	0	103	95	105				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Run ID :Run Order: **ICP2-HE_221031C: 16** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV-1** Method: **E200.7**
Analysis Date: **10/31/22 13:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.50	0.10	2.5	0	100	95	105				
Calcium	25.3	1.0	25	0	101	95	105				
Magnesium	25.2	1.0	25	0	101	95	105				
Potassium	25.3	1.0	25	0	101	95	105				
Sodium	25.4	1.0	25	0	102	95	105				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Run ID :Run Order: **ICP2-HE_221031C: 22** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**
Analysis Date: **10/31/22 13:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.004									
Calcium	ND	0.1									
Magnesium	ND	0.02									
Potassium	ND	0.06									
Sodium	0.06	0.02									

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22100742
BatchID: R179671
Date: *15-Nov-22*

Run ID :Run Order: **ICP2-HE_221031C: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**
Analysis Date: **10/31/22 14:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.941	0.10	1	0	94	85	115				
Calcium	52.1	1.0	50	0	104	85	115				
Magnesium	51.6	1.0	50	0	103	85	115				
Potassium	51.3	1.0	50	0	103	85	115				
Sodium	51.2	1.0	50	0	102	85	115				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Run ID :Run Order: **ICP2-HE_221031C: 170** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.7**
Analysis Date: **11/01/22 05:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.61	0.10	2.5	0	104	90	110				
Calcium	26.6	1.0	25	0	106	90	110				
Magnesium	26.2	1.0	25	0	105	90	110				
Potassium	25.2	1.0	25	0	101	90	110				
Sodium	25.0	1.0	25	0	100	90	110				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Run ID :Run Order: **ICP2-HE_221031C: 180** SampType: **Sample Matrix Spike** Lab ID: **H22100808-001CMS2** Method: **E200.7**
Analysis Date: **11/01/22 06:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.66	0.050	2	0.764	95	70	130				
Calcium	240	1.0	100	141	99	70	130				
Magnesium	255	1.0	100	158.5	96	70	130				
Potassium	117	1.0	100	20.84	96	70	130				
Sodium	380	1.0	100	286.8	93	70	130				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22100742
BatchID: R179671
Date: *15-Nov-22*

Run ID :Run Order: **ICP2-HE_221031C: 181** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22100808-001CMSD2** Method: **E200.7**

Analysis Date: **11/01/22 06:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.72	0.050	2	0.764	98	70	130	2.662	2.1	20	
Calcium	238	1.0	100	141	97	70	130	239.9	0.9	20	
Magnesium	255	1.0	100	158.5	96	70	130	254.8	0.1	20	
Potassium	110	1.0	100	20.84	89	70	130	116.9	6.5	20	
Sodium	354	1.0	100	286.8	67	70	130	380.2	7.3	20	S

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22100742
BatchID: R179684
Date: *15-Nov-22*

Run ID :Run Order: **ICPMS205-H_221101A: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **11/01/22 11:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.306	0.10	0.3	0	102	90	110				
Antimony	0.0610	0.050	0.06	0	102	90	110				
Arsenic	0.0639	0.0050	0.06	0	106	90	110				
Barium	0.0623	0.10	0.06	0	104	90	110				
Beryllium	0.0306	0.0010	0.03	0	102	90	110				
Cadmium	0.0315	0.0010	0.03	0	105	90	110				
Chromium	0.0627	0.010	0.06	0	105	90	110				
Cobalt	0.0613	0.010	0.06	0	102	90	110				
Copper	0.0626	0.010	0.06	0	104	90	110				
Iron	0.308	0.020	0.3	0	103	90	110				
Lead	0.0612	0.010	0.06	0	102	90	110				
Manganese	0.311	0.010	0.3	0	104	90	110				
Molybdenum	0.0594	0.0050	0.06	0	99	90	110				
Nickel	0.0631	0.010	0.06	0	105	90	110				
Selenium	0.0606	0.0050	0.06	0	101	90	110				
Silver	0.0312	0.0050	0.03	0	104	90	110				
Uranium	0.0620	0.00030	0.06	0	103	90	110				
Vanadium	0.0609	0.10	0.06	0	101	90	110				
Zinc	0.0631	0.010	0.06	0	105	90	110				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Run ID :Run Order: **ICPMS205-H_221101A: 68** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **11/01/22 15:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.282	0.10	0.3	0	94	90	110				
Antimony	0.0583	0.050	0.06	0	97	90	110				
Arsenic	0.0601	0.0050	0.06	0	100	90	110				
Barium	0.0591	0.10	0.06	0	98	90	110				
Beryllium	0.0304	0.0010	0.03	0	101	90	110				
Cadmium	0.0305	0.0010	0.03	0	102	90	110				
Chromium	0.0584	0.010	0.06	0	97	90	110				
Cobalt	0.0574	0.010	0.06	0	96	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22100742
BatchID: R179684
Date: *15-Nov-22*

Run ID :Run Order: **ICPMS205-H_221101A: 68** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **11/01/22 15:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0585	0.010	0.06	0	**97**	90	110				
Iron	0.290	0.020	0.3	0	**97**	90	110				
Lead	0.0595	0.010	0.06	0	**99**	90	110				
Manganese	0.293	0.010	0.3	0	**98**	90	110				
Molybdenum	0.0580	0.0050	0.06	0	**97**	90	110				
Nickel	0.0587	0.010	0.06	0	**98**	90	110				
Selenium	0.0600	0.0050	0.06	0	**100**	90	110				
Silver	0.0308	0.0050	0.03	0	**103**	90	110				
Uranium	0.0601	0.00030	0.06	0	**100**	90	110				
Vanadium	0.0578	0.10	0.06	0	**96**	90	110				
Zinc	0.0600	0.010	0.06	0	**100**	90	110				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Run ID :Run Order: **ICPMS205-H_221101A: 78** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **11/01/22 15:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Antimony	ND	0.0002									
Arsenic	ND	0.0002									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00002									
Chromium	ND	0.0001									
Cobalt	ND	0.001									
Copper	ND	0.0001									
Iron	ND	0.004									
Lead	ND	0.0001									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Nickel	ND	0.0002									
Selenium	ND	0.00007									
Silver	ND	0.00008									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22100742 **BatchID:** **R179684** **Date:** *15-Nov-22*

Run ID :Run Order: **ICPMS205-H_221101A: 78** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **11/01/22 15:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	ND	0.00002									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Run ID :Run Order: **ICPMS205-H_221101A: 79** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **11/01/22 15:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0499	0.10	0.05	0	**100**	85	115				
Antimony	0.0465	0.050	0.05	0	**93**	85	115				
Arsenic	0.0510	0.0050	0.05	0	**102**	85	115				
Barium	0.0501	0.10	0.05	0	**100**	85	115				
Beryllium	0.0498	0.0010	0.05	0	**100**	85	115				
Cadmium	0.0504	0.0010	0.05	0	**101**	85	115				
Chromium	0.0498	0.010	0.05	0	**100**	85	115				
Cobalt	0.0504	0.010	0.05	0	**101**	85	115				
Copper	0.0499	0.010	0.05	0	**100**	85	115				
Iron	0.148	0.020	0.15	0	**98**	85	115				
Lead	0.0492	0.010	0.05	0	**98**	85	115				
Manganese	0.0509	0.010	0.05	0	**102**	85	115				
Molybdenum	0.0489	0.0050	0.05	0	**98**	85	115				
Nickel	0.0503	0.010	0.05	0	**101**	85	115				
Selenium	0.0504	0.0050	0.05	0	**101**	85	115				
Silver	0.0203	0.0050	0.02	0	**101**	85	115				
Uranium	0.0488	0.00030	0.05	0	**98**	85	115				
Vanadium	0.0496	0.10	0.05	0	**99**	85	115				
Zinc	0.0505	0.010	0.05	0	**101**	85	115				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22100742 **BatchID:** R179684 **Date:** *15-Nov-22*

Run ID :Run Order: **ICPMS205-H_221101A: 200** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **11/01/22 20:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0471	0.10	0.05	0	94	90	110				
Antimony	0.0511	0.050	0.05	0	102	90	110				
Arsenic	0.0501	0.0050	0.05	0	100	90	110				
Barium	0.0511	0.10	0.05	0	102	90	110				
Beryllium	0.0490	0.0010	0.05	0	98	90	110				
Cadmium	0.0514	0.0010	0.05	0	103	90	110				
Chromium	0.0511	0.010	0.05	0	102	90	110				
Cobalt	0.0510	0.010	0.05	0	102	90	110				
Copper	0.0508	0.010	0.05	0	102	90	110				
Iron	1.32	0.020	1.3	0	102	90	110				
Lead	0.0510	0.010	0.05	0	102	90	110				
Manganese	0.0512	0.010	0.05	0	102	90	110				
Molybdenum	0.0518	0.0050	0.05	0	104	90	110				
Nickel	0.0512	0.010	0.05	0	102	90	110				
Selenium	0.0528	0.0050	0.05	0	106	90	110				
Silver	0.0208	0.0050	0.02	0	104	90	110				
Uranium	0.0508	0.00030	0.05	0	102	90	110				
Vanadium	0.0507	0.10	0.05	0	101	90	110				
Zinc	0.0517	0.010	0.05	0	103	90	110				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Run ID :Run Order: **ICPMS205-H_221101A: 204** SampType: **Sample Matrix Spike** Lab ID: **H22100704-006EMS** Method: **E200.8**

Analysis Date: **11/01/22 21:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0506	0.030	0.05	0	101	70	130				
Antimony	0.0481	0.0010	0.05	0	96	70	130				
Arsenic	0.0525	0.0010	0.05	0	105	70	130				
Barium	0.0509	0.050	0.05	0	102	70	130				
Beryllium	0.0501	0.0010	0.05	0	100	70	130				
Cadmium	0.0530	0.0010	0.05	0	106	70	130				
Chromium	0.0511	0.0050	0.05	0	102	70	130				
Cobalt	0.0512	0.0050	0.05	0	102	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22100742 **BatchID:** R179684 **Date:** *15-Nov-22*

Run ID :Run Order: **ICPMS205-H_221101A: 204** SampType: **Sample Matrix Spike** Lab ID: **H22100704-006EMS** Method: **E200.8**

Analysis Date: **11/01/22 21:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0517	0.0050	0.05	0	103	70	130				
Iron	0.153	0.020	0.15	0	102	70	130				
Lead	0.0514	0.0010	0.05	0	103	70	130				
Manganese	0.0515	0.0010	0.05	0	103	70	130				
Molybdenum	0.0512	0.0010	0.05	0	102	70	130				
Nickel	0.0516	0.0050	0.05	0	103	70	130				
Selenium	0.0532	0.0010	0.05	0	106	70	130				
Silver	0.0212	0.0010	0.02	0	106	70	130				
Uranium	0.0506	0.00030	0.05	0	101	70	130				
Vanadium	0.0504	0.010	0.05	0	101	70	130				
Zinc	0.0543	0.010	0.05	0	109	70	130				

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Run ID :Run Order: **ICPMS205-H_221101A: 205** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22100704-006EMSD** Method: **E200.8**

Analysis Date: **11/01/22 21:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0478	0.030	0.05	0	96	70	130	0.05064	5.8	20	
Antimony	0.0478	0.0010	0.05	0	96	70	130	0.04811	0.6	20	
Arsenic	0.0514	0.0010	0.05	0	103	70	130	0.05249	2.0	20	
Barium	0.0510	0.050	0.05	0	102	70	130	0.05094	0.2	20	
Beryllium	0.0503	0.0010	0.05	0	101	70	130	0.05012	0.3	20	
Cadmium	0.0528	0.0010	0.05	0	106	70	130	0.053	0.4	20	
Chromium	0.0519	0.0050	0.05	0	104	70	130	0.05114	1.5	20	
Cobalt	0.0525	0.0050	0.05	0	105	70	130	0.05116	2.6	20	
Copper	0.0523	0.0050	0.05	0	105	70	130	0.0517	1.2	20	
Iron	0.155	0.020	0.15	0	103	70	130	0.1531	1.0	20	
Lead	0.0513	0.0010	0.05	0	103	70	130	0.05136	0.2	20	
Manganese	0.0520	0.0010	0.05	0	104	70	130	0.05153	1.0	20	
Molybdenum	0.0514	0.0010	0.05	0	103	70	130	0.05116	0.4	20	
Nickel	0.0517	0.0050	0.05	0	103	70	130	0.05159	0.3	20	
Selenium	0.0536	0.0010	0.05	0	107	70	130	0.05323	0.7	20	
Silver	0.0214	0.0010	0.02	0	107	70	130	0.02115	1.0	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22100742
BatchID: R179684
Date: *15-Nov-22*

Run ID :Run Order: **ICPMS205-H_221101A: 205** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22100704-006EMSD** Method: **E200.8**

Analysis Date: **11/01/22 21:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	0.0507	0.00030	0.05	0	**101**	70	130	0.05065	**0**	20	
Vanadium	0.0517	0.010	0.05	0	**103**	70	130	0.05045	**2.5**	20	
Zinc	0.0556	0.010	0.05	0	**111**	70	130	0.0543	**2.4**	20	

Associated samples: **H22100742-001B, H22100742-002B, H22100742-003B, H22100742-004B, H22100742-005B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22100742
BatchID: R179701
Date: *15-Nov-22*

Run ID :Run Order: **ICP2-HE_221101B: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**
Analysis Date: **11/01/22 14:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	39.9	1.0	40	0	100	95	105				

Associated samples: **H22100742-002B**

Run ID :Run Order: **ICP2-HE_221101B: 7** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV-1** Method: **E200.7**
Analysis Date: **11/01/22 14:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	24.7	1.0	25	0	99	95	105				

Associated samples: **H22100742-002B**

Run ID :Run Order: **ICP2-HE_221101B: 13** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**
Analysis Date: **11/01/22 14:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.06	0.02									

Associated samples: **H22100742-002B**

Run ID :Run Order: **ICP2-HE_221101B: 14** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**
Analysis Date: **11/01/22 14:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	49.7	1.0	50	0	99	85	115				

Associated samples: **H22100742-002B**

Run ID :Run Order: **ICP2-HE_221101B: 17** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.7**
Analysis Date: **11/01/22 17:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	23.5	1.0	25	0	94	90	110				

Associated samples: **H22100742-002B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22100742 **BatchID: R179701** **Date:** *15-Nov-22*

Run ID :Run Order: **ICP2-HE_221101B: 21** SampType: **Sample Matrix Spike** Lab ID: **H22110002-001BMS2** Method: **E200.7**

Analysis Date: **11/01/22 17:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	92.0	1.0	50	45.3	**93**	70	130				

Associated samples: **H22100742-002B**

Run ID :Run Order: **ICP2-HE_221101B: 22** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22110002-001BMSD2** Method: **E200.7**

Analysis Date: **11/01/22 17:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	95.7	1.0	50	45.3	**101**	70	130	92.03	**4.0**	20	

Associated samples: **H22100742-002B**

Run ID :Run Order: **ICP2-HE_221101B: 27** SampType: **Sample Matrix Spike** Lab ID: **H22100849-014DMS2** Method: **E200.7**

Analysis Date: **11/01/22 17:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	47.9	1.0	50	2.114	**92**	70	130				

Associated samples: **H22100742-002B**

Run ID :Run Order: **ICP2-HE_221101B: 28** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22100849-014DMSD2** Method: **E200.7**

Analysis Date: **11/01/22 17:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	49.9	1.0	50	2.114	**96**	70	130	47.9	**4.1**	20	

Associated samples: **H22100742-002B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22100742

Login completed by: Taylor K. Jones
Date Received: 10/25/2022

Reviewed by: rtooke
Received by: RAT

Reviewed Date: 10/31/2022
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	4.8°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

Sample for Dissolved Metals/Hardness was subsampled, filtered, and preserved to pH <2 with 2 mL of Nitric acid per 250 mL in the laboratory. According to 40CFR136, samples for Dissolved Metals should be filtered and preserved within 15 minutes of collection.

LYS-08 is listed on the COC. A container was list received. This sample was not collected per phone conversation with Joe Naughton on 10/25/22.
TJ 10/25/22
Insufficient volume to filter LYS-03 and LYS-07 for mercury analysis. 10/28/22 rt

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information *(Billing information)*

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information *(if different than Account Information)*

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ■ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

Please filter all samples in the laboratory to 0.45 um (all samples are submitted raw). If water quantity is insufficient for all analyses, please prioritize dissolved metals first, then dissolved Hg, then common ions (anions before cations), and then alkalinity.

Project Information

Project Name, PWSID, Permit, etc.	SSTOU Repository Vadose Zone
Sampler Name	J. Naughton
Sampler Phone	(406) 214-4478
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Dissolved As, Cd, Cu, Pb, Hg, Zn	Dissolved Al, Sb, Ba, Be, B, Cr, Co, Fe	Dissolved Mn, Mb, ni, Se, Ag, U, V	Alkalinity/Bicarbonate	Hardness	Ca, Mg, Cl, K, Na, SO4				See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1 LYS-01	10/25/22	1242	1	W	✓	✓	✓	✓	✓	✓						H22100742
2 LYS-02	10/25/22	1255	1	W	✓	✓	✓	✓	✓	✓						
3 LYS-03	10/25/22	1225	1	W	✓	✓	✓	✓	✓	✓						
~~4 LYS-04R~~	~~10/25/22~~		~~1~~	W	✓	✓	✓	✓	✓	✓						
~~5 LYS-05~~	~~10/25/22~~		1	W	✓	✓	✓	✓	✓	✓						
6 LYS-06	10/25/22	1235	1	W	✓	✓	✓	✓	✓	✓						
7 LYS-07	10/25/22	1248	1	W	✓	✓	✓	✓	✓	✓						
8 LYS-08	10/25/22	1215	1	W	✓	✓	✓	✓	✓	✓						
9																
10																

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Joe Naughton	10/25/22 1420				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Rebecca Todd	10-25-22 1420	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand	1	Y (N) C B	Y N	4.8 °C	Y (N)	(Y) N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

APPENDIX B-4

Fourth Quarter Results

ANALYTICAL SUMMARY REPORT

January 18, 2023

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22120260 Quote ID: H1526

Project Name: Silver Bow Creek SSTOU Monitoring

Energy Laboratories Inc Helena MT received the following 19 samples for MT DEQ-Federal Superfund on 12/9/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22120260-001	SS-07	12/08/22 17:15	12/09/22	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Conductivity Mercury, Dissolved Mercury, Total Recoverable Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 Mercury Digestion by E245.1 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H22120260-002	SS-10A	12/08/22 16:00	12/09/22	Surface Water	Same As Above
H22120260-003	SS-10A QC-FD	12/08/22 16:00	12/09/22	Surface Water	Same As Above
H22120260-004	SS-13	12/08/22 15:00	12/09/22	Surface Water	Same As Above
H22120260-005	SS-14 QC-FB	12/08/22 14:15	12/09/22	Surface Water	Same As Above
H22120260-006	SS-14	12/08/22 14:30	12/09/22	Surface Water	Same As Above
H22120260-007	SS-15A-2	12/08/22 13:00	12/09/22	Surface Water	Same As Above
H22120260-008	SS-16B	12/08/22 11:15	12/09/22	Surface Water	Same As Above
H22120260-009	SS-17D	12/08/22 10:15	12/09/22	Surface Water	Same As Above
H22120260-010	SS-19	12/08/22 9:15	12/09/22	Surface Water	Same As Above
H22120260-011	SS-07 Sediment <0.063mm	12/08/22 17:15	12/09/22	Sediment	Metals by ICP/ICPMS, Total Mercury in Solid By CVAA Moisture Percent Moisture Total Metals Digestion by SW3050B Mercury Digestion by SW7471B Sieve Analysis, Wet Soil Preparation USDA1

ANALYTICAL SUMMARY REPORT

H22120260-012	SS-07 Sediment 1mm to 0.063mm	12/08/22 17:15	12/09/22	Sediment	Metals by ICP/ICPMS, Total Mercury in Solid By CVAA Moisture Percent Moisture Total Metals Digestion by SW3050B Mercury Digestion by SW7471B Sieve Analysis, Wet
H22120260-013	SS-07 Sediment 2mm to 1mm	12/08/22 17:15	12/09/22	Sediment	Same As Above
H22120260-014	SS-07 QC-FD Sediment <0.063mm	12/08/22 17:15	12/09/22	Sediment	Same As Above
H22120260-015	SS-07 QC-FD Sediment 1mm to 0.063mm	12/08/22 17:15	12/09/22	Sediment	Same As Above
H22120260-016	SS-07 QC-FD Sediment 2mm to 1mm	12/08/22 17:15	12/09/22	Sediment	Same As Above
H22120260-017	SS-19 Sediment <0.063mm	12/08/22 9:15	12/09/22	Sediment	Same As Above
H22120260-018	SS-19 Sediment 1mm to 0.063mm	12/08/22 9:15	12/09/22	Sediment	Same As Above
H22120260-019	SS-19 Sediment 2mm to 1mm	12/08/22 9:15	12/09/22	Sediment	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-001
Collection Date: 12/08/22 17:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	4	mg/L	D	2	0.3	A2540 D	12/12/22 14:29 / am			U-124 (14410200)_221212A	14	TSS221212A
INORGANICS												
Alkalinity, Total as CaCO3	93	mg/L		4	2	A2320 B	12/12/22 12:27 / ljs			PHSC_101-H_221212A	54	R180736
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	12/12/22 12:27 / ljs			PHSC_101-H_221212A	54	R180736
Chloride	40	mg/L		1	0.02	E300.0	12/16/22 10:27 / ljs			IC METROHM_221215A	97	R180905
Sulfate	319	mg/L		1	0.06	E300.0	12/16/22 10:27 / ljs			IC METROHM_221215A	97	R180905
Hardness as CaCO3	367	mg/L		1	1	A2340 B	12/14/22 11:11 / sld			WATERCALC_221214B	11	R180813
NUTRIENTS												
Nitrogen, Ammonia as N	0.04	mg/L	J	0.05	0.03	E350.1	12/13/22 13:15 / JA			FIA203-HE_221213A	56	R180793
Nitrogen, Nitrate+Nitrite as N	1.46	mg/L		0.02	0.008	E353.2	12/14/22 15:38 / JA			FIA203-HE_221214A	102	R180840
Nitrogen, Total	1.36	mg/L	D	0.06	0.04	A4500 N-C	12/12/22 13:09 / JA	12/09/22 13:18	A4500 N-	FIA203-HE_221212A	47	64711
Phosphorus, Total as P	0.039	mg/L		0.003	0.001	E365.1	12/19/22 14:43 / JA	12/16/22 10:03	E365.1	SEAL AA500_221219A	40	64802
METALS, DISSOLVED												
Aluminum	0.008	mg/L	J	0.009	0.003	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Arsenic	0.002	mg/L		0.001	0.0002	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Barium	0.033	mg/L		0.003	0.0002	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Boron	0.077	mg/L	J	0.1	0.004	E200.7	12/09/22 13:47 / kjb			ICP2-HE_221209A	35	R180723
Cadmium	0.00008	mg/L		0.00003	0.00002	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Calcium	124	mg/L		1	0.2	E200.7	12/09/22 13:47 / kjb			ICP2-HE_221209A	35	R180723
Chromium	0.0003	mg/L	J	0.01	0.0001	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Cobalt	ND	mg/L		0.01	0.001	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Copper	0.002	mg/L		0.001	0.0001	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Iron	0.018	mg/L	J	0.02	0.004	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Magnesium	10	mg/L		1	0.05	E200.7	12/09/22 13:47 / kjb			ICP2-HE_221209A	35	R180723
Manganese	0.067	mg/L		0.001	0.0003	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Mercury	0.003	ug/L	J	0.005	0.002	E245.1	12/13/22 14:09 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	13	64708
Molybdenum	0.137	mg/L		0.005	0.0003	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B	125	R180791

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-001
Collection Date: 12/08/22 17:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	13	mg/L		1	0.06	E200.7	12/09/22 13:47 / kjb			ICP2-HE_221209A : 35		R180723
Selenium	0.00059	mg/L	J	0.001	0.00007	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B : 125		R180791
Silver	ND	mg/L		0.0002	0.00008	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B : 125		R180791
Sodium	48	mg/L		1	0.03	E200.7	12/09/22 13:47 / kjb			ICP2-HE_221209A : 35		R180723
Uranium	0.0029	mg/L		0.0002	0.00002	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B : 125		R180791
Vanadium	0.0024	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B : 125		R180791
Zinc	0.040	mg/L		0.008	0.001	E200.8	12/13/22 18:02 / dck			ICPMS205-H_221213B : 125		R180791
METALS, TOTAL RECOVERABLE												
Aluminum	0.070	mg/L		0.009	0.006	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Arsenic	0.002	mg/L		0.001	0.0001	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Barium	0.035	mg/L		0.003	0.0002	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Boron	0.083	mg/L	J	0.1	0.007	E200.7	12/12/22 13:54 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 35		64707
Cadmium	0.00009	mg/L		0.00003	0.00002	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Calcium	128	mg/L		1	0.1	E200.7	12/12/22 13:54 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 35		64707
Chromium	0.0005	mg/L	J	0.01	0.0002	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Cobalt	ND	mg/L		0.01	0.0003	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Copper	0.006	mg/L		0.001	0.0003	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Iron	0.15	mg/L		0.02	0.009	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Lead	0.0010	mg/L		0.0003	0.0001	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Magnesium	11	mg/L		1	0.05	E200.7	12/12/22 13:54 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 35		64707
Manganese	0.076	mg/L		0.001	0.0003	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Mercury	0.005	ug/L		0.005	0.002	E245.1	12/13/22 14:12 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A : 14		64708
Molybdenum	0.144	mg/L		0.005	0.0002	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Potassium	15	mg/L		1	0.1	E200.7	12/12/22 13:54 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 35		64707
Selenium	0.0006	mg/L	J	0.001	0.0001	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Silver	ND	mg/L		0.0002	0.00006	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Sodium	54	mg/L		1	0.1	E200.7	12/12/22 13:54 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 35		64707
Uranium	0.0029	mg/L		0.0002	0.00003	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Vanadium	0.0030	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707
Zinc	0.045	mg/L		0.008	0.001	E200.8	12/13/22 18:05 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 126		64707

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-002
Collection Date: 12/08/22 16:00
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	29	mg/L	D	2	0.3	A2540 D	12/12/22 14:29 / am			U-124 (14410200)_221212A	15	TSS221212A
INORGANICS												
Alkalinity, Total as CaCO3	84	mg/L		4	2	A2320 B	12/12/22 12:38 / ljs			PHSC_101-H_221212A	58	R180736
Bicarbonate as HCO3	100	mg/L		4	3	A2320 B	12/12/22 12:38 / ljs			PHSC_101-H_221212A	58	R180736
Chloride	37	mg/L		1	0.05	E300.0	12/16/22 10:41 / ljs			IC METROHM_221215A	98	R180905
Sulfate	395	mg/L		1	0.1	E300.0	12/16/22 10:41 / ljs			IC METROHM_221215A	98	R180905
Hardness as CaCO3	439	mg/L		1	1	A2340 B	12/14/22 11:11 / sld			WATERCALC_221214B	12	R180813
NUTRIENTS												
Nitrogen, Ammonia as N	0.05	mg/L	J	0.05	0.03	E350.1	12/13/22 13:16 / JA			FIA203-HE_221213A	57	R180793
Nitrogen, Nitrate+Nitrite as N	0.87	mg/L		0.02	0.008	E353.2	12/14/22 15:39 / JA			FIA203-HE_221214A	103	R180840
Nitrogen, Total	1.16	mg/L		0.05	0.02	A4500 N-C	12/12/22 13:10 / JA	12/09/22 13:18	A4500 N-	FIA203-HE_221212A	48	64711
Phosphorus, Total as P	0.105	mg/L		0.003	0.001	E365.1	12/19/22 14:44 / JA	12/16/22 10:03	E365.1	SEAL AA500_221219A	41	64802
METALS, DISSOLVED												
Aluminum	0.005	mg/L	J	0.009	0.003	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Barium	0.035	mg/L		0.003	0.0002	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Boron	0.061	mg/L	J	0.1	0.004	E200.7	12/09/22 13:51 / kjb			ICP2-HE_221209A	36	R180723
Cadmium	0.00018	mg/L		0.00003	0.00002	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Calcium	153	mg/L		1	0.2	E200.7	12/09/22 13:51 / kjb			ICP2-HE_221209A	36	R180723
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Cobalt	ND	mg/L		0.01	0.001	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Copper	0.009	mg/L		0.001	0.0001	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Iron	0.012	mg/L	J	0.02	0.004	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Magnesium	11	mg/L		1	0.05	E200.7	12/09/22 13:51 / kjb			ICP2-HE_221209A	36	R180723
Manganese	0.140	mg/L		0.001	0.0003	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	12/13/22 14:16 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	15	64708
Molybdenum	0.171	mg/L		0.005	0.0003	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791
Nickel	0.0005	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B	130	R180791

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-002
Collection Date: 12/08/22 16:00
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	13	mg/L		1	0.06	E200.7	12/09/22 13:51 / kjb			ICP2-HE_221209A : 36		R180723
Selenium	0.00077	mg/L	J	0.001	0.00007	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B : 130		R180791
Silver	ND	mg/L		0.0002	0.00008	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B : 130		R180791
Sodium	47	mg/L		1	0.03	E200.7	12/09/22 13:51 / kjb			ICP2-HE_221209A : 36		R180723
Uranium	0.0044	mg/L		0.0002	0.00002	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B : 130		R180791
Vanadium	0.0025	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B : 130		R180791
Zinc	0.053	mg/L		0.008	0.001	E200.8	12/13/22 18:16 / dck			ICPMS205-H_221213B : 130		R180791
METALS, TOTAL RECOVERABLE												
Aluminum	0.568	mg/L		0.009	0.006	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Arsenic	0.005	mg/L		0.001	0.0001	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Barium	0.043	mg/L		0.003	0.0002	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Boron	0.066	mg/L	J	0.1	0.007	E200.7	12/12/22 14:13 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 40		64707
Cadmium	0.00040	mg/L		0.00003	0.00002	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Calcium	157	mg/L		1	0.1	E200.7	12/12/22 14:13 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 40		64707
Chromium	0.0012	mg/L	J	0.01	0.0002	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Cobalt	0.0005	mg/L	J	0.01	0.0003	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Copper	0.045	mg/L		0.001	0.0003	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Iron	1.01	mg/L		0.02	0.02	E200.7	12/12/22 14:13 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 40		64707
Lead	0.0071	mg/L		0.0003	0.0001	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Magnesium	12	mg/L		1	0.05	E200.7	12/12/22 14:13 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 40		64707
Manganese	0.301	mg/L		0.001	0.0003	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Mercury	0.035	ug/L		0.005	0.002	E245.1	12/13/22 14:19 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A : 16		64708
Molybdenum	0.178	mg/L		0.005	0.0002	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Nickel	0.0009	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Potassium	13	mg/L		1	0.1	E200.7	12/12/22 14:13 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 40		64707
Selenium	0.0007	mg/L	J	0.001	0.0001	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Silver	0.00009	mg/L	J	0.0002	0.00006	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Sodium	48	mg/L		1	0.1	E200.7	12/12/22 14:13 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 40		64707
Uranium	0.0045	mg/L		0.0002	0.00003	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Vanadium	0.0049	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707
Zinc	0.106	mg/L		0.008	0.001	E200.8	12/13/22 18:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 131		64707

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A QC-FD
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-003
Collection Date: 12/08/22 16:00
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	28	mg/L	D	2	0.3	A2540 D	12/12/22 14:29 / am			U-124 (14410200)_221212A	16	TSS221212A
INORGANICS												
Alkalinity, Total as CaCO3	87	mg/L		4	2	A2320 B	12/12/22 12:43 / ljs			PHSC_101-H_221212A	60	R180736
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	12/12/22 12:43 / ljs			PHSC_101-H_221212A	60	R180736
Chloride	36	mg/L		1	0.05	E300.0	12/16/22 10:56 / ljs			IC METROHM_221215A	99	R180905
Sulfate	395	mg/L		1	0.1	E300.0	12/16/22 10:56 / ljs			IC METROHM_221215A	99	R180905
Hardness as CaCO3	423	mg/L		1	1	A2340 B	12/14/22 11:11 / sld			WATERCALC_221214B	13	R180813
NUTRIENTS												
Nitrogen, Ammonia as N	0.05	mg/L		0.05	0.03	E350.1	12/13/22 13:17 / JA			FIA203-HE_221213A	58	R180793
Nitrogen, Nitrate+Nitrite as N	0.88	mg/L		0.02	0.008	E353.2	12/14/22 15:40 / JA			FIA203-HE_221214A	104	R180840
Nitrogen, Total	1.15	mg/L		0.05	0.02	A4500 N-C	12/12/22 13:14 / JA	12/09/22 13:18	A4500 N-	FIA203-HE_221212A	51	64711
Phosphorus, Total as P	0.105	mg/L		0.003	0.001	E365.1	12/19/22 14:45 / JA	12/16/22 10:03	E365.1	SEAL AA500_221219A	42	64802
METALS, DISSOLVED												
Aluminum	0.005	mg/L	J	0.009	0.003	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Barium	0.035	mg/L		0.003	0.0002	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Boron	0.060	mg/L	J	0.1	0.004	E200.7	12/09/22 13:54 / kjb			ICP2-HE_221209A	37	R180723
Cadmium	0.00017	mg/L		0.00003	0.00002	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Calcium	152	mg/L		1	0.2	E200.7	12/09/22 13:54 / kjb			ICP2-HE_221209A	37	R180723
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Cobalt	ND	mg/L		0.01	0.001	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Copper	0.009	mg/L		0.001	0.0001	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Iron	0.012	mg/L	J	0.02	0.004	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Magnesium	11	mg/L		1	0.05	E200.7	12/09/22 13:54 / kjb			ICP2-HE_221209A	37	R180723
Manganese	0.139	mg/L		0.001	0.0003	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	12/13/22 14:23 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	17	64708
Molybdenum	0.170	mg/L		0.005	0.0003	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-10A QC-FD
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-003
Collection Date: 12/08/22 16:00
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	13	mg/L		1	0.06	E200.7	12/09/22 13:54 / kjb			ICP2-HE_221209A	37	R180723
Selenium	0.00067	mg/L	J	0.001	0.00007	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Silver	ND	mg/L		0.0002	0.00008	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Sodium	47	mg/L		1	0.03	E200.7	12/09/22 13:54 / kjb			ICP2-HE_221209A	37	R180723
Uranium	0.0043	mg/L		0.0002	0.00002	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Vanadium	0.0024	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
Zinc	0.052	mg/L		0.008	0.001	E200.8	12/13/22 18:22 / dck			ICPMS205-H_221213B	132	R180791
METALS, TOTAL RECOVERABLE												
Aluminum	0.492	mg/L		0.009	0.006	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Arsenic	0.005	mg/L		0.001	0.0001	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Barium	0.044	mg/L		0.003	0.0002	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Boron	0.067	mg/L	J	0.1	0.007	E200.7	12/12/22 14:16 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	41	64707
Cadmium	0.00033	mg/L		0.00003	0.00003	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Calcium	150	mg/L		1	0.1	E200.7	12/12/22 14:16 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	41	64707
Chromium	0.0009	mg/L	J	0.01	0.0002	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Cobalt	0.0005	mg/L	J	0.01	0.0003	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Copper	0.041	mg/L		0.001	0.0003	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Iron	0.89	mg/L		0.02	0.02	E200.7	12/12/22 14:16 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	41	64707
Lead	0.0065	mg/L		0.0003	0.0001	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Magnesium	11	mg/L		1	0.05	E200.7	12/12/22 14:16 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	41	64707
Manganese	0.272	mg/L		0.001	0.0003	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Mercury	0.026	ug/L		0.005	0.002	E245.1	12/13/22 14:26 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	18	64708
Molybdenum	0.179	mg/L		0.005	0.0002	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Nickel	0.0009	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Potassium	14	mg/L		1	0.1	E200.7	12/12/22 14:16 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	41	64707
Selenium	0.0007	mg/L	J	0.001	0.0001	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Silver	0.00008	mg/L	J	0.0002	0.00006	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Sodium	51	mg/L		1	0.1	E200.7	12/12/22 14:16 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	41	64707
Uranium	0.0045	mg/L		0.0002	0.00003	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Vanadium	0.0045	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707
Zinc	0.098	mg/L		0.008	0.001	E200.8	12/13/22 18:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	133	64707

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-004
Collection Date: 12/08/22 15:00
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	5	mg/L	D	2	0.3	A2540 D	12/12/22 14:29 / am			U-124 (14410200)_221212A	17	TSS221212A
INORGANICS												
Alkalinity, Total as CaCO3	100	mg/L		4	2	A2320 B	12/12/22 12:49 / ljs			PHSC_101-H_221212A	62	R180736
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	12/12/22 12:49 / ljs			PHSC_101-H_221212A	62	R180736
Chloride	55	mg/L		1	0.05	E300.0	12/16/22 11:10 / ljs			IC METROHM_221215A	100	R180905
Sulfate	341	mg/L		1	0.1	E300.0	12/16/22 11:10 / ljs			IC METROHM_221215A	100	R180905
Hardness as CaCO3	415	mg/L		1	1	A2340 B	12/14/22 11:11 / sld			WATERCALC_221214B	14	R180813
NUTRIENTS												
Nitrogen, Ammonia as N	0.06	mg/L		0.05	0.03	E350.1	12/13/22 13:19 / JA			FIA203-HE_221213A	59	R180793
Nitrogen, Nitrate+Nitrite as N	0.77	mg/L		0.02	0.008	E353.2	12/14/22 15:42 / JA			FIA203-HE_221214A	105	R180840
Nitrogen, Total	1.06	mg/L		0.05	0.02	A4500 N-C	12/12/22 13:15 / JA	12/09/22 13:18	A4500 N-	FIA203-HE_221212A	52	64711
Phosphorus, Total as P	0.065	mg/L		0.003	0.001	E365.1	12/19/22 14:46 / JA	12/16/22 10:03	E365.1	SEAL AA500_221219A	43	64802
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Barium	0.045	mg/L		0.003	0.0002	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Boron	0.072	mg/L	J	0.1	0.004	E200.7	12/09/22 13:58 / kjb			ICP2-HE_221209A	38	R180723
Cadmium	0.00016	mg/L		0.00003	0.00002	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Calcium	140	mg/L		1	0.2	E200.7	12/09/22 13:58 / kjb			ICP2-HE_221209A	38	R180723
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Cobalt	ND	mg/L		0.01	0.001	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Copper	0.008	mg/L		0.001	0.0001	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Iron	0.019	mg/L	J	0.02	0.004	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Magnesium	12	mg/L		1	0.05	E200.7	12/09/22 13:58 / kjb			ICP2-HE_221209A	38	R180723
Manganese	0.146	mg/L		0.001	0.0003	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	12/13/22 14:30 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	19	64708
Molybdenum	0.138	mg/L		0.005	0.0003	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B	134	R180791

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-13
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-004
Collection Date: 12/08/22 15:00
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	12	mg/L		1	0.06	E200.7	12/09/22 13:58 / kjb			ICP2-HE_221209A : 38		R180723
Selenium	0.001	mg/L		0.001	0.00007	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B : 134		R180791
Silver	ND	mg/L		0.0002	0.00008	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B : 134		R180791
Sodium	48	mg/L		1	0.03	E200.7	12/09/22 13:58 / kjb			ICP2-HE_221209A : 38		R180723
Uranium	0.0049	mg/L		0.0002	0.00002	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B : 134		R180791
Vanadium	0.0024	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B : 134		R180791
Zinc	0.074	mg/L		0.008	0.001	E200.8	12/13/22 18:28 / dck			ICPMS205-H_221213B : 134		R180791
METALS, TOTAL RECOVERABLE												
Aluminum	0.095	mg/L		0.009	0.006	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Arsenic	0.004	mg/L		0.001	0.0001	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Barium	0.041	mg/L		0.003	0.0002	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Boron	0.072	mg/L	J	0.1	0.007	E200.7	12/12/22 14:20 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 42		64707
Cadmium	0.00028	mg/L		0.00003	0.00002	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Calcium	144	mg/L		1	0.1	E200.7	12/12/22 14:20 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 42		64707
Chromium	0.0003	mg/L	J	0.01	0.0002	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Cobalt	ND	mg/L		0.01	0.0003	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Copper	0.013	mg/L		0.001	0.0003	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Iron	0.13	mg/L		0.02	0.009	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Lead	0.0008	mg/L		0.0003	0.0001	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Magnesium	13	mg/L		1	0.05	E200.7	12/12/22 14:20 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 42		64707
Manganese	0.184	mg/L		0.001	0.0003	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Mercury	0.006	ug/L		0.005	0.002	E245.1	12/13/22 14:33 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A : 20		64708
Molybdenum	0.143	mg/L		0.005	0.0002	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Potassium	13	mg/L		1	0.1	E200.7	12/12/22 14:20 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 42		64707
Selenium	0.001	mg/L		0.001	0.0001	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Silver	ND	mg/L		0.0002	0.00006	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Sodium	52	mg/L		1	0.1	E200.7	12/12/22 14:20 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 42		64707
Uranium	0.0048	mg/L		0.0002	0.00003	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Vanadium	0.0028	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707
Zinc	0.081	mg/L		0.008	0.001	E200.8	12/13/22 18:31 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 135		64707

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 QC-FB
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-005
Collection Date: 12/08/22 14:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	ND	mg/L	D	2	0.3	A2540 D	12/12/22 14:29 / am			U-124 (14410200)_221212A	18	TSS221212A
INORGANICS												
Alkalinity, Total as CaCO3	3	mg/L	J	4	2	A2320 B	12/12/22 12:54 / ljs			PHSC_101-H_221212A	64	R180736
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	12/12/22 12:54 / ljs			PHSC_101-H_221212A	64	R180736
Chloride	ND	mg/L		1	0.02	E300.0	12/16/22 11:24 / ljs			IC METROHM_221215A	101	R180905
Sulfate	ND	mg/L		1	0.06	E300.0	12/16/22 11:24 / ljs			IC METROHM_221215A	101	R180905
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	12/14/22 11:11 / sld			WATERCALC_221214B	15	R180813
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.03	E350.1	12/13/22 13:20 / JA			FIA203-HE_221213A	60	R180793
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.008	E353.2	12/14/22 15:43 / JA			FIA203-HE_221214A	106	R180840
Nitrogen, Total	ND	mg/L		0.05	0.02	A4500 N-C	12/12/22 13:16 / JA	12/09/22 13:18	A4500 N-	FIA203-HE_221212A	53	64711
Phosphorus, Total as P	ND	mg/L		0.003	0.001	E365.1	12/19/22 14:47 / JA	12/16/22 10:03	E365.1	SEAL AA500_221219A	44	64802
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Antimony	ND	mg/L		0.0005	0.0002	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Arsenic	ND	mg/L		0.001	0.0002	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Barium	0.005	mg/L		0.003	0.0002	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Boron	0.090	mg/L	J	0.1	0.004	E200.7	12/09/22 14:02 / kjb			ICP2-HE_221209A	39	R180723
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Calcium	ND	mg/L		1	0.2	E200.7	12/09/22 14:02 / kjb			ICP2-HE_221209A	39	R180723
Chromium	ND	mg/L		0.01	0.0001	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Cobalt	ND	mg/L		0.01	0.001	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Copper	ND	mg/L		0.001	0.0001	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Iron	ND	mg/L		0.02	0.004	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Magnesium	ND	mg/L		1	0.05	E200.7	12/09/22 14:02 / kjb			ICP2-HE_221209A	39	R180723
Manganese	ND	mg/L		0.001	0.0003	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Mercury	ND	ug/L		0.005	0.002	E245.1	12/13/22 14:37 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	21	64708
Molybdenum	ND	mg/L		0.005	0.0003	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Nickel	ND	mg/L		0.002	0.0002	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14 QC-FB
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-005
Collection Date: 12/08/22 14:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	ND	mg/L		1	0.06	E200.7	12/09/22 14:02 / kjb			ICP2-HE_221209A	39	R180723
Selenium	ND	mg/L		0.001	0.00007	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Silver	ND	mg/L		0.0002	0.00008	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Sodium	0.16	mg/L	J	1	0.03	E200.7	12/09/22 14:02 / kjb			ICP2-HE_221209A	39	R180723
Uranium	ND	mg/L		0.0002	0.00002	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Vanadium	ND	mg/L		0.1	0.0001	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
Zinc	0.012	mg/L		0.008	0.001	E200.8	12/13/22 18:39 / dck			ICPMS205-H_221213B	138	R180791
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.009	0.006	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Antimony	ND	mg/L		0.0005	0.0002	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Arsenic	ND	mg/L		0.001	0.0001	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Barium	ND	mg/L		0.003	0.0002	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Boron	0.088	mg/L	J	0.1	0.007	E200.7	12/12/22 14:32 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	45	64707
Cadmium	ND	mg/L		0.00003	0.00003	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Calcium	ND	mg/L		1	0.1	E200.7	12/12/22 14:32 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	45	64707
Chromium	0.0003	mg/L	J	0.01	0.0002	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Cobalt	ND	mg/L		0.01	0.0003	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Copper	ND	mg/L		0.001	0.0003	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Iron	ND	mg/L		0.02	0.009	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Magnesium	ND	mg/L		1	0.05	E200.7	12/12/22 14:32 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	45	64707
Manganese	ND	mg/L		0.001	0.0003	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Mercury	ND	ug/L		0.005	0.002	E245.1	12/13/22 14:47 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	24	64708
Molybdenum	ND	mg/L		0.005	0.0002	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Nickel	ND	mg/L		0.002	0.0002	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Potassium	ND	mg/L		1	0.1	E200.7	12/12/22 14:32 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	45	64707
Selenium	ND	mg/L		0.001	0.0001	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Silver	ND	mg/L		0.0002	0.00006	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Sodium	ND	mg/L		1	0.1	E200.7	12/12/22 14:32 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	45	64707
Uranium	ND	mg/L		0.0002	0.00003	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Vanadium	ND	mg/L		0.1	0.0001	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707
Zinc	ND	mg/L		0.008	0.001	E200.8	12/13/22 18:42 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	139	64707

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-006
Collection Date: 12/08/22 14:30
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	6	mg/L	D	2	0.3	A2540 D	12/12/22 14:31 / am			U-124 (14410200)_221212A	21	TSS221212A
INORGANICS												
Alkalinity, Total as CaCO3	110	mg/L		4	2	A2320 B	12/12/22 12:58 / ljs			PHSC_101-H_221212A	66	R180736
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	12/12/22 12:58 / ljs			PHSC_101-H_221212A	66	R180736
Chloride	56	mg/L		1	0.05	E300.0	12/16/22 12:22 / ljs			IC METROHM_221215A	104	R180905
Sulfate	331	mg/L		1	0.1	E300.0	12/16/22 12:22 / ljs			IC METROHM_221215A	104	R180905
Hardness as CaCO3	416	mg/L		1	1	A2340 B	12/14/22 11:11 / sld			WATERCALC_221214B	16	R180813
NUTRIENTS												
Nitrogen, Ammonia as N	0.06	mg/L		0.05	0.03	E350.1	12/13/22 13:21 / JA			FIA203-HE_221213A	61	R180793
Nitrogen, Nitrate+Nitrite as N	0.80	mg/L		0.02	0.008	E353.2	12/14/22 15:46 / JA			FIA203-HE_221214A	109	R180840
Nitrogen, Total	1.09	mg/L		0.05	0.02	A4500 N-C	12/12/22 13:20 / JA	12/09/22 13:18	A4500 N-	FIA203-HE_221212A	56	64711
Phosphorus, Total as P	0.069	mg/L		0.003	0.001	E365.1	12/19/22 14:51 / JA	12/16/22 10:03	E365.1	SEAL AA500_221219A	48	64802
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Barium	0.052	mg/L		0.003	0.0002	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Boron	0.071	mg/L	J	0.1	0.004	E200.7	12/09/22 14:06 / kjb			ICP2-HE_221209A	40	R180723
Cadmium	0.00018	mg/L		0.00003	0.00002	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Calcium	142	mg/L		1	0.2	E200.7	12/09/22 14:06 / kjb			ICP2-HE_221209A	40	R180723
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Cobalt	ND	mg/L		0.01	0.001	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Copper	0.007	mg/L		0.001	0.0001	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Iron	0.016	mg/L	J	0.02	0.004	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Magnesium	13	mg/L		1	0.05	E200.7	12/09/22 14:06 / kjb			ICP2-HE_221209A	40	R180723
Manganese	0.154	mg/L		0.001	0.0003	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Mercury	0.003	ug/L	J	0.005	0.002	E245.1	12/13/22 14:51 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	25	64708
Molybdenum	0.136	mg/L		0.005	0.0003	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-14
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-006
Collection Date: 12/08/22 14:30
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	12	mg/L		1	0.06	E200.7	12/09/22 14:06 / kjb			ICP2-HE_221209A	40	R180723
Selenium	0.001	mg/L		0.001	0.00007	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Silver	ND	mg/L		0.0002	0.00008	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Sodium	48	mg/L		1	0.03	E200.7	12/09/22 14:06 / kjb			ICP2-HE_221209A	40	R180723
Uranium	0.0051	mg/L		0.0002	0.00002	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Vanadium	0.0024	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
Zinc	0.085	mg/L		0.008	0.001	E200.8	12/13/22 18:45 / dck			ICPMS205-H_221213B	140	R180791
METALS, TOTAL RECOVERABLE												
Aluminum	0.122	mg/L		0.009	0.006	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Arsenic	0.004	mg/L		0.001	0.0001	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Barium	0.042	mg/L		0.003	0.0002	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Boron	0.072	mg/L	J	0.1	0.007	E200.7	12/12/22 14:35 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	46	64707
Cadmium	0.00031	mg/L		0.00003	0.00003	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Calcium	144	mg/L		1	0.1	E200.7	12/12/22 14:35 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	46	64707
Chromium	0.0004	mg/L	J	0.01	0.0002	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Cobalt	ND	mg/L		0.01	0.0003	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Copper	0.013	mg/L		0.001	0.0003	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Iron	0.18	mg/L		0.02	0.009	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Lead	0.0009	mg/L		0.0003	0.0001	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Magnesium	14	mg/L		1	0.05	E200.7	12/12/22 14:35 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	46	64707
Manganese	0.185	mg/L		0.001	0.0003	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Mercury	0.007	ug/L		0.005	0.002	E245.1	12/13/22 15:01 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	28	64708
Molybdenum	0.143	mg/L		0.005	0.0002	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Potassium	13	mg/L		1	0.1	E200.7	12/12/22 14:35 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	46	64707
Selenium	0.001	mg/L		0.001	0.0001	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Silver	ND	mg/L		0.0002	0.00006	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Sodium	51	mg/L		1	0.1	E200.7	12/12/22 14:35 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A	46	64707
Uranium	0.0051	mg/L		0.0002	0.00003	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Vanadium	0.0029	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707
Zinc	0.088	mg/L		0.008	0.001	E200.8	12/13/22 18:56 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B	144	64707

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-007
Collection Date: 12/08/22 13:00
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L	D	2	0.3	A2540 D	12/12/22 14:31 / am			U-124 (14410200)_221212A	22	TSS221212A
INORGANICS												
Alkalinity, Total as CaCO3	100	mg/L		4	2	A2320 B	12/12/22 13:03 / ljs			PHSC_101-H_221212A	68	R180736
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	12/12/22 13:03 / ljs			PHSC_101-H_221212A	68	R180736
Chloride	53	mg/L		1	0.05	E300.0	12/16/22 12:36 / ljs			IC METROHM_221215A	105	R180905
Sulfate	348	mg/L		1	0.1	E300.0	12/16/22 12:36 / ljs			IC METROHM_221215A	105	R180905
Hardness as CaCO3	436	mg/L		1	1	A2340 B	12/14/22 11:11 / sld			WATERCALC_221214B	17	R180813
NUTRIENTS												
Nitrogen, Ammonia as N	0.06	mg/L		0.05	0.03	E350.1	12/13/22 13:22 / JA			FIA203-HE_221213A	62	R180793
Nitrogen, Nitrate+Nitrite as N	0.76	mg/L		0.02	0.008	E353.2	12/14/22 15:48 / JA			FIA203-HE_221214A	110	R180840
Nitrogen, Total	1.02	mg/L		0.05	0.02	A4500 N-C	12/12/22 13:21 / JA	12/09/22 13:18	A4500 N-	FIA203-HE_221212A	57	64711
Phosphorus, Total as P	0.054	mg/L		0.003	0.001	E365.1	12/19/22 14:52 / JA	12/16/22 10:03	E365.1	SEAL AA500_221219A	49	64802
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Barium	0.038	mg/L		0.003	0.0002	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Boron	0.066	mg/L	J	0.1	0.004	E200.7	12/09/22 14:10 / kjb			ICP2-HE_221209A	41	R180723
Cadmium	0.00027	mg/L		0.00003	0.00002	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Calcium	147	mg/L		1	0.2	E200.7	12/09/22 14:10 / kjb			ICP2-HE_221209A	41	R180723
Chromium	0.0001	mg/L	J	0.01	0.0001	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Cobalt	ND	mg/L		0.01	0.001	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Copper	0.008	mg/L		0.001	0.0001	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Iron	0.005	mg/L	J	0.02	0.004	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Magnesium	13	mg/L		1	0.05	E200.7	12/09/22 14:10 / kjb			ICP2-HE_221209A	41	R180723
Manganese	0.078	mg/L		0.001	0.0003	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	12/13/22 15:05 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	29	64708
Molybdenum	0.139	mg/L		0.005	0.0003	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B	145	R180791

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-15A-2
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-007
Collection Date: 12/08/22 13:00
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	12	mg/L		1	0.06	E200.7	12/09/22 14:10 / kjb			ICP2-HE_221209A : 41		R180723
Selenium	0.001	mg/L		0.001	0.00007	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B : 145		R180791
Silver	ND	mg/L		0.0002	0.00008	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B : 145		R180791
Sodium	48	mg/L		1	0.03	E200.7	12/09/22 14:10 / kjb			ICP2-HE_221209A : 41		R180723
Uranium	0.0054	mg/L		0.0002	0.00002	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B : 145		R180791
Vanadium	0.0020	mg/L	J	0.1	0.0001	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B : 145		R180791
Zinc	0.112	mg/L		0.008	0.001	E200.8	12/13/22 18:59 / dck			ICPMS205-H_221213B : 145		R180791
METALS, TOTAL RECOVERABLE												
Aluminum	0.090	mg/L		0.009	0.006	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Arsenic	0.004	mg/L		0.001	0.0001	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Barium	0.040	mg/L		0.003	0.0002	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Boron	0.070	mg/L	J	0.1	0.007	E200.7	12/12/22 14:39 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 47		64707
Cadmium	0.00034	mg/L		0.00003	0.00003	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Calcium	152	mg/L		1	0.1	E200.7	12/12/22 14:39 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 47		64707
Chromium	0.0004	mg/L	J	0.01	0.0002	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Cobalt	ND	mg/L		0.01	0.0003	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Copper	0.012	mg/L		0.001	0.0003	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Iron	0.10	mg/L		0.02	0.009	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Lead	0.0005	mg/L		0.0003	0.0001	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Magnesium	14	mg/L		1	0.05	E200.7	12/12/22 14:39 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 47		64707
Manganese	0.098	mg/L		0.001	0.0003	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	12/13/22 15:08 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A : 30		64708
Molybdenum	0.147	mg/L		0.005	0.0002	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Potassium	13	mg/L		1	0.1	E200.7	12/12/22 14:39 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 47		64707
Selenium	0.001	mg/L		0.001	0.0001	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Silver	ND	mg/L		0.0002	0.00006	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Sodium	52	mg/L		1	0.1	E200.7	12/12/22 14:39 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 47		64707
Uranium	0.0053	mg/L		0.0002	0.00003	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Vanadium	0.0023	mg/L	J	0.1	0.0001	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707
Zinc	0.123	mg/L		0.008	0.001	E200.8	12/13/22 19:02 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 146		64707

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-008
Collection Date: 12/08/22 11:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L	D	2	0.3	A2540 D	12/12/22 14:31 / am			U-124 (14410200)_221212A	23	TSS221212A
INORGANICS												
Alkalinity, Total as CaCO3	99	mg/L		4	2	A2320 B	12/12/22 13:09 / ljs			PHSC_101-H_221212A	70	R180736
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	12/12/22 13:09 / ljs			PHSC_101-H_221212A	70	R180736
Chloride	44	mg/L		1	0.02	E300.0	12/16/22 13:20 / ljs			IC METROHM_221215A	108	R180905
Sulfate	285	mg/L		1	0.06	E300.0	12/16/22 13:20 / ljs			IC METROHM_221215A	108	R180905
Hardness as CaCO3	375	mg/L		1	1	A2340 B	12/14/22 11:11 / sld			WATERCALC_221214B	18	R180813
NUTRIENTS												
Nitrogen, Ammonia as N	0.05	mg/L		0.05	0.03	E350.1	12/13/22 13:23 / JA			FIA203-HE_221213A	63	R180793
Nitrogen, Nitrate+Nitrite as N	0.65	mg/L		0.02	0.008	E353.2	12/14/22 15:49 / JA			FIA203-HE_221214A	111	R180840
Nitrogen, Total	0.91	mg/L		0.05	0.02	A4500 N-C	12/12/22 13:22 / JA	12/09/22 13:18	A4500 N-	FIA203-HE_221212A	58	64711
Phosphorus, Total as P	0.051	mg/L		0.003	0.001	E365.1	12/19/22 14:53 / JA	12/16/22 10:03	E365.1	SEAL AA500_221219A	50	64802
METALS, DISSOLVED												
Aluminum	0.009	mg/L	J	0.009	0.003	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Antimony	0.0002	mg/L	J	0.0005	0.0002	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Barium	0.034	mg/L		0.003	0.0002	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Boron	0.056	mg/L	J	0.1	0.004	E200.7	12/09/22 14:32 / kjb			ICP2-HE_221209A	47	R180723
Cadmium	0.00024	mg/L		0.00003	0.00002	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Calcium	126	mg/L		1	0.2	E200.7	12/09/22 14:32 / kjb			ICP2-HE_221209A	47	R180723
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Cobalt	ND	mg/L		0.01	0.001	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Copper	0.006	mg/L		0.001	0.0001	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Iron	0.006	mg/L	J	0.02	0.004	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Magnesium	12	mg/L		1	0.05	E200.7	12/09/22 14:32 / kjb			ICP2-HE_221209A	47	R180723
Manganese	0.057	mg/L		0.001	0.0003	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	12/13/22 15:12 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	31	64708
Molybdenum	0.111	mg/L		0.005	0.0003	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791
Nickel	0.0006	mg/L	J	0.002	0.0002	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B	147	R180791

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-16B
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-008
Collection Date: 12/08/22 11:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	10	mg/L		1	0.06	E200.7	12/09/22 14:32 / kjb			ICP2-HE_221209A : 47		R180723
Selenium	0.00086	mg/L	J	0.001	0.00007	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B : 147		R180791
Silver	ND	mg/L		0.0002	0.00008	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B : 147		R180791
Sodium	39	mg/L		1	0.03	E200.7	12/09/22 14:32 / kjb			ICP2-HE_221209A : 47		R180723
Uranium	0.0044	mg/L		0.0002	0.00002	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B : 147		R180791
Vanadium	0.0018	mg/L	J	0.1	0.0001	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B : 147		R180791
Zinc	0.093	mg/L		0.008	0.001	E200.8	12/13/22 19:05 / dck			ICPMS205-H_221213B : 147		R180791
METALS, TOTAL RECOVERABLE												
Aluminum	0.069	mg/L		0.009	0.006	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Arsenic	0.004	mg/L		0.001	0.0001	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Barium	0.036	mg/L		0.003	0.0002	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Boron	0.062	mg/L	J	0.1	0.007	E200.7	12/12/22 14:43 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 48		64707
Cadmium	0.00028	mg/L		0.00003	0.00003	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Calcium	129	mg/L		1	0.1	E200.7	12/12/22 14:43 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 48		64707
Chromium	0.0003	mg/L	J	0.01	0.0002	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Cobalt	ND	mg/L		0.01	0.0003	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Copper	0.009	mg/L		0.001	0.0003	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Iron	0.08	mg/L		0.02	0.009	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Lead	0.0004	mg/L		0.0003	0.0001	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Magnesium	13	mg/L		1	0.05	E200.7	12/12/22 14:43 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 48		64707
Manganese	0.067	mg/L		0.001	0.0003	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	12/13/22 15:29 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A : 36		64709
Molybdenum	0.118	mg/L		0.005	0.0002	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Potassium	11	mg/L		1	0.1	E200.7	12/12/22 14:43 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 48		64707
Selenium	0.0009	mg/L	J	0.001	0.0001	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Silver	ND	mg/L		0.0002	0.00006	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Sodium	42	mg/L		1	0.1	E200.7	12/12/22 14:43 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 48		64707
Uranium	0.0044	mg/L		0.0002	0.00003	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Vanadium	0.0020	mg/L	J	0.1	0.0001	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707
Zinc	0.097	mg/L		0.008	0.001	E200.8	12/13/22 19:08 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 148		64707

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-009
Collection Date: 12/08/22 10:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L	D	2	0.3	A2540 D	12/12/22 14:32 / am			U-124 (14410200)_221212A	24	TSS221212A
INORGANICS												
Alkalinity, Total as CaCO3	100	mg/L		4	2	A2320 B	12/12/22 13:15 / ljs			PHSC_101-H_221212A	72	R180736
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	12/12/22 13:15 / ljs			PHSC_101-H_221212A	72	R180736
Chloride	49	mg/L		1	0.02	E300.0	12/16/22 13:34 / ljs			IC METROHM_221215A	109	R180905
Sulfate	283	mg/L		1	0.06	E300.0	12/16/22 13:34 / ljs			IC METROHM_221215A	109	R180905
Hardness as CaCO3	380	mg/L		1	1	A2340 B	12/14/22 11:11 / sld			WATERCALC_221214B	19	R180813
NUTRIENTS												
Nitrogen, Ammonia as N	0.03	mg/L	J	0.05	0.03	E350.1	12/13/22 13:30 / JA			FIA203-HE_221213A	69	R180793
Nitrogen, Nitrate+Nitrite as N	0.63	mg/L		0.02	0.008	E353.2	12/14/22 15:50 / JA			FIA203-HE_221214A	112	R180840
Nitrogen, Total	0.87	mg/L		0.05	0.02	A4500 N-C	12/12/22 13:23 / JA	12/09/22 13:18	A4500 N-	FIA203-HE_221212A	59	64711
Phosphorus, Total as P	0.044	mg/L		0.003	0.001	E365.1	12/19/22 15:04 / JA	12/16/22 10:05	E365.1	SEAL AA500_221219A	58	64803
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Arsenic	0.004	mg/L		0.001	0.0002	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Barium	0.043	mg/L		0.003	0.0002	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Boron	0.065	mg/L	J	0.1	0.004	E200.7	12/09/22 14:36 / kjb			ICP2-HE_221209A	48	R180723
Cadmium	0.00032	mg/L		0.00003	0.00002	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Calcium	125	mg/L		1	0.2	E200.7	12/09/22 14:36 / kjb			ICP2-HE_221209A	48	R180723
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Cobalt	ND	mg/L		0.01	0.001	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Copper	0.008	mg/L		0.001	0.0001	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Iron	0.007	mg/L	J	0.02	0.004	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Magnesium	12	mg/L		1	0.05	E200.7	12/09/22 14:36 / kjb			ICP2-HE_221209A	48	R180723
Manganese	0.037	mg/L		0.001	0.0003	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	12/13/22 15:33 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	37	64709
Molybdenum	0.106	mg/L		0.005	0.0003	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B	151	R180791

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-17D
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-009
Collection Date: 12/08/22 10:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	10	mg/L		1	0.06	E200.7	12/09/22 14:36 / kjb			ICP2-HE_221209A : 48		R180723
Selenium	0.00094	mg/L	J	0.001	0.00007	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B : 151		R180791
Silver	ND	mg/L		0.0002	0.00008	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B : 151		R180791
Sodium	43	mg/L		1	0.03	E200.7	12/09/22 14:36 / kjb			ICP2-HE_221209A : 48		R180723
Uranium	0.0045	mg/L		0.0002	0.00002	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B : 151		R180791
Vanadium	0.0016	mg/L	J	0.1	0.0001	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B : 151		R180791
Zinc	0.125	mg/L		0.008	0.001	E200.8	12/13/22 19:16 / dck			ICPMS205-H_221213B : 151		R180791
METALS, TOTAL RECOVERABLE												
Aluminum	0.041	mg/L		0.009	0.006	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Arsenic	0.004	mg/L		0.001	0.0001	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Barium	0.034	mg/L		0.003	0.0002	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Boron	0.068	mg/L	J	0.1	0.007	E200.7	12/12/22 14:47 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 49		64707
Cadmium	0.00038	mg/L		0.00003	0.00003	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Calcium	130	mg/L		1	0.1	E200.7	12/12/22 14:47 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 49		64707
Chromium	0.0002	mg/L	J	0.01	0.0002	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Cobalt	ND	mg/L		0.01	0.0003	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Copper	0.011	mg/L		0.001	0.0003	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Iron	0.06	mg/L		0.02	0.009	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Lead	0.0003	mg/L		0.0003	0.0001	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Magnesium	13	mg/L		1	0.05	E200.7	12/12/22 14:47 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 49		64707
Manganese	0.045	mg/L		0.001	0.0003	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Mercury	0.004	ug/L	J	0.005	0.002	E245.1	12/13/22 15:36 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A : 38		64709
Molybdenum	0.112	mg/L		0.005	0.0002	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Nickel	0.0008	mg/L	J	0.002	0.0002	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Potassium	10	mg/L		1	0.1	E200.7	12/12/22 14:47 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 49		64707
Selenium	0.0008	mg/L	J	0.001	0.0001	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Silver	ND	mg/L		0.0002	0.00006	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Sodium	45	mg/L		1	0.1	E200.7	12/12/22 14:47 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 49		64707
Uranium	0.0045	mg/L		0.0002	0.00003	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Vanadium	0.0017	mg/L	J	0.1	0.0001	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707
Zinc	0.125	mg/L		0.008	0.001	E200.8	12/13/22 19:19 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 152		64707

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-010
Collection Date: 12/08/22 09:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	2.2	mg/L	DJ	6	0.3	A2540 D	12/12/22 14:32 / am			U-124 (14410200)_221212A	25	TSS221212A
- TSS did not obtain the minimum residue requirement of 2.5 mg residue.												
INORGANICS												
Alkalinity, Total as CaCO3	110	mg/L		4	2	A2320 B	12/12/22 13:25 / ljs			PHSC_101-H_221212A	76	R180736
Bicarbonate as HCO3	140	mg/L		4	3	A2320 B	12/12/22 13:25 / ljs			PHSC_101-H_221212A	76	R180736
Chloride	47	mg/L		1	0.02	E300.0	12/16/22 13:48 / ljs			IC METROHM_221215A	110	R180905
Sulfate	270	mg/L		1	0.06	E300.0	12/16/22 13:48 / ljs			IC METROHM_221215A	110	R180905
Hardness as CaCO3	372	mg/L		1	1	A2340 B	12/14/22 11:11 / sld			WATERCALC_221214B	20	R180813
NUTRIENTS												
Nitrogen, Ammonia as N	0.03	mg/L	J	0.05	0.03	E350.1	12/13/22 13:34 / JA			FIA203-HE_221213A	72	R180793
Nitrogen, Nitrate+Nitrite as N	0.70	mg/L		0.02	0.008	E353.2	12/14/22 15:51 / JA			FIA203-HE_221214A	113	R180840
Nitrogen, Total	0.92	mg/L		0.05	0.02	A4500 N-C	12/12/22 13:24 / JA	12/09/22 13:18	A4500 N-	FIA203-HE_221212A	60	64711
Phosphorus, Total as P	0.044	mg/L		0.003	0.001	E365.1	12/19/22 15:05 / JA	12/16/22 10:05	E365.1	SEAL AA500_221219A	59	64803
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.009	0.003	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Antimony	0.0003	mg/L	J	0.0005	0.0002	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Barium	0.036	mg/L		0.003	0.0002	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Boron	0.063	mg/L	J	0.1	0.004	E200.7	12/09/22 14:40 / kjb			ICP2-HE_221209A	49	R180723
Cadmium	0.00029	mg/L		0.00003	0.00002	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Calcium	121	mg/L		1	0.2	E200.7	12/09/22 14:40 / kjb			ICP2-HE_221209A	49	R180723
Chromium	0.0002	mg/L	J	0.01	0.0001	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Cobalt	ND	mg/L		0.01	0.001	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Copper	0.007	mg/L		0.001	0.0001	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Iron	0.010	mg/L	J	0.02	0.004	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Magnesium	12	mg/L		1	0.05	E200.7	12/09/22 14:40 / kjb			ICP2-HE_221209A	49	R180723
Manganese	0.043	mg/L		0.001	0.0003	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Mercury	0.002	ug/L	J	0.005	0.002	E245.1	12/13/22 15:40 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A	39	64709
Molybdenum	0.100	mg/L		0.005	0.0003	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791
Nickel	0.0007	mg/L	J	0.002	0.0002	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B	153	R180791

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Surface Water

Lab ID: H22120260-010
Collection Date: 12/08/22 09:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, DISSOLVED												
Potassium	10	mg/L		1	0.06	E200.7	12/09/22 14:40 / kjb			ICP2-HE_221209A : 49		R180723
Selenium	0.00077	mg/L	J	0.001	0.00007	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B : 153		R180791
Silver	ND	mg/L		0.0002	0.00008	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B : 153		R180791
Sodium	44	mg/L		1	0.03	E200.7	12/09/22 14:40 / kjb			ICP2-HE_221209A : 49		R180723
Uranium	0.0050	mg/L		0.0002	0.00002	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B : 153		R180791
Vanadium	0.0019	mg/L	J	0.1	0.0001	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B : 153		R180791
Zinc	0.120	mg/L		0.008	0.001	E200.8	12/13/22 19:22 / dck			ICPMS205-H_221213B : 153		R180791
METALS, TOTAL RECOVERABLE												
Aluminum	0.031	mg/L		0.009	0.006	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Antimony	0.0004	mg/L	J	0.0005	0.0002	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Arsenic	0.005	mg/L		0.001	0.0001	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Barium	0.037	mg/L		0.003	0.0002	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Beryllium	ND	mg/L		0.0008	0.0002	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Boron	0.065	mg/L	J	0.1	0.007	E200.7	12/12/22 14:51 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 50		64707
Cadmium	0.00032	mg/L		0.00003	0.00003	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Calcium	127	mg/L		1	0.1	E200.7	12/12/22 14:51 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 50		64707
Chromium	0.0060	mg/L	J	0.01	0.0002	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Cobalt	ND	mg/L		0.01	0.0003	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Copper	0.010	mg/L		0.001	0.0003	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Iron	0.11	mg/L		0.02	0.009	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Lead	0.0004	mg/L		0.0003	0.0001	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Magnesium	13	mg/L		1	0.05	E200.7	12/12/22 14:51 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 50		64707
Manganese	0.049	mg/L		0.001	0.0003	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Mercury	0.003	ug/L	J	0.005	0.002	E245.1	12/13/22 15:50 / cfg	12/12/22 09:38	E245.1	HGCV203-H_221213A : 42		64709
Molybdenum	0.105	mg/L		0.005	0.0002	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Nickel	0.0011	mg/L	J	0.002	0.0002	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Potassium	10	mg/L		1	0.1	E200.7	12/12/22 14:51 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 50		64707
Selenium	0.0008	mg/L	J	0.001	0.0001	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Silver	ND	mg/L		0.0002	0.00006	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Sodium	45	mg/L		1	0.1	E200.7	12/12/22 14:51 / kjb	12/09/22 09:54	E200.2	ICP2-HE_221212A : 50		64707
Uranium	0.0050	mg/L		0.0002	0.00003	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Vanadium	0.0019	mg/L	J	0.1	0.0001	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707
Zinc	0.128	mg/L		0.008	0.001	E200.8	12/13/22 19:25 / dck	12/09/22 09:54	E200.2	ICPMS205-H_221213B : 154		64707

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22120260-011
Collection Date: 12/08/22 17:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	73.0	wt%		0.2	0.02	D2974	12/29/22 17:13 / jjp			L DRYING OVEN 2_221230B : 2		PMOIST_221229_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	2.5	wt%-wet		0.1		SSSA 15-2	12/21/22 13:25 / dm			MISC SOILS_221221B : 1		R181258
3050 EXTRACTABLE METALS												
Aluminum	22100	mg/kg-dry	D	60	60	SW6010B	12/23/22 15:12 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 85		64872
Antimony	ND	mg/kg-dry		6	6	SW6020	12/27/22 16:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 50		64872
Arsenic	148	mg/kg-dry		5	1	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Barium	349	mg/kg-dry		5	3	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Beryllium	ND	mg/kg-dry		5	4	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Boron	14	mg/kg-dry		6	6	SW6010B	12/23/22 16:15 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 102		64872
Cadmium	5.2	mg/kg-dry		0.3	0.3	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Chromium	64	mg/kg-dry		10	10	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Cobalt	19	mg/kg-dry		7	7	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Copper	900	mg/kg-dry		20	20	SW6010B	12/23/22 15:12 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 85		64872
Iron	52900	mg/kg-dry	D	400	400	SW6010B	12/26/22 18:47 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 20		64872
Lead	506	mg/kg-dry		5	5	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Manganese	5850	mg/kg-dry		7	7	SW6010B	12/26/22 18:47 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 20		64872
Molybdenum	79	mg/kg-dry		5	2	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Nickel	33	mg/kg-dry		5	5	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Selenium	3	mg/kg-dry	J	5	1	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Silver	7	mg/kg-dry		7	7	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Uranium	7	mg/kg-dry		5	0.2	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Vanadium	125	mg/kg-dry		3	3	SW6020	12/27/22 14:55 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 26		64872
Zinc	2050	mg/kg-dry		20	20	SW6010B	12/26/22 18:47 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 20		64872
METALS, TOTAL												
Mercury	0.95	mg/kg-dry		0.10	0.026	SW7471B	12/28/22 15:29 / cfg	12/27/22 10:09	SW7471B	HGCV205-H_221228A : 18		64929

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22120260-012
Collection Date: 12/08/22 17:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	21.8	wt%		0.2	0.02	D2974	12/29/22 17:13 / jjp			L DRYING OVEN 2_221230B : 5		PMOIST_221229_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	18.5	wt%-wet		0.1		SSSA 15-2	12/21/22 13:25 / dm			MISC SOILS_221221B : 2		R181258
3050 EXTRACTABLE METALS												
Aluminum	4580	mg/kg-dry	D	20	20	SW6010B	12/23/22 15:16 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 86		64872
Antimony	ND	mg/kg-dry		5	2	SW6020	12/27/22 16:16 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 51		64872
Arsenic	24	mg/kg-dry		5	0.5	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Barium	75	mg/kg-dry		5	0.9	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Beryllium	ND	mg/kg-dry		5	1	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Boron	ND	mg/kg-dry		5	2	SW6010B	12/23/22 16:19 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 103		64872
Cadmium	1.1	mg/kg-dry		0.2	0.1	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Chromium	18	mg/kg-dry		5	4	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Cobalt	6	mg/kg-dry		5	2	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Copper	134	mg/kg-dry		6	6	SW6010B	12/23/22 15:16 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 86		64872
Iron	28100	mg/kg-dry	D	100	100	SW6010B	12/26/22 18:51 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 21		64872
Lead	62	mg/kg-dry		5	2	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Manganese	1540	mg/kg-dry		5	2	SW6010B	12/26/22 18:51 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 21		64872
Molybdenum	14	mg/kg-dry		5	0.8	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Nickel	6	mg/kg-dry		5	2	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Selenium	ND	mg/kg-dry		5	0.4	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Silver	ND	mg/kg-dry		5	2	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Uranium	6	mg/kg-dry		5	0.07	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Vanadium	60	mg/kg-dry		1	1	SW6020	12/27/22 14:58 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 27		64872
Zinc	534	mg/kg-dry		7	7	SW6010B	12/26/22 18:51 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 21		64872
METALS, TOTAL												
Mercury	0.15	mg/kg-dry		0.10	0.0086	SW7471B	12/28/22 15:31 / cfg	12/27/22 10:09	SW7471B	HGCV205-H_221228A : 19		64929

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
D - Reporting Limit (RL) increased due to sample matrix

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22120260-013
Collection Date: 12/08/22 17:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	22.2	wt%		0.2	0.02	D2974	12/29/22 17:14 / jjp			L DRYING OVEN 2_221230B : 8		PMOIST_221229_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	13.6	wt%-wet		0.1		SSSA 15-2	12/21/22 13:25 / dm			MISC SOILS_221221B : 3		R181258
3050 EXTRACTABLE METALS												
Aluminum	3050	mg/kg-dry	D	20	20	SW6010B	12/23/22 15:42 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 93		64872
Antimony	ND	mg/kg-dry		5	2	SW6020	12/27/22 16:19 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 52		64872
Arsenic	31	mg/kg-dry		5	0.5	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Barium	48	mg/kg-dry		5	0.9	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Beryllium	ND	mg/kg-dry		5	1	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Boron	ND	mg/kg-dry		5	2	SW6010B	12/23/22 16:37 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 108		64872
Cadmium	0.6	mg/kg-dry		0.2	0.1	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Chromium	5	mg/kg-dry	J	5	4	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Cobalt	3	mg/kg-dry	J	5	2	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Copper	76	mg/kg-dry		6	6	SW6010B	12/23/22 15:42 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 93		64872
Iron	7800	mg/kg-dry	D	100	100	SW6010B	12/26/22 19:17 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 28		64872
Lead	56	mg/kg-dry		5	2	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Manganese	954	mg/kg-dry		5	2	SW6010B	12/26/22 19:17 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 28		64872
Molybdenum	10	mg/kg-dry		5	0.7	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Nickel	3	mg/kg-dry	J	5	2	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Selenium	ND	mg/kg-dry		5	0.4	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Silver	ND	mg/kg-dry		5	2	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Uranium	1.3	mg/kg-dry	J	5	0.07	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Vanadium	14	mg/kg-dry		1	1	SW6020	12/27/22 15:13 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 33		64872
Zinc	215	mg/kg-dry		6	6	SW6010B	12/26/22 19:17 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 28		64872
METALS, TOTAL												
Mercury	0.02	mg/kg-dry	J	0.10	0.0088	SW7471B	12/28/22 15:33 / cfg	12/27/22 10:09	SW7471B	HGCV205-H_221228A : 20		64929

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 QC-FD Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22120260-014
Collection Date: 12/08/22 17:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	67.5	wt%		0.2	0.02	D2974	12/29/22 17:14 / jjp			DRYING OVEN 2_221230B : 11		PMOIST_221229_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	2.4	wt%-wet		0.1		SSSA 15-2	12/21/22 13:25 / dm			MISC SOILS_221221B : 4		R181258
3050 EXTRACTABLE METALS												
Aluminum	16800	mg/kg-dry	D	50	50	SW6010B	12/23/22 15:45 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 94		64872
Antimony	ND	mg/kg-dry		5	5	SW6020	12/27/22 16:21 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 53		64872
Arsenic	144	mg/kg-dry		5	1	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Barium	237	mg/kg-dry		5	2	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Beryllium	ND	mg/kg-dry		5	3	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Boron	10	mg/kg-dry		5	5	SW6010B	12/23/22 16:40 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 109		64872
Cadmium	5.7	mg/kg-dry		0.3	0.3	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Chromium	94	mg/kg-dry		10	10	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Cobalt	15	mg/kg-dry		6	6	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Copper	737	mg/kg-dry		10	10	SW6010B	12/23/22 15:45 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 94		64872
Iron	41900	mg/kg-dry	D	300	300	SW6010B	12/26/22 19:21 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 29		64872
Lead	416	mg/kg-dry		5	4	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Manganese	4170	mg/kg-dry		6	6	SW6010B	12/26/22 19:21 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 29		64872
Molybdenum	55	mg/kg-dry		5	2	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Nickel	47	mg/kg-dry		5	4	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Selenium	2	mg/kg-dry	J	5	1	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Silver	ND	mg/kg-dry		6	6	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Uranium	6	mg/kg-dry		5	0.2	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Vanadium	108	mg/kg-dry		3	3	SW6020	12/27/22 15:15 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 34		64872
Zinc	1950	mg/kg-dry		20	20	SW6010B	12/26/22 19:21 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 29		64872
METALS, TOTAL												
Mercury	1.1	mg/kg-dry		0.10	0.021	SW7471B	12/28/22 15:35 / cfg	12/27/22 10:09	SW7471B	HGCV205-H_221228A : 21		64929

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 QC-FD Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22120260-015
Collection Date: 12/08/22 17:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	21.4	wt%		0.2	0.02	D2974	12/29/22 17:14 / jjp			DRYING OVEN 2_221230B	14	PMOIST_221229_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	22.4	wt%-wet		0.1		SSSA 15-2	12/21/22 13:25 / dm			MISC SOILS_221221B	5	R181258
3050 EXTRACTABLE METALS												
Aluminum	5000	mg/kg-dry	D	20	20	SW6010B	12/23/22 15:49 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A	95	64872
Antimony	ND	mg/kg-dry		5	2	SW6020	12/27/22 16:24 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	54	64872
Arsenic	39	mg/kg-dry		5	0.5	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Barium	77	mg/kg-dry		5	0.8	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Beryllium	ND	mg/kg-dry		5	1	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Boron	ND	mg/kg-dry		5	2	SW6010B	12/23/22 16:44 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A	110	64872
Cadmium	2.0	mg/kg-dry		0.2	0.1	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Chromium	16	mg/kg-dry		5	4	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Cobalt	6	mg/kg-dry		5	2	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Copper	168	mg/kg-dry		6	6	SW6010B	12/23/22 15:49 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A	95	64872
Iron	30800	mg/kg-dry	D	100	100	SW6010B	12/26/22 19:25 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C	30	64872
Lead	80	mg/kg-dry		5	2	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Manganese	1100	mg/kg-dry		5	2	SW6010B	12/26/22 19:25 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C	30	64872
Molybdenum	7	mg/kg-dry		5	0.7	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Nickel	9	mg/kg-dry		5	2	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Selenium	ND	mg/kg-dry		5	0.4	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Silver	ND	mg/kg-dry		5	2	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Uranium	7	mg/kg-dry		5	0.07	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Vanadium	62	mg/kg-dry		1	1	SW6020	12/27/22 15:18 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	35	64872
Zinc	858	mg/kg-dry		6	6	SW6010B	12/26/22 19:25 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C	30	64872
METALS, TOTAL												
Mercury	0.19	mg/kg-dry		0.10	0.0087	SW7471B	12/28/22 15:40 / cfg	12/27/22 10:09	SW7471B	HGCV205-H_221228A	24	64929

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
D - Reporting Limit (RL) increased due to sample matrix

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-07 QC-FD Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22120260-016
Collection Date: 12/08/22 17:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	20.7	wt%		0.2	0.02	D2974	12/29/22 17:14 / jjp			DRYING OVEN 2_221230B : 20		PMOIST_221229_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	13.0	wt%-wet		0.1		SSSA 15-2	12/21/22 13:25 / dm			MISC SOILS_221221B : 6		R181258
3050 EXTRACTABLE METALS												
Aluminum	3470	mg/kg-dry	D	20	20	SW6010B	12/23/22 15:53 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 96		64872
Antimony	ND	mg/kg-dry		5	2	SW6020	12/27/22 16:26 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 55		64872
Arsenic	27	mg/kg-dry		5	0.5	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Barium	84	mg/kg-dry		5	0.9	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Beryllium	ND	mg/kg-dry		5	1	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Boron	ND	mg/kg-dry		5	2	SW6010B	12/23/22 16:55 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 113		64872
Cadmium	0.6	mg/kg-dry		0.2	0.1	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Chromium	4	mg/kg-dry	J	5	4	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Cobalt	9	mg/kg-dry		5	2	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Copper	107	mg/kg-dry		6	6	SW6010B	12/23/22 15:53 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 96		64872
Iron	11100	mg/kg-dry	D	100	100	SW6010B	12/26/22 19:28 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 31		64872
Lead	34	mg/kg-dry		5	2	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Manganese	1420	mg/kg-dry		5	2	SW6010B	12/26/22 19:28 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 31		64872
Molybdenum	11	mg/kg-dry		5	0.8	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Nickel	8	mg/kg-dry		5	2	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Selenium	ND	mg/kg-dry		5	0.4	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Silver	3	mg/kg-dry	J	5	2	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Uranium	1.0	mg/kg-dry	J	5	0.07	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Vanadium	18	mg/kg-dry		1	1	SW6020	12/27/22 15:20 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 36		64872
Zinc	298	mg/kg-dry		6	6	SW6010B	12/26/22 19:28 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 31		64872
METALS, TOTAL												
Mercury	0.03	mg/kg-dry	J	0.10	0.0087	SW7471B	12/28/22 15:42 / cfg	12/27/22 10:09	SW7471B	HGCV205-H_221228A : 25		64929

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Sediment <0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22120260-017
Collection Date: 12/08/22 09:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	67.9	wt%		0.2	0.02	D2974	12/29/22 17:15 / jjp			DRYING OVEN 2_221230B : 23		PMOIST_221229_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	3.6	wt%-wet		0.1		SSSA 15-2	12/21/22 13:25 / dm			MISC SOILS_221221B : 7		R181258
3050 EXTRACTABLE METALS												
Aluminum	16800	mg/kg-dry	D	50	50	SW6010B	12/23/22 15:56 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 97		64872
Antimony	ND	mg/kg-dry		5	5	SW6020	12/27/22 16:29 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 56		64872
Arsenic	42	mg/kg-dry		5	1	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Barium	233	mg/kg-dry		5	2	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Beryllium	ND	mg/kg-dry		5	3	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Boron	8	mg/kg-dry		5	5	SW6010B	12/23/22 16:59 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 114		64872
Cadmium	18.4	mg/kg-dry		0.3	0.3	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Chromium	49	mg/kg-dry		10	10	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Cobalt	13	mg/kg-dry		6	6	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Copper	495	mg/kg-dry		10	10	SW6010B	12/23/22 15:56 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 97		64872
Iron	23400	mg/kg-dry	D	300	300	SW6010B	12/26/22 19:32 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 32		64872
Lead	131	mg/kg-dry		5	4	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Manganese	2390	mg/kg-dry		6	6	SW6010B	12/26/22 19:32 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 32		64872
Molybdenum	9	mg/kg-dry		5	2	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Nickel	29	mg/kg-dry		5	4	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Selenium	2	mg/kg-dry	J	5	1	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Silver	ND	mg/kg-dry		6	6	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Uranium	2.7	mg/kg-dry	J	5	0.2	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Vanadium	65	mg/kg-dry		3	3	SW6020	12/27/22 15:23 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 37		64872
Zinc	2060	mg/kg-dry		20	20	SW6010B	12/26/22 19:32 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 32		64872
METALS, TOTAL												
Mercury	0.56	mg/kg-dry		0.10	0.022	SW7471B	12/28/22 15:44 / cfg	12/27/22 10:09	SW7471B	HGCV205-H_221228A : 26		64929

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Sediment 1mm to 0.063mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22120260-018
Collection Date: 12/08/22 09:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	20.8	wt%		0.2	0.02	D2974	12/29/22 17:15 / jjp			DRYING OVEN 2_221230B	26	PMOIST_221229_A
SIEVE ANALYSIS												
No. 230 (63 um), Retained	33.8	wt%-wet		0.1		SSSA 15-2	12/21/22 13:25 / dm			MISC SOILS_221221B	8	R181258
3050 EXTRACTABLE METALS												
Aluminum	4050	mg/kg-dry	D	20	20	SW6010B	12/23/22 16:00 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A	98	64872
Antimony	ND	mg/kg-dry		5	2	SW6020	12/27/22 16:31 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	57	64872
Arsenic	15	mg/kg-dry		5	0.5	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Barium	108	mg/kg-dry		5	0.9	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Beryllium	ND	mg/kg-dry		5	1	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Boron	ND	mg/kg-dry		5	2	SW6010B	12/23/22 17:03 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A	115	64872
Cadmium	1.2	mg/kg-dry		0.2	0.1	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Chromium	13	mg/kg-dry		5	4	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Cobalt	5	mg/kg-dry		5	2	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Copper	50	mg/kg-dry		6	6	SW6010B	12/23/22 16:00 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A	98	64872
Iron	17800	mg/kg-dry	D	100	100	SW6010B	12/26/22 19:36 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C	33	64872
Lead	22	mg/kg-dry		5	2	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Manganese	400	mg/kg-dry		5	2	SW6010B	12/26/22 19:36 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C	33	64872
Molybdenum	1.3	mg/kg-dry	J	5	0.8	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Nickel	5	mg/kg-dry	J	5	2	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Selenium	ND	mg/kg-dry		5	0.4	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Silver	ND	mg/kg-dry		5	2	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Uranium	4.0	mg/kg-dry	J	5	0.07	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Vanadium	50	mg/kg-dry		1	1	SW6020	12/27/22 15:25 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A	38	64872
Zinc	205	mg/kg-dry		7	7	SW6010B	12/26/22 19:36 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C	33	64872
METALS, TOTAL												
Mercury	0.06	mg/kg-dry	J	0.10	0.0085	SW7471B	12/28/22 15:45 / cfg	12/27/22 10:09	SW7471B	HGCV205-H_221228A	27	64929

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-19 Sediment 2mm to 1mm
Project: Silver Bow Creek SSTOU Monitoring
Matrix: Sediment

Lab ID: H22120260-019
Collection Date: 12/08/22 09:15
DateReceived: 12/09/22
Report Date: 01/18/23

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	22.4	wt%		0.2	0.02	D2974	12/29/22 17:15 / jjp			DRYING OVEN 2_221230B : 29		PMOIST_221229_A
SIEVE ANALYSIS												
No. 18 (1 mm), Retained	9.0	wt%-wet		0.1		SSSA 15-2	12/21/22 13:25 / dm			MISC SOILS_221221B : 9		R181258
3050 EXTRACTABLE METALS												
Aluminum	3590	mg/kg-dry	D	20	20	SW6010B	12/23/22 16:11 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 101		64872
Antimony	ND	mg/kg-dry		5	2	SW6020	12/27/22 16:34 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 58		64872
Arsenic	9	mg/kg-dry		5	0.5	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Barium	54	mg/kg-dry		5	0.9	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Beryllium	ND	mg/kg-dry		5	1	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Boron	ND	mg/kg-dry		5	2	SW6010B	12/23/22 17:06 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 116		64872
Cadmium	0.6	mg/kg-dry		0.2	0.1	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Chromium	6	mg/kg-dry		5	4	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Cobalt	ND	mg/kg-dry		5	2	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Copper	43	mg/kg-dry		6	6	SW6010B	12/23/22 16:11 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221223A : 101		64872
Iron	6060	mg/kg-dry	D	100	100	SW6010B	12/26/22 19:39 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 34		64872
Lead	14	mg/kg-dry		5	2	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Manganese	292	mg/kg-dry		5	2	SW6010B	12/26/22 19:39 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 34		64872
Molybdenum	1.0	mg/kg-dry	J	5	0.8	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Nickel	4	mg/kg-dry	J	5	2	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Selenium	ND	mg/kg-dry		5	0.4	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Silver	ND	mg/kg-dry		5	2	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Uranium	1.1	mg/kg-dry	J	5	0.07	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Vanadium	13	mg/kg-dry		1	1	SW6020	12/27/22 15:28 / dck	12/22/22 09:32	SW3050 B	ICPMS205-H_221227A : 39		64872
Zinc	117	mg/kg-dry		7	7	SW6010B	12/26/22 19:39 / sld	12/22/22 09:32	SW3050 B	ICP2-HE_221226C : 34		64872
METALS, TOTAL												
Mercury	0.03	mg/kg-dry	J	0.10	0.0089	SW7471B	12/28/22 15:47 / cfg	12/27/22 10:09	SW7471B	HGCV205-H_221228A : 28		64929

Report Definitions:
RL - Analyte Reporting Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
ND - Not detected at the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 221213waLL-hg203
Date: *18-Jan-23*

Run ID :Run Order: **HGCV203-H_221213A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**

Analysis Date: **12/13/22 13:55** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.103	0.0050	0.1	0	103	90	110				

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B, H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Run ID :Run Order: **HGCV203-H_221213A: 10** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV1** Method: **E245.1**

Analysis Date: **12/13/22 13:59** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.102	0.0050	0.1	0	102	95	105				

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B, H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Run ID :Run Order: **HGCV203-H_221213A: 22** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E245.1**

Analysis Date: **12/13/22 14:40** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.105	0.0050	0.1	0	105	90	110				

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B, H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Run ID :Run Order: **HGCV203-H_221213A: 32** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E245.1**

Analysis Date: **12/13/22 15:15** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0973	0.0050	0.1	0	97	90	110				

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B, H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22120260
BatchID: 221228sa-hg205
Date: *18-Jan-23*

Run ID :Run Order: **HGCV205-H_221228A: 7** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW7471B**
Analysis Date: **12/28/22 13:53** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00098	0.50	0.001	0	98	90	110				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **HGCV205-H_221228A: 8** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **SW7471B**
Analysis Date: **12/28/22 13:55** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0025	0.50	0.0025	0	100	90	110				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **HGCV205-H_221228A: 22** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **SW7471B**
Analysis Date: **12/28/22 15:37** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0026	0.50	0.0025	0	103	90	110				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 44449
Date: *18-Jan-23*

Run ID :Run Order: **SEAL AA500_221219A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **12/19/22 14:12** Units: **mg/L** **Prep Info:** Prep Date: **1/17/2019** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.252	0.010	0.25	0	**101**	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 50868
Date: *18-Jan-23*

Run ID :Run Order: **FIA203-HE_221212A: 37** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **12/12/22 12:57** Units: **mg/L** **Prep Info:** Prep Date: **4/8/2020** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.482	0.10	0.5	0	**96**	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **FIA203-HE_221212A: 49** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **12/12/22 13:11** Units: **mg/L** **Prep Info:** Prep Date: **4/8/2020** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.472	0.10	0.5	0	**95**	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 51253
Date: *18-Jan-23*

Run ID :Run Order: **SEAL AA500_221219A: 35** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **12/19/22 14:35** Units: **mg/L** **Prep Info:** Prep Date: **5/11/2020** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.0993	0.010	0.1	0	**99**	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **SEAL AA500_221219A: 51** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **12/19/22 14:54** Units: **mg/L** **Prep Info:** Prep Date: **5/11/2020** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.0994	0.010	0.1	0	**99**	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64707
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221212A: 15** SampType: **Method Blank** Lab ID: **MB-64707** Method: **E200.7**

Analysis Date: **12/12/22 12:38** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.007									
Calcium	ND	0.1									
Iron	ND	0.02									
Magnesium	ND	0.05									
Potassium	ND	0.1									
Sodium	ND	0.1									

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Run ID :Run Order: **ICP2-HE_221212A: 16** SampType: **Laboratory Control Sample** Lab ID: **LCS-64707** Method: **E200.7**

Analysis Date: **12/12/22 12:42** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.533	0.050	0.5	0	**107**	85	115				
Calcium	26.6	1.0	25	0	**106**	85	115				
Iron	2.70	0.020	2.5	0	**108**	85	115				
Magnesium	26.8	1.0	25	0	**107**	85	115				
Potassium	25.8	1.0	25	0	**103**	85	115				
Sodium	25.7	1.0	25	0	**103**	85	115				

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Run ID :Run Order: **ICP2-HE_221212A: 21** SampType: **Serial Dilution** Lab ID: **H22120258-002CDIL** Method: **E200.7**

Analysis Date: **12/12/22 13:01** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.050		0		0	0	0.01631		10	
Calcium	42.0	1.0		0		0	0	43.33	**3.2**	10	
Iron	0.337	0.092		0		0	0	0.3311		10	N
Magnesium	12.5	1.0		0		0	0	13.06	**4.0**	10	
Potassium	2.60	1.0		0		0	0	2.82		10	N
Sodium	8.30	1.0		0		0	0	8.114	**2.3**	10	

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: 64707** **Date:** *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221212A: 36** SampType: **Serial Dilution** Lab ID: **H22120260-001CDIL** Method: **E200.7**

Analysis Date: **12/12/22 13:58** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.0884	0.050		0		0	0	0.08311		10	N
Calcium	123	1.0		0		0	0	128.1	4.4	10	
Iron	0.147	0.092		0		0	0	0.1545		10	N
Magnesium	10.9	1.0		0		0	0	11.38	4.4	10	
Potassium	13.7	1.0		0		0	0	14.63	6.5	10	
Sodium	51.1	1.0		0		0	0	53.85	5.3	10	

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Run ID :Run Order: **ICP2-HE_221212A: 38** SampType: **Sample Matrix Spike** Lab ID: **H22120260-001CMS3** Method: **E200.7**

Analysis Date: **12/12/22 14:05** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.603	0.050	0.5	0.08311	104	70	130				
Calcium	150	1.0	25	128.1		70	130				A
Iron	2.77	0.020	2.5	0.1545	104	70	130				
Magnesium	39.2	1.0	25	11.38	111	70	130				
Potassium	43.2	1.0	25	14.63	114	70	130				
Sodium	83.4	1.0	25	53.85	118	70	130				

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Run ID :Run Order: **ICP2-HE_221212A: 39** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-001CMSD3** Method: **E200.7**

Analysis Date: **12/12/22 14:09** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **E200.2**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.602	0.050	0.5	0.08311	104	70	130	0.6034	0.3	20	
Calcium	150	1.0	25	128.1		70	130	150.1	0.2	20	A
Iron	2.74	0.020	2.5	0.1545	103	70	130	2.765	1.0	20	
Magnesium	38.5	1.0	25	11.38	108	70	130	39.24	2.0	20	
Potassium	42.4	1.0	25	14.63	111	70	130	43.16	1.9	20	
Sodium	81.3	1.0	25	53.85	110	70	130	83.42	2.5	20	

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: 64707** **Date:** *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 93** SampType: **Method Blank** Lab ID: **MB-64707** Method: **E200.8**

Analysis Date: **12/13/22 16:31** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.006									
Antimony	ND	0.0002									
Arsenic	ND	0.0001									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00003									
Chromium	ND	0.0002									
Cobalt	ND	0.0003									
Copper	ND	0.0003									
Iron	ND	0.009									
Lead	ND	0.0001									
Manganese	ND	0.0003									
Molybdenum	ND	0.0002									
Nickel	ND	0.0002									
Selenium	ND	0.0001									
Silver	ND	0.00006									
Uranium	ND	0.00003									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Run ID :Run Order: **ICPMS205-H_221213B: 104** SampType: **Laboratory Control Sample** Lab ID: **LCS-64707** Method: **E200.8**

Analysis Date: **12/13/22 17:02** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.58	0.030	2.5	0	**103**	85	115				
Antimony	0.524	0.0010	0.5	0	**105**	85	115				
Arsenic	0.516	0.0010	0.5	0	**103**	85	115				
Barium	0.509	0.050	0.5	0	**102**	85	115				
Beryllium	0.256	0.0010	0.25	0	**102**	85	115				
Cadmium	0.261	0.0010	0.25	0	**104**	85	115				
Chromium	0.522	0.0050	0.5	0	**104**	85	115				
Cobalt	0.513	0.0050	0.5	0	**103**	85	115				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64707
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 104** SampType: **Laboratory Control Sample** Lab ID: **LCS-64707** Method: **E200.8**

Analysis Date: **12/13/22 17:02** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.512	0.0050	0.5	0	102	85	115				
Iron	2.64	0.020	2.5	0	106	85	115				
Lead	0.519	0.0010	0.5	0	104	85	115				
Manganese	2.58	0.0010	2.5	0	103	85	115				
Molybdenum	0.506	0.0010	0.5	0	101	85	115				
Nickel	0.513	0.0050	0.5	0	103	85	115				
Selenium	0.502	0.0010	0.5	0	100	85	115				
Silver	0.0491	0.0010	0.05	0	98	85	115				
Uranium	0.451	0.00030	0.5	0	90	85	115				
Vanadium	0.516	0.010	0.5	0	103	85	115				
Zinc	0.510	0.010	0.5	0	102	85	115				

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Run ID :Run Order: **ICPMS205-H_221213B: 127** SampType: **Sample Matrix Spike** Lab ID: **H22120260-001CMS3** Method: **E200.8**

Analysis Date: **12/13/22 18:08** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.61	0.030	2.5	0.06987	101	70	130				
Antimony	0.522	0.0010	0.5	0.0002442	104	70	130				
Arsenic	0.521	0.0010	0.5	0.002116	104	70	130				
Barium	0.540	0.050	0.5	0.03451	101	70	130				
Beryllium	0.248	0.0010	0.25	0	99	70	130				
Cadmium	0.258	0.0010	0.25	0.00008926	103	70	130				
Chromium	0.516	0.0050	0.5	0.0005324	103	70	130				
Cobalt	0.507	0.0050	0.5	0	101	70	130				
Copper	0.508	0.0050	0.5	0.005867	100	70	130				
Iron	2.73	0.020	2.5	0.1505	103	70	130				
Lead	0.524	0.0010	0.5	0.000966	105	70	130				
Manganese	2.59	0.0010	2.5	0.07632	101	70	130				
Molybdenum	0.655	0.0010	0.5	0.1436	102	70	130				
Nickel	0.501	0.0050	0.5	0.0005908	100	70	130				
Selenium	0.502	0.0010	0.5	0.0005989	100	70	130				
Silver	0.0486	0.0010	0.05	0	97	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: 64707** **Date:** *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 127** SampType: **Sample Matrix Spike** Lab ID: **H22120260-001CMS3** Method: **E200.8**

Analysis Date: **12/13/22 18:08** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	0.468	0.00030	0.5	0.002939	93	70	130				
Vanadium	0.519	0.010	0.5	0.002964	103	70	130				
Zinc	0.532	0.010	0.5	0.04524	97	70	130				

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Run ID :Run Order: **ICPMS205-H_221213B: 128** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-001CMSD3** Method: **E200.8**

Analysis Date: **12/13/22 18:11** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **E200.2**

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.60	0.030	2.5	0.06987	101	70	130	2.607	0.3	20	
Antimony	0.523	0.0010	0.5	0.0002442	105	70	130	0.5218	0.3	20	
Arsenic	0.511	0.0010	0.5	0.002116	102	70	130	0.5214	2.0	20	
Barium	0.548	0.050	0.5	0.03451	103	70	130	0.5398	1.6	20	
Beryllium	0.246	0.0010	0.25	0	98	70	130	0.2476	0.9	20	
Cadmium	0.257	0.0010	0.25	0.00008926	103	70	130	0.258	0.3	20	
Chromium	0.504	0.0050	0.5	0.0005324	101	70	130	0.5155	2.2	20	
Cobalt	0.500	0.0050	0.5	0	100	70	130	0.5069	1.3	20	
Copper	0.497	0.0050	0.5	0.005867	98	70	130	0.508	2.1	20	
Iron	2.69	0.020	2.5	0.1505	101	70	130	2.727	1.5	20	
Lead	0.515	0.0010	0.5	0.000966	103	70	130	0.5237	1.7	20	
Manganese	2.55	0.0010	2.5	0.07632	99	70	130	2.592	1.7	20	
Molybdenum	0.661	0.0010	0.5	0.1436	103	70	130	0.655	0.9	20	
Nickel	0.496	0.0050	0.5	0.0005908	99	70	130	0.5006	1.0	20	
Selenium	0.498	0.0010	0.5	0.0005989	99	70	130	0.5022	0.9	20	
Silver	0.0485	0.0010	0.05	0	97	70	130	0.04861	0.2	20	
Uranium	0.455	0.00030	0.5	0.002939	90	70	130	0.4681	2.8	20	
Vanadium	0.508	0.010	0.5	0.002964	101	70	130	0.5189	2.0	20	
Zinc	0.521	0.010	0.5	0.04524	95	70	130	0.5322	2.1	20	

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: 64708** **Date:** *18-Jan-23*

Run ID :Run Order: **HGCV203-H_221212A: 12** SampType: **Method Blank** Lab ID: **MB-64708** Method: **E245.1**

Analysis Date: **12/12/22 15:52** Units: **ug/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.002									

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B**

Run ID :Run Order: **HGCV203-H_221212A: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-64708** Method: **E245.1**

Analysis Date: **12/12/22 15:55** Units: **ug/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0532	0.0050	0.05	0	106	90	110				

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B**

Run ID :Run Order: **HGCV203-H_221213A: 26** SampType: **Sample Matrix Spike** Lab ID: **H22120260-006BMS** Method: **E245.1**

Analysis Date: **12/13/22 14:54** Units: **ug/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0540	0.0050	0.05	0.00261	103	70	130				

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B**

Run ID :Run Order: **HGCV203-H_221213A: 27** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-006BMSD** Method: **E245.1**

Analysis Date: **12/13/22 14:58** Units: **ug/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0540	0.0050	0.05	0.00261	103	70	130	0.054	0	20	

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: 64709** **Date:** *18-Jan-23*

Run ID :Run Order: **HGCV203-H_221213A: 34** SampType: **Method Blank** Lab ID: **MB-64709** Method: **E245.1**

Analysis Date: **12/13/22 15:22** Units: **ug/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.002									

Associated samples: **H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Run ID :Run Order: **HGCV203-H_221213A: 35** SampType: **Laboratory Control Sample** Lab ID: **LCS-64709** Method: **E245.1**

Analysis Date: **12/13/22 15:26** Units: **ug/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0506	0.0050	0.05	0	101	90	110				

Associated samples: **H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Run ID :Run Order: **HGCV203-H_221213A: 40** SampType: **Sample Matrix Spike** Lab ID: **H22120260-010BMS** Method: **E245.1**

Analysis Date: **12/13/22 15:43** Units: **ug/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0524	0.0050	0.05	0.00241	100	70	130				

Associated samples: **H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Run ID :Run Order: **HGCV203-H_221213A: 41** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-010BMSD** Method: **E245.1**

Analysis Date: **12/13/22 15:47** Units: **ug/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0528	0.0050	0.05	0.00241	101	70	130	0.05237	0.9	20	

Associated samples: **H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: 64711** **Date:** *18-Jan-23*

Run ID :Run Order: **FIA203-HE_221212A: 11** SampType: **Method Blank** Lab ID: **MB-64711** Method: **A4500 N-C**

Analysis Date: **12/12/22 12:26** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **FIA203-HE_221212A: 14** SampType: **Laboratory Control Sample** Lab ID: **LCS-64711** Method: **A4500 N-C**

Analysis Date: **12/12/22 12:30** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	11.5	0.30	11.2	0	103	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **FIA203-HE_221212A: 17** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-64711** Method: **A4500 N-C**

Analysis Date: **12/12/22 12:34** Units: **mg/L** **Prep Info:** Prep Date: **12/9/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.02	0.10	1	0	102	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **FIA203-HE_221212A: 54** SampType: **Sample Matrix Spike** Lab ID: **H22120260-005Ams** Method: **A4500 N-C**

Analysis Date: **12/12/22 13:17** Units: **mg/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.976	0.10	1	0	98	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **FIA203-HE_221212A: 55** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-005Amsd** Method: **A4500 N-C**

Analysis Date: **12/12/22 13:19** Units: **mg/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.960	0.10	1	0	96	90	110	0.9761	1.6	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64711
Date: *18-Jan-23*

Run ID :Run Order: **FIA203-HE_221212A: 55** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-005Amsd** Method: **A4500 N-C**

Analysis Date: **12/12/22 13:19** Units: **mg/L** **Prep Info:** Prep Date: **12/12/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64802
Date: *18-Jan-23*

Run ID :Run Order: **SEAL AA500_221219A: 15** SampType: **Method Blank** Lab ID: **MB-64802** Method: **E365.1**
Analysis Date: **12/19/22 14:13** Units: **mg/L** **Prep Info:** Prep Date: **12/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.001									

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D**

Run ID :Run Order: **SEAL AA500_221219A: 18** SampType: **Laboratory Control Sample** Lab ID: **LCS-64802** Method: **E365.1**
Analysis Date: **12/19/22 14:17** Units: **mg/L** **Prep Info:** Prep Date: **12/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.425	0.010	0.4	0	**106**	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D**

Run ID :Run Order: **SEAL AA500_221219A: 45** SampType: **Sample Matrix Spike** Lab ID: **H22120260-005Dms** Method: **E365.1**
Analysis Date: **12/19/22 14:48** Units: **mg/L** **Prep Info:** Prep Date: **12/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.218	0.010	0.2	0	**109**	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D**

Run ID :Run Order: **SEAL AA500_221219A: 46** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-005Dmsd** Method: **E365.1**
Analysis Date: **12/19/22 14:49** Units: **mg/L** **Prep Info:** Prep Date: **12/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.216	0.010	0.2	0	**108**	90	110	0.2175	**0.6**	20	

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D**

Run ID :Run Order: **SEAL AA500_221219A: 55** SampType: **Sample Matrix Spike** Lab ID: **H22110332-001Cms** Method: **E365.1**
Analysis Date: **12/19/22 15:01** Units: **mg/L** **Prep Info:** Prep Date: **11/14/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.216	0.010	0.2	0.0023	**107**	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64802
Date: *18-Jan-23*

Run ID :Run Order: **SEAL AA500_221219A: 56** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22110332-001Cmsd** Method: **E365.1**

Analysis Date: **12/19/22 15:02** Units: **mg/L** **Prep Info:** Prep Date: **11/14/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.216	0.010	0.2	0.0023	**107**	90	110	0.216	**0.1**	20	

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: 64803** **Date:** *18-Jan-23*

Run ID :Run Order: **SEAL AA500_221219A: 16** SampType: **Method Blank** Lab ID: **MB-64803** Method: **E365.1**

Analysis Date: **12/19/22 14:14** Units: **mg/L** **Prep Info:** Prep Date: **12/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.001									

Associated samples: **H22120260-009D, H22120260-010D**

Run ID :Run Order: **SEAL AA500_221219A: 19** SampType: **Laboratory Control Sample** Lab ID: **LCS-64803** Method: **E365.1**

Analysis Date: **12/19/22 14:18** Units: **mg/L** **Prep Info:** Prep Date: **12/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.428	0.010	0.4	0	**107**	90	110				

Associated samples: **H22120260-009D, H22120260-010D**

Run ID :Run Order: **SEAL AA500_221219A: 80** SampType: **Sample Matrix Spike** Lab ID: **H22120511-001Dms** Method: **E365.1**

Analysis Date: **12/19/22 15:30** Units: **mg/L** **Prep Info:** Prep Date: **12/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.234	0.010	0.2	0.0167	**108**	90	110				

Associated samples: **H22120260-009D, H22120260-010D**

Run ID :Run Order: **SEAL AA500_221219A: 81** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120511-001Dmsd** Method: **E365.1**

Analysis Date: **12/19/22 15:31** Units: **mg/L** **Prep Info:** Prep Date: **12/16/2022** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.237	0.010	0.2	0.0167	**110**	90	110	0.2337	**1.2**	20	

Associated samples: **H22120260-009D, H22120260-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64872
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221223A: 82** SampType: **Method Blank** Lab ID: **MB-64872** Method: **SW6010B**

Analysis Date: **12/23/22 15:01** Units: **mg/kg** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.8									
Copper	ND	1									
Iron	ND	20									
Manganese	ND	0.4									
Zinc	ND	1									

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICP2-HE_221223A: 83** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-64872** Method: **SW6010B**

Analysis Date: **12/23/22 15:05** Units: **mg/kg** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	258	5.0	247.2	0	104	80	120				
Boron	48.6	1.0	49.45	0	98	80	120				
Copper	50.3	1.0	49.45	0	102	80	120				
Iron	236	22	247.2	0	95	80	120				
Manganese	236	1.0	247.2	0	95	80	120				
Zinc	47.2	1.0	49.45	0	96	80	120				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICP2-HE_221223A: 84** SampType: **Laboratory Control Sample** Lab ID: **LCS-64872** Method: **SW6010B**

Analysis Date: **12/23/22 15:08** Units: **mg/kg** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8700	17	9653	0	90	63.5	122				
Boron	103	3.7	126.7	0	81	63.9	108				
Copper	125	4.8	134.5	0	93	73.9	113				
Iron	14000	110	16010	0	87	71.9	118				
Manganese	402	1.9	426.2	0	94	74.4	123				
Zinc	215	5.1	226.8	0	95	83.1	125				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64872
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221223A: 89** SampType: **Serial Dilution** Lab ID: **H22120260-012ADIL** Method: **SW6010B**

Analysis Date: **12/23/22 15:27** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/22/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4240	110		0		0	0	4582	7.7	10	
Boron	ND	24		0		0	0	0		10	
Copper	129	31		0		0	0	133.7		10	N
Iron	22600	700		0		0	0	22040	2.3	10	
Manganese	1330	12		0		0	0	1414	6.1	10	
Zinc	442	33		0		0	0	449.7	1.7	10	

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICP2-HE_221223A: 90** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22120260-012APDS** Method: **SW6010B**

Analysis Date: **12/23/22 15:31** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/22/2022** Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	6050	23	1641	4582	89	75	125				
Boron	293	5.0	328.1	0	89	75	125				
Copper	435	6.4	328.1	133.7	92	75	125				
Iron	23600	150	1641	22040		75	125				A
Manganese	2640	2.5	1641	1414	75	75	125				
Zinc	704	6.9	328.1	449.7	78	75	125				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICP2-HE_221223A: 91** SampType: **Sample Matrix Spike** Lab ID: **H22120260-012AMS** Method: **SW6010B**

Analysis Date: **12/23/22 15:34** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	6350	23	318.9	4582		75	125				A
Boron	62.7	4.9	63.78	0	98	75	125				
Copper	192	6.2	63.78	133.7	91	75	125				
Iron	25300	140	318.9	22040		75	125				A
Manganese	1450	2.4	318.9	1414		75	125				A
Zinc	542	6.7	63.78	449.7		75	125				A

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64872
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221223A: 92** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-012AMSD** Method: **SW6010B**

Analysis Date: **12/23/22 15:38** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	6050	22	314.7	4582		75	125	6350	**4.9**	20	A
Boron	60.8	4.8	62.95	0	**97**	75	125	62.67	**3.0**	20	
Copper	200	6.1	62.95	133.7	**105**	75	125	192	**3.9**	20	
Iron	23100	140	314.7	22040		75	125	25300	**9.0**	20	A
Manganese	1490	2.4	314.7	1414		75	125	1448	**3.0**	20	A
Zinc	614	6.6	62.95	449.7		75	125	542.1	**13**	20	A

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICP2-HE_221226C: 17** SampType: **Method Blank** Lab ID: **MB-64872** Method: **SW6010B**

Analysis Date: **12/26/22 18:36** Units: **mg/kg** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 7	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	4									
Boron	ND	0.8									
Copper	ND	1									
Iron	ND	20									
Manganese	ND	0.4									
Zinc	ND	1									
Iron as Fe2O3	ND	30									

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22120260
BatchID: 64872
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221227A: 22** SampType: **Method Blank** Lab ID: **MB-64872** Method: **SW6020**
Analysis Date: **12/27/22 14:45** Units: **mg/kg** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	3									
Arsenic	ND	0.2									
Barium	ND	0.3									
Beryllium	ND	0.4									
Cadmium	ND	0.04									
Chromium	ND	1									
Cobalt	ND	0.7									
Lead	ND	0.5									
Molybdenum	ND	0.2									
Nickel	ND	0.5									
Selenium	ND	0.1									
Silver	ND	0.7									
Uranium	ND	0.02									
Vanadium	ND	0.3									

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICPMS205-H_221227A: 23** SampType: **Laboratory Control Sample** Lab ID: **LCS-64872** Method: **SW6020**
Analysis Date: **12/27/22 14:48** Units: **mg/kg** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	58.9	7.8	240	0	**25**	12.8	37.2				
Arsenic	161	1.0	196	0	**82**	66.4	104				
Barium	176	1.0	187	0	**94**	71.8	124				
Beryllium	77.3	1.1	83.6	0	**93**	70	115				
Cadmium	98.7	1.0	99	0	**100**	79.2	121				
Chromium	107	3.0	117	0	**92**	72.5	115				
Cobalt	104	1.8	108	0	**97**	79.4	126				
Lead	104	1.3	105	0	**99**	71.6	128				
Molybdenum	118	1.0	127	0	**93**	61.3	124				
Nickel	80.5	1.2	86.2	0	**93**	70.6	116				
Selenium	175	1.0	205	0	**85**	72.3	111				
Silver	42.4	1.8	42.1	0	**101**	70.8	133				
Uranium	99.1	1.0	99.9	0	**99**	80.1	120.1				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64872
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221227A: 23** SampType: **Laboratory Control Sample** Lab ID: **LCS-64872** Method: **SW6020**

Analysis Date: **12/27/22 14:48** Units: **mg/kg** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	101	1.0	114	0	89	73	116				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICPMS205-H_221227A: 24** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-64872** Method: **SW6020**

Analysis Date: **12/27/22 14:50** Units: **mg/kg** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	50.6	7.8	49.45	0	102	80	120				
Arsenic	50.1	1.0	49.45	0	101	80	120				
Barium	50.7	1.0	49.45	0	103	80	120				
Beryllium	25.5	1.1	24.72	0	103	80	120				
Cadmium	26.2	1.0	24.72	0	106	80	120				
Chromium	49.7	3.1	49.45	0	101	80	120				
Cobalt	49.7	1.8	49.45	0	101	80	120				
Lead	51.1	1.3	49.45	0	103	80	120				
Molybdenum	49.9	1.0	49.45	0	101	80	120				
Nickel	50.8	1.2	49.45	0	103	80	120				
Selenium	46.4	1.0	49.45	0	94	80	120				
Silver	26.2	1.8	24.72	0	106	80	120				
Uranium	50.8	1.0	49.45	0	103	80	120				
Vanadium	48.2	1.0	49.45	0	97	80	120				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICPMS205-H_221227A: 28** SampType: **Serial Dilution** Lab ID: **H22120260-012ADIL** Method: **SW6020**

Analysis Date: **12/27/22 15:00** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/22/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	50		0		0	0	0		10	
Arsenic	27.0	2.5		0		0	0	23.83		10	N
Barium	80.8	4.4		0		0	0	74.93	7.6	10	
Beryllium	ND	7.0		0		0	0	0		10	
Cadmium	1.33	1.0		0		0	0	1.12		10	N
Chromium	ND	20		0		0	0	17.56		10	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64872
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221227A: 28** SampType: **Serial Dilution** Lab ID: **H22120260-012ADIL** Method: **SW6020**

Analysis Date: **12/27/22 15:00** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/22/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	12		0		0	0	6.235		10	
Lead	67.9	8.2		0		0	0	61.96		10	N
Molybdenum	15.1	3.8		0		0	0	13.98		10	N
Nickel	ND	8.0		0		0	0	5.588		10	
Selenium	ND	2.2		0		0	0	0		10	
Silver	ND	12		0		0	0	0		10	
Uranium	6.20	1.0		0		0	0	5.575	11	10	R
Vanadium	66.6	5.2		0		0	0	59.73	11	10	R

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICPMS205-H_221227A: 29** SampType: **Post Digestion/Distillation Spike** Lab ID: **H22120260-012APDS1** Method: **SW6020**

Analysis Date: **12/27/22 15:03** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/22/2022** Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	16.5	10	15.93	0	104	75	125				
Arsenic	39.0	1.0	15.93	23.83	95	75	125				
Barium	90.5	1.0	15.93	74.93		75	125				A
Beryllium	16.0	1.4	15.93	0	101	75	125				
Cadmium	17.7	1.0	15.93	1.12	104	75	125				
Chromium	33.5	3.9	15.93	17.56	100	75	125				
Cobalt	22.3	2.3	15.93	6.235	101	75	125				
Lead	77.8	1.6	15.93	61.96	99	75	125				
Molybdenum	30.3	1.0	15.93	13.98	103	75	125				
Nickel	22.0	1.6	15.93	5.588	103	75	125				
Selenium	15.1	1.0	15.93	0	95	75	125				
Silver	8.75	2.3	6.372	0	137	75	125				S
Uranium	21.7	1.0	15.93	5.575	101	75	125				
Vanadium	75.2	1.0	15.93	59.73	97	75	125				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64872
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221227A: 30** SampType: **Sample Matrix Spike** Lab ID: **H22120260-012AMS** Method: **SW6020**

Analysis Date: **12/27/22 15:05** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	45.1	10	63.78	0	71	75	125				S
Arsenic	88.5	1.0	63.78	23.83	101	75	125				
Barium	140	1.0	63.78	74.93	102	75	125				
Beryllium	30.1	1.4	31.89	0	94	75	125				
Cadmium	33.6	1.0	31.89	1.12	102	75	125				
Chromium	79.0	4.0	63.78	17.56	96	75	125				
Cobalt	70.8	2.3	63.78	6.235	101	75	125				
Lead	153	1.6	63.78	61.96	143	75	125				S
Molybdenum	74.2	1.0	63.78	13.98	94	75	125				
Nickel	70.7	1.6	63.78	5.588	102	75	125				
Selenium	56.0	1.0	63.78	0	88	75	125				
Silver	34.1	2.3	31.89	0	107	75	125				
Uranium	64.4	1.0	63.78	5.575	92	75	125				
Vanadium	131	1.0	63.78	59.73	111	75	125				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICPMS205-H_221227A: 31** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-012AMSD** Method: **SW6020**

Analysis Date: **12/27/22 15:08** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	46.7	10	62.95	0	74	75	125	45.11	3.6	20	S
Arsenic	90.5	1.0	62.95	23.83	106	75	125	88.46	2.3	20	
Barium	160	1.0	62.95	74.93	135	75	125	139.7	13	20	S
Beryllium	29.9	1.4	31.47	0	95	75	125	30.11	0.7	20	
Cadmium	34.8	1.0	31.47	1.12	107	75	125	33.61	3.6	20	
Chromium	82.6	3.9	62.95	17.56	103	75	125	79.01	4.4	20	
Cobalt	70.9	2.3	62.95	6.235	103	75	125	70.83	0.1	20	
Lead	155	1.6	62.95	61.96	147	75	125	153.1	1.0	20	S
Molybdenum	76.8	1.0	62.95	13.98	100	75	125	74.25	3.3	20	
Nickel	70.2	1.6	62.95	5.588	103	75	125	70.71	0.8	20	
Selenium	56.2	1.0	62.95	0	89	75	125	56.02	0.3	20	
Silver	34.9	2.3	31.47	0	111	75	125	34.09	2.4	20	
Uranium	69.5	1.0	62.95	5.575	102	75	125	64.45	7.6	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: 64872
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221227A: 31** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-012AMSD** Method: **SW6020**

Analysis Date: **12/27/22 15:08** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/22/2022** Prep Method: **SW3050 B**

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	129	1.0	62.95	59.73	**111**	75	125	130.7	**1.0**	20	

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: 64929** **Date:** *18-Jan-23*

Run ID :Run Order: **HGCV205-H_221228A: 10** SampType: **Method Blank** Lab ID: **MB-64929** Method: **SW7471B**

Analysis Date: **12/28/22 15:15** Units: **mg/kg** **Prep Info:** Prep Date: **12/27/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.007									

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **HGCV205-H_221228A: 11** SampType: **Laboratory Control Sample** Lab ID: **LCS-64929** Method: **SW7471B**

Analysis Date: **12/28/22 15:17** Units: **mg/kg** **Prep Info:** Prep Date: **12/27/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.1	0.50	4.965	0	102	71	126.4				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **HGCV205-H_221228A: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-64929** Method: **SW7471B**

Analysis Date: **12/28/22 15:19** Units: **mg/kg** **Prep Info:** Prep Date: **12/27/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.20	0.50	0.1956	0	102	80	120				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **HGCV205-H_221228A: 14** SampType: **Serial Dilution** Lab ID: **H22110612-001ADIL** Method: **SW7471B**

Analysis Date: **12/28/22 15:22** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.50		0		0	0	0.0108		10	

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **HGCV205-H_221228A: 15** SampType: **Sample Matrix Spike** Lab ID: **H22110612-001AMS** Method: **SW7471B**

Analysis Date: **12/28/22 15:24** Units: **mg/kg** **Prep Info:** Prep Date: **12/27/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.21	0.50	0.1988	0.0108	102	80	120				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: 64929** **Date:** *18-Jan-23*

Run ID :Run Order: **HGCV205-H_221228A: 16** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22110612-001AMSD** Method: **SW7471B**

Analysis Date: **12/28/22 15:26** Units: **mg/kg** **Prep Info:** Prep Date: **12/27/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.22	0.050	0.1996	0.0108	103	80	120	0.2145	1.0	20	

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **HGCV205-H_221228A: 29** SampType: **Serial Dilution** Lab ID: **H22120260-019ADIL** Method: **SW7471B**

Analysis Date: **12/28/22 15:49** Units: **mg/kg-dry** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.019	0.013		0		0	0	0.02512	25	10	R

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **HGCV205-H_221228A: 30** SampType: **Sample Matrix Spike** Lab ID: **H22120260-019AMS** Method: **SW7471B**

Analysis Date: **12/28/22 15:51** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/27/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.29	0.50	0.2576	0.02512	102	80	120				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **HGCV205-H_221228A: 31** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-019AMSD** Method: **SW7471B**

Analysis Date: **12/28/22 15:53** Units: **mg/kg-dry** **Prep Info:** Prep Date: **12/27/2022** Prep Method: **SW7471B**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.28	0.050	0.2573	0.02512	100	80	120	0.2881	1.6	20	

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: PMOIST_221229_A
Date: *18-Jan-23*

Run ID :Run Order: **SOIL DRYING OVEN 2_221230B: 1** SampType: **Sample Duplicate** Lab ID: **H22120260-015A DUP** Method: **D2974**

Analysis Date: **12/29/22 17:14** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	22.0	0.20		0				21.4	**2.8**	20	

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **SOIL DRYING OVEN 2_221230B: 1** SampType: **Sample Duplicate** Lab ID: **H22120260-015A DUP** Method: **D2974**

Analysis Date: **12/29/22 17:14** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	22.0	0.20		0				21.4	**2.8**	20	

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R180723
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221209A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **12/09/22 11:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.768	0.10	0.8	0	96	95	105				
Calcium	40.0	1.0	40	0	100	95	105				
Magnesium	39.6	1.0	40	0	99	95	105				
Potassium	40.0	1.0	40	0	100	95	105				
Sodium	39.7	1.0	40	0	99	95	105				

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Run ID :Run Order: **ICP2-HE_221209A: 8** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **12/09/22 12:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.45	0.10	2.5	0	98	95	105				
Calcium	25.1	1.0	25	0	100	95	105				
Magnesium	24.8	1.0	25	0	99	95	105				
Potassium	25.7	1.0	25	0	103	95	105				
Sodium	25.3	1.0	25	0	101	95	105				

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Run ID :Run Order: **ICP2-HE_221209A: 14** SampType: **Method Blank** Lab ID: **MB** Method: **E200.7**

Analysis Date: **12/09/22 12:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.004									
Calcium	ND	0.2									
Magnesium	ND	0.05									
Potassium	ND	0.06									
Sodium	0.04	0.03									

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R180723
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221209A: 15** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.7**

Analysis Date: **12/09/22 12:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.943	0.10	1	0	94	85	115				
Calcium	50.3	1.0	50	0	101	85	115				
Magnesium	49.8	1.0	50	0	100	85	115				
Potassium	48.8	1.0	50	0	98	85	115				
Sodium	48.6	1.0	50	0	97	85	115				

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Run ID :Run Order: **ICP2-HE_221209A: 28** SampType: **Sample Matrix Spike** Lab ID: **H22120112-001BMS2** Method: **E200.7**

Analysis Date: **12/09/22 13:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	11.4	0.050	10	1.244	102	70	130				
Calcium	616	1.9	500	84.15	106	70	130				
Magnesium	551	1.0	500	26.61	105	70	130				
Potassium	526	1.0	500	17.53	102	70	130				
Sodium	4720	1.0	500	4206		70	130				A

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Run ID :Run Order: **ICP2-HE_221209A: 29** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120112-001BMSD2** Method: **E200.7**

Analysis Date: **12/09/22 13:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	10.9	0.050	10	1.244	96	70	130	11.44	5.2	20	
Calcium	571	1.9	500	84.15	97	70	130	615.7	7.5	20	
Magnesium	519	1.0	500	26.61	99	70	130	551.1	6.0	20	
Potassium	537	1.0	500	17.53	104	70	130	525.7	2.0	20	
Sodium	4820	1.0	500	4206		70	130	4718	2.2	20	A

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R180723
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221209A: 30** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/09/22 13:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.47	0.10	2.5	0	99	90	110				
Calcium	24.6	1.0	25	0	98	90	110				
Magnesium	24.9	1.0	25	0	100	90	110				
Potassium	25.0	1.0	25	0	100	90	110				
Sodium	24.6	1.0	25	0	98	90	110				

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Run ID :Run Order: **ICP2-HE_221209A: 42** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/09/22 14:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.49	0.10	2.5	0	100	90	110				
Calcium	24.7	1.0	25	0	99	90	110				
Magnesium	25.0	1.0	25	0	100	90	110				
Potassium	26.5	1.0	25	0	106	90	110				
Sodium	26.0	1.0	25	0	104	90	110				

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Run ID :Run Order: **ICP2-HE_221209A: 45** SampType: **Sample Matrix Spike** Lab ID: **H22120260-007BMS2** Method: **E200.7**

Analysis Date: **12/09/22 14:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.05	0.050	1	0.06609	98	70	130				
Calcium	199	1.0	50	146.6	105	70	130				
Magnesium	63.2	1.0	50	12.81	101	70	130				
Potassium	60.3	1.0	50	12.02	97	70	130				
Sodium	93.3	1.0	50	47.98	91	70	130				

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R180723
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221209A: 46** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-007BMSD2** Method: **E200.7**

Analysis Date: **12/09/22 14:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.09	0.050	1	0.06609	**102**	70	130	1.047	**4.0**	20	
Calcium	198	1.0	50	146.6	**103**	70	130	199	**0.5**	20	
Magnesium	63.2	1.0	50	12.81	**101**	70	130	63.23	**0.1**	20	
Potassium	64.5	1.0	50	12.02	**105**	70	130	60.27	**6.7**	20	
Sodium	99.7	1.0	50	47.98	**103**	70	130	93.28	**6.7**	20	

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R180736** **Date:** *18-Jan-23*

Run ID :Run Order: **PHSC_101-H_221212A: 52** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **12/12/22 12:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	4	2									

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **PHSC_101-H_221212A: 53** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **12/12/22 12:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	560	4.0	600	0	94	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **PHSC_101-H_221212A: 56** SampType: **Sample Duplicate** Lab ID: **H22120260-001ADUP** Method: **A2320 B**

Analysis Date: **12/12/22 12:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	94	4.0		0				93.35	0.9	10	
Bicarbonate as HCO3	110	4.0		0				113.3	0.9	10	

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **PHSC_101-H_221212A: 74** SampType: **Sample Duplicate** Lab ID: **H22120260-009ADUP** Method: **A2320 B**

Analysis Date: **12/12/22 13:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	100	4.0		0				103.8	0.5	10	
Bicarbonate as HCO3	130	4.0		0				126.1	0.5	10	

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R180774
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221212A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **12/12/22 12:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.792	0.10	0.8	0	99	95	105				
Calcium	40.7	1.0	40	0	102	95	105				
Iron	4.05	0.020	4	0	101	95	105				
Magnesium	40.5	1.0	40	0	101	95	105				
Potassium	39.1	1.0	40	0	98	95	105				
Sodium	38.9	1.0	40	0	97	95	105				

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Run ID :Run Order: **ICP2-HE_221212A: 7** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **12/12/22 12:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.45	0.10	2.5	0	98	95	105				
Calcium	25.2	1.0	25	0	101	95	105				
Iron	2.54	0.020	2.5	0	102	95	105				
Magnesium	25.7	1.0	25	0	103	95	105				
Potassium	25.3	1.0	25	0	101	95	105				
Sodium	25.3	1.0	25	0	101	95	105				

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Run ID :Run Order: **ICP2-HE_221212A: 31** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/12/22 13:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.53	0.10	2.5	0	101	90	110				
Calcium	26.1	1.0	25	0	104	90	110				
Iron	2.62	0.020	2.5	0	105	90	110				
Magnesium	26.2	1.0	25	0	105	90	110				
Potassium	23.9	1.0	25	0	95	90	110				
Sodium	23.7	1.0	25	0	95	90	110				

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R180774
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221212A: 43** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/12/22 14:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	2.50	0.10	2.5	0	**100**	90	110				
Calcium	24.5	1.0	25	0	**98**	90	110				
Iron	2.53	0.020	2.5	0	**101**	90	110				
Magnesium	26.3	1.0	25	0	**105**	90	110				
Potassium	26.8	1.0	25	0	**107**	90	110				
Sodium	26.8	1.0	25	0	**107**	90	110				

Associated samples: **H22120260-001C, H22120260-002C, H22120260-003C, H22120260-004C, H22120260-005C, H22120260-006C, H22120260-007C, H22120260-008C, H22120260-009C, H22120260-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R180791** **Date:** *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 26** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **12/13/22 11:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0517	0.10	0.05	0	103	85	115				
Antimony	0.0518	0.050	0.05	0	104	85	115				
Arsenic	0.0522	0.0050	0.05	0	104	85	115				
Barium	0.0512	0.10	0.05	0	102	85	115				
Beryllium	0.0493	0.0010	0.05	0	99	85	115				
Cadmium	0.0512	0.0010	0.05	0	102	85	115				
Chromium	0.0520	0.010	0.05	0	104	85	115				
Cobalt	0.0521	0.010	0.05	0	104	85	115				
Copper	0.0535	0.010	0.05	0	107	85	115				
Iron	0.159	0.020	0.15	0	106	85	115				
Lead	0.0500	0.010	0.05	0	100	85	115				
Manganese	0.0515	0.010	0.05	0	103	85	115				
Molybdenum	0.0491	0.0050	0.05	0	98	85	115				
Nickel	0.0524	0.010	0.05	0	105	85	115				
Selenium	0.0499	0.0050	0.05	0	100	85	115				
Silver	0.0204	0.0050	0.02	0	102	85	115				
Uranium	0.0486	0.00030	0.05	0	97	85	115				
Vanadium	0.0512	0.10	0.05	0	102	85	115				
Zinc	0.0551	0.010	0.05	0	110	85	115				

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Run ID :Run Order: **ICPMS205-H_221213B: 29** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **12/13/22 12:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.003									
Antimony	ND	0.0002									
Arsenic	ND	0.0002									
Barium	ND	0.0002									
Beryllium	ND	0.0002									
Cadmium	ND	0.00002									
Chromium	ND	0.0001									
Cobalt	ND	0.001									

Qualifiers:
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S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22120260
BatchID: R180791
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 29** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **12/13/22 12:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0001									
Iron	ND	0.004									
Lead	ND	0.0001									
Manganese	ND	0.0003									
Molybdenum	ND	0.0003									
Selenium	ND	0.00007									
Silver	ND	0.00008									
Uranium	ND	0.00002									
Vanadium	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Run ID :Run Order: **ICPMS205-H_221213B: 58** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **12/13/22 14:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.289	0.10	0.3	0	**96**	90	110				
Antimony	0.0573	0.050	0.06	0	**95**	90	110				
Arsenic	0.0604	0.0050	0.06	0	**101**	90	110				
Barium	0.0548	0.10	0.06	0	**91**	90	110				
Beryllium	0.0292	0.0010	0.03	0	**97**	90	110				
Cadmium	0.0286	0.0010	0.03	0	**95**	90	110				
Chromium	0.0579	0.010	0.06	0	**96**	90	110				
Cobalt	0.0570	0.010	0.06	0	**95**	90	110				
Copper	0.0587	0.010	0.06	0	**98**	90	110				
Iron	0.293	0.020	0.3	0	**98**	90	110				
Lead	0.0570	0.010	0.06	0	**95**	90	110				
Manganese	0.292	0.010	0.3	0	**97**	90	110				
Molybdenum	0.0557	0.0050	0.06	0	**93**	90	110				
Nickel	0.0585	0.010	0.06	0	**97**	90	110				
Selenium	0.0594	0.0050	0.06	0	**99**	90	110				
Silver	0.0291	0.0050	0.03	0	**97**	90	110				
Uranium	0.0555	0.00030	0.06	0	**92**	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R180791** **Date:** *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 58** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **12/13/22 14:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	0.0576	0.10	0.06	0	96	90	110				
Zinc	0.0593	0.010	0.06	0	99	90	110				

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B, H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Run ID :Run Order: **ICPMS205-H_221213B: 111** SampType: **Sample Matrix Spike** Lab ID: **H22120258-006BMS** Method: **E200.8**

Analysis Date: **12/13/22 17:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0507	0.030	0.05	0	101	70	130				
Antimony	0.0508	0.0010	0.05	0.000423	101	70	130				
Arsenic	0.0572	0.0010	0.05	0.005103	104	70	130				
Barium	0.108	0.050	0.05	0.05991	96	70	130				
Beryllium	0.0488	0.0010	0.05	0	98	70	130				
Cadmium	0.0503	0.0010	0.05	0.00003924	101	70	130				
Chromium	0.0504	0.0050	0.05	0.0001336	101	70	130				
Cobalt	0.0501	0.0050	0.05	0	100	70	130				
Copper	0.0529	0.0050	0.05	0.002705	100	70	130				
Iron	0.166	0.020	0.15	0.01422	101	70	130				
Lead	0.0507	0.0010	0.05	0	101	70	130				
Manganese	0.0957	0.0010	0.05	0.04642	98	70	130				
Molybdenum	0.0757	0.0010	0.05	0.02667	98	70	130				
Nickel	0.0505	0.0050	0.05	0.0005074	100	70	130				
Selenium	0.0516	0.0010	0.05	0.0002314	103	70	130				
Silver	0.0197	0.0010	0.02	0	99	70	130				
Uranium	0.0582	0.00030	0.05	0.008397	100	70	130				
Vanadium	0.0507	0.010	0.05	0.0007541	100	70	130				
Zinc	0.0622	0.010	0.05	0.01135	102	70	130				

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22120260
BatchID: R180791
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 112** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120258-006BMSD** Method: **E200.8**

Analysis Date: **12/13/22 17:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0520	0.030	0.05	0	104	70	130	0.05071	2.6	20	
Antimony	0.0505	0.0010	0.05	0.000423	100	70	130	0.05079	0.5	20	
Arsenic	0.0578	0.0010	0.05	0.005103	105	70	130	0.05719	1.0	20	
Barium	0.109	0.050	0.05	0.05991	98	70	130	0.1077	1.0	20	
Beryllium	0.0499	0.0010	0.05	0	100	70	130	0.04879	2.2	20	
Cadmium	0.0503	0.0010	0.05	0.00003924	101	70	130	0.05031	0	20	
Chromium	0.0508	0.0050	0.05	0.0001336	101	70	130	0.05044	0.8	20	
Cobalt	0.0505	0.0050	0.05	0	101	70	130	0.05014	0.8	20	
Copper	0.0532	0.0050	0.05	0.002705	101	70	130	0.05288	0.6	20	
Iron	0.166	0.020	0.15	0.01422	101	70	130	0.1657	0.3	20	
Lead	0.0514	0.0010	0.05	0	103	70	130	0.05074	1.3	20	
Manganese	0.0976	0.0010	0.05	0.04642	102	70	130	0.09566	2.0	20	
Molybdenum	0.0761	0.0010	0.05	0.02667	99	70	130	0.07566	0.6	20	
Nickel	0.0509	0.0050	0.05	0.0005074	101	70	130	0.05054	0.7	20	
Selenium	0.0525	0.0010	0.05	0.0002314	105	70	130	0.05162	1.8	20	
Silver	0.0200	0.0010	0.02	0	100	70	130	0.01974	1.1	20	
Uranium	0.0590	0.00030	0.05	0.008397	101	70	130	0.05817	1.4	20	
Vanadium	0.0513	0.010	0.05	0.0007541	101	70	130	0.05073	1.1	20	
Zinc	0.0632	0.010	0.05	0.01135	104	70	130	0.06217	1.6	20	

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Run ID :Run Order: **ICPMS205-H_221213B: 123** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **12/13/22 17:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0518	0.10	0.05	0	104	90	110				
Antimony	0.0497	0.050	0.05	0	99	90	110				
Arsenic	0.0500	0.0050	0.05	0	100	90	110				
Barium	0.0494	0.10	0.05	0	99	90	110				
Beryllium	0.0503	0.0010	0.05	0	101	90	110				
Cadmium	0.0518	0.0010	0.05	0	104	90	110				
Chromium	0.0502	0.010	0.05	0	100	90	110				
Cobalt	0.0512	0.010	0.05	0	102	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R180791** **Date:** *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 123** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **12/13/22 17:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0511	0.010	0.05	0	102	90	110				
Iron	1.30	0.020	1.3	0	100	90	110				
Lead	0.0503	0.010	0.05	0	101	90	110				
Manganese	0.0502	0.010	0.05	0	100	90	110				
Molybdenum	0.0522	0.0050	0.05	0	104	90	110				
Nickel	0.0511	0.010	0.05	0	102	90	110				
Selenium	0.0521	0.0050	0.05	0	104	90	110				
Silver	0.0209	0.0050	0.02	0	105	90	110				
Uranium	0.0496	0.00030	0.05	0	99	90	110				
Vanadium	0.0508	0.10	0.05	0	102	90	110				
Zinc	0.0513	0.010	0.05	0	103	90	110				

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B, H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Run ID :Run Order: **ICPMS205-H_221213B: 136** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **12/13/22 18:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0512	0.10	0.05	0	102	90	110				
Antimony	0.0490	0.050	0.05	0	98	90	110				
Arsenic	0.0503	0.0050	0.05	0	101	90	110				
Barium	0.0499	0.10	0.05	0	100	90	110				
Beryllium	0.0497	0.0010	0.05	0	99	90	110				
Cadmium	0.0520	0.0010	0.05	0	104	90	110				
Chromium	0.0513	0.010	0.05	0	103	90	110				
Cobalt	0.0510	0.010	0.05	0	102	90	110				
Copper	0.0510	0.010	0.05	0	102	90	110				
Iron	1.30	0.020	1.3	0	100	90	110				
Lead	0.0502	0.010	0.05	0	100	90	110				
Manganese	0.0501	0.010	0.05	0	100	90	110				
Molybdenum	0.0524	0.0050	0.05	0	105	90	110				
Nickel	0.0508	0.010	0.05	0	102	90	110				
Selenium	0.0525	0.0050	0.05	0	105	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R180791
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 136** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **12/13/22 18:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.0213	0.0050	0.02	0	106	90	110				
Uranium	0.0494	0.00030	0.05	0	99	90	110				
Vanadium	0.0506	0.10	0.05	0	101	90	110				
Zinc	0.0520	0.010	0.05	0	104	90	110				

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B, H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Run ID :Run Order: **ICPMS205-H_221213B: 141** SampType: **Sample Matrix Spike** Lab ID: **H22120260-006BMS** Method: **E200.8**

Analysis Date: **12/13/22 18:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0446	0.030	0.05	0	89	70	130				
Antimony	0.0510	0.0010	0.05	0.0002529	101	70	130				
Arsenic	0.0563	0.0010	0.05	0.004013	105	70	130				
Barium	0.0982	0.050	0.05	0.0518	93	70	130				
Beryllium	0.0488	0.0010	0.05	0	98	70	130				
Cadmium	0.0515	0.0010	0.05	0.0001801	103	70	130				
Chromium	0.0511	0.0050	0.05	0.0001985	102	70	130				
Cobalt	0.0515	0.0050	0.05	0	103	70	130				
Copper	0.0577	0.0050	0.05	0.007013	101	70	130				
Iron	0.169	0.020	0.15	0.01591	102	70	130				
Lead	0.0515	0.0010	0.05	0.0001253	103	70	130				
Manganese	0.204	0.0010	0.05	0.1538	101	70	130				
Molybdenum	0.185	0.0010	0.05	0.1365	98	70	130				
Nickel	0.0514	0.0050	0.05	0.0007514	101	70	130				
Selenium	0.0536	0.0010	0.05	0.001075	105	70	130				
Silver	0.0119	0.0010	0.02	0	60	70	130				S
Uranium	0.0562	0.00030	0.05	0.005065	102	70	130				
Vanadium	0.0534	0.010	0.05	0.002366	102	70	130				
Zinc	0.136	0.010	0.05	0.08493	102	70	130				

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22120260 **BatchID: R180791** **Date:** *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 142** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-006BMSD** Method: **E200.8**
Analysis Date: **12/13/22 18:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0540	0.030	0.05	0	108	70	130	0.04458	19	20	
Antimony	0.0507	0.0010	0.05	0.0002529	101	70	130	0.05096	0.6	20	
Arsenic	0.0557	0.0010	0.05	0.004013	103	70	130	0.0563	1.1	20	
Barium	0.101	0.050	0.05	0.0518	98	70	130	0.09818	2.6	20	
Beryllium	0.0501	0.0010	0.05	0	100	70	130	0.0488	2.7	20	
Cadmium	0.0514	0.0010	0.05	0.0001801	102	70	130	0.05153	0.3	20	
Chromium	0.0502	0.0050	0.05	0.0001985	100	70	130	0.05114	1.9	20	
Cobalt	0.0507	0.0050	0.05	0	101	70	130	0.0515	1.6	20	
Copper	0.0571	0.0050	0.05	0.007013	100	70	130	0.05766	1.0	20	
Iron	0.166	0.020	0.15	0.01591	100	70	130	0.1687	1.9	20	
Lead	0.0514	0.0010	0.05	0.0001253	103	70	130	0.05154	0.2	20	
Manganese	0.199	0.0010	0.05	0.1538	90	70	130	0.2044	2.8	20	
Molybdenum	0.185	0.0010	0.05	0.1365	98	70	130	0.1853	0.0	20	
Nickel	0.0504	0.0050	0.05	0.0007514	99	70	130	0.0514	2.0	20	
Selenium	0.0533	0.0010	0.05	0.001075	104	70	130	0.05358	0.5	20	
Silver	0.0121	0.0010	0.02	0	60	70	130	0.01191	1.5	20	S
Uranium	0.0561	0.00030	0.05	0.005065	102	70	130	0.05625	0.3	20	
Vanadium	0.0520	0.010	0.05	0.002366	99	70	130	0.05345	2.8	20	
Zinc	0.133	0.010	0.05	0.08493	96	70	130	0.136	2.4	20	

Associated samples: **H22120260-001B, H22120260-002B, H22120260-003B, H22120260-004B, H22120260-005B, H22120260-006B, H22120260-007B, H22120260-008B, H22120260-009B, H22120260-010B**

Run ID :Run Order: **ICPMS205-H_221213B: 149** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**
Analysis Date: **12/13/22 19:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0516	0.10	0.05	0	103	90	110				
Antimony	0.0486	0.050	0.05	0	97	90	110				
Arsenic	0.0501	0.0050	0.05	0	100	90	110				
Barium	0.0472	0.10	0.05	0	94	90	110				
Beryllium	0.0498	0.0010	0.05	0	100	90	110				
Cadmium	0.0512	0.0010	0.05	0	102	90	110				
Chromium	0.0510	0.010	0.05	0	102	90	110				
Cobalt	0.0513	0.010	0.05	0	103	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R180791
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221213B: 149** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **12/13/22 19:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 19	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0513	0.010	0.05	0	**103**	90	110				
Iron	1.29	0.020	1.3	0	**99**	90	110				
Lead	0.0498	0.010	0.05	0	**100**	90	110				
Manganese	0.0495	0.010	0.05	0	**99**	90	110				
Molybdenum	0.0526	0.0050	0.05	0	**105**	90	110				
Nickel	0.0511	0.010	0.05	0	**102**	90	110				
Selenium	0.0528	0.0050	0.05	0	**106**	90	110				
Silver	0.0215	0.0050	0.02	0	**108**	90	110				
Uranium	0.0491	0.00030	0.05	0	**98**	90	110				
Vanadium	0.0505	0.10	0.05	0	**101**	90	110				
Zinc	0.0499	0.010	0.05	0	**100**	90	110				

Associated samples: **H22120260-001B, H22120260-001C, H22120260-002B, H22120260-002C, H22120260-003B, H22120260-003C, H22120260-004B, H22120260-004C, H22120260-005B, H22120260-005C, H22120260-006B, H22120260-006C, H22120260-007B, H22120260-007C, H22120260-008B, H22120260-008C, H22120260-009B, H22120260-009C, H22120260-010B, H22120260-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R180793** **Date:** *18-Jan-23*

Run ID :Run Order: **FIA203-HE_221213A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E350.1**

Analysis Date: **12/13/22 12:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.965	0.050	1	0	96	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221213A: 10** SampType: **Method Blank** Lab ID: **MBLK** Method: **E350.1**

Analysis Date: **12/13/22 12:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	ND	0.03									

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221213A: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E350.1**

Analysis Date: **12/13/22 12:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.973	0.050	1	0	97	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221213A: 50** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E350.1**

Analysis Date: **12/13/22 13:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.499	0.050	0.5	0	100	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221213A: 54** SampType: **Sample Matrix Spike** Lab ID: **H22120258-010DMS** Method: **E350.1**

Analysis Date: **12/13/22 13:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.933	0.050	1	0.0725	86	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R180793** **Date:** *18-Jan-23*

Run ID :Run Order: **FIA203-HE_221213A: 54** SampType: **Sample Matrix Spike** Lab ID: **H22120258-010DMS** Method: **E350.1**

Analysis Date: **12/13/22 13:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221213A: 55** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120258-010DMSD** Method: **E350.1**

Analysis Date: **12/13/22 13:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.940	0.050	1	0.0725	87	80	120	0.9327	0.8	10	

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221213A: 64** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E350.1**

Analysis Date: **12/13/22 13:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.499	0.050	0.5	0	100	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221213A: 70** SampType: **Sample Matrix Spike** Lab ID: **H22120260-009DMS** Method: **E350.1**

Analysis Date: **12/13/22 13:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.920	0.050	1	0.0325	89	80	120				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221213A: 71** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-009DMSD** Method: **E350.1**

Analysis Date: **12/13/22 13:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.919	0.050	1	0.0325	89	80	120	0.9205	0.2	10	

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R180793
Date: *18-Jan-23*

Run ID :Run Order: **FIA203-HE_221213A: 90** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E350.1**

Analysis Date: **12/13/22 16:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.956	0.050	1	0	96	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R180840** **Date:** *18-Jan-23*

Run ID :Run Order: **FIA203-HE_221214A: 10** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E353.2**

Analysis Date: **12/14/22 13:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.05	0.010	1	0	105	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221214A: 11** SampType: **Method Blank** Lab ID: **MBLK** Method: **E353.2**

Analysis Date: **12/14/22 13:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	ND	0.008									

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221214A: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E353.2**

Analysis Date: **12/14/22 13:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.987	0.011	1	0	99	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221214A: 93** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **12/14/22 15:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.477	0.010	0.5	0	95	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221214A: 96** SampType: **Sample Matrix Spike** Lab ID: **H22120258-006DMS** Method: **E353.2**

Analysis Date: **12/14/22 15:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.15	0.011	1	0.2019	94	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R180840** **Date:** *18-Jan-23*

Run ID :Run Order: **FIA203-HE_221214A: 96** SampType: **Sample Matrix Spike** Lab ID: **H22120258-006DMS** Method: **E353.2**

Analysis Date: **12/14/22 15:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221214A: 97** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120258-006DMSD** Method: **E353.2**

Analysis Date: **12/14/22 15:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.14	0.011	1	0.2019	94	90	110	1.146	0.2	10	

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221214A: 107** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **12/14/22 15:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.477	0.010	0.5	0	95	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221214A: 115** SampType: **Sample Matrix Spike** Lab ID: **H22120264-001AMS** Method: **E353.2**

Analysis Date: **12/14/22 15:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.945	0.011	1	0	94	90	110				

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Run ID :Run Order: **FIA203-HE_221214A: 116** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120264-001AMSD** Method: **E353.2**

Analysis Date: **12/14/22 15:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.954	0.011	1	0	95	90	110	0.9447	1.0	10	

Associated samples: **H22120260-001D, H22120260-002D, H22120260-003D, H22120260-004D, H22120260-005D, H22120260-006D, H22120260-007D, H22120260-008D, H22120260-009D, H22120260-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R180905** **Date:** *18-Jan-23*

Run ID :Run Order: **IC METROHM_221215A: 13** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **12/15/22 12:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	99.1	1.0	100	0	99	90	110				
Sulfate	400	1.0	400	0	100	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **IC METROHM_221215A: 17** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **12/15/22 13:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.7	1.0	25	0	99	90	110				
Sulfate	101	1.0	100	0	101	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **IC METROHM_221215A: 18** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **12/15/22 14:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.06									

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **IC METROHM_221215A: 88** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **12/16/22 08:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	53.7	1.0	50	0	107	90	110				
Sulfate	213	1.0	200	0	106	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R180905** **Date:** *18-Jan-23*

Run ID :Run Order: **IC METROHM_221215A: 92** SampType: **Sample Matrix Spike** Lab ID: **H22120258-007AMS** Method: **E300.0**

Analysis Date: **12/16/22 09:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	39.6	1.0	25	13.38	105	90	110				
Sulfate	267	1.0	100	163.2	104	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **IC METROHM_221215A: 93** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120258-007AMSD** Method: **E300.0**

Analysis Date: **12/16/22 09:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	39.4	1.0	25	13.38	104	90	110	39.61	0.4	20	
Sulfate	267	1.0	100	163.2	104	90	110	266.8	0.3	20	

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **IC METROHM_221215A: 102** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **12/16/22 11:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51.0	1.0	50	0	102	90	110				
Sulfate	202	1.0	200	0	101	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **IC METROHM_221215A: 106** SampType: **Sample Matrix Spike** Lab ID: **H22120260-007AMS** Method: **E300.0**

Analysis Date: **12/16/22 12:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	102	1.0	50	53.15	97	90	110				
Sulfate	539	1.0	200	347.9	95	90	110				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R180905
Date: *18-Jan-23*

Run ID :Run Order: **IC METROHM_221215A: 107** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H22120260-007AMSD** Method: **E300.0**

Analysis Date: **12/16/22 13:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	103	1.0	50	53.15	**101**	90	110	101.9	**1.6**	20	
Sulfate	547	1.0	200	347.9	**99**	90	110	538.7	**1.5**	20	

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R181106** **Date:** *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221223A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6010B**

Analysis Date: **12/23/22 10:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4.07	0.10	4	0	102	90	110				
Boron	0.833	0.10	0.8	0	104	90	110				
Copper	0.805	0.012	0.8	0	101	90	110				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICP2-HE_221223A: 7** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6010B**

Analysis Date: **12/23/22 10:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4.10	0.10	4	0	103	90	110				
Boron	0.827	0.10	0.8	0	103	90	110				
Copper	0.807	0.012	0.8	0	101	90	110				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICP2-HE_221223A: 11** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6010B**

Analysis Date: **12/23/22 10:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	511	0.10	500	0	102	80	120				
Boron	-0.00890	0.10		0		0	0				
Copper	0.00126	0.012		0		0	0				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICP2-HE_221223A: 12** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6010B**

Analysis Date: **12/23/22 10:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	504	0.10	500	0	101	80	120				
Boron	1.00	0.10	1	0	100	80	120				
Copper	0.500	0.012	0.5	0	100	80	120				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260
BatchID: R181111
Date: *18-Jan-23*

Run ID :Run Order: **ICP2-HE_221226C: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6010B**

Analysis Date: **12/26/22 17:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	4.16	0.030	4	0	104	90	110				
Manganese	4.00	0.010	4	0	100	90	110				
Zinc	0.802	0.010	0.8	0	100	90	110				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICP2-HE_221226C: 10** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6010B**

Analysis Date: **12/26/22 17:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	185	0.030	200	0	93	80	120				
Manganese	-0.00417	0.010		0		0	0				
Zinc	0.00477	0.010		0		0	0				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICP2-HE_221226C: 11** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6010B**

Analysis Date: **12/26/22 17:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	186	0.030	200	0	93	80	120				
Manganese	0.462	0.010	0.5	0	92	80	120				
Zinc	0.951	0.010	1	0	95	80	120				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22120260
BatchID: R181146
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221227A: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**
Analysis Date: **12/27/22 13:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0585	0.0010	0.06	0	98	90	110				
Arsenic	0.0611	0.0010	0.06	0	102	90	110				
Barium	0.0577	0.0010	0.06	0	96	90	110				
Beryllium	0.0299	0.0010	0.03	0	100	90	110				
Cadmium	0.0299	0.0010	0.03	0	100	90	110				
Chromium	0.0591	0.0010	0.06	0	99	90	110				
Cobalt	0.0602	0.0011	0.06	0	100	90	110				
Lead	0.0585	0.0010	0.06	0	97	90	110				
Molybdenum	0.0566	0.0010	0.06	0	94	90	110				
Nickel	0.0608	0.0010	0.06	0	101	90	110				
Selenium	0.0590	0.0010	0.06	0	98	90	110				
Silver	0.0295	0.0010	0.03	0	98	90	110				
Uranium	0.0584	0.00030	0.06	0	97	90	110				
Vanadium	0.0579	0.0010	0.06	0	97	90	110				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICPMS205-H_221227A: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**
Analysis Date: **12/27/22 13:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000243	0.0010		0							
Arsenic	-2.28E-06	0.0010		0							
Barium	0.000175	0.0010		0							
Beryllium	-0.0000686	0.0010		0							
Cadmium	0.000110	0.0010		0							
Chromium	0.00186	0.0010		0							
Cobalt	0.0000601	0.0011		0							
Lead	-0.0000633	0.0010		0							
Molybdenum	0.796	0.0010	0.8	0	100	70	130				
Nickel	0.0000514	0.0010		0		0	0				
Selenium	0.000182	0.0010		0							
Silver	0.0000113	0.0010		0							
Uranium	0.0000247	0.00030		0							

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: R181146** **Date:** *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221227A: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **12/27/22 13:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	-0.0000623	0.0010		0		0	0				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICPMS205-H_221227A: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **12/27/22 13:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0000194	0.0010		0		0	0				
Arsenic	0.00993	0.0010	0.01	0	99	70	130				
Barium	0.000168	0.0010		0		0	0				
Beryllium	-0.0000317	0.0010		0		0	0				
Cadmium	0.00999	0.0010	0.01	0	100	70	130				
Chromium	0.0213	0.0010	0.02	0	107	70	130				
Cobalt	0.0202	0.0011	0.02	0	101	70	130				
Lead	-0.0000580	0.0010		0		0	0				
Molybdenum	0.790	0.0010	0.8	0	99	70	130				
Nickel	0.0196	0.0010	0.02	0	98	70	130				
Selenium	0.00969	0.0010	0.01	0	97	70	130				
Silver	0.0200	0.0010	0.02	0	100	70	130				
Uranium	0.0000198	0.00030		0		0	0				
Vanadium	0.0201	0.0010	0.02	0	101	70	130				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICPMS205-H_221227A: 20** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **12/27/22 14:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0510	0.0010	0.05	0	102	90	110				
Arsenic	0.0517	0.0010	0.05	0	103	90	110				
Barium	0.0501	0.0010	0.05	0	100	90	110				
Beryllium	0.0510	0.0010	0.05	0	102	90	110				
Cadmium	0.0513	0.0010	0.05	0	103	90	110				
Chromium	0.0519	0.0010	0.05	0	104	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limit; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H22120260
BatchID: R181146
Date: *18-Jan-23*

Run ID :Run Order: **ICPMS205-H_221227A: 20** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **SW6020**
Analysis Date: **12/27/22 14:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	0.0512	0.0011	0.05	0	102	90	110				
Lead	0.0504	0.0010	0.05	0	101	90	110				
Molybdenum	0.0506	0.0010	0.05	0	101	90	110				
Nickel	0.0517	0.0010	0.05	0	103	90	110				
Selenium	0.0510	0.0010	0.05	0	102	90	110				
Silver	0.0210	0.0010	0.02	0	105	90	110				
Uranium	0.0503	0.00030	0.05	0	101	90	110				
Vanadium	0.0514	0.0010	0.05	0	103	90	110				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Run ID :Run Order: **ICPMS205-H_221227A: 48** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **SW6020**
Analysis Date: **12/27/22 16:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 14	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.0500	0.0010	0.05	0	100	90	110				
Arsenic	0.0495	0.0010	0.05	0	99	90	110				
Barium	0.0501	0.0010	0.05	0	100	90	110				
Beryllium	0.0515	0.0010	0.05	0	103	90	110				
Cadmium	0.0504	0.0010	0.05	0	101	90	110				
Chromium	0.0504	0.0010	0.05	0	101	90	110				
Cobalt	0.0505	0.0011	0.05	0	101	90	110				
Lead	0.0500	0.0010	0.05	0	100	90	110				
Molybdenum	0.0497	0.0010	0.05	0	99	90	110				
Nickel	0.0504	0.0010	0.05	0	101	90	110				
Selenium	0.0507	0.0010	0.05	0	101	90	110				
Silver	0.0206	0.0010	0.02	0	103	90	110				
Uranium	0.0504	0.00030	0.05	0	101	90	110				
Vanadium	0.0496	0.0010	0.05	0	99	90	110				

Associated samples: **H22120260-011A, H22120260-012A, H22120260-013A, H22120260-014A, H22120260-015A, H22120260-016A, H22120260-017A, H22120260-018A, H22120260-019A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H22120260 **BatchID: TSS221212A** **Date:** *18-Jan-23*

Run ID :Run Order: **ACCU-124 (14410200)_221212A: 1** SampType: **Method Blank** Lab ID: **MB-24_221212** Method: **A2540 D**

Analysis Date: **12/12/22 14:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	0.5	0.3									

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **ACCU-124 (14410200)_221212A: 2** SampType: **Laboratory Control Sample** Lab ID: **LCS-25_221212** Method: **A2540 D**

Analysis Date: **12/12/22 14:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	98.0	25	100	0	**98**	80	120				

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

Run ID :Run Order: **ACCU-124 (14410200)_221212A: 2** SampType: **Sample Duplicate** Lab ID: **H22120260-010A DUP** Method: **A2540 D**

Analysis Date: **12/12/22 14:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	2.89	10		0				2.222		10	

Associated samples: **H22120260-001A, H22120260-002A, H22120260-003A, H22120260-004A, H22120260-005A, H22120260-006A, H22120260-007A, H22120260-008A, H22120260-009A, H22120260-010A**

- TSS did not obtain the minimum residue requirement of 2.5 mg residue. - Since the difference between the analytical result for the sample and its duplicate is less than the reporting limit, the RPD variance is not considered significant.

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22120260

Login completed by: Taylor K. Jones
Date Received: 12/9/2022

Reviewed by: rtooke
Received by: wjj

Reviewed Date: 12/12/2022
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	5.8°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

The Temperature Blank temperature for shipping container 1 was 5.8°C, shipping container 2 was 0.0°C, and shipping container 3 was 0.0°C.
It was unclear which nitric container as filtered and which was unfiltered for sample SS-14. One container was marked unfiltered with an 'F' on the lid and the other was not marked filtered or unfiltered and a blank lid. Dissolved Metals container was determine by Laboratory Metals analyst.
tj 12/9/22

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Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information (Billing information)

Company/Name	MTDEQ
Contact	Ben Quinones
Phone	(404) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ▣Email
Receive Report	☐Hard Copy ▣Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; tanner.traxler@respec.com
Receive Report	☐Hard Copy ▣Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

C1 5.8
C2 0.0
C3 0.0

Project Information

Project Name, PWSID, Permit, etc.	Silver Bow Creek SSTOU Monitoring
Sampler Name	T. Traxler, J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ▣ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	TR Metals (see list)	Diss Metals (see list)	TPN	NH3, NO3+NO2, TP	TSS	Hardness (TR Ca & Mg)	Tot. Alkalinity, HCO3	SO4, Cl, K, Na	Tot Metals, dry weight (see list)	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
C3	1 SS-07	12/8/22	1715	5	W	✓	✓	✓	✓	✓	✓	✓	✓				H221207-001
C3	2 SS-10A	12/8/22	1600	5	W	✓	✓	✓	✓	✓	✓	✓	✓				-002
C3	3 SS-10A ~~Duplicate~~ QC - FD	12/8/22	1600	5	W	✓	✓	✓	✓	✓	✓	✓	✓				-003
C3	4 SS-13	12/8/22	1500	5	W	✓	✓	✓	✓	✓	✓	✓	✓				-004
C3	5 ~~Field Blank #1~~ SS-14 QC - FB	12/8/22	1445	5	W	✓	✓	✓	✓	✓	✓	✓	✓				-005
C3	6 SS-14	12/8/22	1430	5	W	✓	✓	✓	✓	✓	✓	✓	✓				-006
C2	7 SS-15A-2	12/8/22	1300	5	W	✓	✓	✓	✓	✓	✓	✓	✓				-007
C2	8 SS-16B	12/8/22	1115	5	W	✓	✓	✓	✓	✓	✓	✓	✓				-008
C2	9 SS-17D	12/8/22	1015	5	W	✓	✓	✓	✓	✓	✓	✓	✓				-009
C2	10 SS-19	12/8/22	0915	5	W	✓	✓	✓	✓	✓	✓	✓	✓				-010

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tanner Traxler	12/8/22 1900	[signature]			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				[illegible]	12-9-22 7:30	[signature]

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand left in lockedoor	Y	Y N (C) B	(Y) N	5.0 °C	(Y) N	(Y) N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

Chain of Custody & Analytical Request Record

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Account Information *(Billing information)*

Company/Name	MTDEQ
Contact	Ben Quinones
Phone	(404) 444-6593
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ▣Email
Receive Report	☐Hard Copy ▣Email
Purchase Order	Quote	Bottle Order

Report Information *(if different than Account Information)*

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; tanner.traxler@respec.com
Receive Report	☐Hard Copy ▣Email

Special Report/Formats: ☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

lab to sieve sediment samples into 3 size fractions, report as dry weight concentrations

C1 5.8
C2 0.0
C3 0.0

Project Information

Project Name, PWSID, Permit, etc.	Silver Bow Creek SSTOU Monitoring
Sampler Name	T. Traxler, J. Naughton
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ▣ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification *(Name, Location, Interval, etc.)*	Collection Date	Collection Time	Number of Containers	Matrix *(See Codes Above)*	Analysis Requested: Tot Metals, dry weight (see list)	See Attached	RUSH TAT	ELI LAB ID *Laboratory Use Only*
C1	1 SS-07	12/8/22	1715	1	S	✓			H221202608
C1	2 SS-07 ~~Duplicate~~ QC-FD	12/8/22	1715	1	S	✓			
	~~3 SS-10A~~	~~12/8/22~~	1600	1	S	✓			
	~~4 SS-13~~	~~12/8/22~~		1	S	✓			
	~~5 SS-14~~	~~12/8/22~~		1	S	✓			
	~~6 SS-15A-2~~	~~12/8/22~~		1	S	✓			
	~~7 SS-16B~~	~~12/8/22~~		1	S	✓			
	~~8 SS-17D~~	~~12/8/22~~		1	S	✓			
C1	9 SS-19	12/8/22	0915	1	S	✓			
	10								

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tanner Traxler	12/8/22 1900	Tanner Traxler			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				[illegible]	12-9-22 730	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number *(cash/check only)*
hand del	X	(Y) N (C) B	(Y) N	5.6 °C	(Y) N	(Y) N	CC Cash Check_____	$	

in lockat entry

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

January 05, 2023

MT DEQ-Federal Superfund
PO Box 200901
Helena, MT 59620-0901

Work Order: H22120670

Project Name: SSTOU Synoptic Q4 2022

Energy Laboratories Inc Helena MT received the following 18 samples for MT DEQ-Federal Superfund on 12/22/2022 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H22120670-001	SS-07-0.0	12/10/22 8:30	12/22/22	Aqueous	Metals by ICP/ICPMS, Tot. Rec. Metals Digestion by E200.2
H22120670-002	SS-07-0.5	12/10/22 8:45	12/22/22	Aqueous	Same As Above
H22120670-003	SS-07-1.0	12/10/22 9:00	12/22/22	Aqueous	Same As Above
H22120670-004	SS-07-1.5	12/10/22 9:15	12/22/22	Aqueous	Same As Above
H22120670-005	SS-07-2.0	12/10/22 9:22	12/22/22	Aqueous	Same As Above
H22120670-006	SS-07-2.5	12/10/22 9:30	12/22/22	Aqueous	Same As Above
H22120670-007	SS-07-3.0	12/10/22 9:40	12/22/22	Aqueous	Same As Above
H22120670-008	SS-07-3.1	12/10/22 9:45	12/22/22	Aqueous	Same As Above
H22120670-009	SS-07-3.2	12/10/22 9:50	12/22/22	Aqueous	Same As Above
H22120670-010	SS-07-3.3	12/10/22 9:55	12/22/22	Aqueous	Same As Above
H22120670-011	SS-07-3.4	12/10/22 10:02	12/22/22	Aqueous	Same As Above
H22120670-012	SS-07-3.5	12/10/22 10:15	12/22/22	Aqueous	Same As Above
H22120670-013	SS-07-4.0	12/10/22 10:25	12/22/22	Aqueous	Same As Above
H22120670-014	SS-07-4.5	12/10/22 10:35	12/22/22	Aqueous	Same As Above
H22120670-015	SS-07-5.0	12/10/22 11:30	12/22/22	Aqueous	Same As Above
H22120670-016	SS-07-5.2	12/10/22 11:40	12/22/22	Aqueous	Same As Above
H22120670-017	SS-07-3.0 QC-FB	12/10/22 9:40	12/22/22	Aqueous	Same As Above
H22120670-018	SS-07-4.5 QC-FD	12/10/22 10:35	12/22/22	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-001
Client Sample ID: SS-07-0.0

Report Date: 01/05/23
Collection Date: 12/10/22 08:30
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.010	mg/L		0.005		E200.8	12/28/22 10:41 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-002
Client Sample ID: SS-07-0.5

Report Date: 01/05/23
Collection Date: 12/10/22 08:45
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.006	mg/L		0.005		E200.8	12/28/22 10:43 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-003
Client Sample ID: SS-07-1.0

Report Date: 01/05/23
Collection Date: 12/10/22 09:00
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.008	mg/L		0.005		E200.8	12/28/22 10:46 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-004
Client Sample ID: SS-07-1.5

Report Date: 01/05/23
Collection Date: 12/10/22 09:15
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.011	mg/L		0.005		E200.8	12/28/22 10:48 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-005
Client Sample ID: SS-07-2.0

Report Date: 01/05/23
Collection Date: 12/10/22 09:22
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.010	mg/L		0.005		E200.8	12/28/22 10:51 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-006
Client Sample ID: SS-07-2.5

Report Date: 01/05/23
Collection Date: 12/10/22 09:30
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.008	mg/L		0.005		E200.8	12/28/22 10:53 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-007
Client Sample ID: SS-07-3.0

Report Date: 01/05/23
Collection Date: 12/10/22 09:40
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	ND	mg/L		0.005		E200.8	12/28/22 10:56 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-008
Client Sample ID: SS-07-3.1

Report Date: 01/05/23
Collection Date: 12/10/22 09:45
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.042	mg/L		0.005		E200.8	12/28/22 10:58 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-009
Client Sample ID: SS-07-3.2

Report Date: 01/05/23
Collection Date: 12/10/22 09:50
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.021	mg/L		0.005		E200.8	12/28/22 11:01 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-010
Client Sample ID: SS-07-3.3

Report Date: 01/05/23
Collection Date: 12/10/22 09:55
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.021	mg/L		0.005		E200.8	12/28/22 11:03 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-011
Client Sample ID: SS-07-3.4

Report Date: 01/05/23
Collection Date: 12/10/22 10:02
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.020	mg/L		0.005		E200.8	12/28/22 11:21 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-012
Client Sample ID: SS-07-3.5

Report Date: 01/05/23
Collection Date: 12/10/22 10:15
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.020	mg/L		0.005		E200.8	12/28/22 11:23 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-013
Client Sample ID: SS-07-4.0

Report Date: 01/05/23
Collection Date: 12/10/22 10:25
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.033	mg/L		0.005		E200.8	12/28/22 11:26 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-014
Client Sample ID: SS-07-4.5

Report Date: 01/05/23
Collection Date: 12/10/22 10:35
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.022	mg/L		0.005		E200.8	12/28/22 11:28 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-015
Client Sample ID: SS-07-5.0

Report Date: 01/05/23
Collection Date: 12/10/22 11:30
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.023	mg/L		0.005		E200.8	12/28/22 11:31 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-016
Client Sample ID: SS-07-5.2

Report Date: 01/05/23
Collection Date: 12/10/22 11:40
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.022	mg/L		0.005		E200.8	12/28/22 11:33 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-017
Client Sample ID: SS-07-3.0 QC-FB

Report Date: 01/05/23
Collection Date: 12/10/22 09:40
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.008	mg/L		0.005		E200.8	12/28/22 11:36 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Project: SSTOU Synoptic Q4 2022
Lab ID: H22120670-018
Client Sample ID: SS-07-4.5 QC-FD

Report Date: 01/05/23
Collection Date: 12/10/22 10:35
DateReceived: 12/22/22
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS, TOTAL RECOVERABLE							
Copper	0.022	mg/L		0.005		E200.8	12/28/22 11:38 / dck

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund **Work Order:** H22120670 **Report Date:** 01/05/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **E200.8**									Analytical Run: ICPMS205-H_221228A	
Lab ID: **ICV**		Initial Calibration Verification Standard							12/28/22 08:26	
Copper		0.0587	mg/L	0.010	98	90	110			
Lab ID: **CCV**		Continuing Calibration Verification Standard							12/28/22 10:33	
Copper		0.0538	mg/L	0.010	108	90	110			
Lab ID: **CCV**		Continuing Calibration Verification Standard							12/28/22 11:16	
Copper		0.0529	mg/L	0.010	106	90	110			
Method: **E200.8**									Batch: 64907	
Lab ID: **MB-64907**		Method Blank				Run: ICPMS205-H_221228A			12/28/22 10:38	
Copper		ND	mg/L	0.0003						
Lab ID: **LCS-64907**		Laboratory Control Sample				Run: ICPMS205-H_221228A			12/28/22 11:06	
Copper		0.533	mg/L	0.0050	107	85	115			
Lab ID: **H22120670-001AMS3**		Sample Matrix Spike				Run: ICPMS205-H_221228A			12/28/22 11:08	
Copper		0.523	mg/L	0.0050	103	70	130			
Lab ID: **H22120670-001AMSD**		Sample Matrix Spike Duplicate				Run: ICPMS205-H_221228A			12/28/22 11:11	
Copper		0.522	mg/L	0.0050	102	70	130	0.1	20	
Lab ID: **H22120670-011AMS3**		Sample Matrix Spike				Run: ICPMS205-H_221228A			12/28/22 11:46	
Copper		0.531	mg/L	0.0050	102	70	130			
Lab ID: **H22120670-011AMSD**		Sample Matrix Spike Duplicate				Run: ICPMS205-H_221228A			12/28/22 11:48	
Copper		0.528	mg/L	0.0050	102	70	130	0.6	20	

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H22120670

Login completed by:	Rebecca A. Tooke	Date Received:	12/22/2022
Reviewed by:	tjones	Received by:	rrs
Reviewed Date:	12/27/2022	Carrier name:	Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	0.0°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

ID on COC SS-07-3.0, ID on container SS-07-3.0 QC-FB.
ID on COC SS-07-4.5, ID on container SS-07-4.5 QC-FD.
ID on COC SS-07-3.0 QC-FB, ID on container only SS-07-3.0.
ID on COC SS-07-4.5 QC-FD, ID on container only SS-07-4.5.

Used IDs from COC and emailed client for clarification. 12/23/22 rt
Per client email we are to us the IDs on the COC. 12/29/22 rt

Chain of Custody & Analytical Request Record

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Account Information *(Billing Information)*

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information *(if different than Account Information)*

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email
Special Report/Formats:	☐ LEVEL IV ☐ NELAC ■ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

P

Project Information SYNOPTIC Q4 2022

Project Name, PWSID, Permit, etc.	SSTOU ~~Repository Vadose Zone~~
Sampler Name	J. Naughton
Sampler Phone	(406) 214-4478
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Solls/ Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling -- See Instructions Page

	Sample Identification *(Name, Location, Interval, etc.)*	Collection Date	Collection Time	Number of Containers	Matrix *(See Codes Above)*	Analysis Requested: Total recoverable copper	See Attached	RUSH TAT	ELI LAB ID *Laboratory Use Only*
1	SS-07-0.0	12/10	0830	1	W	✓			1220670
2	SS-07-0.5	"	0845	1	W	✓			
3	SS-07-1.0	"	0900	1	W	✓			
4	SS-07-1.5	"	0915	1	W	✓			
5	SS-07-2.0	"	0922	1	W	✓			
6	SS-07-2.5	"	0930	1	W	✓			
7	SS-07-~~2.6~~ 3.0	"	0940	1	W	✓			
8	SS-07-~~2.7~~ 3.1	"	0945	1	W	✓			
9	SS-07-~~2.8~~ 3.2	"	0950	1	W	✓			
10	SS-07-~~2.9~~ 3.3	"	0955	1	W	✓			

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	~~Joe Naughton~~					
	Tanner Tooley	12/22/22 1640		R Sponholz	12/22/22 1640	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number *(cash/check only)*
HAND	Y	Y (N) C B	Y N	0.0 °C	(Y) N	Y (N)	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

Chain of Custody & Analytical Request Record

ENERGY LABORATORIES — Trust our People. Trust our Data.

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Account Information *(Billing information)*

Company/Name	Montana DEQ
Contact	Ben Quinones
Phone	(406) 461-7128
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	bequinones@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information *(If different than Account Information)*

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email
Special Report/Formats:	☐ LEVEL IV ☐ NELAC ■ EDD/EDT *(contact laboratory)* ☐ Other

Comments

P

Project Information SYNOPTIC Q4 2022

Project Name, PWSID, Permit, etc.	SSTOU ~~Repository Vadoso Zone~~
Sampler Name	J. Naughton
Sampler Phone	(406) 214-4478
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Solids/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

Analysis Requested

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Total recoverable copper	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	SS-07-~~3.0~~ 3.4	12/12/22	1002	1	W	✓			22120670
2	SS-07-3.5		1015	1	W	✓			
3	SS-07-4.0		1025	1	W	✓			
4	SS-07-4.5		1035	1	W	✓			
5	SS-07-5.0		1130	1	W	✓			
6	SS-07-5.2		1140	1	W	✓			
7	SS-07-3.0 QC-FB		0940	1	W	✓			
8	SS-07-4.5 QC-FD		1035	1	W	✓			
9									
10									

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	[illegible]					
	[illegible]	12/13/22 1640	[illegible]	R SPONHOLZ	12/13/22 1640	[illegible]

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
HAND	Y	Y N (C) B	Y N	0.0 °C	(Y) N	Y (N)	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

APPENDIX C

Surface Water Data

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

Site ID	Date	Time	Sample Type	Characteristic Name	Sample Fraction	Result Value	Result Qualifier	Method Detection Limit	Lower Reporting Limit	Unit
SS-07	16-Mar-22	16:00	F-MSR/OBS	Dissolved oxygen (DO)	NA	8.9				mg/l
SS-07	16-Mar-22	16:00	F-MSR/OBS	Dissolved oxygen saturation	NA	91				%
SS-07	16-Mar-22	16:00	F-MSR/OBS	Flow	NA	23.6				ft3/sec
SS-07	16-Mar-22	16:00	F-MSR/OBS	pH	NA	7.31				None
SS-07	16-Mar-22	16:00	F-MSR/OBS	Specific conductance	NA	1016				uS/cm
SS-07	16-Mar-22	16:00	F-MSR/OBS	Turbidity	NA	2.3				NTU
SS-07	16-Mar-22	16:00	F-MSR/OBS	Water Temperature	NA	8.1				deg C
SS-07	16-Mar-22	16:00	S-ROUTINE	Alkalinity, total	Total	90		2	4	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Aluminum	Dissolved	0.023		0.003	0.009	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Aluminum	Total Recv	0.05		0.006	0.009	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Ammonia	Unfiltered	0.04	J	0.03	0.05	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Arsenic	Total Recv	0.002		0.0001	0.001	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Barium	Dissolved	0.033		0.0002	0.003	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Barium	Total Recv	0.034		0.0002	0.003	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-07	16-Mar-22	16:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-07	16-Mar-22	16:00	S-ROUTINE	Bicarbonate	Total	110		3	4	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Boron	Dissolved	0.072	J	0.004	0.1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Boron	Total Recv	0.079	J	0.007	0.1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Cadmium	Dissolved	0.00008		0.00002	0.00003	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Cadmium	Total Recv	0.00009		0.00002	0.00003	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Calcium	Dissolved	165		0.1	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Calcium	Total Recv	173		0.1	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Chloride	Total	42		0.05	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Chromium	Total Recv	Not Detected		0.0002	0.01	
SS-07	16-Mar-22	16:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-07	16-Mar-22	16:00	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-07	16-Mar-22	16:00	S-ROUTINE	Copper	Dissolved	0.003		0.0001	0.001	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Copper	Total Recv	0.005		0.0003	0.001	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Hardness, Ca, Mg	NA	491		1	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Iron	Dissolved	0.016	J	0.004	0.02	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Iron	Total Recv	0.11		0.009	0.02	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Lead	Dissolved	0.0003	JB	0.0001	0.0003	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Lead	Total Recv	0.0005		0.0001	0.0003	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	16-Mar-22	16:00	S-ROUTINE	Magnesium	Dissolved	14		0.02	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Manganese	Dissolved	0.07		0.0003	0.001	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Manganese	Total Recv	0.076		0.0003	0.001	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Mercury	Dissolved	0.004	J	0.002	0.005	ug/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Mercury	Total Recv	0.005	J	0.002	0.005	ug/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Molybdenum	Dissolved	0.216		0.0003	0.005	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Molybdenum	Total Recv	0.214		0.0002	0.005	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Nickel	Dissolved	0.0005	J	0.0002	0.002	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Nickel	Total Recv	0.0006	J	0.0002	0.002	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	1.16		0.02	0.02	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Potassium	Dissolved	14		0.06	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Potassium	Total Recv	14		0.1	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Selenium	Dissolved	0.0007	J	0.00007	0.001	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Selenium	Total Recv	0.0007	J	0.0001	0.001	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-07	16-Mar-22	16:00	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-07	16-Mar-22	16:00	S-ROUTINE	Sodium	Dissolved	51		0.02	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Sodium	Total Recv	50		0.1	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Sulfate	Total	455		0.1	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.7		0.03	0.05	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.042		0.001	0.003	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Total suspended solids	NA	3		0.8	1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Uranium	Dissolved	0.0033		0.00002	0.0002	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Uranium	Total Recv	0.0033		0.00003	0.0002	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Vanadium	Dissolved	0.002	J	0.0001	0.1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Vanadium	Total Recv	0.0025	J	0.0001	0.1	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Zinc	Dissolved	0.036		0.001	0.008	mg/l
SS-07	16-Mar-22	16:00	S-ROUTINE	Zinc	Total Recv	0.038		0.001	0.008	mg/l
SS-07	8-Jun-22	16:45	F-MSR/OBS	Dissolved oxygen (DO)	NA	10.2				mg/l
SS-07	8-Jun-22	16:45	F-MSR/OBS	Dissolved oxygen saturation	NA	94				%
SS-07	8-Jun-22	16:45	F-MSR/OBS	Flow	NA	43.6				ft3/sec
SS-07	8-Jun-22	16:45	F-MSR/OBS	pH	NA	7.67				None
SS-07	8-Jun-22	16:45	F-MSR/OBS	Specific conductance	NA	1314				uS/cm
SS-07	8-Jun-22	16:45	F-MSR/OBS	Turbidity	NA	4.7				NTU
SS-07	8-Jun-22	16:45	F-MSR/OBS	Water Temperature	NA	11.8				deg C
SS-07	8-Jun-22	16:45	S-ROUTINE	Alkalinity, total	Total	71		2	4	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Aluminum	Dissolved	0.017		0.003	0.009	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Aluminum	Total Recv	0.156		0.006	0.009	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-07	8-Jun-22	16:45	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Jun-22	16:45	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Barium	Dissolved	0.052		0.0002	0.003	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Barium	Total Recv	0.035		0.0002	0.003	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-07	8-Jun-22	16:45	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-07	8-Jun-22	16:45	S-ROUTINE	Bicarbonate	Total	86		3	4	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Boron	Dissolved	0.037	J	0.004	0.1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Boron	Total Recv	0.054	J	0.007	0.1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Cadmium	Dissolved	0.00015		0.00002	0.00003	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Cadmium	Total Recv	0.00016		0.00003	0.00003	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Calcium	Dissolved	211		0.1	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Calcium	Total Recv	221		0.1	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Chloride	Total	25		0.05	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Chromium	Total Recv	0.0004	J	0.0002	0.01	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-07	8-Jun-22	16:45	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-07	8-Jun-22	16:45	S-ROUTINE	Copper	Dissolved	0.004		0.0001	0.001	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Copper	Total Recv	0.008		0.0003	0.001	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Hardness, Ca, Mg	NA	598		1	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Iron	Dissolved	0.03		0.004	0.02	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Iron	Total Recv	0.34		0.009	0.02	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-07	8-Jun-22	16:45	S-ROUTINE	Lead	Total Recv	0.0011		0.0001	0.0003	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Magnesium	Dissolved	11		0.02	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Magnesium	Total Recv	11		0.05	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Manganese	Dissolved	0.066		0.0003	0.001	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Manganese	Total Recv	0.077		0.0003	0.001	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Mercury	Dissolved	0.005		0.001	0.005	ug/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Mercury	Total Recv	0.011		0.001	0.005	ug/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Molybdenum	Dissolved	0.275		0.0003	0.005	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Molybdenum	Total Recv	0.275		0.0002	0.005	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Nickel	Dissolved	0.0004	J	0.0002	0.002	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Nickel	Total Recv	0.0005	J	0.0002	0.002	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.55		0.008	0.02	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Potassium	Dissolved	15		0.06	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Potassium	Total Recv	14		0.1	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Selenium	Total Recv	0.001	J	0.0001	0.001	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Jun-22	16:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-07	8-Jun-22	16:45	S-ROUTINE	Silver	Total Recv	0.00007	J	0.00006	0.0002	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Sodium	Dissolved	49		0.02	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Sodium	Total Recv	46		0.1	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Sulfate	Total	523		0.1	1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.85	J	0.02	0.05	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.064		0.001	0.003	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Total suspended solids	NA	6	D	0.3	2	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Uranium	Dissolved	0.0034		0.00002	0.0002	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Uranium	Total Recv	0.0036		0.00003	0.0002	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Vanadium	Dissolved	0.0021	J	0.0001	0.1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Vanadium	Total Recv	0.0029	J	0.0001	0.1	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Zinc	Dissolved	0.03	B	0.001	0.008	mg/l
SS-07	8-Jun-22	16:45	S-ROUTINE	Zinc	Total Recv	0.026		0.001	0.008	mg/l
SS-07-0.0	8-Jun-22	16:45	S-ROUTINE	Copper	Total Recv	0.008		0.0003	0.001	mg/l
SS-07-0.5	8-Jun-22	17:50	S-ROUTINE	Copper	Total Recv	0.008		0.0003	0.001	mg/l
SS-07-1.0	8-Jun-22	18:10	S-ROUTINE	Copper	Total Recv	0.008		0.0003	0.001	mg/l
SS-07-1.5	8-Jun-22	18:20	S-ROUTINE	Copper	Total Recv	0.009		0.0003	0.001	mg/l
SS-07-2.0	8-Jun-22	18:30	S-ROUTINE	Copper	Total Recv	0.012		0.0003	0.001	mg/l
SS-07-2.5	8-Jun-22	18:40	S-ROUTINE	Copper	Total Recv	0.012		0.0003	0.001	mg/l
SS-07-3.0	8-Jun-22	18:48	S-ROUTINE	Copper	Total Recv	0.012		0.0003	0.001	mg/l
SS-07-3.5	8-Jun-22	18:55	S-ROUTINE	Copper	Total Recv	0.021		0.0003	0.001	mg/l
SS-07-4.0	8-Jun-22	19:05	S-ROUTINE	Copper	Total Recv	0.022		0.0003	0.001	mg/l
SS-07-4.5	8-Jun-22	19:12	S-ROUTINE	Copper	Total Recv	0.022		0.0003	0.001	mg/l
SS-07-5.0	8-Jun-22	19:20	S-ROUTINE	Copper	Total Recv	0.021		0.0003	0.001	mg/l
SS-07-5.2	8-Jun-22	19:25	S-ROUTINE	Copper	Total Recv	0.022		0.0003	0.001	mg/l
SS-10A	16-Mar-22	15:00	F-MSR/OBS	Dissolved oxygen (DO)	NA	10.2				mg/l
SS-10A	16-Mar-22	15:00	F-MSR/OBS	Dissolved oxygen saturation	NA	101				%
SS-10A	16-Mar-22	15:00	F-MSR/OBS	Flow	NA	31.22				ft3/sec
SS-10A	16-Mar-22	15:00	F-MSR/OBS	pH	NA	7.78				None
SS-10A	16-Mar-22	15:00	F-MSR/OBS	Specific conductance	NA	1482				uS/cm
SS-10A	16-Mar-22	15:00	F-MSR/OBS	Turbidity	NA	4.5				NTU
SS-10A	16-Mar-22	15:00	F-MSR/OBS	Water Temperature	NA	6.4				deg C
SS-10A	16-Mar-22	14:45	S-ROUTINE	Alkalinity, total	Total	73		2	4	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Aluminum	Dissolved	0.018		0.003	0.009	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Aluminum	Total Recv	0.186		0.006	0.009	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-10A	16-Mar-22	14:45	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	16-Mar-22	14:45	S-ROUTINE	Barium	Dissolved	0.04		0.0002	0.003	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Barium	Total Recv	0.042		0.0002	0.003	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-10A	16-Mar-22	14:45	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-10A	16-Mar-22	14:45	S-ROUTINE	Bicarbonate	Total	88		3	4	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Boron	Dissolved	0.058	J	0.004	0.1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Boron	Total Recv	0.061	J	0.007	0.1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Cadmium	Dissolved	0.00022		0.00002	0.00003	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Cadmium	Total Recv	0.00029		0.00002	0.00003	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Calcium	Dissolved	234		0.1	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Calcium	Total Recv	245		0.1	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Chloride	Total	36		0.05	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Chromium	Total Recv	0.0004	J	0.0002	0.01	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-10A	16-Mar-22	14:45	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-10A	16-Mar-22	14:45	S-ROUTINE	Copper	Dissolved	0.009		0.0001	0.001	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Copper	Total Recv	0.022		0.0003	0.001	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Hardness, Ca, Mg	NA	671		1	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Iron	Dissolved	0.02		0.004	0.02	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Iron	Total Recv	0.35		0.009	0.02	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Lead	Dissolved	0.0009	B	0.0001	0.0003	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Lead	Total Recv	0.0023		0.0001	0.0003	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Magnesium	Dissolved	14		0.02	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Manganese	Dissolved	0.116		0.0003	0.001	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Manganese	Total Recv	0.141		0.0003	0.001	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Mercury	Dissolved	0.006		0.002	0.005	ug/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Mercury	Total Recv	0.015		0.002	0.005	ug/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Molybdenum	Dissolved	0.33		0.0003	0.005	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Molybdenum	Total Recv	0.328		0.0002	0.005	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Nickel	Dissolved	0.0005	J	0.0002	0.002	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Nickel	Total Recv	0.0007	J	0.0002	0.002	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.73		0.02	0.02	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Potassium	Dissolved	17		0.06	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Potassium	Total Recv	16		0.1	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-10A	16-Mar-22	14:45	S-ROUTINE	Silver	Total Recv	0.00008	J	0.00006	0.0002	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Sodium	Dissolved	55		0.02	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	16-Mar-22	14:45	S-ROUTINE	Sodium	Total Recv	54		0.1	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Sulfate	Total	675		0.1	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.05		0.03	0.05	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.054		0.001	0.003	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Total suspended solids	NA	10		0.8	1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Uranium	Dissolved	0.0038		0.00002	0.0002	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Uranium	Total Recv	0.0039		0.00003	0.0002	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Vanadium	Dissolved	0.0022	J	0.0001	0.1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Vanadium	Total Recv	0.0031	J	0.0001	0.1	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Zinc	Dissolved	0.048		0.001	0.008	mg/l
SS-10A	16-Mar-22	14:45	S-ROUTINE	Zinc	Total Recv	0.066		0.001	0.008	mg/l
SS-10A	8-Jun-22	15:00	F-MSR/OBS	Dissolved oxygen (DO)	NA	11.3				mg/l
SS-10A	8-Jun-22	15:00	F-MSR/OBS	Dissolved oxygen saturation	NA	107				%
SS-10A	8-Jun-22	15:00	F-MSR/OBS	Flow	NA	44.86				ft3/sec
SS-10A	8-Jun-22	15:00	F-MSR/OBS	pH	NA	8.32				None
SS-10A	8-Jun-22	15:00	F-MSR/OBS	Specific conductance	NA	1403				uS/cm
SS-10A	8-Jun-22	15:00	F-MSR/OBS	Turbidity	NA	3.7				NTU
SS-10A	8-Jun-22	15:00	F-MSR/OBS	Water Temperature	NA	12.7				deg C
SS-10A	8-Jun-22	15:00	S-ROUTINE	Alkalinity, total	Total	72		2	4	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Aluminum	Dissolved	0.013		0.003	0.009	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Aluminum	Total Recv	0.147		0.006	0.009	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-10A	8-Jun-22	15:00	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Arsenic	Total Recv	0.005		0.0001	0.001	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Barium	Dissolved	0.052		0.0002	0.003	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Barium	Total Recv	0.04		0.0002	0.003	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-10A	8-Jun-22	15:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-10A	8-Jun-22	15:00	S-ROUTINE	Bicarbonate	Total	87		3	4	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Boron	Dissolved	0.03	J	0.004	0.1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Boron	Total Recv	0.047	J	0.007	0.1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Cadmium	Dissolved	0.00024		0.00002	0.00003	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Cadmium	Total Recv	0.00028		0.00003	0.00003	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Calcium	Dissolved	249		0.1	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Calcium	Total Recv	253		0.1	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Chloride	Total	26		0.05	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Chromium	Total Recv	0.0004	J	0.0002	0.01	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	8-Jun-22	15:00	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-10A	8-Jun-22	15:00	S-ROUTINE	Copper	Dissolved	0.012		0.0001	0.001	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Copper	Total Recv	0.019		0.0003	0.001	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Hardness, Ca, Mg	NA	685		1	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Iron	Dissolved	0.04		0.004	0.02	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Iron	Total Recv	0.34		0.009	0.02	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Lead	Dissolved	0.0002	J	0.0001	0.0003	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Lead	Total Recv	0.0015		0.0001	0.0003	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Magnesium	Dissolved	13		0.02	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Manganese	Dissolved	0.125		0.0003	0.001	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Manganese	Total Recv	0.143		0.0003	0.001	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Mercury	Dissolved	0.005		0.001	0.005	ug/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Mercury	Total Recv	0.012		0.001	0.005	ug/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Molybdenum	Dissolved	0.327		0.0003	0.005	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Molybdenum	Total Recv	0.334		0.0002	0.005	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Nickel	Dissolved	0.0004	J	0.0002	0.002	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Nickel	Total Recv	0.0005	J	0.0002	0.002	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.45		0.008	0.02	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Potassium	Dissolved	17		0.06	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Potassium	Total Recv	17		0.1	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-10A	8-Jun-22	15:00	S-ROUTINE	Silver	Total Recv	0.00007	J	0.00006	0.0002	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Sodium	Dissolved	56		0.02	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Sodium	Total Recv	55		0.1	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Sulfate	Total	639		0.1	1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.71	J	0.02	0.05	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.059		0.001	0.003	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Total suspended solids	NA	6	D	0.3	2	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Uranium	Dissolved	0.0044		0.00002	0.0002	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Uranium	Total Recv	0.0046		0.00003	0.0002	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Vanadium	Dissolved	0.0022	J	0.0001	0.1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Vanadium	Total Recv	0.0031	J	0.0001	0.1	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Zinc	Dissolved	0.031	B	0.001	0.008	mg/l
SS-10A	8-Jun-22	15:00	S-ROUTINE	Zinc	Total Recv	0.044		0.001	0.008	mg/l
SS-13	16-Mar-22	13:50	F-MSR/OBS	Dissolved oxygen (DO)	NA	11.7				mg/l
SS-13	16-Mar-22	13:50	F-MSR/OBS	Dissolved oxygen saturation	NA	109				%
SS-13	16-Mar-22	13:50	F-MSR/OBS	Flow	NA	39.12				ft3/sec
SS-13	16-Mar-22	13:50	F-MSR/OBS	pH	NA	7.55				None

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	16-Mar-22	13:50	F-MSR/OBS	Specific conductance	NA	1260				uS/cm
SS-13	16-Mar-22	13:50	F-MSR/OBS	Turbidity	NA	7.6				NTU
SS-13	16-Mar-22	13:50	F-MSR/OBS	Water Temperature	NA	4				deg C
SS-13	16-Mar-22	13:50	S-ROUTINE	Alkalinity, total	Total	86		2	4	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Aluminum	Dissolved	0.005	J	0.003	0.009	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Aluminum	Total Recv	0.27		0.006	0.009	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Ammonia	Unfiltered	0.06		0.03	0.05	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Arsenic	Total Recv	0.005		0.0001	0.001	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Barium	Dissolved	0.042		0.0002	0.003	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Barium	Total Recv	0.046		0.0002	0.003	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-13	16-Mar-22	13:50	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-13	16-Mar-22	13:50	S-ROUTINE	Bicarbonate	Total	100		3	4	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Boron	Dissolved	0.066	J	0.004	0.1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Boron	Total Recv	0.067	J	0.007	0.1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Cadmium	Dissolved	0.00018		0.00002	0.00003	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Cadmium	Total Recv	0.00033		0.00003	0.00003	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Calcium	Dissolved	188		0.1	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Calcium	Total Recv	189		0.1	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Chloride	Total	55		0.05	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-13	16-Mar-22	13:50	S-ROUTINE	Chromium	Total Recv	0.0004	J	0.0002	0.01	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-13	16-Mar-22	13:50	S-ROUTINE	Cobalt	Total Recv	0.0004	J	0.0003	0.01	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Copper	Total Recv	0.02		0.0003	0.001	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Hardness, Ca, Mg	NA	531		1	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Iron	Dissolved	0.03		0.004	0.02	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Iron	Total Recv	0.39		0.009	0.02	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Lead	Dissolved	0.0009	B	0.0001	0.0003	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Lead	Total Recv	0.002		0.0001	0.0003	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Magnesium	Dissolved	14		0.02	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Manganese	Dissolved	0.174		0.0003	0.001	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Manganese	Total Recv	0.205		0.0003	0.001	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Mercury	Dissolved	0.007		0.002	0.005	ug/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Mercury	Total Recv	0.015		0.002	0.005	ug/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Molybdenum	Dissolved	0.226		0.0003	0.005	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	16-Mar-22	13:50	S-ROUTINE	Molybdenum	Total Recv	0.222		0.0002	0.005	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Nickel	Dissolved	0.0008	J	0.0002	0.002	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Nickel	Total Recv	0.0009	J	0.0002	0.002	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.65		0.008	0.02	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Potassium	Dissolved	14		0.06	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Potassium	Total Recv	14		0.1	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-13	16-Mar-22	13:50	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-13	16-Mar-22	13:50	S-ROUTINE	Sodium	Dissolved	49		0.02	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Sodium	Total Recv	48		0.1	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Sulfate	Total	497		0.1	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.15		0.03	0.05	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.1		0.001	0.003	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Total suspended solids	NA	12		0.8	1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Uranium	Dissolved	0.0038		0.00002	0.0002	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Uranium	Total Recv	0.0038		0.00003	0.0002	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Vanadium	Dissolved	0.0018	J	0.0001	0.1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Vanadium	Total Recv	0.0029	J	0.0001	0.1	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Zinc	Dissolved	0.065		0.001	0.008	mg/l
SS-13	16-Mar-22	13:50	S-ROUTINE	Zinc	Total Recv	0.085		0.001	0.008	mg/l
SS-13	8-Jun-22	14:20	F-MSR/OBS	Dissolved oxygen (DO)	NA	11.2				mg/l
SS-13	8-Jun-22	14:20	F-MSR/OBS	Dissolved oxygen saturation	NA	103				%
SS-13	8-Jun-22	14:20	F-MSR/OBS	Flow	NA	51.25				ft3/sec
SS-13	8-Jun-22	14:20	F-MSR/OBS	pH	NA	8.17				None
SS-13	8-Jun-22	14:20	F-MSR/OBS	Specific conductance	NA	1375				uS/cm
SS-13	8-Jun-22	14:20	F-MSR/OBS	Turbidity	NA	4.1				NTU
SS-13	8-Jun-22	14:20	F-MSR/OBS	Water Temperature	NA	11.8				deg C
SS-13	8-Jun-22	14:20	S-ROUTINE	Alkalinity, total	Total	82		2	4	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Aluminum	Dissolved	0.007	J	0.003	0.009	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Aluminum	Total Recv	0.172		0.006	0.009	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-13	8-Jun-22	14:20	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Arsenic	Total Recv	0.008		0.0001	0.001	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Barium	Dissolved	0.056		0.0002	0.003	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Barium	Total Recv	0.045		0.0002	0.003	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-13	8-Jun-22	14:20	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	8-Jun-22	14:20	S-ROUTINE	Bicarbonate	Total	100		3	4	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Boron	Dissolved	0.027	J	0.004	0.1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Boron	Total Recv	0.04	J	0.007	0.1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Cadmium	Dissolved	0.00017		0.00002	0.00003	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Cadmium	Total Recv	0.00028		0.00003	0.00003	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Calcium	Dissolved	231		0.1	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Calcium	Total Recv	239		0.1	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Chloride	Total	30		0.05	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Chromium	Total Recv	0.0003	J	0.0002	0.01	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-13	8-Jun-22	14:20	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-13	8-Jun-22	14:20	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Copper	Total Recv	0.014		0.0003	0.001	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Hardness, Ca, Mg	NA	651		1	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Iron	Dissolved	0.04		0.004	0.02	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Iron	Total Recv	0.32		0.009	0.02	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Lead	Dissolved	0.0002	J	0.0001	0.0003	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Lead	Total Recv	0.0013		0.0001	0.0003	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Magnesium	Dissolved	13		0.02	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Manganese	Dissolved	0.161		0.0003	0.001	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Manganese	Total Recv	0.188		0.0003	0.001	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Mercury	Dissolved	0.007		0.001	0.005	ug/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Mercury	Total Recv	0.013		0.001	0.005	ug/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Molybdenum	Dissolved	0.28		0.0003	0.005	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Molybdenum	Total Recv	0.291		0.0002	0.005	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Nickel	Dissolved	0.0006	J	0.0002	0.002	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Nickel	Total Recv	0.0007	J	0.0002	0.002	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.36		0.008	0.02	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Potassium	Dissolved	15		0.06	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Potassium	Total Recv	15		0.1	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-13	8-Jun-22	14:20	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-13	8-Jun-22	14:20	S-ROUTINE	Sodium	Dissolved	52		0.02	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Sodium	Total Recv	52		0.1	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Sulfate	Total	583		0.1	1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.68	J	0.02	0.05	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.085		0.001	0.003	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	8-Jun-22	14:20	S-ROUTINE	Total suspended solids	NA	6	D	0.3	2	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Uranium	Dissolved	0.0042		0.00002	0.0002	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Uranium	Total Recv	0.0044		0.00003	0.0002	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Vanadium	Dissolved	0.0021	J	0.0001	0.1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Vanadium	Total Recv	0.0028	J	0.0001	0.1	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Zinc	Dissolved	0.032	B	0.001	0.008	mg/l
SS-13	8-Jun-22	14:20	S-ROUTINE	Zinc	Total Recv	0.044		0.001	0.008	mg/l
SS-14	16-Mar-22	13:00	F-MSR/OBS	Dissolved oxygen (DO)	NA	11.1				mg/l
SS-14	16-Mar-22	13:00	F-MSR/OBS	Dissolved oxygen saturation	NA	103				%
SS-14	16-Mar-22	13:00	F-MSR/OBS	Flow	NA	36.23				ft3/sec
SS-14	16-Mar-22	13:00	F-MSR/OBS	pH	NA	7.56				None
SS-14	16-Mar-22	13:00	F-MSR/OBS	Specific conductance	NA	1252				uS/cm
SS-14	16-Mar-22	13:00	F-MSR/OBS	Turbidity	NA	7.6				NTU
SS-14	16-Mar-22	13:00	F-MSR/OBS	Water Temperature	NA	3.9				deg C
SS-14	16-Mar-22	13:00	S-ROUTINE	Alkalinity, total	Total	86		2	4	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Aluminum	Dissolved	0.005	J	0.003	0.009	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Aluminum	Total Recv	0.337		0.006	0.009	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Ammonia	Unfiltered	0.07		0.03	0.05	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Arsenic	Total Recv	0.006		0.0001	0.001	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Barium	Dissolved	0.044		0.0002	0.003	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Barium	Total Recv	0.049		0.0002	0.003	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-14	16-Mar-22	13:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-14	16-Mar-22	13:00	S-ROUTINE	Bicarbonate	Total	100		3	4	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Boron	Dissolved	0.076	J	0.004	0.1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Boron	Total Recv	0.076	J	0.007	0.1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Cadmium	Dissolved	0.00019		0.00002	0.00003	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Cadmium	Total Recv	0.00036		0.00002	0.00003	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Calcium	Dissolved	187		0.1	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Calcium	Total Recv	187		0.1	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Chloride	Total	62		0.05	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-14	16-Mar-22	13:00	S-ROUTINE	Chromium	Total Recv	0.0005	J	0.0002	0.01	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-14	16-Mar-22	13:00	S-ROUTINE	Cobalt	Total Recv	0.0004	J	0.0003	0.01	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Copper	Total Recv	0.023		0.0003	0.001	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Hardness, Ca, Mg	NA	529		1	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	16-Mar-22	13:00	S-ROUTINE	Iron	Dissolved	0.03		0.004	0.02	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Iron	Total Recv	0.49		0.009	0.02	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Lead	Dissolved	0.0009	B	0.0001	0.0003	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Lead	Total Recv	0.0025		0.0001	0.0003	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Magnesium	Dissolved	15		0.02	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Magnesium	Total Recv	15		0.05	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Manganese	Dissolved	0.183		0.0003	0.001	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Manganese	Total Recv	0.221		0.0003	0.001	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Mercury	Dissolved	0.005		0.002	0.005	ug/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Mercury	Total Recv	0.018		0.002	0.005	ug/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Molybdenum	Dissolved	0.221		0.0003	0.005	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Molybdenum	Total Recv	0.217		0.0002	0.005	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Nickel	Total Recv	0.001	J	0.0002	0.002	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.67		0.008	0.02	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Potassium	Dissolved	14		0.06	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Potassium	Total Recv	14		0.1	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Selenium	Total Recv	0.001	J	0.0001	0.001	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-14	16-Mar-22	13:00	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-14	16-Mar-22	13:00	S-ROUTINE	Sodium	Dissolved	50		0.02	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Sodium	Total Recv	50		0.1	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Sulfate	Total	487		0.1	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.21		0.03	0.05	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.104		0.001	0.003	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Total suspended solids	NA	16		0.8	1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Uranium	Dissolved	0.0038		0.00002	0.0002	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Uranium	Total Recv	0.0038		0.00003	0.0002	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Vanadium	Dissolved	0.002	J	0.0001	0.1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Vanadium	Total Recv	0.0031	J	0.0001	0.1	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Zinc	Dissolved	0.071		0.001	0.008	mg/l
SS-14	16-Mar-22	13:00	S-ROUTINE	Zinc	Total Recv	0.098		0.001	0.008	mg/l
SS-14	8-Jun-22	13:45	F-MSR/OBS	Dissolved oxygen (DO)	NA	10.7				mg/l
SS-14	8-Jun-22	13:45	F-MSR/OBS	Dissolved oxygen saturation	NA	99				%
SS-14	8-Jun-22	13:45	F-MSR/OBS	Flow	NA	50.73				ft3/sec
SS-14	8-Jun-22	13:45	F-MSR/OBS	pH	NA	8.1				None
SS-14	8-Jun-22	13:45	F-MSR/OBS	Specific conductance	NA	1363				uS/cm
SS-14	8-Jun-22	13:45	F-MSR/OBS	Turbidity	NA	3.8				NTU
SS-14	8-Jun-22	13:45	F-MSR/OBS	Water Temperature	NA	11.3				deg C
SS-14	8-Jun-22	13:45	S-ROUTINE	Alkalinity, total	Total	83		2	4	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	8-Jun-22	13:45	S-ROUTINE	Aluminum	Dissolved	0.007	J	0.003	0.009	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Aluminum	Total Recv	0.177		0.006	0.009	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-14	8-Jun-22	13:45	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Arsenic	Total Recv	0.008		0.0001	0.001	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Barium	Dissolved	0.053		0.0002	0.003	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Barium	Total Recv	0.047		0.0002	0.003	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-14	8-Jun-22	13:45	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-14	8-Jun-22	13:45	S-ROUTINE	Bicarbonate	Total	100		3	4	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Boron	Dissolved	0.03	J	0.004	0.1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Boron	Total Recv	0.043	J	0.007	0.1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Cadmium	Dissolved	0.00017		0.00002	0.00003	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Cadmium	Total Recv	0.00031		0.00003	0.00003	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Calcium	Dissolved	231		0.1	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Calcium	Total Recv	232		0.1	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Chloride	Total	31		0.05	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Chromium	Total Recv	0.0004	J	0.0002	0.01	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-14	8-Jun-22	13:45	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-14	8-Jun-22	13:45	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Copper	Total Recv	0.015		0.0003	0.001	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Hardness, Ca, Mg	NA	633		1	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Iron	Dissolved	0.04		0.004	0.02	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Iron	Total Recv	0.33		0.009	0.02	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Lead	Dissolved	0.0002	J	0.0001	0.0003	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Lead	Total Recv	0.0014		0.0001	0.0003	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Magnesium	Dissolved	13		0.02	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Manganese	Dissolved	0.169		0.0003	0.001	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Manganese	Total Recv	0.198		0.0003	0.001	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Mercury	Dissolved	0.01		0.001	0.005	ug/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Mercury	Total Recv	0.014		0.001	0.005	ug/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Molybdenum	Dissolved	0.275		0.0003	0.005	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Molybdenum	Total Recv	0.294		0.0002	0.005	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Nickel	Total Recv	0.0008	J	0.0002	0.002	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.34		0.008	0.02	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	8-Jun-22	13:45	S-ROUTINE	Potassium	Dissolved	15		0.06	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Potassium	Total Recv	15		0.1	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-14	8-Jun-22	13:45	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-14	8-Jun-22	13:45	S-ROUTINE	Sodium	Dissolved	52		0.02	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Sodium	Total Recv	52		0.1	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Sulfate	Total	573		0.1	1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.68	J	0.02	0.05	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.086		0.001	0.003	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Total suspended solids	NA	7	D	0.3	2	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Uranium	Dissolved	0.0041		0.00002	0.0002	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Uranium	Total Recv	0.0044		0.00003	0.0002	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Vanadium	Dissolved	0.0021	J	0.0001	0.1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Vanadium	Total Recv	0.0028	J	0.0001	0.1	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Zinc	Dissolved	0.042	B	0.001	0.008	mg/l
SS-14	8-Jun-22	13:45	S-ROUTINE	Zinc	Total Recv	0.054		0.001	0.008	mg/l
SS-15A-2	16-Mar-22	12:00	F-MSR/OBS	Dissolved oxygen (DO)	NA	12.7				mg/l
SS-15A-2	16-Mar-22	12:00	F-MSR/OBS	Dissolved oxygen saturation	NA	115				%
SS-15A-2	16-Mar-22	12:00	F-MSR/OBS	Flow	NA	48.63				ft3/sec
SS-15A-2	16-Mar-22	12:00	F-MSR/OBS	pH	NA	7.82				None
SS-15A-2	16-Mar-22	12:00	F-MSR/OBS	Specific conductance	NA	1216				uS/cm
SS-15A-2	16-Mar-22	12:00	F-MSR/OBS	Turbidity	NA	15.2				NTU
SS-15A-2	16-Mar-22	12:00	F-MSR/OBS	Water Temperature	NA	3.1				deg C
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Alkalinity, total	Total	92		2	4	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Aluminum	Total Recv	0.51		0.006	0.009	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Ammonia	Unfiltered	0.05		0.03	0.05	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Arsenic	Total Recv	0.006		0.0001	0.001	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Barium	Dissolved	0.039		0.0002	0.003	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Barium	Total Recv	0.048		0.0002	0.003	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Bicarbonate	Total	110		3	4	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Boron	Dissolved	0.082	J	0.004	0.1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Boron	Total Recv	0.084	J	0.007	0.1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Cadmium	Dissolved	0.00018		0.00002	0.00003	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Cadmium	Total Recv	0.00048		0.00002	0.00003	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Calcium	Dissolved	170		0.1	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Calcium	Total Recv	169		0.1	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Chloride	Total	71		0.05	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Chromium	Total Recv	0.0007	J	0.0002	0.01	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Cobalt	Total Recv	0.0006	J	0.0003	0.01	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Copper	Total Recv	0.034		0.0003	0.001	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Hardness, Ca, Mg	NA	487		1	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Iron	Dissolved	0.02		0.004	0.02	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Iron	Total Recv	0.72		0.009	0.02	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Lead	Dissolved	0.0009	B	0.0001	0.0003	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Lead	Total Recv	0.0042		0.0001	0.0003	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Magnesium	Dissolved	15		0.02	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Magnesium	Total Recv	15		0.05	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Manganese	Dissolved	0.312		0.0003	0.001	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Manganese	Total Recv	0.317		0.0003	0.001	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Mercury	Dissolved	0.005		0.002	0.005	ug/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Mercury	Total Recv	0.03		0.002	0.005	ug/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Molybdenum	Dissolved	0.19		0.0003	0.005	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Molybdenum	Total Recv	0.188		0.0002	0.005	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Nickel	Dissolved	0.0008	J	0.0002	0.002	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Nickel	Total Recv	0.0011	J	0.0002	0.002	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.82		0.02	0.02	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Potassium	Dissolved	13		0.06	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Potassium	Total Recv	13		0.1	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Selenium	Dissolved	0.00095	J	0.00007	0.001	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Selenium	Total Recv	0.0009	J	0.0001	0.001	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Sodium	Dissolved	51		0.02	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Sodium	Total Recv	50		0.1	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Sulfate	Total	424		0.1	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.36		0.03	0.05	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.115		0.001	0.003	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Total suspended solids	NA	26		0.8	1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Uranium	Dissolved	0.0041		0.00002	0.0002	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Uranium	Total Recv	0.0042		0.00003	0.0002	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Vanadium	Dissolved	0.0019	J	0.0001	0.1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Vanadium	Total Recv	0.0035	J	0.0001	0.1	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Zinc	Dissolved	0.078		0.001	0.008	mg/l
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Zinc	Total Recv	0.132		0.001	0.008	mg/l
SS-15A-2	8-Jun-22	12:40	F-MSR/OBS	Dissolved oxygen (DO)	NA	10.4				mg/l
SS-15A-2	8-Jun-22	12:40	F-MSR/OBS	Dissolved oxygen saturation	NA	95				%
SS-15A-2	8-Jun-22	12:40	F-MSR/OBS	Flow	NA	59.98				ft3/sec
SS-15A-2	8-Jun-22	12:40	F-MSR/OBS	pH	NA	8.16				None
SS-15A-2	8-Jun-22	12:40	F-MSR/OBS	Specific conductance	NA	1320				uS/cm
SS-15A-2	8-Jun-22	12:40	F-MSR/OBS	Turbidity	NA	6.2				NTU
SS-15A-2	8-Jun-22	12:40	F-MSR/OBS	Water Temperature	NA	11				deg C
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Alkalinity, total	Total	86		2	4	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Aluminum	Dissolved	0.003	J	0.003	0.009	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Aluminum	Total Recv	0.292		0.006	0.009	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Arsenic	Dissolved	0.006		0.0002	0.001	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Arsenic	Total Recv	0.008		0.0001	0.001	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Barium	Dissolved	0.054		0.0002	0.003	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Barium	Total Recv	0.049		0.0002	0.003	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Bicarbonate	Total	100		3	4	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Boron	Dissolved	0.034	J	0.004	0.1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Boron	Total Recv	0.054	J	0.007	0.1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Cadmium	Dissolved	0.00016		0.00002	0.00003	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Cadmium	Total Recv	0.00035		0.00003	0.00003	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Calcium	Dissolved	222		0.1	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Calcium	Total Recv	223		0.1	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Chloride	Total	31		0.05	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Chromium	Total Recv	0.0006	J	0.0002	0.01	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Cobalt	Total Recv	0.0004	J	0.0003	0.01	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Copper	Total Recv	0.021		0.0003	0.001	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Hardness, Ca, Mg	NA	609		1	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Iron	Dissolved	0.04		0.004	0.02	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Iron	Total Recv	0.47		0.009	0.02	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Lead	Total Recv	0.0026		0.0001	0.0003	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Magnesium	Dissolved	13		0.02	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Manganese	Dissolved	0.224		0.0003	0.001	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Manganese	Total Recv	0.298		0.0003	0.001	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Mercury	Dissolved	0.006		0.001	0.005	ug/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Mercury	Total Recv	0.018		0.001	0.005	ug/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Molybdenum	Dissolved	0.255		0.0003	0.005	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Molybdenum	Total Recv	0.265		0.0002	0.005	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Nickel	Total Recv	0.0009	J	0.0002	0.002	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.29		0.008	0.02	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Potassium	Dissolved	14		0.06	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Potassium	Total Recv	14		0.1	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Silver	Total Recv	0.00007	J	0.00006	0.0002	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Sodium	Dissolved	50		0.02	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Sodium	Total Recv	50		0.1	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Sulfate	Total	548		0.1	1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.63	J	0.02	0.05	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.087		0.001	0.003	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Total suspended solids	NA	12	D	0.3	2	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Uranium	Dissolved	0.004		0.00002	0.0002	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Uranium	Total Recv	0.0042		0.00003	0.0002	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Vanadium	Dissolved	0.002	J	0.0001	0.1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Vanadium	Total Recv	0.003	J	0.0001	0.1	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Zinc	Dissolved	0.048	B	0.001	0.008	mg/l
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Zinc	Total Recv	0.078		0.001	0.008	mg/l
SS-16B	16-Mar-22	10:30	F-MSR/OBS	Dissolved oxygen (DO)	NA	12.8				mg/l
SS-16B	16-Mar-22	10:30	F-MSR/OBS	Dissolved oxygen saturation	NA	113				%
SS-16B	16-Mar-22	10:30	F-MSR/OBS	Flow	NA	53.55				ft3/sec
SS-16B	16-Mar-22	10:30	F-MSR/OBS	pH	NA	7.66				None
SS-16B	16-Mar-22	10:30	F-MSR/OBS	Specific conductance	NA	1146				uS/cm
SS-16B	16-Mar-22	10:30	F-MSR/OBS	Turbidity	NA	14.3				NTU
SS-16B	16-Mar-22	10:30	F-MSR/OBS	Water Temperature	NA	2.4				deg C
SS-16B	16-Mar-22	10:30	S-ROUTINE	Alkalinity, total	Total	88		2	4	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-16B	16-Mar-22	10:30	S-ROUTINE	Aluminum	Total Recv	0.606		0.006	0.009	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Ammonia	Unfiltered	0.05	J	0.03	0.05	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	16-Mar-22	10:30	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Arsenic	Total Recv	0.006		0.0001	0.001	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Barium	Dissolved	0.041		0.0002	0.003	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Barium	Total Recv	0.052		0.0002	0.003	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-16B	16-Mar-22	10:30	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-16B	16-Mar-22	10:30	S-ROUTINE	Bicarbonate	Total	110		3	4	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Boron	Dissolved	0.06	J	0.004	0.1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Boron	Total Recv	0.066	J	0.007	0.1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Cadmium	Dissolved	0.00018		0.00002	0.00003	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Cadmium	Total Recv	0.0005		0.00003	0.00003	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Calcium	Dissolved	168		0.1	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Calcium	Total Recv	171		0.1	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Chloride	Total	50		0.05	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-16B	16-Mar-22	10:30	S-ROUTINE	Chromium	Total Recv	0.0007	J	0.0002	0.01	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-16B	16-Mar-22	10:30	S-ROUTINE	Cobalt	Total Recv	0.0007	J	0.0003	0.01	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Copper	Dissolved	0.006		0.0001	0.001	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Copper	Total Recv	0.033		0.0003	0.001	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Hardness, Ca, Mg	NA	486		1	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Iron	Dissolved	0.02	J	0.004	0.02	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Iron	Total Recv	0.78		0.009	0.02	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Lead	Dissolved	0.0008	B	0.0001	0.0003	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Lead	Total Recv	0.0044		0.0001	0.0003	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Magnesium	Dissolved	14		0.02	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Manganese	Dissolved	0.192		0.0003	0.001	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Manganese	Total Recv	0.311		0.0003	0.001	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Mercury	Dissolved	0.004	J	0.002	0.005	ug/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Mercury	Total Recv	0.027		0.002	0.005	ug/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Molybdenum	Dissolved	0.194		0.0003	0.005	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Molybdenum	Total Recv	0.195		0.0002	0.005	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Nickel	Total Recv	0.0011	J	0.0002	0.002	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.74		0.008	0.02	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Potassium	Dissolved	12		0.06	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Potassium	Total Recv	13		0.1	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Selenium	Dissolved	0.00096	J	0.00007	0.001	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Selenium	Total Recv	0.0009	J	0.0001	0.001	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	16-Mar-22	10:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-16B	16-Mar-22	10:30	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-16B	16-Mar-22	10:30	S-ROUTINE	Sodium	Dissolved	43		0.02	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Sodium	Total Recv	44		0.1	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Sulfate	Total	437		0.1	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.23		0.03	0.05	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.118		0.001	0.003	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Total suspended solids	NA	28		0.8	1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Uranium	Dissolved	0.0036		0.00002	0.0002	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Uranium	Total Recv	0.0037		0.00003	0.0002	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Vanadium	Dissolved	0.0018	J	0.0001	0.1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Vanadium	Total Recv	0.0035	J	0.0001	0.1	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Zinc	Dissolved	0.079		0.001	0.008	mg/l
SS-16B	16-Mar-22	10:30	S-ROUTINE	Zinc	Total Recv	0.13		0.001	0.008	mg/l
SS-16B	8-Jun-22	11:30	F-MSR/OBS	Dissolved oxygen (DO)	NA	10.9				mg/l
SS-16B	8-Jun-22	11:30	F-MSR/OBS	Dissolved oxygen saturation	NA	93				%
SS-16B	8-Jun-22	11:30	F-MSR/OBS	Flow	NA	119.53				ft3/sec
SS-16B	8-Jun-22	11:30	F-MSR/OBS	pH	NA	8.15				None
SS-16B	8-Jun-22	11:30	F-MSR/OBS	Specific conductance	NA	693.6				uS/cm
SS-16B	8-Jun-22	11:30	F-MSR/OBS	Turbidity	NA	6				NTU
SS-16B	8-Jun-22	11:30	F-MSR/OBS	Water Temperature	NA	8.4				deg C
SS-16B	8-Jun-22	11:30	S-ROUTINE	Alkalinity, total	Total	83		2	4	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Aluminum	Dissolved	0.006	J	0.003	0.009	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Aluminum	Total Recv	0.336		0.006	0.009	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-16B	8-Jun-22	11:30	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Arsenic	Total Recv	0.006		0.0001	0.001	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Barium	Dissolved	0.042		0.0002	0.003	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Barium	Total Recv	0.03		0.0002	0.003	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-16B	8-Jun-22	11:30	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-16B	8-Jun-22	11:30	S-ROUTINE	Bicarbonate	Total	100		3	4	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Boron	Dissolved	0.013	J	0.004	0.1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Boron	Total Recv	0.028	J	0.007	0.1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Cadmium	Dissolved	0.00008		0.00002	0.00003	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Cadmium	Total Recv	0.00021		0.00003	0.00003	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Calcium	Dissolved	109		0.1	1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Calcium	Total Recv	108		0.1	1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Chloride	Total	15		0.02	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	8-Jun-22	11:30	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Chromium	Total Recv	0.0004	J	0.0002	0.01	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-16B	8-Jun-22	11:30	S-ROUTINE	Cobalt	Total Recv	0.0008	J	0.0003	0.01	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Copper	Dissolved	0.005		0.0001	0.001	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Copper	Total Recv	0.014		0.0003	0.001	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Hardness, Ca, Mg	NA	304		1	1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Iron	Dissolved	0.03		0.004	0.02	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Iron	Total Recv	0.38		0.009	0.02	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-16B	8-Jun-22	11:30	S-ROUTINE	Lead	Total Recv	0.0016		0.0001	0.0003	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Magnesium	Dissolved	8		0.02	1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Magnesium	Total Recv	8		0.05	1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Manganese	Dissolved	0.104		0.0003	0.001	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Manganese	Total Recv	0.154		0.0003	0.001	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Mercury	Dissolved	0.007		0.001	0.005	ug/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Mercury	Total Recv	0.018		0.001	0.005	ug/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Molybdenum	Dissolved	0.103		0.0003	0.005	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Molybdenum	Total Recv	0.108		0.0002	0.005	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Nickel	Dissolved	0.0005	J	0.0002	0.002	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Nickel	Total Recv	0.0006	J	0.0002	0.002	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.13		0.008	0.02	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Potassium	Dissolved	7		0.06	1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Potassium	Total Recv	7		0.1	1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Selenium	Dissolved	0.00096	J	0.00007	0.001	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Selenium	Total Recv	0.0009	J	0.0001	0.001	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-16B	8-Jun-22	11:30	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-16B	8-Jun-22	11:30	S-ROUTINE	Sodium	Dissolved	23		0.02	1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Sodium	Total Recv	25		0.1	1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Sulfate	Total	235		0.06	1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.37	J	0.02	0.05	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.068		0.001	0.003	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Total suspended solids	NA	12	D	0.3	2	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Uranium	Dissolved	0.0021		0.00002	0.0002	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Uranium	Total Recv	0.0022		0.00003	0.0002	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Vanadium	Dissolved	0.0014	J	0.0001	0.1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Vanadium	Total Recv	0.0023	J	0.0001	0.1	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Zinc	Dissolved	0.027	B	0.001	0.008	mg/l
SS-16B	8-Jun-22	11:30	S-ROUTINE	Zinc	Total Recv	0.044		0.001	0.008	mg/l
SS-17D	16-Mar-22	9:45	F-MSR/OBS	Dissolved oxygen (DO)	NA	12.7				mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	16-Mar-22	9:45	F-MSR/OBS	Dissolved oxygen saturation	NA	109				%
SS-17D	16-Mar-22	9:45	F-MSR/OBS	Flow	NA	46.8				ft3/sec
SS-17D	16-Mar-22	9:45	F-MSR/OBS	pH	NA	7.61				None
SS-17D	16-Mar-22	9:45	F-MSR/OBS	Specific conductance	NA	1013				uS/cm
SS-17D	16-Mar-22	9:45	F-MSR/OBS	Turbidity	NA	13				NTU
SS-17D	16-Mar-22	9:45	F-MSR/OBS	Water Temperature	NA	1.8				deg C
SS-17D	16-Mar-22	9:45	S-ROUTINE	Alkalinity, total	Total	89		2	4	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Aluminum	Dissolved	0.045		0.003	0.009	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Aluminum	Total Recv	0.515		0.006	0.009	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Ammonia	Unfiltered	0.1		0.03	0.05	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Arsenic	Total Recv	0.007		0.0001	0.001	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Barium	Dissolved	0.038		0.0002	0.003	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Barium	Total Recv	0.046		0.0002	0.003	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-17D	16-Mar-22	9:45	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-17D	16-Mar-22	9:45	S-ROUTINE	Bicarbonate	Total	110		3	4	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Boron	Dissolved	0.049	J	0.004	0.1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Boron	Total Recv	0.05	J	0.007	0.1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Cadmium	Dissolved	0.00034		0.00002	0.00003	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Cadmium	Total Recv	0.00061		0.00003	0.00003	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Calcium	Dissolved	145		0.1	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Calcium	Total Recv	150		0.1	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Chloride	Total	38		0.05	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Chromium	Total Recv	0.0007	J	0.0002	0.01	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-17D	16-Mar-22	9:45	S-ROUTINE	Cobalt	Total Recv	0.0006	J	0.0003	0.01	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Copper	Dissolved	0.013		0.0001	0.001	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Copper	Total Recv	0.033		0.0003	0.001	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Hardness, Ca, Mg	NA	423		1	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Iron	Dissolved	0.09		0.004	0.02	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Iron	Total Recv	0.72		0.009	0.02	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Lead	Dissolved	0.0015	B	0.0001	0.0003	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Lead	Total Recv	0.0038		0.0001	0.0003	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Magnesium	Dissolved	11		0.02	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Magnesium	Total Recv	12		0.05	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Manganese	Dissolved	0.188		0.0003	0.001	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Manganese	Total Recv	0.317		0.0003	0.001	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	16-Mar-22	9:45	S-ROUTINE	Mercury	Dissolved	0.008		0.002	0.005	ug/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Mercury	Total Recv	0.026		0.002	0.005	ug/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Molybdenum	Dissolved	0.162		0.0003	0.005	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Molybdenum	Total Recv	0.162		0.0002	0.005	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Nickel	Dissolved	0.0008	J	0.0002	0.002	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Nickel	Total Recv	0.0012	J	0.0002	0.002	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.53		0.008	0.02	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Potassium	Dissolved	11		0.06	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Potassium	Total Recv	11		0.1	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Selenium	Dissolved	0.0008	J	0.00007	0.001	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Selenium	Total Recv	0.0008	J	0.0001	0.001	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-17D	16-Mar-22	9:45	S-ROUTINE	Silver	Total Recv	0.00007	J	0.00006	0.0002	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Sodium	Dissolved	37		0.02	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Sodium	Total Recv	38		0.1	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Sulfate	Total	377		0.1	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.06		0.03	0.05	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.115		0.001	0.003	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Total suspended solids	NA	24		0.8	1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Uranium	Dissolved	0.0036		0.00002	0.0002	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Uranium	Total Recv	0.0037		0.00003	0.0002	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Vanadium	Dissolved	0.0018	J	0.0001	0.1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Vanadium	Total Recv	0.0035	J	0.0001	0.1	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Zinc	Dissolved	0.114		0.001	0.008	mg/l
SS-17D	16-Mar-22	9:45	S-ROUTINE	Zinc	Total Recv	0.156		0.001	0.008	mg/l
SS-17D	8-Jun-22	10:45	F-MSR/OBS	Dissolved oxygen (DO)	NA	11.2				mg/l
SS-17D	8-Jun-22	10:45	F-MSR/OBS	Dissolved oxygen saturation	NA	96				%
SS-17D	8-Jun-22	10:45	F-MSR/OBS	Flow	NA	111				ft3/sec
SS-17D	8-Jun-22	10:45	F-MSR/OBS	pH	NA	8.15				None
SS-17D	8-Jun-22	10:45	F-MSR/OBS	Specific conductance	NA	750				uS/cm
SS-17D	8-Jun-22	10:45	F-MSR/OBS	Turbidity	NA	7.3				NTU
SS-17D	8-Jun-22	10:45	F-MSR/OBS	Water Temperature	NA	8.5				deg C
SS-17D	8-Jun-22	10:30	S-ROUTINE	Alkalinity, total	Total	79		2	4	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Aluminum	Dissolved	0.004	J	0.003	0.009	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Aluminum	Total Recv	0.382		0.006	0.009	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-17D	8-Jun-22	10:30	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Antimony	Total Recv	0.0002	J	0.0002	0.0005	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Arsenic	Total Recv	0.006		0.0001	0.001	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Barium	Dissolved	0.045		0.0002	0.003	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	8-Jun-22	10:30	S-ROUTINE	Barium	Total Recv	0.034		0.0002	0.003	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-17D	8-Jun-22	10:30	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-17D	8-Jun-22	10:30	S-ROUTINE	Bicarbonate	Total	96		3	4	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Boron	Dissolved	0.013	J	0.004	0.1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Boron	Total Recv	0.027	J	0.007	0.1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Cadmium	Dissolved	0.00011		0.00002	0.00003	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Cadmium	Total Recv	0.0003		0.00003	0.00003	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Calcium	Dissolved	122		0.1	1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Calcium	Total Recv	118		0.1	1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Chloride	Total	16		0.02	1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Chromium	Total Recv	0.0005	J	0.0002	0.01	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-17D	8-Jun-22	10:30	S-ROUTINE	Cobalt	Total Recv	0.0008	J	0.0003	0.01	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Copper	Dissolved	0.005		0.0001	0.001	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Copper	Total Recv	0.017		0.0003	0.001	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Hardness, Ca, Mg	NA	330		1	1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Iron	Dissolved	0.03		0.004	0.02	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Iron	Total Recv	0.46		0.009	0.02	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-17D	8-Jun-22	10:30	S-ROUTINE	Lead	Total Recv	0.002		0.0001	0.0003	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Magnesium	Dissolved	9		0.02	1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Magnesium	Total Recv	9		0.05	1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Manganese	Dissolved	0.116		0.0003	0.001	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Manganese	Total Recv	0.195		0.0003	0.001	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Mercury	Dissolved	0.008		0.001	0.005	ug/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Mercury	Total Recv	0.019		0.001	0.005	ug/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Molybdenum	Dissolved	0.118		0.0003	0.005	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Molybdenum	Total Recv	0.123		0.0002	0.005	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Nickel	Dissolved	0.0004	J	0.0002	0.002	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Nickel	Total Recv	0.0007	J	0.0002	0.002	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.08		0.008	0.02	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Potassium	Dissolved	7		0.06	1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Potassium	Total Recv	8		0.1	1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Selenium	Dissolved	0.00097	J	0.00007	0.001	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Selenium	Total Recv	0.001	J	0.0001	0.001	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-17D	8-Jun-22	10:30	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-17D	8-Jun-22	10:30	S-ROUTINE	Sodium	Dissolved	24		0.02	1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Sodium	Total Recv	26		0.1	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	8-Jun-22	10:30	S-ROUTINE	Sulfate	Total	261		0.06	1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.29		0.02	0.05	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.057		0.001	0.003	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Total suspended solids	NA	14	D	0.3	2	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Uranium	Dissolved	0.0021		0.00002	0.0002	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Uranium	Total Recv	0.0023		0.00003	0.0002	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Vanadium	Dissolved	0.0014	J	0.0001	0.1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Vanadium	Total Recv	0.0024	J	0.0001	0.1	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Zinc	Dissolved	0.038	B	0.001	0.008	mg/l
SS-17D	8-Jun-22	10:30	S-ROUTINE	Zinc	Total Recv	0.064		0.001	0.008	mg/l
SS-19	16-Mar-22	9:00	F-MSR/OBS	Dissolved oxygen (DO)	NA	11.8				mg/l
SS-19	16-Mar-22	9:00	F-MSR/OBS	Dissolved oxygen saturation	NA	102				%
SS-19	16-Mar-22	9:00	F-MSR/OBS	Flow	NA	54.64				ft3/sec
SS-19	16-Mar-22	9:00	F-MSR/OBS	pH	NA	7.43				None
SS-19	16-Mar-22	9:00	F-MSR/OBS	Specific conductance	NA	1024				uS/cm
SS-19	16-Mar-22	9:00	F-MSR/OBS	Turbidity	NA	11.7				NTU
SS-19	16-Mar-22	9:00	F-MSR/OBS	Water Temperature	NA	1.7				deg C
SS-19	16-Mar-22	9:00	S-ROUTINE	Alkalinity, total	Total	89		2	4	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-19	16-Mar-22	9:00	S-ROUTINE	Aluminum	Total Recv	0.585		0.006	0.009	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-19	16-Mar-22	9:00	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Arsenic	Total Recv	0.007		0.0001	0.001	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Barium	Dissolved	0.04		0.0002	0.003	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Barium	Total Recv	0.051		0.0002	0.003	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-19	16-Mar-22	9:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-19	16-Mar-22	9:00	S-ROUTINE	Bicarbonate	Total	110		3	4	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Boron	Dissolved	0.046	J	0.004	0.1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Boron	Total Recv	0.05	J	0.007	0.1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Cadmium	Dissolved	0.00032		0.00002	0.00003	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Cadmium	Total Recv	0.0006		0.00003	0.00003	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Calcium	Dissolved	147		0.1	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Calcium	Total Recv	156		0.1	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Chloride	Total	34		0.05	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-19	16-Mar-22	9:00	S-ROUTINE	Chromium	Total Recv	0.0006	J	0.0002	0.01	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-19	16-Mar-22	9:00	S-ROUTINE	Cobalt	Total Recv	0.0007	J	0.0003	0.01	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	16-Mar-22	9:00	S-ROUTINE	Copper	Dissolved	0.009		0.0001	0.001	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Copper	Total Recv	0.034		0.0003	0.001	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Hardness, Ca, Mg	NA	439		1	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Iron	Dissolved	0.03		0.004	0.02	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Iron	Total Recv	0.78		0.009	0.02	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Lead	Dissolved	0.0008	B	0.0001	0.0003	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Lead	Total Recv	0.0041		0.0001	0.0003	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Magnesium	Dissolved	12		0.02	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Magnesium	Total Recv	12		0.05	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Manganese	Dissolved	0.163		0.0003	0.001	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Manganese	Total Recv	0.326		0.0003	0.001	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Mercury	Dissolved	0.005	J	0.002	0.005	ug/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Mercury	Total Recv	0.026		0.002	0.005	ug/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Molybdenum	Dissolved	0.166		0.0003	0.005	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Molybdenum	Total Recv	0.165		0.0002	0.005	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Nickel	Total Recv	0.0012	J	0.0002	0.002	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.53		0.008	0.02	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Potassium	Dissolved	11		0.06	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Potassium	Total Recv	11		0.1	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Selenium	Dissolved	0.0008	J	0.00007	0.001	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Selenium	Total Recv	0.0008	J	0.0001	0.001	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-19	16-Mar-22	9:00	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-19	16-Mar-22	9:00	S-ROUTINE	Sodium	Dissolved	39		0.02	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Sodium	Total Recv	38		0.1	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Sulfate	Total	386		0.1	1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.06		0.03	0.05	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.116		0.001	0.003	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Total suspended solids	NA	26	D	0.8	2	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Uranium	Dissolved	0.0038		0.00002	0.0002	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Uranium	Total Recv	0.004		0.00003	0.0002	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Vanadium	Dissolved	0.0019	J	0.0001	0.1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Vanadium	Total Recv	0.0038	J	0.0001	0.1	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Zinc	Dissolved	0.114		0.001	0.008	mg/l
SS-19	16-Mar-22	9:00	S-ROUTINE	Zinc	Total Recv	0.174		0.002	0.008	mg/l
SS-19	8-Jun-22	9:30	F-MSR/OBS	Dissolved oxygen (DO)	NA	10.7				mg/l
SS-19	8-Jun-22	9:30	F-MSR/OBS	Dissolved oxygen saturation	NA	92				%
SS-19	8-Jun-22	9:30	F-MSR/OBS	Flow	NA	120.57				ft3/sec
SS-19	8-Jun-22	9:30	F-MSR/OBS	pH	NA	8.04				None
SS-19	8-Jun-22	9:30	F-MSR/OBS	Specific conductance	NA	762				uS/cm

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	8-Jun-22	9:30	F-MSR/OBS	Turbidity	NA	7.8				NTU
SS-19	8-Jun-22	9:30	F-MSR/OBS	Water Temperature	NA	8.5				deg C
SS-19	8-Jun-22	9:30	S-ROUTINE	Alkalinity, total	Total	81		2	4	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-19	8-Jun-22	9:30	S-ROUTINE	Aluminum	Total Recv	0.404		0.006	0.009	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-19	8-Jun-22	9:30	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Arsenic	Total Recv	0.006		0.0001	0.001	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Barium	Dissolved	0.047		0.0002	0.003	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Barium	Total Recv	0.037		0.0002	0.003	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-19	8-Jun-22	9:30	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-19	8-Jun-22	9:30	S-ROUTINE	Bicarbonate	Total	98		3	4	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Boron	Dissolved	0.018	J	0.004	0.1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Boron	Total Recv	0.025	J	0.007	0.1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Cadmium	Dissolved	0.0001		0.00002	0.00003	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Cadmium	Total Recv	0.00031		0.00003	0.00003	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Calcium	Dissolved	125		0.1	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Calcium	Total Recv	119		0.1	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Chloride	Total	15		0.02	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-19	8-Jun-22	9:30	S-ROUTINE	Chromium	Total Recv	0.0005	J	0.0002	0.01	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-19	8-Jun-22	9:30	S-ROUTINE	Cobalt	Total Recv	0.0009	J	0.0003	0.01	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Copper	Dissolved	0.005		0.0001	0.001	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Copper	Total Recv	0.018		0.0003	0.001	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Hardness, Ca, Mg	NA	334		1	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Iron	Dissolved	0.03		0.004	0.02	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Iron	Total Recv	0.49		0.009	0.02	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-19	8-Jun-22	9:30	S-ROUTINE	Lead	Total Recv	0.0022		0.0001	0.0003	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Magnesium	Dissolved	9		0.02	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Magnesium	Total Recv	9		0.05	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Manganese	Dissolved	0.123		0.0003	0.001	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Manganese	Total Recv	0.197		0.0003	0.001	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Mercury	Dissolved	0.007		0.001	0.005	ug/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Mercury	Total Recv	0.017		0.001	0.005	ug/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Molybdenum	Dissolved	0.128		0.0003	0.005	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Molybdenum	Total Recv	0.128		0.0002	0.005	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	8-Jun-22	9:30	S-ROUTINE	Nickel	Dissolved	0.0005	J	0.0002	0.002	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Nickel	Total Recv	0.0008	J	0.0002	0.002	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.1		0.008	0.02	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Potassium	Dissolved	7		0.06	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Potassium	Total Recv	8		0.1	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Selenium	Dissolved	0.00098	J	0.00007	0.001	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Selenium	Total Recv	0.0009	J	0.0001	0.001	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-19	8-Jun-22	9:30	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-19	8-Jun-22	9:30	S-ROUTINE	Sodium	Dissolved	25		0.02	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Sodium	Total Recv	28		0.1	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Sulfate	Total	269		0.06	1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.45	J	0.02	0.05	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.058		0.001	0.003	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Total suspended solids	NA	15	D	0.3	2	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Uranium	Dissolved	0.0024		0.00002	0.0002	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Uranium	Total Recv	0.0025		0.00003	0.0002	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Vanadium	Dissolved	0.0016	J	0.0001	0.1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Vanadium	Total Recv	0.0026	J	0.0001	0.1	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Zinc	Dissolved	0.046	B	0.001	0.008	mg/l
SS-19	8-Jun-22	9:30	S-ROUTINE	Zinc	Total Recv	0.07		0.001	0.008	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Alkalinity, total	Total	120		2	4	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Bicarbonate	Total	150		3	4	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Chloride	Total	46		0.02	1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Sulfate	Total	95		0.06	1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.64		0.02	0.05	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Total suspended solids	NA	3		0.3	1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Aluminum	Dissolved	0.013		0.003	0.009	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Antimony	Dissolved	0.0004	J	0.0002	0.0005	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Barium	Dissolved	0.035		0.0002	0.003	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-07	2-Sep-22	16:00	S-ROUTINE	Boron	Dissolved	0.1		0.004	0.1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Cadmium	Dissolved	0.00005		0.00002	0.00003	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Calcium	Dissolved	49		0.1	1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-07	2-Sep-22	16:00	S-ROUTINE	Copper	Dissolved	0.004		0.0001	0.001	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Iron	Dissolved	0.019	J	0.004	0.02	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Lead	Dissolved	0.0003	J	0.0001	0.0003	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Magnesium	Dissolved	14		0.02	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	2-Sep-22	16:00	S-ROUTINE	Manganese	Dissolved	0.025		0.0003	0.001	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Molybdenum	Dissolved	0.007		0.0003	0.005	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Nickel	Dissolved	0.0005	J	0.0002	0.002	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Potassium	Dissolved	10		0.06	1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Selenium	Dissolved	0.00013	J	0.00007	0.001	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-07	2-Sep-22	16:00	S-ROUTINE	Sodium	Dissolved	45		0.02	1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Uranium	Dissolved	0.0033		0.00002	0.0002	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Vanadium	Dissolved	0.0026	J	0.0001	0.1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Zinc	Dissolved	0.04		0.001	0.008	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Aluminum	Total Recv	0.058	J	0.006	0.009	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Arsenic	Total Recv	0.003		0.0001	0.001	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Barium	Total Recv	0.036		0.0002	0.003	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-07	2-Sep-22	16:00	S-ROUTINE	Boron	Total Recv	0.1		0.007	0.1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Cadmium	Total Recv	0.00005		0.00003	0.00003	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Calcium	Total Recv	48		0.1	1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Chromium	Total Recv	0.0003	J	0.0002	0.01	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-07	2-Sep-22	16:00	S-ROUTINE	Copper	Total Recv	0.006		0.0003	0.001	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Iron	Total Recv	0.11	J	0.009	0.02	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Lead	Total Recv	0.001		0.0001	0.0003	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Manganese	Total Recv	0.05		0.0003	0.001	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Molybdenum	Total Recv	0.007		0.0002	0.005	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Nickel	Total Recv	0.0008	J	0.0002	0.002	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Potassium	Total Recv	11		0.1	1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Selenium	Total Recv	0.0001	J	0.0001	0.001	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-07	2-Sep-22	16:00	S-ROUTINE	Sodium	Total Recv	46		0.1	1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Uranium	Total Recv	0.0035		0.00003	0.0002	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Vanadium	Total Recv	0.0028	J	0.0001	0.1	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Zinc	Total Recv	0.046		0.001	0.008	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-07	2-Sep-22	16:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	1.22	H	0.008	0.02	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.04		0.001	0.003	mg/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Mercury	Total Recv	0.004	J	0.002	0.005	ug/l
SS-07	2-Sep-22	16:00	S-ROUTINE	Hardness, Ca, Mg	NA	178		1	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Alkalinity, total	Total	120		2	4	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	2-Sep-22	14:30	S-ROUTINE	Bicarbonate	Total	110		3	4	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Chloride	Total	44		0.02	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Sulfate	Total	104		0.06	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.8		0.02	0.05	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Total suspended solids	NA	6	J	0.3	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-10A	2-Sep-22	14:30	S-ROUTINE	Antimony	Dissolved	0.0004	J	0.0002	0.0005	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Arsenic	Dissolved	0.006		0.0002	0.001	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Barium	Dissolved	0.027		0.0002	0.003	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-10A	2-Sep-22	14:30	S-ROUTINE	Boron	Dissolved	0.1		0.004	0.1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Cadmium	Dissolved	0.00016		0.00002	0.00003	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Calcium	Dissolved	54		0.1	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-10A	2-Sep-22	14:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-10A	2-Sep-22	14:30	S-ROUTINE	Copper	Dissolved	0.012		0.0001	0.001	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Iron	Dissolved	0.018	J	0.004	0.02	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Lead	Dissolved	0.0002	J	0.0001	0.0003	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Magnesium	Dissolved	13		0.02	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Manganese	Dissolved	0.012		0.0003	0.001	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Molybdenum	Dissolved	0.018		0.0003	0.005	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Nickel	Dissolved	0.0005	J	0.0002	0.002	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Potassium	Dissolved	9		0.06	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Selenium	Dissolved	0.00016	J	0.00007	0.001	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-10A	2-Sep-22	14:30	S-ROUTINE	Sodium	Dissolved	43		0.02	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Uranium	Dissolved	0.0045		0.00002	0.0002	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Vanadium	Dissolved	0.004	J	0.0001	0.1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Zinc	Dissolved	0.023		0.001	0.008	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Aluminum	Total Recv	0.069	J	0.006	0.009	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Arsenic	Total Recv	0.007		0.0001	0.001	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Barium	Total Recv	0.028		0.0002	0.003	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-10A	2-Sep-22	14:30	S-ROUTINE	Boron	Total Recv	0.1		0.007	0.1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Cadmium	Total Recv	0.00018		0.00003	0.00003	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Calcium	Total Recv	53		0.1	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Chromium	Total Recv	Not Detected		0.0002	0.01	
SS-10A	2-Sep-22	14:30	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-10A	2-Sep-22	14:30	S-ROUTINE	Copper	Total Recv	0.018		0.0003	0.001	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Iron	Total Recv	0.13	J	0.009	0.02	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	2-Sep-22	14:30	S-ROUTINE	Lead	Total Recv	0.0015		0.0001	0.0003	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Manganese	Total Recv	0.029		0.0003	0.001	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Molybdenum	Total Recv	0.019		0.0002	0.005	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Nickel	Total Recv	0.0005	J	0.0002	0.002	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Potassium	Total Recv	9		0.1	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Selenium	Total Recv	0.0002	J	0.0001	0.001	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-10A	2-Sep-22	14:30	S-ROUTINE	Sodium	Total Recv	43		0.1	1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Uranium	Total Recv	0.0047		0.00003	0.0002	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Vanadium	Total Recv	0.0042	J	0.0001	0.1	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Zinc	Total Recv	0.033		0.001	0.008	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-10A	2-Sep-22	14:30	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.44		0.02	0.02	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.088		0.001	0.003	mg/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Mercury	Total Recv	0.011		0.002	0.005	ug/l
SS-10A	2-Sep-22	14:30	S-ROUTINE	Hardness, Ca, Mg	NA	189		1	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Alkalinity, total	Total	130		2	4	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Bicarbonate	Total	140		3	4	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Chloride	Total	66		0.02	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Sulfate	Total	134		0.06	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.93		0.02	0.05	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Total suspended solids	NA	6	J	0.3	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-13	2-Sep-22	13:30	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Barium	Dissolved	0.036		0.0002	0.003	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-13	2-Sep-22	13:30	S-ROUTINE	Boron	Dissolved	0.098	J	0.004	0.1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Cadmium	Dissolved	0.00006		0.00002	0.00003	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Calcium	Dissolved	73		0.1	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-13	2-Sep-22	13:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-13	2-Sep-22	13:30	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Iron	Dissolved	0.012	J	0.004	0.02	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Lead	Dissolved	0.0002	J	0.0001	0.0003	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Magnesium	Dissolved	17		0.02	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Manganese	Dissolved	0.083		0.0003	0.001	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Molybdenum	Dissolved	0.018		0.0003	0.005	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Nickel	Dissolved	0.0009	J	0.0002	0.002	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	2-Sep-22	13:30	S-ROUTINE	Potassium	Dissolved	10		0.06	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Selenium	Dissolved	0.00076	J	0.00007	0.001	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-13	2-Sep-22	13:30	S-ROUTINE	Sodium	Dissolved	46		0.02	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Uranium	Dissolved	0.0053		0.00002	0.0002	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Vanadium	Dissolved	0.0036	J	0.0001	0.1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Zinc	Dissolved	0.019		0.001	0.008	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Aluminum	Total Recv	0.086	J	0.006	0.009	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Arsenic	Total Recv	0.007		0.0001	0.001	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Barium	Total Recv	0.039		0.0002	0.003	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-13	2-Sep-22	13:30	S-ROUTINE	Boron	Total Recv	0.1		0.007	0.1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Cadmium	Total Recv	0.00014		0.00002	0.00003	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Calcium	Total Recv	73		0.1	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Chromium	Total Recv	Not Detected		0.0002	0.01	
SS-13	2-Sep-22	13:30	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-13	2-Sep-22	13:30	S-ROUTINE	Copper	Total Recv	0.012		0.0003	0.001	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Iron	Total Recv	0.13	J	0.009	0.02	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Lead	Total Recv	0.0009		0.0001	0.0003	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Magnesium	Total Recv	17		0.05	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Manganese	Total Recv	0.138		0.0003	0.001	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Molybdenum	Total Recv	0.019		0.0002	0.005	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Nickel	Total Recv	0.0009	J	0.0002	0.002	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Potassium	Total Recv	10		0.1	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Selenium	Total Recv	0.0008	J	0.0001	0.001	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-13	2-Sep-22	13:30	S-ROUTINE	Sodium	Total Recv	47		0.1	1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Uranium	Total Recv	0.0055		0.00003	0.0002	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Vanadium	Total Recv	0.0037	J	0.0001	0.1	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Zinc	Total Recv	0.029		0.001	0.008	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-13	2-Sep-22	13:30	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.53		0.008	0.02	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.133		0.001	0.003	mg/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Mercury	Dissolved	0.005		0.002	0.005	ug/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Mercury	Total Recv	0.007		0.002	0.005	ug/l
SS-13	2-Sep-22	13:30	S-ROUTINE	Hardness, Ca, Mg	NA	253		1	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Alkalinity, total	Total	130		2	4	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Bicarbonate	Total	150		3	4	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Chloride	Total	63		0.02	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Sulfate	Total	127		0.06	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	2-Sep-22	12:45	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.85		0.02	0.05	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Total suspended solids	NA	10	J	0.3	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-14	2-Sep-22	12:45	S-ROUTINE	Antimony	Dissolved	0.0004	J	0.0002	0.0005	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Barium	Dissolved	0.034		0.0002	0.003	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-14	2-Sep-22	12:45	S-ROUTINE	Boron	Dissolved	0.1	J	0.004	0.1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Cadmium	Dissolved	0.00008		0.00002	0.00003	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Calcium	Dissolved	70		0.1	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-14	2-Sep-22	12:45	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-14	2-Sep-22	12:45	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Iron	Dissolved	0.012	J	0.004	0.02	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Lead	Dissolved	0.0002	J	0.0001	0.0003	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Magnesium	Dissolved	16		0.02	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Manganese	Dissolved	0.064		0.0003	0.001	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Molybdenum	Dissolved	0.02		0.0003	0.005	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Potassium	Dissolved	10		0.06	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Selenium	Dissolved	0.00076	J	0.00007	0.001	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-14	2-Sep-22	12:45	S-ROUTINE	Sodium	Dissolved	45		0.02	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Uranium	Dissolved	0.0054		0.00002	0.0002	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Vanadium	Dissolved	0.0034	J	0.0001	0.1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Zinc	Dissolved	0.02		0.001	0.008	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Aluminum	Total Recv	Not Detected		0.006	0.009	
SS-14	2-Sep-22	12:45	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Arsenic	Total Recv	0.007		0.0001	0.001	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Barium	Total Recv	0.034		0.0002	0.003	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-14	2-Sep-22	12:45	S-ROUTINE	Boron	Total Recv	0.098	J	0.007	0.1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Cadmium	Total Recv	0.00008		0.00003	0.00003	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Calcium	Total Recv	71		0.1	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Chromium	Total Recv	Not Detected		0.0002	0.01	
SS-14	2-Sep-22	12:45	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-14	2-Sep-22	12:45	S-ROUTINE	Copper	Total Recv	0.008		0.0003	0.001	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Iron	Total Recv	0.016	J	0.009	0.02	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Lead	Total Recv	0.0002	J	0.0001	0.0003	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Magnesium	Total Recv	16		0.05	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Manganese	Total Recv	0.063		0.0003	0.001	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	2-Sep-22	12:45	S-ROUTINE	Molybdenum	Total Recv	0.021		0.0002	0.005	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Nickel	Total Recv	0.0007	J	0.0002	0.002	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Potassium	Total Recv	9		0.1	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Selenium	Total Recv	0.0007	J	0.0001	0.001	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-14	2-Sep-22	12:45	S-ROUTINE	Sodium	Total Recv	44		0.1	1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Uranium	Total Recv	0.0056		0.00003	0.0002	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Vanadium	Total Recv	0.0036	J	0.0001	0.1	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Zinc	Total Recv	0.021		0.001	0.008	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-14	2-Sep-22	12:45	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.48		0.008	0.02	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.125		0.001	0.003	mg/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Mercury	Total Recv	0.005	J	0.002	0.005	ug/l
SS-14	2-Sep-22	12:45	S-ROUTINE	Hardness, Ca, Mg	NA	243		1	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Alkalinity, total	Total	120		2	4	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Bicarbonate	Total	120		3	4	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Chloride	Total	59		0.02	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Sulfate	Total	109		0.06	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.34		0.02	0.05	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Total suspended solids	NA	35	DJ	0.3	2	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Arsenic	Dissolved	0.008		0.0002	0.001	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Barium	Dissolved	0.02		0.0002	0.003	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Boron	Dissolved	0.091	J	0.004	0.1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Cadmium	Dissolved	0.00011		0.00002	0.00003	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Calcium	Dissolved	62		0.1	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Iron	Dissolved	0.009	J	0.004	0.02	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Lead	Dissolved	0.0002	J	0.0001	0.0003	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Magnesium	Dissolved	14		0.02	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Manganese	Dissolved	0.021		0.0003	0.001	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Molybdenum	Dissolved	0.026		0.0003	0.005	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Potassium	Dissolved	8		0.06	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Selenium	Dissolved	0.00044	J	0.00007	0.001	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Sodium	Dissolved	43		0.02	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Uranium	Dissolved	0.0047		0.00002	0.0002	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Vanadium	Dissolved	0.0033	J	0.0001	0.1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Zinc	Dissolved	0.018		0.001	0.008	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Aluminum	Total Recv	0.71	J	0.006	0.009	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Arsenic	Total Recv	0.009		0.0001	0.001	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Barium	Total Recv	0.035		0.0002	0.003	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Boron	Total Recv	0.093	J	0.007	0.1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Cadmium	Total Recv	0.00043		0.00003	0.00003	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Calcium	Total Recv	64		0.1	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Chromium	Total Recv	0.0007	J	0.0002	0.01	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Cobalt	Total Recv	0.0006	J	0.0003	0.01	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Copper	Total Recv	0.035		0.0003	0.001	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Iron	Total Recv	0.79	J	0.009	0.02	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Lead	Total Recv	0.0044		0.0001	0.0003	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Manganese	Total Recv	0.256	D	0.002	0.002	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Molybdenum	Total Recv	0.027		0.0002	0.005	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Nickel	Total Recv	0.001	J	0.0002	0.002	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Potassium	Total Recv	8		0.1	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Selenium	Total Recv	0.0005	J	0.0001	0.001	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Silver	Total Recv	0.00007	J	0.00006	0.0002	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Sodium	Total Recv	44		0.1	1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Uranium	Total Recv	0.005		0.00003	0.0002	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Vanadium	Total Recv	0.0047	J	0.0001	0.1	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Zinc	Total Recv	0.093		0.001	0.008	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	Not Detected		0.008	0.02	
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.138		0.001	0.003	mg/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Mercury	Total Recv	0.024		0.002	0.005	ug/l
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Hardness, Ca, Mg	NA	213		1	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Alkalinity, total	Total	130		2	4	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Bicarbonate	Total	150		3	4	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Chloride	Total	55		0.02	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Sulfate	Total	100		0.06	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.32		0.02	0.05	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Total suspended solids	NA	3		0.3	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	2-Sep-22	10:30	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Barium	Dissolved	0.024		0.0002	0.003	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Boron	Dissolved	0.084	J	0.004	0.1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Cadmium	Dissolved	0.00009		0.00002	0.00003	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Calcium	Dissolved	63		0.1	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Iron	Dissolved	0.008	J	0.004	0.02	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Magnesium	Dissolved	14		0.02	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Manganese	Dissolved	0.022		0.0003	0.001	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Molybdenum	Dissolved	0.025		0.0003	0.005	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Nickel	Dissolved	0.0006	J	0.0002	0.002	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Potassium	Dissolved	8		0.06	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Selenium	Dissolved	0.00041	J	0.00007	0.001	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Sodium	Dissolved	39		0.02	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Uranium	Dissolved	0.0044		0.00002	0.0002	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Vanadium	Dissolved	0.0026	J	0.0001	0.1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Zinc	Dissolved	0.018		0.001	0.008	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Aluminum	Total Recv	0.059	J	0.006	0.009	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Arsenic	Total Recv	0.007		0.0001	0.001	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Barium	Total Recv	0.026		0.0002	0.003	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Boron	Total Recv	0.082	J	0.007	0.1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Cadmium	Total Recv	0.00013		0.00003	0.00003	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Calcium	Total Recv	63		0.1	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Chromium	Total Recv	Not Detected		0.0002	0.01	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Copper	Total Recv	0.01		0.0003	0.001	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Iron	Total Recv	0.07		0.009	0.02	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Lead	Total Recv	0.0005		0.0001	0.0003	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Manganese	Total Recv	0.049		0.0003	0.001	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Molybdenum	Total Recv	0.026		0.0002	0.005	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Nickel	Total Recv	0.0008	J	0.0002	0.002	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Potassium	Total Recv	8		0.1	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	2-Sep-22	10:30	S-ROUTINE	Selenium	Total Recv	0.0004	J	0.0001	0.001	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Sodium	Total Recv	41		0.1	1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Uranium	Total Recv	0.0045		0.00003	0.0002	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Vanadium	Total Recv	0.0028	J	0.0001	0.1	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Zinc	Total Recv	0.025		0.001	0.008	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Nitrate + Nitrite	Unfiltered	Not Detected		0.008	0.02	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.095		0.001	0.003	mg/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	
SS-16B	2-Sep-22	10:30	S-ROUTINE	Mercury	Total Recv	0.004	J	0.002	0.005	ug/l
SS-16B	2-Sep-22	10:30	S-ROUTINE	Hardness, Ca, Mg	NA	215		1	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Alkalinity, total	Total	130		2	4	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Bicarbonate	Total	150		3	4	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Chloride	Total	53		0.02	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Sulfate	Total	113		0.06	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.33		0.02	0.05	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Total suspended solids	NA	1		0.3	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Arsenic	Dissolved	0.008		0.0002	0.001	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Barium	Dissolved	0.021		0.0002	0.003	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Boron	Dissolved	0.082	J	0.004	0.1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Cadmium	Dissolved	0.00011		0.00002	0.00003	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Calcium	Dissolved	68		0.1	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Copper	Dissolved	0.009		0.0001	0.001	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Iron	Dissolved	0.01	J	0.004	0.02	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Magnesium	Dissolved	14		0.02	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Manganese	Dissolved	0.015		0.0003	0.001	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Molybdenum	Dissolved	0.032		0.0003	0.005	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Potassium	Dissolved	7		0.06	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Selenium	Dissolved	0.00035	J	0.00007	0.001	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Sodium	Dissolved	40		0.02	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Uranium	Dissolved	0.0045		0.00002	0.0002	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Vanadium	Dissolved	0.0023	J	0.0001	0.1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	2-Sep-22	9:45	S-ROUTINE	Zinc	Dissolved	0.024		0.001	0.008	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Aluminum	Total Recv	0.023		0.006	0.009	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Arsenic	Total Recv	0.008		0.0001	0.001	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Barium	Total Recv	0.022		0.0002	0.003	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Boron	Total Recv	0.082	J	0.007	0.1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Cadmium	Total Recv	0.00013		0.00002	0.00003	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Calcium	Total Recv	67		0.1	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Chromium	Total Recv	Not Detected		0.0002	0.01	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Copper	Total Recv	0.011		0.0003	0.001	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Iron	Total Recv	0.05		0.009	0.02	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Lead	Total Recv	0.0003	J	0.0001	0.0003	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Manganese	Total Recv	0.031		0.0003	0.001	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Molybdenum	Total Recv	0.034		0.0002	0.005	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Nickel	Total Recv	0.0007	J	0.0002	0.002	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Potassium	Total Recv	7		0.1	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Selenium	Total Recv	0.0003	J	0.0001	0.001	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Sodium	Total Recv	41		0.1	1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Uranium	Total Recv	0.0046		0.00003	0.0002	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Vanadium	Total Recv	0.0025	J	0.0001	0.1	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Zinc	Total Recv	0.029		0.001	0.008	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-17D	2-Sep-22	9:45	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.04		0.008	0.02	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.088		0.001	0.003	mg/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Mercury	Total Recv	0.003	J	0.002	0.005	ug/l
SS-17D	2-Sep-22	9:45	S-ROUTINE	Hardness, Ca, Mg	NA	226		1	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Alkalinity, total	Total	140		2	4	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Bicarbonate	Total	170		3	4	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Chloride	Total	42		0.02	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Sulfate	Total	112		0.06	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.34		0.02	0.05	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Total suspended solids	NA	1		0.3	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-19	2-Sep-22	9:00	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Barium	Dissolved	0.029		0.0002	0.003	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	2-Sep-22	9:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-19	2-Sep-22	9:00	S-ROUTINE	Boron	Dissolved	0.076	J	0.004	0.1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Cadmium	Dissolved	0.00007		0.00002	0.00003	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Calcium	Dissolved	65		0.1	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	
SS-19	2-Sep-22	9:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-19	2-Sep-22	9:00	S-ROUTINE	Copper	Dissolved	0.006		0.0001	0.001	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Iron	Dissolved	0.012	J	0.004	0.02	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-19	2-Sep-22	9:00	S-ROUTINE	Magnesium	Dissolved	14		0.02	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Manganese	Dissolved	0.027		0.0003	0.001	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Molybdenum	Dissolved	0.026		0.0003	0.005	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Nickel	Dissolved	0.0006	J	0.0002	0.002	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Potassium	Dissolved	7		0.06	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Selenium	Dissolved	0.00031	J	0.00007	0.001	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-19	2-Sep-22	9:00	S-ROUTINE	Sodium	Dissolved	41		0.02	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Uranium	Dissolved	0.0058		0.00002	0.0002	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Vanadium	Dissolved	0.0027	J	0.0001	0.1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Zinc	Dissolved	0.02		0.001	0.008	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Aluminum	Total Recv	0.018		0.006	0.009	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Arsenic	Total Recv	0.007		0.0001	0.001	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Barium	Total Recv	0.029		0.0002	0.003	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-19	2-Sep-22	9:00	S-ROUTINE	Boron	Total Recv	0.079	J	0.007	0.1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Cadmium	Total Recv	0.00009		0.00003	0.00003	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Calcium	Total Recv	66		0.1	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Chromium	Total Recv	Not Detected		0.0002	0.01	
SS-19	2-Sep-22	9:00	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-19	2-Sep-22	9:00	S-ROUTINE	Copper	Total Recv	0.007		0.0003	0.001	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Iron	Total Recv	0.04		0.009	0.02	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Lead	Total Recv	0.0002	J	0.0001	0.0003	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Manganese	Total Recv	0.038		0.0003	0.001	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Molybdenum	Total Recv	0.027		0.0002	0.005	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Nickel	Total Recv	0.0004	J	0.0002	0.002	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Potassium	Total Recv	7		0.1	1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Selenium	Total Recv	0.0003	J	0.0001	0.001	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-19	2-Sep-22	9:00	S-ROUTINE	Sodium	Total Recv	42		0.1	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	2-Sep-22	9:00	S-ROUTINE	Uranium	Total Recv	0.0058		0.00003	0.0002	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Vanadium	Total Recv	0.0026	J	0.0001	0.1	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Zinc	Total Recv	0.02		0.001	0.008	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Ammonia	Unfiltered	Not Detected		0.03	0.05	
SS-19	2-Sep-22	9:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.04		0.008	0.02	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.067		0.001	0.003	mg/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	
SS-19	2-Sep-22	9:00	S-ROUTINE	Mercury	Total Recv	0.005	J	0.002	0.005	ug/l
SS-19	2-Sep-22	9:00	S-ROUTINE	Hardness, Ca, Mg	NA	220		1	1	mg/l
SS-07-0.5	2-Sep-22	19:00	S-ROUTINE	Copper	Total Recv	0.007		0.0003	0.001	mg/l
SS-07-1.0	2-Sep-22	17:20	S-ROUTINE	Copper	Total Recv	0.008		0.0003	0.001	mg/l
SS-07-1.5	2-Sep-22	17:30	S-ROUTINE	Copper	Total Recv	0.007		0.0003	0.001	mg/l
SS-07-2.0	2-Sep-22	17:40	S-ROUTINE	Copper	Total Recv	0.006		0.0003	0.001	mg/l
SS-07-2.5	2-Sep-22	17:50	S-ROUTINE	Copper	Total Recv	0.008		0.0003	0.001	mg/l
SS-07-3.0	2-Sep-22	17:55	S-ROUTINE	Copper	Total Recv	0.008		0.0003	0.001	mg/l
SS-07-3.5	2-Sep-22	18:00	S-ROUTINE	Copper	Total Recv	0.018		0.0003	0.001	mg/l
SS-07-4.0	2-Sep-22	18:10	S-ROUTINE	Copper	Total Recv	0.018		0.0003	0.001	mg/l
SS-07-4.5	2-Sep-22	18:20	S-ROUTINE	Copper	Total Recv	0.019		0.0003	0.001	mg/l
SS-07-5.0	2-Sep-22	18:30	S-ROUTINE	Copper	Total Recv	0.017		0.0003	0.001	mg/l
SS-07-5.2	2-Sep-22	18:40	S-ROUTINE	Copper	Total Recv	0.018		0.0003	0.001	mg/l
SS-07	2-Sep-22		F-MSR/OBS	pH	NA	8				None
SS-07	2-Sep-22		F-MSR/OBS	Water Temperature	NA	19				deg C
SS-07	2-Sep-22		F-MSR/OBS	Dissolved oxygen (DO)	NA	8.3				mg/l
SS-07	2-Sep-22		F-MSR/OBS	Specific conductance	NA	585				uS/cm
SS-07	2-Sep-22		F-MSR/OBS	Turbidity	NA	1.6				NTU
SS-07	2-Sep-22		F-MSR/OBS	Flow	NA	15.3				ft3/sec
SS-10A	2-Sep-22		F-MSR/OBS	pH	NA	9.38				None
SS-10A	2-Sep-22		F-MSR/OBS	Water Temperature	NA	20.2				deg C
SS-10A	2-Sep-22		F-MSR/OBS	Dissolved oxygen (DO)	NA	15.6				mg/l
SS-10A	2-Sep-22		F-MSR/OBS	Specific conductance	NA	549				uS/cm
SS-10A	2-Sep-22		F-MSR/OBS	Turbidity	NA	0.8				NTU
SS-10A	2-Sep-22		F-MSR/OBS	Flow	NA	11.24				ft3/sec
SS-13	2-Sep-22		F-MSR/OBS	pH	NA	8.82				None
SS-13	2-Sep-22		F-MSR/OBS	Water Temperature	NA	19.7				deg C
SS-13	2-Sep-22		F-MSR/OBS	Dissolved oxygen (DO)	NA	13.1				mg/l
SS-13	2-Sep-22		F-MSR/OBS	Specific conductance	NA	682				uS/cm
SS-13	2-Sep-22		F-MSR/OBS	Turbidity	NA	3				NTU
SS-13	2-Sep-22		F-MSR/OBS	Flow	NA	18.75				ft3/sec
SS-14	2-Sep-22		F-MSR/OBS	pH	NA	8.76				None
SS-14	2-Sep-22		F-MSR/OBS	Water Temperature	NA	18.9				deg C
SS-14	2-Sep-22		F-MSR/OBS	Dissolved oxygen (DO)	NA	12.3				mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	2-Sep-22		F-MSR/OBS	Specific conductance	NA	670				uS/cm
SS-14	2-Sep-22		F-MSR/OBS	Turbidity	NA	3.1				NTU
SS-14	2-Sep-22		F-MSR/OBS	Flow	NA	18.39				ft3/sec
SS-15A-2	2-Sep-22		F-MSR/OBS	pH	NA	9.25				None
SS-15A-2	2-Sep-22		F-MSR/OBS	Water Temperature	NA	16.9				deg C
SS-15A-2	2-Sep-22		F-MSR/OBS	Dissolved oxygen (DO)	NA	14				mg/l
SS-15A-2	2-Sep-22		F-MSR/OBS	Specific conductance	NA	600				uS/cm
SS-15A-2	2-Sep-22		F-MSR/OBS	Turbidity	NA	1				NTU
SS-15A-2	2-Sep-22		F-MSR/OBS	Flow	NA	18.27				ft3/sec
SS-16B	2-Sep-22		F-MSR/OBS	pH	NA	8.86				None
SS-16B	2-Sep-22		F-MSR/OBS	Water Temperature	NA	15.6				deg C
SS-16B	2-Sep-22		F-MSR/OBS	Dissolved oxygen (DO)	NA	9.8				mg/l
SS-16B	2-Sep-22		F-MSR/OBS	Specific conductance	NA	624				uS/cm
SS-16B	2-Sep-22		F-MSR/OBS	Turbidity	NA	2.3				NTU
SS-16B	2-Sep-22		F-MSR/OBS	Flow	NA	12.93				ft3/sec
SS-17D	2-Sep-22		F-MSR/OBS	pH	NA	8.53				None
SS-17D	2-Sep-22		F-MSR/OBS	Water Temperature	NA	14.9				deg C
SS-17D	2-Sep-22		F-MSR/OBS	Dissolved oxygen (DO)	NA	11.6				mg/l
SS-17D	2-Sep-22		F-MSR/OBS	Specific conductance	NA	627				uS/cm
SS-17D	2-Sep-22		F-MSR/OBS	Turbidity	NA	1.1				NTU
SS-17D	2-Sep-22		F-MSR/OBS	Flow	NA	4.9				ft3/sec
SS-19	2-Sep-22		F-MSR/OBS	pH	NA	8.23				None
SS-19	2-Sep-22		F-MSR/OBS	Water Temperature	NA	13.2				deg C
SS-19	2-Sep-22		F-MSR/OBS	Dissolved oxygen (DO)	NA	10.1				mg/l
SS-19	2-Sep-22		F-MSR/OBS	Specific conductance	NA	611				uS/cm
SS-19	2-Sep-22		F-MSR/OBS	Turbidity	NA	0.9				NTU
SS-19	2-Sep-22		F-MSR/OBS	Flow	NA	11.57				ft3/sec
SS-07	8-Dec-22	17:15	S-ROUTINE	Alkalinity, total	Total	93		2	4	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Bicarbonate	Total	110		3	4	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Chloride	Total	40		0.02	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Sulfate	Total	319		0.06	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.36	D	0.04	0.06	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Total suspended solids	NA	4	D	0.3	2	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Aluminum	Dissolved	0.008	J	0.003	0.009	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Barium	Dissolved	0.033		0.0002	0.003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-07	8-Dec-22	17:15	S-ROUTINE	Boron	Dissolved	0.077	J	0.004	0.1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Cadmium	Dissolved	0.00008		0.00002	0.00003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Calcium	Dissolved	124		0.2	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Dec-22	17:15	S-ROUTINE	Chromium	Dissolved	0.0003	J	0.0001	0.01	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-07	8-Dec-22	17:15	S-ROUTINE	Copper	Dissolved	0.002		0.0001	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Iron	Dissolved	0.018	J	0.004	0.02	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Magnesium	Dissolved	10		0.05	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Manganese	Dissolved	0.067		0.0003	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Molybdenum	Dissolved	0.137		0.0003	0.005	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Nickel	Dissolved	0.0006	J	0.0002	0.002	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Potassium	Dissolved	13		0.06	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Selenium	Dissolved	0.00059	J	0.00007	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-07	8-Dec-22	17:15	S-ROUTINE	Sodium	Dissolved	48		0.03	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Uranium-238	Dissolved	0.0029		0.00002	0.0002	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Vanadium	Dissolved	0.0024	J	0.0001	0.1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Zinc	Dissolved	0.04		0.001	0.008	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Aluminum	Total Recv	0.07		0.006	0.009	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Antimony	Total Recv	0.0002	J	0.0002	0.0005	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Arsenic	Total Recv	0.002		0.0001	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Barium	Total Recv	0.035		0.0002	0.003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-07	8-Dec-22	17:15	S-ROUTINE	Boron	Total Recv	0.083	J	0.007	0.1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Cadmium	Total Recv	0.00009		0.00002	0.00003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Calcium	Total Recv	128		0.1	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Chromium	Total Recv	0.0005	J	0.0002	0.01	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-07	8-Dec-22	17:15	S-ROUTINE	Copper	Total Recv	0.006		0.0003	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Iron	Total Recv	0.15		0.009	0.02	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Lead	Total Recv	0.001		0.0001	0.0003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Magnesium	Total Recv	11		0.05	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Manganese	Total Recv	0.076		0.0003	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Molybdenum	Total Recv	0.144		0.0002	0.005	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Nickel	Total Recv	0.0006	J	0.0002	0.002	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Potassium	Total Recv	15		0.1	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Selenium	Total Recv	0.0006	J	0.0001	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-07	8-Dec-22	17:15	S-ROUTINE	Sodium	Total Recv	54		0.1	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Uranium-238	Total Recv	0.0029		0.00003	0.0002	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Vanadium	Total Recv	0.003	J	0.0001	0.1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Zinc	Total Recv	0.045		0.001	0.008	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Ammonia	Unfiltered	0.04	J	0.03	0.05	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Dec-22	17:15	S-ROUTINE	Nitrate + Nitrite	Unfiltered	1.46		0.008	0.02	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.039		0.001	0.003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Mercury	Dissolved	0.003	J	0.002	0.005	ug/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Mercury	Total Recv	0.005		0.002	0.005	ug/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Hardness, Ca, Mg	NA	367		1	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Alkalinity, total	Total	93		2	4	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Bicarbonate	Total	110		3	4	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Chloride	Total	40		0.02	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Sulfate	Total	319		0.06	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.36	D	0.04	0.06	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Total suspended solids	NA	4	D	0.3	2	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Aluminum	Dissolved	0.008	J	0.003	0.009	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Barium	Dissolved	0.033		0.0002	0.003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-07	8-Dec-22	17:15	S-ROUTINE	Boron	Dissolved	0.077	J	0.004	0.1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Cadmium	Dissolved	0.00008		0.00002	0.00003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Calcium	Dissolved	124		0.2	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Chromium	Dissolved	0.0003	J	0.0001	0.01	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-07	8-Dec-22	17:15	S-ROUTINE	Copper	Dissolved	0.002		0.0001	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Iron	Dissolved	0.018	J	0.004	0.02	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Magnesium	Dissolved	10		0.05	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Manganese	Dissolved	0.067		0.0003	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Molybdenum	Dissolved	0.137		0.0003	0.005	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Nickel	Dissolved	0.0006	J	0.0002	0.002	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Potassium	Dissolved	13		0.06	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Selenium	Dissolved	0.00059	J	0.00007	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-07	8-Dec-22	17:15	S-ROUTINE	Sodium	Dissolved	48		0.03	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Uranium-238	Dissolved	0.0029		0.00002	0.0002	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Vanadium	Dissolved	0.0024	J	0.0001	0.1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Zinc	Dissolved	0.04		0.001	0.008	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Aluminum	Total Recv	0.07		0.006	0.009	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Antimony	Total Recv	0.0002	J	0.0002	0.0005	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Arsenic	Total Recv	0.002		0.0001	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Barium	Total Recv	0.035		0.0002	0.003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-07	8-Dec-22	17:15	S-ROUTINE	Boron	Total Recv	0.083	J	0.007	0.1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Dec-22	17:15	S-ROUTINE	Cadmium	Total Recv	0.00009		0.00002	0.00003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Calcium	Total Recv	128		0.1	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Chromium	Total Recv	0.0005	J	0.0002	0.01	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-07	8-Dec-22	17:15	S-ROUTINE	Copper	Total Recv	0.006		0.0003	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Iron	Total Recv	0.15		0.009	0.02	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Lead	Total Recv	0.001		0.0001	0.0003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Magnesium	Total Recv	11		0.05	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Manganese	Total Recv	0.076		0.0003	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Molybdenum	Total Recv	0.144		0.0002	0.005	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Nickel	Total Recv	0.0006	J	0.0002	0.002	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Potassium	Total Recv	15		0.1	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Selenium	Total Recv	0.0006	J	0.0001	0.001	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-07	8-Dec-22	17:15	S-ROUTINE	Sodium	Total Recv	54		0.1	1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Uranium-238	Total Recv	0.0029		0.00003	0.0002	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Vanadium	Total Recv	0.003	J	0.0001	0.1	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Zinc	Total Recv	0.045		0.001	0.008	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Ammonia	Unfiltered	0.04	J	0.03	0.05	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Nitrate + Nitrite	Unfiltered	1.46		0.008	0.02	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.039		0.001	0.003	mg/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Mercury	Dissolved	0.003	J	0.002	0.005	ug/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Mercury	Total Recv	0.005		0.002	0.005	ug/l
SS-07	8-Dec-22	17:15	S-ROUTINE	Hardness, Ca, Mg	NA	367		1	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Alkalinity, total	Total	84		2	4	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Bicarbonate	Total	100		3	4	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Chloride	Total	37		0.05	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Sulfate	Total	395		0.1	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.16		0.02	0.05	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Total suspended solids	NA	29	D	0.3	2	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Aluminum	Dissolved	0.005	J	0.003	0.009	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Barium	Dissolved	0.035		0.0002	0.003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-10A	8-Dec-22	16:00	S-ROUTINE	Boron	Dissolved	0.061	J	0.004	0.1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Cadmium	Dissolved	0.00018		0.00002	0.00003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Calcium	Dissolved	153		0.2	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-10A	8-Dec-22	16:00	S-ROUTINE	Copper	Dissolved	0.009		0.0001	0.001	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	8-Dec-22	16:00	S-ROUTINE	Iron	Dissolved	0.012	J	0.004	0.02	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Magnesium	Dissolved	11		0.05	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Manganese	Dissolved	0.14		0.0003	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Molybdenum	Dissolved	0.171		0.0003	0.005	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Nickel	Dissolved	0.0005	J	0.0002	0.002	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Potassium	Dissolved	13		0.06	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Selenium	Dissolved	0.00077	J	0.00007	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-10A	8-Dec-22	16:00	S-ROUTINE	Sodium	Dissolved	47		0.03	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Uranium-238	Dissolved	0.0044		0.00002	0.0002	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Vanadium	Dissolved	0.0025	J	0.0001	0.1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Zinc	Dissolved	0.053		0.001	0.008	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Aluminum	Total Recv	0.568		0.006	0.009	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Arsenic	Total Recv	0.005		0.0001	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Barium	Total Recv	0.043		0.0002	0.003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-10A	8-Dec-22	16:00	S-ROUTINE	Boron	Total Recv	0.066	J	0.007	0.1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Cadmium	Total Recv	0.0004		0.00002	0.00003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Calcium	Total Recv	157		0.1	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Chromium	Total Recv	0.0012	J	0.0002	0.01	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Cobalt	Total Recv	0.0005	J	0.0003	0.01	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Copper	Total Recv	0.045		0.0003	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Iron	Total Recv	1.01		0.02	0.02	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Lead	Total Recv	0.0071		0.0001	0.0003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Magnesium	Total Recv	12		0.05	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Manganese	Total Recv	0.301		0.0003	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Molybdenum	Total Recv	0.178		0.0002	0.005	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Nickel	Total Recv	0.0009	J	0.0002	0.002	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Potassium	Total Recv	13		0.1	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Selenium	Total Recv	0.0007	J	0.0001	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Silver	Total Recv	0.00009	J	0.00006	0.0002	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Sodium	Total Recv	48		0.1	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Uranium-238	Total Recv	0.0045		0.00003	0.0002	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Vanadium	Total Recv	0.0049	J	0.0001	0.1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Zinc	Total Recv	0.106		0.001	0.008	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Ammonia	Unfiltered	0.05	J	0.03	0.05	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.87		0.008	0.02	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.105		0.001	0.003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	8-Dec-22	16:00	S-ROUTINE	Mercury	Total Recv	0.035		0.002	0.005	ug/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Hardness, Ca, Mg	NA	439		1	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Alkalinity, total	Total	84		2	4	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Bicarbonate	Total	100		3	4	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Chloride	Total	37		0.05	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Sulfate	Total	395		0.1	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.16		0.02	0.05	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Total suspended solids	NA	29	D	0.3	2	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Aluminum	Dissolved	0.005	J	0.003	0.009	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Barium	Dissolved	0.035		0.0002	0.003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-10A	8-Dec-22	16:00	S-ROUTINE	Boron	Dissolved	0.061	J	0.004	0.1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Cadmium	Dissolved	0.00018		0.00002	0.00003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Calcium	Dissolved	153		0.2	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-10A	8-Dec-22	16:00	S-ROUTINE	Copper	Dissolved	0.009		0.0001	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Iron	Dissolved	0.012	J	0.004	0.02	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Magnesium	Dissolved	11		0.05	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Manganese	Dissolved	0.14		0.0003	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Molybdenum	Dissolved	0.171		0.0003	0.005	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Nickel	Dissolved	0.0005	J	0.0002	0.002	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Potassium	Dissolved	13		0.06	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Selenium	Dissolved	0.00077	J	0.00007	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-10A	8-Dec-22	16:00	S-ROUTINE	Sodium	Dissolved	47		0.03	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Uranium-238	Dissolved	0.0044		0.00002	0.0002	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Vanadium	Dissolved	0.0025	J	0.0001	0.1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Zinc	Dissolved	0.053		0.001	0.008	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Aluminum	Total Recv	0.568		0.006	0.009	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Arsenic	Total Recv	0.005		0.0001	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Barium	Total Recv	0.043		0.0002	0.003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-10A	8-Dec-22	16:00	S-ROUTINE	Boron	Total Recv	0.066	J	0.007	0.1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Cadmium	Total Recv	0.0004		0.00002	0.00003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Calcium	Total Recv	157		0.1	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Chromium	Total Recv	0.0012	J	0.0002	0.01	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	8-Dec-22	16:00	S-ROUTINE	Cobalt	Total Recv	0.0005	J	0.0003	0.01	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Copper	Total Recv	0.045		0.0003	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Iron	Total Recv	1.01		0.02	0.02	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Lead	Total Recv	0.0071		0.0001	0.0003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Magnesium	Total Recv	12		0.05	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Manganese	Total Recv	0.301		0.0003	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Molybdenum	Total Recv	0.178		0.0002	0.005	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Nickel	Total Recv	0.0009	J	0.0002	0.002	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Potassium	Total Recv	13		0.1	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Selenium	Total Recv	0.0007	J	0.0001	0.001	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Silver	Total Recv	0.00009	J	0.00006	0.0002	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Sodium	Total Recv	48		0.1	1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Uranium-238	Total Recv	0.0045		0.00003	0.0002	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Vanadium	Total Recv	0.0049	J	0.0001	0.1	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Zinc	Total Recv	0.106		0.001	0.008	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Ammonia	Unfiltered	0.05	J	0.03	0.05	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.87		0.008	0.02	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.105		0.001	0.003	mg/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Mercury	Total Recv	0.035		0.002	0.005	ug/l
SS-10A	8-Dec-22	16:00	S-ROUTINE	Hardness, Ca, Mg	NA	439		1	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Alkalinity, total	Total	100		2	4	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Bicarbonate	Total	120		3	4	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Chloride	Total	55		0.05	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Sulfate	Total	341		0.1	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.06		0.02	0.05	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Total suspended solids	NA	5	D	0.3	2	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-13	8-Dec-22	15:00	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Barium	Dissolved	0.045		0.0002	0.003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-13	8-Dec-22	15:00	S-ROUTINE	Boron	Dissolved	0.072	J	0.004	0.1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Cadmium	Dissolved	0.00016		0.00002	0.00003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Calcium	Dissolved	140		0.2	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-13	8-Dec-22	15:00	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Iron	Dissolved	0.019	J	0.004	0.02	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Magnesium	Dissolved	12		0.05	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	8-Dec-22	15:00	S-ROUTINE	Manganese	Dissolved	0.146		0.0003	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Molybdenum	Dissolved	0.138		0.0003	0.005	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Nickel	Dissolved	0.0006	J	0.0002	0.002	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Potassium	Dissolved	12		0.06	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-13	8-Dec-22	15:00	S-ROUTINE	Sodium	Dissolved	48		0.03	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Uranium-238	Dissolved	0.0049		0.00002	0.0002	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Vanadium	Dissolved	0.0024	J	0.0001	0.1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Zinc	Dissolved	0.074		0.001	0.008	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Aluminum	Total Recv	0.095		0.006	0.009	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Antimony	Total Recv	0.0002	J	0.0002	0.0005	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Barium	Total Recv	0.041		0.0002	0.003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-13	8-Dec-22	15:00	S-ROUTINE	Boron	Total Recv	0.072	J	0.007	0.1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Cadmium	Total Recv	0.00028		0.00002	0.00003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Calcium	Total Recv	144		0.1	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Chromium	Total Recv	0.0003	J	0.0002	0.01	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-13	8-Dec-22	15:00	S-ROUTINE	Copper	Total Recv	0.013		0.0003	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Iron	Total Recv	0.13		0.009	0.02	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Lead	Total Recv	0.0008		0.0001	0.0003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Manganese	Total Recv	0.184		0.0003	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Molybdenum	Total Recv	0.143		0.0002	0.005	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Nickel	Total Recv	0.0007	J	0.0002	0.002	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Potassium	Total Recv	13		0.1	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-13	8-Dec-22	15:00	S-ROUTINE	Sodium	Total Recv	52		0.1	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Uranium-238	Total Recv	0.0048		0.00003	0.0002	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Vanadium	Total Recv	0.0028	J	0.0001	0.1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Zinc	Total Recv	0.081		0.001	0.008	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Ammonia	Unfiltered	0.06		0.03	0.05	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.77		0.008	0.02	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.065		0.001	0.003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Mercury	Total Recv	0.006		0.002	0.005	ug/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Hardness, Ca, Mg	NA	415		1	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Alkalinity, total	Total	100		2	4	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	8-Dec-22	15:00	S-ROUTINE	Bicarbonate	Total	120		3	4	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Chloride	Total	55		0.05	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Sulfate	Total	341		0.1	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.06		0.02	0.05	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Total suspended solids	NA	5	D	0.3	2	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-13	8-Dec-22	15:00	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Barium	Dissolved	0.045		0.0002	0.003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-13	8-Dec-22	15:00	S-ROUTINE	Boron	Dissolved	0.072	J	0.004	0.1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Cadmium	Dissolved	0.00016		0.00002	0.00003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Calcium	Dissolved	140		0.2	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-13	8-Dec-22	15:00	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Iron	Dissolved	0.019	J	0.004	0.02	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Magnesium	Dissolved	12		0.05	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Manganese	Dissolved	0.146		0.0003	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Molybdenum	Dissolved	0.138		0.0003	0.005	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Nickel	Dissolved	0.0006	J	0.0002	0.002	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Potassium	Dissolved	12		0.06	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-13	8-Dec-22	15:00	S-ROUTINE	Sodium	Dissolved	48		0.03	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Uranium-238	Dissolved	0.0049		0.00002	0.0002	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Vanadium	Dissolved	0.0024	J	0.0001	0.1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Zinc	Dissolved	0.074		0.001	0.008	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Aluminum	Total Recv	0.095		0.006	0.009	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Antimony	Total Recv	0.0002	J	0.0002	0.0005	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Barium	Total Recv	0.041		0.0002	0.003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-13	8-Dec-22	15:00	S-ROUTINE	Boron	Total Recv	0.072	J	0.007	0.1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Cadmium	Total Recv	0.00028		0.00002	0.00003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Calcium	Total Recv	144		0.1	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Chromium	Total Recv	0.0003	J	0.0002	0.01	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-13	8-Dec-22	15:00	S-ROUTINE	Copper	Total Recv	0.013		0.0003	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Iron	Total Recv	0.13		0.009	0.02	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	8-Dec-22	15:00	S-ROUTINE	Lead	Total Recv	0.0008		0.0001	0.0003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Manganese	Total Recv	0.184		0.0003	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Molybdenum	Total Recv	0.143		0.0002	0.005	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Nickel	Total Recv	0.0007	J	0.0002	0.002	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Potassium	Total Recv	13		0.1	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-13	8-Dec-22	15:00	S-ROUTINE	Sodium	Total Recv	52		0.1	1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Uranium-238	Total Recv	0.0048		0.00003	0.0002	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Vanadium	Total Recv	0.0028	J	0.0001	0.1	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Zinc	Total Recv	0.081		0.001	0.008	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Ammonia	Unfiltered	0.06		0.03	0.05	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.77		0.008	0.02	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.065		0.001	0.003	mg/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Mercury	Total Recv	0.006		0.002	0.005	ug/l
SS-13	8-Dec-22	15:00	S-ROUTINE	Hardness, Ca, Mg	NA	415		1	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Lead	Total Recv	0.0005		0.0001	0.0003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Manganese	Total Recv	0.098		0.0003	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Molybdenum	Total Recv	0.147		0.0002	0.005	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Nickel	Total Recv	0.0008	J	0.0002	0.002	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Potassium	Total Recv	13		0.1	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Sodium	Total Recv	52		0.1	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Uranium-238	Total Recv	0.0053		0.00003	0.0002	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Vanadium	Total Recv	0.0023	J	0.0001	0.1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Zinc	Total Recv	0.123		0.001	0.008	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Ammonia	Unfiltered	0.06		0.03	0.05	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.76		0.008	0.02	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.054		0.001	0.003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Alkalinity, total	Total	100		2	4	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Bicarbonate	Total	120		3	4	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Chloride	Total	53		0.05	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Sulfate	Total	348		0.1	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.02		0.02	0.05	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Total suspended solids	NA	3	D	0.3	2	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Barium	Dissolved	0.038		0.0002	0.003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Boron	Dissolved	0.066	J	0.004	0.1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Cadmium	Dissolved	0.00027		0.00002	0.00003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Calcium	Dissolved	147		0.2	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Iron	Dissolved	0.005	J	0.004	0.02	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Magnesium	Dissolved	13		0.05	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Manganese	Dissolved	0.078		0.0003	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Molybdenum	Dissolved	0.139		0.0003	0.005	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Potassium	Dissolved	12		0.06	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Sodium	Dissolved	48		0.03	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Uranium-238	Dissolved	0.0054		0.00002	0.0002	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Vanadium	Dissolved	0.002	J	0.0001	0.1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Zinc	Dissolved	0.112		0.001	0.008	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Aluminum	Total Recv	0.09		0.006	0.009	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Barium	Total Recv	0.04		0.0002	0.003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Boron	Total Recv	0.07	J	0.007	0.1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Cadmium	Total Recv	0.00034		0.00003	0.00003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Calcium	Total Recv	152		0.1	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Chromium	Total Recv	0.0004	J	0.0002	0.01	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Copper	Total Recv	0.012		0.0003	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Iron	Total Recv	0.1		0.009	0.02	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Mercury	Total Recv	0.004	J	0.002	0.005	ug/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Hardness, Ca, Mg	NA	436		1	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Lead	Total Recv	0.0005		0.0001	0.0003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Manganese	Total Recv	0.098		0.0003	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Molybdenum	Total Recv	0.147		0.0002	0.005	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Nickel	Total Recv	0.0008	J	0.0002	0.002	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Potassium	Total Recv	13		0.1	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Sodium	Total Recv	52		0.1	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Uranium-238	Total Recv	0.0053		0.00003	0.0002	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Vanadium	Total Recv	0.0023	J	0.0001	0.1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Zinc	Total Recv	0.123		0.001	0.008	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Ammonia	Unfiltered	0.06		0.03	0.05	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.76		0.008	0.02	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.054		0.001	0.003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Alkalinity, total	Total	100		2	4	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Bicarbonate	Total	120		3	4	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Chloride	Total	53		0.05	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Sulfate	Total	348		0.1	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.02		0.02	0.05	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Total suspended solids	NA	3	D	0.3	2	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Barium	Dissolved	0.038		0.0002	0.003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Boron	Dissolved	0.066	J	0.004	0.1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Cadmium	Dissolved	0.00027		0.00002	0.00003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Calcium	Dissolved	147		0.2	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Iron	Dissolved	0.005	J	0.004	0.02	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Magnesium	Dissolved	13		0.05	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Manganese	Dissolved	0.078		0.0003	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Molybdenum	Dissolved	0.139		0.0003	0.005	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Potassium	Dissolved	12		0.06	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Sodium	Dissolved	48		0.03	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Uranium-238	Dissolved	0.0054		0.00002	0.0002	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Vanadium	Dissolved	0.002	J	0.0001	0.1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Zinc	Dissolved	0.112		0.001	0.008	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Aluminum	Total Recv	0.09		0.006	0.009	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Barium	Total Recv	0.04		0.0002	0.003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Boron	Total Recv	0.07	J	0.007	0.1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Cadmium	Total Recv	0.00034		0.00003	0.00003	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Calcium	Total Recv	152		0.1	1	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Chromium	Total Recv	0.0004	J	0.0002	0.01	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Copper	Total Recv	0.012		0.0003	0.001	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Iron	Total Recv	0.1		0.009	0.02	mg/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Mercury	Total Recv	0.004	J	0.002	0.005	ug/l
SS-15A-2	8-Dec-22	13:00	S-ROUTINE	Hardness, Ca, Mg	NA	436		1	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Alkalinity, total	Total	99		2	4	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Bicarbonate	Total	120		3	4	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Chloride	Total	44		0.02	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Sulfate	Total	285		0.06	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.91		0.02	0.05	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Total suspended solids	NA	3	D	0.3	2	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Aluminum	Dissolved	0.009	J	0.003	0.009	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Barium	Dissolved	0.034		0.0002	0.003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Boron	Dissolved	0.056	J	0.004	0.1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Cadmium	Dissolved	0.00024		0.00002	0.00003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Calcium	Dissolved	126		0.2	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Copper	Dissolved	0.006		0.0001	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Iron	Dissolved	0.006	J	0.004	0.02	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Magnesium	Dissolved	12		0.05	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Manganese	Dissolved	0.057		0.0003	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Molybdenum	Dissolved	0.111		0.0003	0.005	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Nickel	Dissolved	0.0006	J	0.0002	0.002	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Potassium	Dissolved	10		0.06	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Selenium	Dissolved	0.00086	J	0.00007	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	8-Dec-22	11:15	S-ROUTINE	Sodium	Dissolved	39		0.03	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Uranium-238	Dissolved	0.0044		0.00002	0.0002	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Vanadium	Dissolved	0.0018	J	0.0001	0.1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Zinc	Dissolved	0.093		0.001	0.008	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Aluminum	Total Recv	0.069		0.006	0.009	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Barium	Total Recv	0.036		0.0002	0.003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Boron	Total Recv	0.062	J	0.007	0.1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Cadmium	Total Recv	0.00028		0.00003	0.00003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Calcium	Total Recv	129		0.1	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Chromium	Total Recv	0.0003	J	0.0002	0.01	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Copper	Total Recv	0.009		0.0003	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Iron	Total Recv	0.08		0.009	0.02	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Lead	Total Recv	0.0004		0.0001	0.0003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Manganese	Total Recv	0.067		0.0003	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Molybdenum	Total Recv	0.118		0.0002	0.005	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Nickel	Total Recv	0.0007	J	0.0002	0.002	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Potassium	Total Recv	11		0.1	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Selenium	Total Recv	0.0009	J	0.0001	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Sodium	Total Recv	42		0.1	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Uranium-238	Total Recv	0.0044		0.00003	0.0002	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Vanadium	Total Recv	0.002	J	0.0001	0.1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Zinc	Total Recv	0.097		0.001	0.008	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Ammonia	Unfiltered	0.05		0.03	0.05	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.65		0.008	0.02	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.051		0.001	0.003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Mercury	Total Recv	0.004	J	0.002	0.005	ug/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Hardness, Ca, Mg	NA	375		1	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Alkalinity, total	Total	110		2	4	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Bicarbonate	Total	130		3	4	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Chloride	Total	56		0.05	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Sulfate	Total	331		0.1	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.09		0.02	0.05	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Total suspended solids	NA	6	D	0.3	2	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	8-Dec-22	14:30	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Barium	Dissolved	0.052		0.0002	0.003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-14	8-Dec-22	14:30	S-ROUTINE	Boron	Dissolved	0.071	J	0.004	0.1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Cadmium	Dissolved	0.00018		0.00002	0.00003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Calcium	Dissolved	142		0.2	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-14	8-Dec-22	14:30	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Iron	Dissolved	0.016	J	0.004	0.02	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Magnesium	Dissolved	13		0.05	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Manganese	Dissolved	0.154		0.0003	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Molybdenum	Dissolved	0.136		0.0003	0.005	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Nickel	Dissolved	0.0008	J	0.0002	0.002	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Potassium	Dissolved	12		0.06	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-14	8-Dec-22	14:30	S-ROUTINE	Sodium	Dissolved	48		0.03	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Uranium-238	Dissolved	0.0051		0.00002	0.0002	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Vanadium	Dissolved	0.0024	J	0.0001	0.1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Zinc	Dissolved	0.085		0.001	0.008	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Aluminum	Total Recv	0.122		0.006	0.009	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Barium	Total Recv	0.042		0.0002	0.003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-14	8-Dec-22	14:30	S-ROUTINE	Boron	Total Recv	0.072	J	0.007	0.1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Cadmium	Total Recv	0.00031		0.00003	0.00003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Calcium	Total Recv	144		0.1	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Chromium	Total Recv	0.0004	J	0.0002	0.01	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-14	8-Dec-22	14:30	S-ROUTINE	Copper	Total Recv	0.013		0.0003	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Iron	Total Recv	0.18		0.009	0.02	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Lead	Total Recv	0.0009		0.0001	0.0003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Manganese	Total Recv	0.185		0.0003	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Molybdenum	Total Recv	0.143		0.0002	0.005	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Nickel	Total Recv	0.0008	J	0.0002	0.002	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Potassium	Total Recv	13		0.1	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	8-Dec-22	14:30	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-14	8-Dec-22	14:30	S-ROUTINE	Sodium	Total Recv	51		0.1	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Uranium-238	Total Recv	0.0051		0.00003	0.0002	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Vanadium	Total Recv	0.0029	J	0.0001	0.1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Zinc	Total Recv	0.088		0.001	0.008	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Ammonia	Unfiltered	0.06		0.03	0.05	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.8		0.008	0.02	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.069		0.001	0.003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Mercury	Dissolved	0.003	J	0.002	0.005	ug/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Mercury	Total Recv	0.007		0.002	0.005	ug/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Hardness, Ca, Mg	NA	416		1	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Alkalinity, total	Total	110		2	4	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Bicarbonate	Total	130		3	4	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Chloride	Total	56		0.05	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Sulfate	Total	331		0.1	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	1.09		0.02	0.05	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Total suspended solids	NA	6	D	0.3	2	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-14	8-Dec-22	14:30	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Barium	Dissolved	0.052		0.0002	0.003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-14	8-Dec-22	14:30	S-ROUTINE	Boron	Dissolved	0.071	J	0.004	0.1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Cadmium	Dissolved	0.00018		0.00002	0.00003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Calcium	Dissolved	142		0.2	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-14	8-Dec-22	14:30	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Iron	Dissolved	0.016	J	0.004	0.02	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Magnesium	Dissolved	13		0.05	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Manganese	Dissolved	0.154		0.0003	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Molybdenum	Dissolved	0.136		0.0003	0.005	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Nickel	Dissolved	0.0008	J	0.0002	0.002	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Potassium	Dissolved	12		0.06	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-14	8-Dec-22	14:30	S-ROUTINE	Sodium	Dissolved	48		0.03	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Uranium-238	Dissolved	0.0051		0.00002	0.0002	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Vanadium	Dissolved	0.0024	J	0.0001	0.1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	8-Dec-22	14:30	S-ROUTINE	Zinc	Dissolved	0.085		0.001	0.008	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Aluminum	Total Recv	0.122		0.006	0.009	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Barium	Total Recv	0.042		0.0002	0.003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-14	8-Dec-22	14:30	S-ROUTINE	Boron	Total Recv	0.072	J	0.007	0.1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Cadmium	Total Recv	0.00031		0.00003	0.00003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Calcium	Total Recv	144		0.1	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Chromium	Total Recv	0.0004	J	0.0002	0.01	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-14	8-Dec-22	14:30	S-ROUTINE	Copper	Total Recv	0.013		0.0003	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Iron	Total Recv	0.18		0.009	0.02	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Lead	Total Recv	0.0009		0.0001	0.0003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Magnesium	Total Recv	14		0.05	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Manganese	Total Recv	0.185		0.0003	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Molybdenum	Total Recv	0.143		0.0002	0.005	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Nickel	Total Recv	0.0008	J	0.0002	0.002	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Potassium	Total Recv	13		0.1	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Selenium	Total Recv	0.001		0.0001	0.001	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-14	8-Dec-22	14:30	S-ROUTINE	Sodium	Total Recv	51		0.1	1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Uranium-238	Total Recv	0.0051		0.00003	0.0002	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Vanadium	Total Recv	0.0029	J	0.0001	0.1	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Zinc	Total Recv	0.088		0.001	0.008	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Ammonia	Unfiltered	0.06		0.03	0.05	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.8		0.008	0.02	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.069		0.001	0.003	mg/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Mercury	Dissolved	0.003	J	0.002	0.005	ug/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Mercury	Total Recv	0.007		0.002	0.005	ug/l
SS-14	8-Dec-22	14:30	S-ROUTINE	Hardness, Ca, Mg	NA	416		1	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Alkalinity, total	Total	99		2	4	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Bicarbonate	Total	120		3	4	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Chloride	Total	44		0.02	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Sulfate	Total	285		0.06	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.91		0.02	0.05	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Total suspended solids	NA	3	D	0.3	2	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Aluminum	Dissolved	0.009	J	0.003	0.009	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Barium	Dissolved	0.034		0.0002	0.003	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	8-Dec-22	11:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Boron	Dissolved	0.056	J	0.004	0.1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Cadmium	Dissolved	0.00024		0.00002	0.00003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Calcium	Dissolved	126		0.2	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Copper	Dissolved	0.006		0.0001	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Iron	Dissolved	0.006	J	0.004	0.02	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Magnesium	Dissolved	12		0.05	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Manganese	Dissolved	0.057		0.0003	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Molybdenum	Dissolved	0.111		0.0003	0.005	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Nickel	Dissolved	0.0006	J	0.0002	0.002	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Potassium	Dissolved	10		0.06	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Selenium	Dissolved	0.00086	J	0.00007	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Sodium	Dissolved	39		0.03	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Uranium-238	Dissolved	0.0044		0.00002	0.0002	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Vanadium	Dissolved	0.0018	J	0.0001	0.1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Zinc	Dissolved	0.093		0.001	0.008	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Aluminum	Total Recv	0.069		0.006	0.009	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Barium	Total Recv	0.036		0.0002	0.003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Boron	Total Recv	0.062	J	0.007	0.1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Cadmium	Total Recv	0.00028		0.00003	0.00003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Calcium	Total Recv	129		0.1	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Chromium	Total Recv	0.0003	J	0.0002	0.01	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Copper	Total Recv	0.009		0.0003	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Iron	Total Recv	0.08		0.009	0.02	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Lead	Total Recv	0.0004		0.0001	0.0003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Manganese	Total Recv	0.067		0.0003	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Molybdenum	Total Recv	0.118		0.0002	0.005	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Nickel	Total Recv	0.0007	J	0.0002	0.002	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Potassium	Total Recv	11		0.1	1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Selenium	Total Recv	0.0009	J	0.0001	0.001	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-16B	8-Dec-22	11:15	S-ROUTINE	Sodium	Total Recv	42		0.1	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	8-Dec-22	11:15	S-ROUTINE	Uranium-238	Total Recv	0.0044		0.00003	0.0002	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Vanadium	Total Recv	0.002	J	0.0001	0.1	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Zinc	Total Recv	0.097		0.001	0.008	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Ammonia	Unfiltered	0.05		0.03	0.05	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.65		0.008	0.02	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.051		0.001	0.003	mg/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Mercury	Total Recv	0.004	J	0.002	0.005	ug/l
SS-16B	8-Dec-22	11:15	S-ROUTINE	Hardness, Ca, Mg	NA	375		1	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Alkalinity, total	Total	100		2	4	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Bicarbonate	Total	130		3	4	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Chloride	Total	49		0.02	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Sulfate	Total	283		0.06	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.87		0.02	0.05	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Total suspended solids	NA	3	D	0.3	2	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Barium	Dissolved	0.043		0.0002	0.003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Boron	Dissolved	0.065	J	0.004	0.1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Cadmium	Dissolved	0.00032		0.00002	0.00003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Calcium	Dissolved	125		0.2	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Iron	Dissolved	0.007	J	0.004	0.02	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Magnesium	Dissolved	12		0.05	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Manganese	Dissolved	0.037		0.0003	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Molybdenum	Dissolved	0.106		0.0003	0.005	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Potassium	Dissolved	10		0.06	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Selenium	Dissolved	0.00094	J	0.00007	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Sodium	Dissolved	43		0.03	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Uranium-238	Dissolved	0.0045		0.00002	0.0002	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Vanadium	Dissolved	0.0016	J	0.0001	0.1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Zinc	Dissolved	0.125		0.001	0.008	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Aluminum	Total Recv	0.041		0.006	0.009	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	8-Dec-22	10:15	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Barium	Total Recv	0.034		0.0002	0.003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Boron	Total Recv	0.068	J	0.007	0.1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Cadmium	Total Recv	0.00038		0.00003	0.00003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Calcium	Total Recv	130		0.1	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Chromium	Total Recv	0.0002	J	0.0002	0.01	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Copper	Total Recv	0.011		0.0003	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Iron	Total Recv	0.06		0.009	0.02	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Lead	Total Recv	0.0003		0.0001	0.0003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Manganese	Total Recv	0.045		0.0003	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Molybdenum	Total Recv	0.112		0.0002	0.005	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Nickel	Total Recv	0.0008	J	0.0002	0.002	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Potassium	Total Recv	10		0.1	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Selenium	Total Recv	0.0008	J	0.0001	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Sodium	Total Recv	45		0.1	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Uranium-238	Total Recv	0.0045		0.00003	0.0002	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Vanadium	Total Recv	0.0017	J	0.0001	0.1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Zinc	Total Recv	0.125		0.001	0.008	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Ammonia	Unfiltered	0.03	J	0.03	0.05	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.63		0.008	0.02	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.044		0.001	0.003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Mercury	Total Recv	0.004	J	0.002	0.005	ug/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Hardness, Ca, Mg	NA	380		1	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Alkalinity, total	Total	100		2	4	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Bicarbonate	Total	130		3	4	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Chloride	Total	49		0.02	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Sulfate	Total	283		0.06	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.87		0.02	0.05	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Total suspended solids	NA	3	D	0.3	2	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Barium	Dissolved	0.043		0.0002	0.003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Boron	Dissolved	0.065	J	0.004	0.1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Cadmium	Dissolved	0.00032		0.00002	0.00003	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	8-Dec-22	10:15	S-ROUTINE	Calcium	Dissolved	125		0.2	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Iron	Dissolved	0.007	J	0.004	0.02	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Magnesium	Dissolved	12		0.05	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Manganese	Dissolved	0.037		0.0003	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Molybdenum	Dissolved	0.106		0.0003	0.005	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Potassium	Dissolved	10		0.06	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Selenium	Dissolved	0.00094	J	0.00007	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Sodium	Dissolved	43		0.03	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Uranium-238	Dissolved	0.0045		0.00002	0.0002	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Vanadium	Dissolved	0.0016	J	0.0001	0.1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Zinc	Dissolved	0.125		0.001	0.008	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Aluminum	Total Recv	0.041		0.006	0.009	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Antimony	Total Recv	0.0003	J	0.0002	0.0005	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Arsenic	Total Recv	0.004		0.0001	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Barium	Total Recv	0.034		0.0002	0.003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Boron	Total Recv	0.068	J	0.007	0.1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Cadmium	Total Recv	0.00038		0.00003	0.00003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Calcium	Total Recv	130		0.1	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Chromium	Total Recv	0.0002	J	0.0002	0.01	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Copper	Total Recv	0.011		0.0003	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Iron	Total Recv	0.06		0.009	0.02	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Lead	Total Recv	0.0003		0.0001	0.0003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Manganese	Total Recv	0.045		0.0003	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Molybdenum	Total Recv	0.112		0.0002	0.005	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Nickel	Total Recv	0.0008	J	0.0002	0.002	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Potassium	Total Recv	10		0.1	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Selenium	Total Recv	0.0008	J	0.0001	0.001	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-17D	8-Dec-22	10:15	S-ROUTINE	Sodium	Total Recv	45		0.1	1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Uranium-238	Total Recv	0.0045		0.00003	0.0002	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Vanadium	Total Recv	0.0017	J	0.0001	0.1	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Zinc	Total Recv	0.125		0.001	0.008	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	8-Dec-22	10:15	S-ROUTINE	Ammonia	Unfiltered	0.03	J	0.03	0.05	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.63		0.008	0.02	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.044		0.001	0.003	mg/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Mercury	Total Recv	0.004	J	0.002	0.005	ug/l
SS-17D	8-Dec-22	10:15	S-ROUTINE	Hardness, Ca, Mg	NA	380		1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Alkalinity, total	Total	110		2	4	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Bicarbonate	Total	140		3	4	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Chloride	Total	47		0.02	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Sulfate	Total	270		0.06	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.92		0.02	0.05	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Total suspended solids	NA	2.2	DJ	0.3	6	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	Dissolved	0.036		0.0002	0.003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	Dissolved	0.063	J	0.004	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	Dissolved	0.00029		0.00002	0.00003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Calcium	Dissolved	121		0.2	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	Dissolved	0.01	J	0.004	0.02	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-19	8-Dec-22	9:15	S-ROUTINE	Magnesium	Dissolved	12		0.05	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	Dissolved	0.043		0.0003	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	Dissolved	0.1		0.0003	0.005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Potassium	Dissolved	10		0.06	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	Dissolved	0.00077	J	0.00007	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-19	8-Dec-22	9:15	S-ROUTINE	Sodium	Dissolved	44		0.03	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium-238	Dissolved	0.005		0.00002	0.0002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	Dissolved	0.0019	J	0.0001	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	Dissolved	0.12		0.001	0.008	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	Total Recv	0.031		0.006	0.009	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	Total Recv	0.005		0.0001	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	Total Recv	0.037		0.0002	0.003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	Total Recv	0.065	J	0.007	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	Total Recv	0.00032		0.00003	0.00003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Calcium	Total Recv	127		0.1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	Total Recv	0.006	J	0.0002	0.01	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	Total Recv	0.01		0.0003	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	Total Recv	0.11		0.009	0.02	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	Total Recv	0.0004		0.0001	0.0003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	Total Recv	0.049		0.0003	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	Total Recv	0.105		0.0002	0.005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	Total Recv	0.0011	J	0.0002	0.002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Potassium	Total Recv	10		0.1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	Total Recv	0.0008	J	0.0001	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-19	8-Dec-22	9:15	S-ROUTINE	Sodium	Total Recv	45		0.1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium-238	Total Recv	0.005		0.00003	0.0002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	Total Recv	0.0019	J	0.0001	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	Total Recv	0.128		0.001	0.008	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Ammonia	Unfiltered	0.03	J	0.03	0.05	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.7		0.008	0.02	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.044		0.001	0.003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	Total Recv	0.003	J	0.002	0.005	ug/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Hardness, Ca, Mg	NA	372		1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Alkalinity, total	Total	110		2	4	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Bicarbonate	Total	140		3	4	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Chloride	Total	47		0.02	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Sulfate	Total	270		0.06	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.92		0.02	0.05	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Total suspended solids	NA	2.2	DJ	0.3	6	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	Dissolved	0.036		0.0002	0.003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	Dissolved	0.063	J	0.004	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	Dissolved	0.00029		0.00002	0.00003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Calcium	Dissolved	121		0.2	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	Dissolved	0.01	J	0.004	0.02	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-19	8-Dec-22	9:15	S-ROUTINE	Magnesium	Dissolved	12		0.05	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	Dissolved	0.043		0.0003	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	Dissolved	0.1		0.0003	0.005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Potassium	Dissolved	10		0.06	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	Dissolved	0.00077	J	0.00007	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-19	8-Dec-22	9:15	S-ROUTINE	Sodium	Dissolved	44		0.03	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium-238	Dissolved	0.005		0.00002	0.0002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	Dissolved	0.0019	J	0.0001	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	Dissolved	0.12		0.001	0.008	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	Total Recv	0.031		0.006	0.009	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	Total Recv	0.005		0.0001	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	Total Recv	0.037		0.0002	0.003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	Total Recv	0.065	J	0.007	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	Total Recv	0.00032		0.00003	0.00003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Calcium	Total Recv	127		0.1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	Total Recv	0.006	J	0.0002	0.01	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	Total Recv	0.01		0.0003	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	Total Recv	0.11		0.009	0.02	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	Total Recv	0.0004		0.0001	0.0003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	Total Recv	0.049		0.0003	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	Total Recv	0.105		0.0002	0.005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	Total Recv	0.0011	J	0.0002	0.002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Potassium	Total Recv	10		0.1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	Total Recv	0.0008	J	0.0001	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-19	8-Dec-22	9:15	S-ROUTINE	Sodium	Total Recv	45		0.1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium-238	Total Recv	0.005		0.00003	0.0002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	Total Recv	0.0019	J	0.0001	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	Total Recv	0.128		0.001	0.008	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Ammonia	Unfiltered	0.03	J	0.03	0.05	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.7		0.008	0.02	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.044		0.001	0.003	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	Total Recv	0.003	J	0.002	0.005	ug/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Hardness, Ca, Mg	NA	372		1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Alkalinity, total	Total	110		2	4	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Bicarbonate	Total	140		3	4	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Chloride	Total	47		0.02	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Sulfate	Total	270		0.06	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered	0.92		0.02	0.05	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Total suspended solids	NA	2.2	DJ	0.3	6	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	Dissolved	0.036		0.0002	0.003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	Dissolved	0.063	J	0.004	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	Dissolved	0.00029		0.00002	0.00003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Calcium	Dissolved	121		0.2	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	Dissolved	0.01	J	0.004	0.02	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	
SS-19	8-Dec-22	9:15	S-ROUTINE	Magnesium	Dissolved	12		0.05	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	Dissolved	0.043		0.0003	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	Dissolved	0.1		0.0003	0.005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	Dissolved	0.0007	J	0.0002	0.002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Potassium	Dissolved	10		0.06	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	Dissolved	0.00077	J	0.00007	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	
SS-19	8-Dec-22	9:15	S-ROUTINE	Sodium	Dissolved	44		0.03	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium-238	Dissolved	0.005		0.00002	0.0002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	Dissolved	0.0019	J	0.0001	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	Dissolved	0.12		0.001	0.008	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	Total Recv	0.031		0.006	0.009	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	Total Recv	0.0004	J	0.0002	0.0005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	Total Recv	0.005		0.0001	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	Total Recv	0.037		0.0002	0.003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	Total Recv	Not Detected		0.0002	0.0008	
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	Total Recv	0.065	J	0.007	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	Total Recv	0.00032		0.00003	0.00003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Calcium	Total Recv	127		0.1	1	mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	Total Recv	0.006	J	0.0002	0.01	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	Total Recv	Not Detected		0.0003	0.01	
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	Total Recv	0.01		0.0003	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	Total Recv	0.11		0.009	0.02	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	Total Recv	0.0004		0.0001	0.0003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Magnesium	Total Recv	13		0.05	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	Total Recv	0.049		0.0003	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	Total Recv	0.105		0.0002	0.005	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	Total Recv	0.0011	J	0.0002	0.002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Potassium	Total Recv	10		0.1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	Total Recv	0.0008	J	0.0001	0.001	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	Total Recv	Not Detected		0.00006	0.0002	
SS-19	8-Dec-22	9:15	S-ROUTINE	Sodium	Total Recv	45		0.1	1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium-238	Total Recv	0.005		0.00003	0.0002	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	Total Recv	0.0019	J	0.0001	0.1	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	Total Recv	0.128		0.001	0.008	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Ammonia	Unfiltered	0.03	J	0.03	0.05	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Nitrate + Nitrite	Unfiltered	0.7		0.008	0.02	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered	0.044		0.001	0.003	mg/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	ug/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	Total Recv	0.003	J	0.002	0.005	ug/l
SS-19	8-Dec-22	9:15	S-ROUTINE	Hardness, Ca, Mg	NA	372		1	1	mg/l
SS-07-0.0	10-Dec-22	8:30	S-ROUTINE	Copper	Total Recv	0.01		0.0003	0.005	mg/l
SS-07-0.5	10-Dec-22	8:45	S-ROUTINE	Copper	Total Recv	0.006		0.0003	0.005	mg/l
SS-07-1.0	10-Dec-22	9:00	S-ROUTINE	Copper	Total Recv	0.008		0.0003	0.005	mg/l
SS-07-1.5	10-Dec-22	9:15	S-ROUTINE	Copper	Total Recv	0.011		0.0003	0.005	mg/l
SS-07-2.0	10-Dec-22	9:22	S-ROUTINE	Copper	Total Recv	0.01		0.0003	0.005	mg/l
SS-07-2.5	10-Dec-22	9:30	S-ROUTINE	Copper	Total Recv	0.008		0.0003	0.005	mg/l
SS-07-3.0	10-Dec-22	9:40	S-ROUTINE	Copper	Total Recv	Not Detected		0.0003	0.005	
SS-07-3.1	10-Dec-22	9:45	S-ROUTINE	Copper	Total Recv	0.042		0.0003	0.005	mg/l
SS-07-3.2	10-Dec-22	9:50	S-ROUTINE	Copper	Total Recv	0.021		0.0003	0.005	mg/l
SS-07-3.3	10-Dec-22	9:55	S-ROUTINE	Copper	Total Recv	0.021		0.0003	0.005	mg/l
SS-07-3.4	10-Dec-22	10:02	S-ROUTINE	Copper	Total Recv	0.02		0.0003	0.005	mg/l
SS-07-3.5	10-Dec-22	10:15	S-ROUTINE	Copper	Total Recv	0.02		0.0003	0.005	mg/l
SS-07-4.0	10-Dec-22	10:25	S-ROUTINE	Copper	Total Recv	0.033		0.0003	0.005	mg/l
SS-07-4.5	10-Dec-22	10:35	S-ROUTINE	Copper	Total Recv	0.022		0.0003	0.005	mg/l
SS-07-5.0	10-Dec-22	11:30	S-ROUTINE	Copper	Total Recv	0.023		0.0003	0.005	mg/l
SS-07-5.2	10-Dec-22	11:40	S-ROUTINE	Copper	Total Recv	0.022		0.0003	0.005	mg/l
SS-07	8-Dec-22	17:15	F-MSR/OBS	Dissolved oxygen (DO)	NA	11.3				mg/l
SS-07	8-Dec-22	17:15	F-MSR/OBS	Dissolved oxygen saturation	NA	96				%
SS-07	8-Dec-22	17:15	F-MSR/OBS	Specific conductance	NA	916				uS/cm

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Dec-22	17:15	F-MSR/OBS	Turbidity	NA	2				NTU
SS-07	8-Dec-22	17:15	F-MSR/OBS	Flow	NA	19.5				ft3/sec
SS-07	8-Dec-22	17:15	F-MSR/OBS	pH	NA	7.56				None
SS-07	8-Dec-22	17:15	F-MSR/OBS	Water Temperature	NA	5.3				deg C
SS-10A	8-Dec-22	16:00	F-MSR/OBS	Dissolved oxygen (DO)	NA	12.7				mg/l
SS-10A	8-Dec-22	16:00	F-MSR/OBS	Dissolved oxygen saturation	NA	95				%
SS-10A	8-Dec-22	16:00	F-MSR/OBS	Specific conductance	NA	1015				uS/cm
SS-10A	8-Dec-22	16:00	F-MSR/OBS	Turbidity	NA	14.4				NTU
SS-10A	8-Dec-22	16:00	F-MSR/OBS	pH	NA	8.14				None
SS-10A	8-Dec-22	16:00	F-MSR/OBS	Water Temperature	NA	0.1				deg C
SS-13	8-Dec-22	15:00	F-MSR/OBS	Dissolved oxygen (DO)	NA	11.3				mg/l
SS-13	8-Dec-22	15:00	F-MSR/OBS	Dissolved oxygen saturation	NA	88				%
SS-13	8-Dec-22	15:00	F-MSR/OBS	Specific conductance	NA	1008				uS/cm
SS-13	8-Dec-22	15:00	F-MSR/OBS	Turbidity	NA	3				NTU
SS-13	8-Dec-22	15:00	F-MSR/OBS	pH	NA	8.03				None
SS-13	8-Dec-22	15:00	F-MSR/OBS	Water Temperature	NA	2.2				deg C
SS-14	8-Dec-22	14:30	F-MSR/OBS	Dissolved oxygen (DO)	NA	12.1				mg/l
SS-14	8-Dec-22	14:30	F-MSR/OBS	Dissolved oxygen saturation	NA	95				%
SS-14	8-Dec-22	14:30	F-MSR/OBS	Specific conductance	NA	1002				uS/cm
SS-14	8-Dec-22	14:30	F-MSR/OBS	Turbidity	NA	3.2				NTU
SS-14	8-Dec-22	14:30	F-MSR/OBS	pH	NA	7.91				None
SS-14	8-Dec-22	14:30	F-MSR/OBS	Water Temperature	NA	2.6				deg C
SS-15A-2	8-Dec-22	12:30	F-MSR/OBS	Dissolved oxygen (DO)	NA	12.2				mg/l
SS-15A-2	8-Dec-22	12:30	F-MSR/OBS	Dissolved oxygen saturation	NA	90				%
SS-15A-2	8-Dec-22	12:30	F-MSR/OBS	Specific conductance	NA	1060				uS/cm
SS-15A-2	8-Dec-22	12:30	F-MSR/OBS	Turbidity	NA	2.5				NTU
SS-15A-2	8-Dec-22	12:30	F-MSR/OBS	pH	NA	7.35				None
SS-15A-2	8-Dec-22	12:30	F-MSR/OBS	Water Temperature	NA	0.8				deg C
SS-16B	8-Dec-22	11:15	F-MSR/OBS	Dissolved oxygen (DO)	NA	13.3				mg/l
SS-16B	8-Dec-22	11:15	F-MSR/OBS	Dissolved oxygen saturation	NA	98				%
SS-16B	8-Dec-22	11:15	F-MSR/OBS	Specific conductance	NA	880.7				uS/cm
SS-16B	8-Dec-22	11:15	F-MSR/OBS	Turbidity	NA	2				NTU
SS-16B	8-Dec-22	11:15	F-MSR/OBS	pH	NA	7.94				None
SS-16B	8-Dec-22	11:15	F-MSR/OBS	Water Temperature	NA	0.7				deg C
SS-17D	8-Dec-22	10:15	F-MSR/OBS	Dissolved oxygen (DO)	NA	10.4				mg/l
SS-17D	8-Dec-22	10:15	F-MSR/OBS	Dissolved oxygen saturation	NA	75				%
SS-17D	8-Dec-22	10:15	F-MSR/OBS	Specific conductance	NA	887.5				uS/cm
SS-17D	8-Dec-22	10:15	F-MSR/OBS	Turbidity	NA	3.4				NTU
SS-17D	8-Dec-22	10:15	F-MSR/OBS	pH	NA	7.87				None
SS-17D	8-Dec-22	10:15	F-MSR/OBS	Water Temperature	NA	0				deg C
SS-19	8-Dec-22	9:15	F-MSR/OBS	Dissolved oxygen (DO)	NA	13.2				mg/l

Table C-1. Surface water monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	8-Dec-22	9:15	F-MSR/OBS	Dissolved oxygen saturation	NA	95				%
SS-19	8-Dec-22	9:15	F-MSR/OBS	Specific conductance	NA	882.2				uS/cm
SS-19	8-Dec-22	9:15	F-MSR/OBS	Turbidity	NA	1.2				NTU
SS-19	8-Dec-22	9:15	F-MSR/OBS	pH	NA	7.81				None
SS-19	8-Dec-22	9:15	F-MSR/OBS	Water Temperature	NA	0				deg C

APPENDIX D

Sediment Data

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

Site ID	Date	Time	Sample Type	Characteristic Name	Size Fraction	Result Value	Result Qualifier	Method Detection Limit	Lower Reporting Limit	Unit
SS-16B	16-Mar-22	10:30	QC-FD	Aluminum	<0.063 mm	17200	D	50	50	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Aluminum	<0.063 mm	19700	D	50	50	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Aluminum	<0.063 mm	23200	D	50	50	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Aluminum	<0.063 mm	20700	D	70	70	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Aluminum	<0.063 mm	26600	D	70	70	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Aluminum	<0.063 mm	18400	D	60	60	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Aluminum	<0.063 mm	24100	D	70	70	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Aluminum	<0.063 mm	21600	D	50	50	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Aluminum	<0.063 mm	20900	D	40	40	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Aluminum	<0.063 mm	22600	D	60	60	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Aluminum	<0.063 mm	16600	D	50	50	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Aluminum	<0.063 mm	27000	D	70	70	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Aluminum	<0.063 mm	23300	D	60	60	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Aluminum	<0.063 mm	26700	D	40	40	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Aluminum	<0.063 mm	28400	D	40	40	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Aluminum	<0.063 mm	17800	D	40	40	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Aluminum	<0.063 mm	23400	D	50	50	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Aluminum	<0.063 mm	24000	D	60	60	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Aluminum	<0.063 mm	33800	D	60	60	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Aluminum	<0.063 mm	21700	D	70	70	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Aluminum	<0.063 mm	35700	D	60	60	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Aluminum	<0.063 mm	33800	D	80	80	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Aluminum	<0.063 mm	26600	D	50	50	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Aluminum	<0.063 mm	32300	D	50	50	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Aluminum	<0.063 mm	29800	D	50	50	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Aluminum	<0.063 mm	25700	D	60	60	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Aluminum	<0.063 mm	23600	D	40	40	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Aluminum	<0.063 mm	16800	D	50	50	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Aluminum	<0.063 mm	16800	D	50	50	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Aluminum	<0.063 mm	22100	D	60	60	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Aluminum	<0.063 mm	22100	D	60	60	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	<0.063 mm	16800	D	50	50	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	<0.063 mm	16800	D	50	50	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Antimony	<0.063 mm	Not Detected		4	5	
SS-10A	16-Mar-22	14:45	S-ROUTINE	Antimony	<0.063 mm	Not Detected		4	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Antimony	<0.063 mm	Not Detected		6	6	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Antimony	<0.063 mm	Not Detected		7	7	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Antimony	<0.063 mm	Not Detected		6	6	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Antimony	<0.063 mm	Not Detected		4	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Antimony	<0.063 mm	Not Detected		6	6	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Antimony	<0.063 mm	Not Detected		4	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Antimony	<0.063 mm	Not Detected		3	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Antimony	<0.063 mm	Not Detected		3	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Antimony	<0.063 mm	Not Detected		3	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Antimony	<0.063 mm	Not Detected		10	10	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Antimony	<0.063 mm	Not Detected		10	10	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Antimony	<0.063 mm	Not Detected		10	10	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Antimony	<0.063 mm	Not Detected		10	10	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Antimony	<0.063 mm	Not Detected		9	9	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Antimony	<0.063 mm	Not Detected		9	9	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Antimony	<0.063 mm	Not Detected		9	9	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Antimony	<0.063 mm	Not Detected		10	10	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Antimony	<0.063 mm	Not Detected		8	8	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Antimony	<0.063 mm	Not Detected		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Antimony	<0.063 mm	Not Detected		6	6	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	<0.063 mm	Not Detected		5	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Arsenic	<0.063 mm	36		1	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Arsenic	<0.063 mm	115		1	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Arsenic	<0.063 mm	36		1	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Arsenic	<0.063 mm	37		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Arsenic	<0.063 mm	72		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Arsenic	<0.063 mm	41		1	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Arsenic	<0.063 mm	54		1	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Arsenic	<0.063 mm	47		1	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Arsenic	<0.063 mm	53		0.9	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Arsenic	<0.063 mm	62		1	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Arsenic	<0.063 mm	126		1	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Arsenic	<0.063 mm	60		1	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Arsenic	<0.063 mm	41		1	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	8-Jun-22	13:45	S-ROUTINE	Arsenic	<0.063 mm	31		0.9	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Arsenic	<0.063 mm	24		0.8	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Arsenic	<0.063 mm	188		0.9	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Arsenic	<0.063 mm	61		1	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Arsenic	<0.063 mm	52		1	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Arsenic	<0.063 mm	72		1	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Arsenic	<0.063 mm	86		2	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Arsenic	<0.063 mm	45		1	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Arsenic	<0.063 mm	70		2	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Arsenic	<0.063 mm	60		1	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Arsenic	<0.063 mm	53		1	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Arsenic	<0.063 mm	63		1	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Arsenic	<0.063 mm	70		1	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Arsenic	<0.063 mm	70		0.9	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Arsenic	<0.063 mm	144		1	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Arsenic	<0.063 mm	144		1	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Arsenic	<0.063 mm	148		1	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Arsenic	<0.063 mm	148		1	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	<0.063 mm	42		1	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	<0.063 mm	42		1	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Barium	<0.063 mm	181		2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Barium	<0.063 mm	263		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Barium	<0.063 mm	253		2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Barium	<0.063 mm	189		3	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Barium	<0.063 mm	270		3	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Barium	<0.063 mm	207		2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Barium	<0.063 mm	262		3	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Barium	<0.063 mm	327		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Barium	<0.063 mm	212		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Barium	<0.063 mm	362		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Barium	<0.063 mm	195		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Barium	<0.063 mm	285		3	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Barium	<0.063 mm	221		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Barium	<0.063 mm	334		1	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Barium	<0.063 mm	275		1	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Barium	<0.063 mm	209		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Barium	<0.063 mm	390		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Barium	<0.063 mm	364		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Barium	<0.063 mm	424		2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Barium	<0.063 mm	227		3	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Barium	<0.063 mm	242		2	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	2-Sep-22	13:30	S-ROUTINE	Barium	<0.063 mm	270		3	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Barium	<0.063 mm	300		2	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Barium	<0.063 mm	463		2	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Barium	<0.063 mm	396		2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Barium	<0.063 mm	440		2	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Barium	<0.063 mm	259		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Barium	<0.063 mm	237		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Barium	<0.063 mm	237		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Barium	<0.063 mm	349		3	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Barium	<0.063 mm	349		3	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	<0.063 mm	233		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	<0.063 mm	233		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		5	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		5	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Dec-22	17:15	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	<0.063 mm	Not Detected		3	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Boron	<0.063 mm	10		5	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Boron	<0.063 mm	13		4	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Boron	<0.063 mm	11		4	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Boron	<0.063 mm	13		6	6	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Boron	<0.063 mm	15		6	6	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Boron	<0.063 mm	12		5	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Boron	<0.063 mm	15		6	6	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Boron	<0.063 mm	11		5	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Boron	<0.063 mm	8		3	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Boron	<0.063 mm	8		5	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Boron	<0.063 mm	11		4	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Boron	<0.063 mm	16		6	6	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Boron	<0.063 mm	13		5	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Boron	<0.063 mm	10		3	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Boron	<0.063 mm	11		3	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Boron	<0.063 mm	7		3	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Boron	<0.063 mm	10		5	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Boron	<0.063 mm	9		5	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Boron	<0.063 mm	17		10	10	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Boron	<0.063 mm	16		10	10	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Boron	<0.063 mm	Not Detected		10	10	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Boron	<0.063 mm	Not Detected		20	20	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Boron	<0.063 mm	12		10	10	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Boron	<0.063 mm	17		10	10	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Boron	<0.063 mm	14		10	10	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Boron	<0.063 mm	13		10	10	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Boron	<0.063 mm	Not Detected		9	9	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Boron	<0.063 mm	10		5	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Boron	<0.063 mm	10		5	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Boron	<0.063 mm	14		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Boron	<0.063 mm	14		6	6	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	<0.063 mm	8		5	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	<0.063 mm	8		5	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Cadmium	<0.063 mm	7.1		0.3	0.3	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Cadmium	<0.063 mm	6.4		0.3	0.3	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Cadmium	<0.063 mm	7.4		0.2	0.2	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Cadmium	<0.063 mm	8.9		0.4	0.4	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	16-Mar-22	13:00	S-ROUTINE	Cadmium	<0.063 mm	11.8		0.4	0.4	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Cadmium	<0.063 mm	9		0.3	0.3	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Cadmium	<0.063 mm	9.3		0.3	0.3	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Cadmium	<0.063 mm	11.4		0.3	0.3	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Cadmium	<0.063 mm	5.5		0.2	0.2	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Cadmium	<0.063 mm	17.9		0.3	0.3	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Cadmium	<0.063 mm	10.9		0.3	0.3	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Cadmium	<0.063 mm	9.8		0.3	0.3	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Cadmium	<0.063 mm	6.5		0.3	0.3	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Cadmium	<0.063 mm	7		0.2	0.2	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Cadmium	<0.063 mm	3.7		0.2	0.2	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Cadmium	<0.063 mm	13.9		0.2	0.2	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Cadmium	<0.063 mm	17.4		0.3	0.3	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Cadmium	<0.063 mm	19.3		0.3	0.3	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Cadmium	<0.063 mm	9.8		0.3	0.3	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Cadmium	<0.063 mm	6.9		0.4	0.4	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Cadmium	<0.063 mm	10.1		0.3	0.3	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Cadmium	<0.063 mm	12.4		0.4	0.4	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Cadmium	<0.063 mm	8.4		0.3	0.3	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Cadmium	<0.063 mm	15.7		0.3	0.3	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Cadmium	<0.063 mm	7.4		0.3	0.3	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Cadmium	<0.063 mm	13.7		0.3	0.3	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Cadmium	<0.063 mm	124		0.2	0.2	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Cadmium	<0.063 mm	5.7		0.3	0.3	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Cadmium	<0.063 mm	5.7		0.3	0.3	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Cadmium	<0.063 mm	5.2		0.3	0.3	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Cadmium	<0.063 mm	5.2		0.3	0.3	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	<0.063 mm	18.4		0.3	0.3	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	<0.063 mm	18.4		0.3	0.3	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Chromium	<0.063 mm	19		9	9	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Chromium	<0.063 mm	68	J	9	9	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Chromium	<0.063 mm	29		8	8	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Chromium	<0.063 mm	31		10	10	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Chromium	<0.063 mm	44		10	10	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Chromium	<0.063 mm	24		10	10	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Chromium	<0.063 mm	46		10	10	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Chromium	<0.063 mm	37		9	9	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Chromium	<0.063 mm	38	J	7	7	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Chromium	<0.063 mm	64		10	10	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Chromium	<0.063 mm	46		9	9	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Chromium	<0.063 mm	43		10	10	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	8-Jun-22	14:20	S-ROUTINE	Chromium	<0.063 mm	32		10	10	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Chromium	<0.063 mm	48		7	7	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Chromium	<0.063 mm	21		7	7	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Chromium	<0.063 mm	21		7	7	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Chromium	<0.063 mm	66		9	9	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Chromium	<0.063 mm	45		10	10	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Chromium	<0.063 mm	45		10	10	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Chromium	<0.063 mm	74		10	10	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Chromium	<0.063 mm	32		10	10	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Chromium	<0.063 mm	55		10	10	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Chromium	<0.063 mm	54		9	9	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Chromium	<0.063 mm	47		9	9	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Chromium	<0.063 mm	50		9	9	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Chromium	<0.063 mm	64		10	10	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Chromium	<0.063 mm	62		7	7	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Chromium	<0.063 mm	94		10	10	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Chromium	<0.063 mm	94		10	10	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Chromium	<0.063 mm	64		10	10	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Chromium	<0.063 mm	64		10	10	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	<0.063 mm	49		10	10	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	<0.063 mm	49		10	10	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Cobalt	<0.063 mm	9		5	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Cobalt	<0.063 mm	17		5	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Cobalt	<0.063 mm	10		5	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Cobalt	<0.063 mm	9		7	7	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Cobalt	<0.063 mm	16		8	8	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Cobalt	<0.063 mm	12		6	6	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Cobalt	<0.063 mm	13		7	7	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Cobalt	<0.063 mm	14		6	6	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Cobalt	<0.063 mm	9		4	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Cobalt	<0.063 mm	16		6	6	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Cobalt	<0.063 mm	12		5	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Cobalt	<0.063 mm	13		7	7	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Cobalt	<0.063 mm	11		6	6	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Cobalt	<0.063 mm	10		4	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Cobalt	<0.063 mm	11		4	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Cobalt	<0.063 mm	7		4	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Cobalt	<0.063 mm	18		6	6	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Cobalt	<0.063 mm	14		6	6	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Cobalt	<0.063 mm	15		6	6	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Cobalt	<0.063 mm	14		7	7	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	2-Sep-22	14:30	S-ROUTINE	Cobalt	<0.063 mm	13		6	6	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Cobalt	<0.063 mm	16		8	8	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Cobalt	<0.063 mm	13		5	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Cobalt	<0.063 mm	15		5	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Cobalt	<0.063 mm	13		5	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Cobalt	<0.063 mm	23		6	6	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Cobalt	<0.063 mm	15		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Cobalt	<0.063 mm	15		6	6	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Cobalt	<0.063 mm	15		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Cobalt	<0.063 mm	19		7	7	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Cobalt	<0.063 mm	19		7	7	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	<0.063 mm	13		6	6	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	<0.063 mm	13		6	6	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Copper	<0.063 mm	528		10	10	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Copper	<0.063 mm	856		10	10	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Copper	<0.063 mm	616		10	10	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Copper	<0.063 mm	821		20	20	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Copper	<0.063 mm	857		20	20	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Copper	<0.063 mm	790		20	20	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Copper	<0.063 mm	638		20	20	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Copper	<0.063 mm	639		10	10	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Copper	<0.063 mm	364		10	10	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Copper	<0.063 mm	671		10	10	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Copper	<0.063 mm	782		9	9	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Copper	<0.063 mm	1120		10	10	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Copper	<0.063 mm	814		10	10	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Copper	<0.063 mm	599		7	7	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Copper	<0.063 mm	316		7	7	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Copper	<0.063 mm	2410		7	7	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Copper	<0.063 mm	724		10	10	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Copper	<0.063 mm	687		10	10	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Copper	<0.063 mm	648		10	10	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Copper	<0.063 mm	817		10	10	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Copper	<0.063 mm	878		10	10	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Copper	<0.063 mm	1070		10	10	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Copper	<0.063 mm	640		9	9	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Copper	<0.063 mm	910		9	9	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Copper	<0.063 mm	488		10	10	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Copper	<0.063 mm	887		10	10	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Copper	<0.063 mm	816		8	8	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Copper	<0.063 mm	737		10	10	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Dec-22	17:15	QC-FD	Copper	<0.063 mm	737		10	10	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Copper	<0.063 mm	900		20	20	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Copper	<0.063 mm	900		20	20	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	<0.063 mm	495		10	10	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	<0.063 mm	495		10	10	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Iron	<0.063 mm	18100	D	300	300	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Iron	<0.063 mm	38000	D	300	300	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Iron	<0.063 mm	26000	D	300	300	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Iron	<0.063 mm	22200	D	400	400	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Iron	<0.063 mm	24200	D	500	500	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Iron	<0.063 mm	21500	D	400	400	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Iron	<0.063 mm	26300	D	400	400	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Iron	<0.063 mm	26900	D	300	300	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Iron	<0.063 mm	24100	D	300	300	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Iron	<0.063 mm	33500	D	300	300	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Iron	<0.063 mm	30100	D	300	300	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Iron	<0.063 mm	28700	D	400	400	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Iron	<0.063 mm	25000	D	400	400	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Iron	<0.063 mm	26000	D	200	200	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Iron	<0.063 mm	26100	D	200	200	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Iron	<0.063 mm	18700	D	200	200	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Iron	<0.063 mm	31700	D	300	300	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Iron	<0.063 mm	30900	D	400	400	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Iron	<0.063 mm	34400	D	400	400	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Iron	<0.063 mm	35900	D	400	400	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Iron	<0.063 mm	35900	D	400	400	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Iron	<0.063 mm	40400	D	500	500	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Iron	<0.063 mm	30600	D	300	300	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Iron	<0.063 mm	32000	D	300	300	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Iron	<0.063 mm	33300	D	300	300	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Iron	<0.063 mm	36600	D	400	400	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Iron	<0.063 mm	29000	D	300	300	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Iron	<0.063 mm	41900	D	300	300	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Iron	<0.063 mm	41900	D	300	300	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Iron	<0.063 mm	52900	D	400	400	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Iron	<0.063 mm	52900	D	400	400	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	<0.063 mm	23400	D	300	300	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	<0.063 mm	23400	D	300	300	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Lead	<0.063 mm	114		4	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Lead	<0.063 mm	402	J	4	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Lead	<0.063 mm	151	J	3	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	16-Mar-22	13:50	S-ROUTINE	Lead	<0.063 mm	130	J	5	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Lead	<0.063 mm	156	J	5	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Lead	<0.063 mm	126	J	4	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Lead	<0.063 mm	189	J	5	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Lead	<0.063 mm	128	J	4	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Lead	<0.063 mm	134	J	3	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Lead	<0.063 mm	172		4	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Lead	<0.063 mm	416		4	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Lead	<0.063 mm	246		5	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Lead	<0.063 mm	143		4	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Lead	<0.063 mm	116		3	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Lead	<0.063 mm	69		3	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Lead	<0.063 mm	337		3	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Lead	<0.063 mm	198		4	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Lead	<0.063 mm	132		4	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Lead	<0.063 mm	211		4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Lead	<0.063 mm	414		5	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Lead	<0.063 mm	319		4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Lead	<0.063 mm	202		6	6	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Lead	<0.063 mm	185		4	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Lead	<0.063 mm	179		4	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Lead	<0.063 mm	182		4	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Lead	<0.063 mm	233		4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Lead	<0.063 mm	232		3	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Lead	<0.063 mm	416		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Lead	<0.063 mm	416		4	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Lead	<0.063 mm	506		5	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Lead	<0.063 mm	506		5	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	<0.063 mm	131		4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	<0.063 mm	131		4	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Manganese	<0.063 mm	2500		6	6	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Manganese	<0.063 mm	4780		5	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Manganese	<0.063 mm	1730		5	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Manganese	<0.063 mm	1640		7	7	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Manganese	<0.063 mm	1940		8	8	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Manganese	<0.063 mm	3660		6	6	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Manganese	<0.063 mm	3470		7	7	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Manganese	<0.063 mm	3940		6	6	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Manganese	<0.063 mm	765		4	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Manganese	<0.063 mm	3970		6	6	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Manganese	<0.063 mm	1340		5	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	8-Jun-22	15:15	S-ROUTINE	Manganese	<0.063 mm	1180		7	7	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Manganese	<0.063 mm	2200		6	6	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Manganese	<0.063 mm	895		4	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Manganese	<0.063 mm	1540		4	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Manganese	<0.063 mm	999		4	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Manganese	<0.063 mm	3780		6	6	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Manganese	<0.063 mm	3280		6	6	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Manganese	<0.063 mm	2640		10	10	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Manganese	<0.063 mm	2580		10	10	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Manganese	<0.063 mm	2730		10	10	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Manganese	<0.063 mm	1520		10	10	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Manganese	<0.063 mm	1180		8	8	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Manganese	<0.063 mm	1310		8	8	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Manganese	<0.063 mm	1890		9	9	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Manganese	<0.063 mm	8370		6	6	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Manganese	<0.063 mm	2190		7	7	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Manganese	<0.063 mm	4170		6	6	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Manganese	<0.063 mm	4170		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Manganese	<0.063 mm	5850		7	7	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Manganese	<0.063 mm	5850		7	7	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	<0.063 mm	2390		6	6	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	<0.063 mm	2390		6	6	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Mercury	<0.063 mm	0.62		0.013	0.1	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Mercury	<0.063 mm	1		0.012	0.1	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Mercury	<0.063 mm	0.56		0.012	0.1	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Mercury	<0.063 mm	0.6		0.018	0.1	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Mercury	<0.063 mm	0.62		0.018	0.1	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Mercury	<0.063 mm	0.72		0.014	0.1	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Mercury	<0.063 mm	0.88		0.017	0.1	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Mercury	<0.063 mm	0.62		0.013	0.1	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Mercury	<0.063 mm	0.64		0.01	0.1	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Mercury	<0.063 mm	0.58		0.013	0.1	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Mercury	<0.063 mm	1.1		0.013	0.1	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Mercury	<0.063 mm	1.1		0.016	0.1	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Mercury	<0.063 mm	0.71		0.014	0.1	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Mercury	<0.063 mm	0.46		0.0094	0.1	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Mercury	<0.063 mm	0.32		0.0097	0.1	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Mercury	<0.063 mm	3.5		0.047	0.11	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Mercury	<0.063 mm	0.62		0.013	0.1	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Mercury	<0.063 mm	0.65		0.014	0.1	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Mercury	<0.063 mm	0.65		0.023	0.1	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	2-Sep-22	16:00	S-ROUTINE	Mercury	<0.063 mm	0.92		0.027	0.1	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Mercury	<0.063 mm	1.2		0.024	0.1	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Mercury	<0.063 mm	0.78		0.031	0.1	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Mercury	<0.063 mm	0.5		0.019	0.1	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Mercury	<0.063 mm	0.63		0.019	0.1	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Mercury	<0.063 mm	0.58		0.021	0.1	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Mercury	<0.063 mm	0.77		0.024	0.1	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Mercury	<0.063 mm	0.68		0.016	0.1	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Mercury	<0.063 mm	1.1		0.021	0.1	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Mercury	<0.063 mm	1.1		0.021	0.1	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Mercury	<0.063 mm	0.95		0.026	0.1	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Mercury	<0.063 mm	0.95		0.026	0.1	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	<0.063 mm	0.56		0.022	0.1	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	<0.063 mm	0.56		0.022	0.1	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Moisture content	<0.063 mm	67		0.02	0.2	% by wt
SS-07	16-Mar-22	16:00	S-ROUTINE	Moisture content	<0.063 mm	64.7		0.02	0.2	% by wt
SS-10A	16-Mar-22	14:45	S-ROUTINE	Moisture content	<0.063 mm	62.2		0.02	0.2	% by wt
SS-13	16-Mar-22	13:50	S-ROUTINE	Moisture content	<0.063 mm	75.1		0.02	0.2	% by wt
SS-14	16-Mar-22	13:00	S-ROUTINE	Moisture content	<0.063 mm	76		0.02	0.2	% by wt
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Moisture content	<0.063 mm	69.5		0.02	0.2	% by wt
SS-16B	16-Mar-22	10:30	S-ROUTINE	Moisture content	<0.063 mm	74.6		0.02	0.2	% by wt
SS-17D	16-Mar-22	9:45	S-ROUTINE	Moisture content	<0.063 mm	67.6		0.02	0.2	% by wt
SS-19	16-Mar-22	9:00	S-ROUTINE	Moisture content	<0.063 mm	57.1		0.02	0.2	% by wt
SS-19	8-Jun-22	9:30	QC-FD	Moisture content	<0.063 mm	67.3		0	0.2	% by wt
SS-07	8-Jun-22	16:45	S-ROUTINE	Moisture content	<0.063 mm	65.2		0	0.2	% by wt
SS-10A	8-Jun-22	15:15	S-ROUTINE	Moisture content	<0.063 mm	73.3		0	0.2	% by wt
SS-13	8-Jun-22	14:20	S-ROUTINE	Moisture content	<0.063 mm	70		0	0.2	% by wt
SS-14	8-Jun-22	13:45	S-ROUTINE	Moisture content	<0.063 mm	54		0	0.2	% by wt
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Moisture content	<0.063 mm	54.6		0	0.2	% by wt
SS-16B	8-Jun-22	11:30	S-ROUTINE	Moisture content	<0.063 mm	53.6		0	0.2	% by wt
SS-17D	8-Jun-22	10:30	S-ROUTINE	Moisture content	<0.063 mm	67.3		0	0.2	% by wt
SS-19	8-Jun-22	9:30	S-ROUTINE	Moisture content	<0.063 mm	69.6		0	0.2	% by wt
SS-16B	2-Sep-22	10:30	QC-FD	Moisture content	<0.063 mm	70.4		0.02	0.2	% by wt
SS-07	2-Sep-22	16:00	S-ROUTINE	Moisture content	<0.063 mm	74.8		0.02	0.2	% by wt
SS-10A	2-Sep-22	14:30	S-ROUTINE	Moisture content	<0.063 mm	71.9		0.02	0.2	% by wt
SS-13	2-Sep-22	13:30	S-ROUTINE	Moisture content	<0.063 mm	78		0.02	0.2	% by wt
SS-14	2-Sep-22	12:45	S-ROUTINE	Moisture content	<0.063 mm	63.8		0.02	0.2	% by wt
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Moisture content	<0.063 mm	65.1		0.02	0.2	% by wt
SS-16B	2-Sep-22	10:30	S-ROUTINE	Moisture content	<0.063 mm	67		0.02	0.2	% by wt
SS-17D	2-Sep-22	9:45	S-ROUTINE	Moisture content	<0.063 mm	70.9		0.02	0.2	% by wt
SS-19	2-Sep-22	9:00	S-ROUTINE	Moisture content	<0.063 mm	58.6		0.02	0.2	% by wt

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Dec-22	17:15	QC-FD	Moisture content	<0.063 mm	67.5		0.02	0.2	% by wt
SS-07	8-Dec-22	17:15	QC-FD	Moisture content	<0.063 mm	67.5		0.02	0.2	% by wt
SS-07	8-Dec-22	17:15	S-ROUTINE	Moisture content	<0.063 mm	73		0.02	0.2	% by wt
SS-07	8-Dec-22	17:15	S-ROUTINE	Moisture content	<0.063 mm	73		0.02	0.2	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Moisture content	<0.063 mm	67.9		0.02	0.2	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Moisture content	<0.063 mm	67.9		0.02	0.2	% by wt
SS-16B	16-Mar-22	10:30	QC-FD	Molybdenum	<0.063 mm	22		2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Molybdenum	<0.063 mm	102		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Molybdenum	<0.063 mm	28		2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Molybdenum	<0.063 mm	36		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Molybdenum	<0.063 mm	66		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Molybdenum	<0.063 mm	27		2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Molybdenum	<0.063 mm	29		2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Molybdenum	<0.063 mm	25		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Molybdenum	<0.063 mm	15		1	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Molybdenum	<0.063 mm	17		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Molybdenum	<0.063 mm	85		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Molybdenum	<0.063 mm	52		2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Molybdenum	<0.063 mm	32		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Molybdenum	<0.063 mm	26		1	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Molybdenum	<0.063 mm	9		1	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Molybdenum	<0.063 mm	14		1	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Molybdenum	<0.063 mm	18		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Molybdenum	<0.063 mm	18		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Molybdenum	<0.063 mm	16		2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Molybdenum	<0.063 mm	52		2	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Molybdenum	<0.063 mm	19		2	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Molybdenum	<0.063 mm	69		3	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Molybdenum	<0.063 mm	66		2	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Molybdenum	<0.063 mm	21		2	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Molybdenum	<0.063 mm	12		2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Molybdenum	<0.063 mm	31		2	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Molybdenum	<0.063 mm	11		1	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Molybdenum	<0.063 mm	55		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Molybdenum	<0.063 mm	55		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Molybdenum	<0.063 mm	79		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Molybdenum	<0.063 mm	79		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	<0.063 mm	9		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	<0.063 mm	9		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Nickel	<0.063 mm	12		4	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Nickel	<0.063 mm	34	J	3	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	16-Mar-22	14:45	S-ROUTINE	Nickel	<0.063 mm	15		3	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Nickel	<0.063 mm	16		5	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Nickel	<0.063 mm	24		5	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Nickel	<0.063 mm	15		4	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Nickel	<0.063 mm	26	J	5	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Nickel	<0.063 mm	22		4	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Nickel	<0.063 mm	20		3	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Nickel	<0.063 mm	37		4	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Nickel	<0.063 mm	23		4	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Nickel	<0.063 mm	22		5	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Nickel	<0.063 mm	17		4	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Nickel	<0.063 mm	25		3	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Nickel	<0.063 mm	14		3	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Nickel	<0.063 mm	13		3	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Nickel	<0.063 mm	38		4	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Nickel	<0.063 mm	26		4	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Nickel	<0.063 mm	26		4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Nickel	<0.063 mm	43		5	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Nickel	<0.063 mm	19		4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Nickel	<0.063 mm	31		6	6	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Nickel	<0.063 mm	29		3	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Nickel	<0.063 mm	29		3	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Nickel	<0.063 mm	30		4	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Nickel	<0.063 mm	40		4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Nickel	<0.063 mm	36		3	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Nickel	<0.063 mm	47		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Nickel	<0.063 mm	47		4	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Nickel	<0.063 mm	33		5	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Nickel	<0.063 mm	33		5	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	<0.063 mm	29		4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	<0.063 mm	29		4	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	7.2		0	0.1	% by wt
SS-07	16-Mar-22	16:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	5.3		0	0.1	% by wt
SS-10A	16-Mar-22	14:45	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	8.7		0	0.1	% by wt
SS-13	16-Mar-22	13:50	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	6.5		0	0.1	% by wt
SS-14	16-Mar-22	13:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	22.6		0	0.1	% by wt

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	7.1		0	0.1	% by wt
SS-16B	16-Mar-22	10:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	15.1		0	0.1	% by wt
SS-17D	16-Mar-22	9:45	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	1.3		0	0.1	% by wt
SS-19	16-Mar-22	9:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	7.8		0	0.1	% by wt
SS-19	8-Jun-22	9:30	QC-FD	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	1.3		0	0.1	% by wt
SS-07	8-Jun-22	16:45	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	1.4		0	0.1	% by wt
SS-10A	8-Jun-22	15:15	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	13.8		0	0.1	% by wt
SS-13	8-Jun-22	14:20	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	7.8		0	0.1	% by wt
SS-14	8-Jun-22	13:45	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	4.3		0	0.1	% by wt
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	3.2		0	0.1	% by wt
SS-16B	8-Jun-22	11:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	5.4		0	0.1	% by wt
SS-17D	8-Jun-22	10:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	0.6		0	0.1	% by wt
SS-19	8-Jun-22	9:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	0.8		0	0.1	% by wt
SS-16B	2-Sep-22	10:30	QC-FD	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	6		0	0.1	% by wt
SS-07	2-Sep-22	16:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	11.5		0	0.1	% by wt
SS-10A	2-Sep-22	14:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	5.5		0	0.1	% by wt
SS-13	2-Sep-22	13:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	14.7		0	0.1	% by wt
SS-14	2-Sep-22	12:45	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	5.7		0	0.1	% by wt
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	2.3		0	0.1	% by wt
SS-16B	2-Sep-22	10:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	8.3		0	0.1	% by wt

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	2-Sep-22	9:45	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	1		0	0.1	% by wt
SS-19	2-Sep-22	9:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	1.9		0	0.1	% by wt
SS-07	8-Dec-22	17:15	QC-FD	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	2.4		0	0.1	% by wt
SS-07	8-Dec-22	17:15	QC-FD	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	2.4		0	0.1	% by wt
SS-07	8-Dec-22	17:15	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	2.5		0	0.1	% by wt
SS-07	8-Dec-22	17:15	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	2.5		0	0.1	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	3.6		0	0.1	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	<0.063 mm	3.6		0	0.1	% by wt
SS-16B	16-Mar-22	10:30	QC-FD	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Selenium	<0.063 mm	2.9	J	0.9	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Selenium	<0.063 mm	1.4	J	0.9	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Selenium	<0.063 mm	3	J	1	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Selenium	<0.063 mm	3	J	1	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Selenium	<0.063 mm	1.7	J	0.8	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Selenium	<0.063 mm	3	J	1	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Selenium	<0.063 mm	2.2	J	0.7	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Selenium	<0.063 mm	1	J	0.7	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Selenium	<0.063 mm	1.5	J	0.8	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Selenium	<0.063 mm	3	J	1	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Selenium	<0.063 mm	5	J	2	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Selenium	<0.063 mm	3	J	1	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	2-Sep-22	9:45	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Selenium	<0.063 mm	3.8	J	0.8	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Selenium	<0.063 mm	3	J	1	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Selenium	<0.063 mm	3	J	1	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	<0.063 mm	2	J	1	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Silver	<0.063 mm	Not Detected		5	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Silver	<0.063 mm	6		5	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Silver	<0.063 mm	Not Detected		5	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Silver	<0.063 mm	Not Detected		7	7	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Silver	<0.063 mm	Not Detected		8	8	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Silver	<0.063 mm	Not Detected		6	6	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Silver	<0.063 mm	Not Detected		7	7	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Silver	<0.063 mm	Not Detected		6	6	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Silver	<0.063 mm	Not Detected		4	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Silver	<0.063 mm	2	J	1	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Silver	<0.063 mm	Not Detected		5	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Silver	<0.063 mm	3	J	1	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Silver	<0.063 mm	1.3	J	0.8	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Silver	<0.063 mm	Not Detected		4	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Silver	<0.063 mm	Not Detected		4	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Silver	<0.063 mm	9		4	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Silver	<0.063 mm	2	J	1	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Silver	<0.063 mm	2	J	1	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Silver	<0.063 mm	Not Detected		6	6	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Silver	<0.063 mm	Not Detected		7	7	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Silver	<0.063 mm	Not Detected		6	6	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Silver	<0.063 mm	Not Detected		8	8	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Silver	<0.063 mm	Not Detected		5	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Silver	<0.063 mm	Not Detected		5	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Silver	<0.063 mm	Not Detected		5	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Silver	<0.063 mm	Not Detected		6	6	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Silver	<0.063 mm	Not Detected		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Silver	<0.063 mm	Not Detected		6	6	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Silver	<0.063 mm	Not Detected		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Silver	<0.063 mm	7		7	7	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Silver	<0.063 mm	7		7	7	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	<0.063 mm	Not Detected		6	6	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	<0.063 mm	Not Detected		6	6	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	16-Mar-22	10:30	QC-FD	Uranium	<0.063 mm	1.8	J	0.2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Uranium	<0.063 mm	7		0.1	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Uranium	<0.063 mm	2.8	J	0.1	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Uranium	<0.063 mm	2.9	J	0.2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Uranium	<0.063 mm	6		0.2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Uranium	<0.063 mm	2.4	J	0.2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Uranium	<0.063 mm	2.4	J	0.2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Uranium	<0.063 mm	2.7	J	0.2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Uranium	<0.063 mm	7		0.1	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Uranium	<0.063 mm	3.9	J	0.2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Uranium	<0.063 mm	7		0.2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Uranium	<0.063 mm	4.7	J	0.2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Uranium	<0.063 mm	3.5	J	0.2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Uranium	<0.063 mm	3.6	J	0.1	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Uranium	<0.063 mm	1.7	J	0.1	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Uranium	<0.063 mm	4.4	J	0.1	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Uranium	<0.063 mm	3.1	J	0.2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Uranium	<0.063 mm	4.1	J	0.2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Uranium	<0.063 mm	3.5	J	0.2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Uranium	<0.063 mm	8		0.2	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Uranium	<0.063 mm	3.9	J	0.2	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Uranium	<0.063 mm	9		0.2	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Uranium	<0.063 mm	7		0.1	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Uranium	<0.063 mm	4.1	J	0.1	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Uranium	<0.063 mm	3	J	0.2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Uranium	<0.063 mm	6		0.2	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Uranium	<0.063 mm	16		0.1	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Uranium	<0.063 mm	6		0.2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Uranium	<0.063 mm	6		0.2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Uranium	<0.063 mm	7		0.2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Uranium	<0.063 mm	7		0.2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium	<0.063 mm	2.7	J	0.2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium	<0.063 mm	2.7	J	0.2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Vanadium	<0.063 mm	41		2	2	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Vanadium	<0.063 mm	106		2	2	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Vanadium	<0.063 mm	61		2	2	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Vanadium	<0.063 mm	54		3	3	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Vanadium	<0.063 mm	67		3	3	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Vanadium	<0.063 mm	50		3	3	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Vanadium	<0.063 mm	53		3	3	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Vanadium	<0.063 mm	65		2	2	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	16-Mar-22	9:00	S-ROUTINE	Vanadium	<0.063 mm	56		2	2	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Vanadium	<0.063 mm	97		3	3	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Vanadium	<0.063 mm	81		2	2	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Vanadium	<0.063 mm	80		3	3	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Vanadium	<0.063 mm	61		3	3	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Vanadium	<0.063 mm	63		2	2	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Vanadium	<0.063 mm	50		2	2	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Vanadium	<0.063 mm	39		2	2	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Vanadium	<0.063 mm	84		2	2	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Vanadium	<0.063 mm	97		3	3	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Vanadium	<0.063 mm	64		3	3	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Vanadium	<0.063 mm	106		3	3	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Vanadium	<0.063 mm	56		3	3	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Vanadium	<0.063 mm	95		4	4	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Vanadium	<0.063 mm	72		2	2	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Vanadium	<0.063 mm	65		2	2	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Vanadium	<0.063 mm	57		2	2	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Vanadium	<0.063 mm	106		3	3	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Vanadium	<0.063 mm	98		2	2	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Vanadium	<0.063 mm	108		3	3	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Vanadium	<0.063 mm	108		3	3	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Vanadium	<0.063 mm	125		3	3	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Vanadium	<0.063 mm	125		3	3	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	<0.063 mm	65		3	3	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	<0.063 mm	65		3	3	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Zinc	<0.063 mm	1270		20	20	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Zinc	<0.063 mm	1750		10	10	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Zinc	<0.063 mm	1180		10	10	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Zinc	<0.063 mm	1420		20	20	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Zinc	<0.063 mm	2230		20	20	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Zinc	<0.063 mm	1460		20	20	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Zinc	<0.063 mm	1760		20	20	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Zinc	<0.063 mm	1650		20	20	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Zinc	<0.063 mm	1570		10	10	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Zinc	<0.063 mm	1800	D	20	20	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Zinc	<0.063 mm	2090	D	20	20	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Zinc	<0.063 mm	1910	D	30	30	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Zinc	<0.063 mm	1150	D	20	20	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Zinc	<0.063 mm	1070	D	20	20	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Zinc	<0.063 mm	798	D	20	20	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Zinc	<0.063 mm	2030	D	20	20	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	8-Jun-22	10:30	S-ROUTINE	Zinc	<0.063 mm	2500	D	20	20	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Zinc	<0.063 mm	1760	D	20	20	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Zinc	<0.063 mm	2110	D	30	30	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Zinc	<0.063 mm	1870	D	30	30	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Zinc	<0.063 mm	1590	D	30	30	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Zinc	<0.063 mm	2200	D	40	40	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Zinc	<0.063 mm	1990	D	20	20	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Zinc	<0.063 mm	2400	D	20	20	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Zinc	<0.063 mm	1710	D	20	20	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Zinc	<0.063 mm	2070	D	30	30	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Zinc	<0.063 mm	2330	D	20	20	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Zinc	<0.063 mm	1950		20	20	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Zinc	<0.063 mm	1950		20	20	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Zinc	<0.063 mm	2050		20	20	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Zinc	<0.063 mm	2050		20	20	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	<0.063 mm	2060		20	20	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	<0.063 mm	2060		20	20	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Aluminum	0.063-1 mm	7630	D	20	20	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Aluminum	0.063-1 mm	5500	D	20	20	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Aluminum	0.063-1 mm	10200	D	30	30	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Aluminum	0.063-1 mm	7610	D	30	30	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Aluminum	0.063-1 mm	6020	D	20	20	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Aluminum	0.063-1 mm	8300	D	30	30	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Aluminum	0.063-1 mm	7510	D	20	20	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Aluminum	0.063-1 mm	5050	D	20	20	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Aluminum	0.063-1 mm	6470	D	20	20	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Aluminum	0.063-1 mm	4580	D	20	20	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Aluminum	0.063-1 mm	5680	D	20	20	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Aluminum	0.063-1 mm	11900	D	30	30	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Aluminum	0.063-1 mm	7670	D	30	30	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Aluminum	0.063-1 mm	7020	D	20	20	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Aluminum	0.063-1 mm	7340	D	20	20	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Aluminum	0.063-1 mm	7720	D	30	30	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Aluminum	0.063-1 mm	4760	D	20	20	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Aluminum	0.063-1 mm	4310	D	20	20	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Aluminum	0.063-1 mm	5510	D	20	20	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Aluminum	0.063-1 mm	5950	D	20	20	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Aluminum	0.063-1 mm	6810	D	20	20	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Aluminum	0.063-1 mm	7840	D	20	20	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Aluminum	0.063-1 mm	6620	D	20	20	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Aluminum	0.063-1 mm	6770	D	20	20	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	2-Sep-22	10:30	S-ROUTINE	Aluminum	0.063-1 mm	7040	D	20	20	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Aluminum	0.063-1 mm	4110	D	20	20	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Aluminum	0.063-1 mm	4470	D	20	20	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Aluminum	0.063-1 mm	5000	D	20	20	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Aluminum	0.063-1 mm	4580	D	20	20	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	0.063-1 mm	4050	D	20	20	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	0.063-1 mm	4050	D	20	20	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		3	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Antimony	0.063-1 mm	Not Detected		4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		4	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		4	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		4	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		4	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		4	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	0.063-1 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Arsenic	0.063-1 mm	19		0.5	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Arsenic	0.063-1 mm	25		0.5	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Arsenic	0.063-1 mm	13		0.6	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	16-Mar-22	13:50	S-ROUTINE	Arsenic	0.063-1 mm	10		0.6	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Arsenic	0.063-1 mm	7		0.5	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Arsenic	0.063-1 mm	29		0.6	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Arsenic	0.063-1 mm	19		0.5	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Arsenic	0.063-1 mm	18		0.5	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Arsenic	0.063-1 mm	9		0.5	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Arsenic	0.063-1 mm	13		0.5	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Arsenic	0.063-1 mm	22		0.5	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Arsenic	0.063-1 mm	17		0.6	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Arsenic	0.063-1 mm	9		0.6	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Arsenic	0.063-1 mm	6		0.5	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Arsenic	0.063-1 mm	21		0.5	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Arsenic	0.063-1 mm	74		0.6	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Arsenic	0.063-1 mm	23		0.5	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Arsenic	0.063-1 mm	15		0.5	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Arsenic	0.063-1 mm	24		0.5	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Arsenic	0.063-1 mm	24		0.5	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Arsenic	0.063-1 mm	10		0.5	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Arsenic	0.063-1 mm	6		0.5	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Arsenic	0.063-1 mm	6		0.5	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Arsenic	0.063-1 mm	41		0.5	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Arsenic	0.063-1 mm	17		0.5	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Arsenic	0.063-1 mm	22		0.5	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Arsenic	0.063-1 mm	12		0.5	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Arsenic	0.063-1 mm	39		0.5	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Arsenic	0.063-1 mm	24		0.5	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	0.063-1 mm	15		0.5	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	0.063-1 mm	15		0.5	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Barium	0.063-1 mm	150		0.9	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Barium	0.063-1 mm	89		0.9	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Barium	0.063-1 mm	160		1	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Barium	0.063-1 mm	161		1	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Barium	0.063-1 mm	142		1	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Barium	0.063-1 mm	181		1	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Barium	0.063-1 mm	146		0.9	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Barium	0.063-1 mm	105		0.9	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Barium	0.063-1 mm	144		0.9	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Barium	0.063-1 mm	94		0.9	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Barium	0.063-1 mm	89		0.9	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Barium	0.063-1 mm	182		1	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Barium	0.063-1 mm	171		1	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	8-Jun-22	13:45	S-ROUTINE	Barium	0.063-1 mm	145		0.9	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Barium	0.063-1 mm	139		1	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Barium	0.063-1 mm	145		1	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Barium	0.063-1 mm	92		0.9	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Barium	0.063-1 mm	97		0.9	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Barium	0.063-1 mm	116		0.9	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Barium	0.063-1 mm	114		0.9	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Barium	0.063-1 mm	84		0.9	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Barium	0.063-1 mm	183		0.9	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Barium	0.063-1 mm	161		0.9	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Barium	0.063-1 mm	140		0.9	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Barium	0.063-1 mm	144		0.9	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Barium	0.063-1 mm	95		0.9	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Barium	0.063-1 mm	112		0.9	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Barium	0.063-1 mm	77		0.8	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Barium	0.063-1 mm	75		0.9	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	0.063-1 mm	108		0.9	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	0.063-1 mm	108		0.9	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	0.063-1 mm	Not Detected		1	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Boron	0.063-1 mm	2	J	2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Boron	0.063-1 mm	4	J	2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Boron	0.063-1 mm	3	J	2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Boron	0.063-1 mm	3	J	2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Boron	0.063-1 mm	3	J	2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Boron	0.063-1 mm	2	J	2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Boron	0.063-1 mm	3	J	2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Boron	0.063-1 mm	4	J	2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Boron	0.063-1 mm	2	J	2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Boron	0.063-1 mm	3	J	2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Boron	0.063-1 mm	Not Detected		5	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Boron	0.063-1 mm	Not Detected		5	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Boron	0.063-1 mm	Not Detected		5	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Boron	0.063-1 mm	Not Detected		5	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Boron	0.063-1 mm	Not Detected		5	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Boron	0.063-1 mm	Not Detected		5	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Boron	0.063-1 mm	Not Detected		5	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Boron	0.063-1 mm	Not Detected		5	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Boron	0.063-1 mm	Not Detected		5	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	0.063-1 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Cadmium	0.063-1 mm	1.3		0.1	0.2	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Cadmium	0.063-1 mm	1.2		0.1	0.2	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	16-Mar-22	14:45	S-ROUTINE	Cadmium	0.063-1 mm	2.1		0.1	0.2	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Cadmium	0.063-1 mm	1.7		0.1	0.2	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Cadmium	0.063-1 mm	1		0.1	0.2	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Cadmium	0.063-1 mm	4.8		0.1	0.2	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Cadmium	0.063-1 mm	1.4		0.1	0.2	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Cadmium	0.063-1 mm	1.5		0.1	0.2	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Cadmium	0.063-1 mm	1.1		0.1	0.2	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Cadmium	0.063-1 mm	1		0.1	0.2	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Cadmium	0.063-1 mm	1.7		0.1	0.2	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Cadmium	0.063-1 mm	2.4		0.1	0.2	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Cadmium	0.063-1 mm	1.2		0.1	0.2	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Cadmium	0.063-1 mm	1.4		0.1	0.2	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Cadmium	0.063-1 mm	1		0.1	0.2	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Cadmium	0.063-1 mm	2.8		0.1	0.2	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Cadmium	0.063-1 mm	1.3		0.1	0.2	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Cadmium	0.063-1 mm	1		0.1	0.2	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Cadmium	0.063-1 mm	1.3		0.1	0.2	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Cadmium	0.063-1 mm	1.7		0.1	0.2	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Cadmium	0.063-1 mm	1.1		0.1	0.2	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Cadmium	0.063-1 mm	1.5		0.1	0.2	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Cadmium	0.063-1 mm	1		0.1	0.2	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Cadmium	0.063-1 mm	2.5		0.1	0.2	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Cadmium	0.063-1 mm	1.6		0.1	0.2	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Cadmium	0.063-1 mm	0.8		0.1	0.2	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Cadmium	0.063-1 mm	7		0.1	0.2	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Cadmium	0.063-1 mm	2		0.1	0.2	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Cadmium	0.063-1 mm	1.1		0.1	0.2	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	0.063-1 mm	1.2		0.1	0.2	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	0.063-1 mm	1.2		0.1	0.2	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Chromium	0.063-1 mm	8		4	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Chromium	0.063-1 mm	14		4	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Chromium	0.063-1 mm	8		4	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Chromium	0.063-1 mm	14		4	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Chromium	0.063-1 mm	12		4	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Chromium	0.063-1 mm	14		5	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Chromium	0.063-1 mm	10		4	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Chromium	0.063-1 mm	17		4	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Chromium	0.063-1 mm	13		4	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Chromium	0.063-1 mm	13		4	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Chromium	0.063-1 mm	13		4	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Chromium	0.063-1 mm	14		5	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	8-Jun-22	14:20	S-ROUTINE	Chromium	0.063-1 mm	18		4	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Chromium	0.063-1 mm	14		4	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Chromium	0.063-1 mm	8		4	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Chromium	0.063-1 mm	17		5	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Chromium	0.063-1 mm	22		4	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Chromium	0.063-1 mm	12		4	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Chromium	0.063-1 mm	10		4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Chromium	0.063-1 mm	14		4	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Chromium	0.063-1 mm	14		4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Chromium	0.063-1 mm	14		4	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Chromium	0.063-1 mm	12		4	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Chromium	0.063-1 mm	19		4	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Chromium	0.063-1 mm	11		4	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Chromium	0.063-1 mm	15		4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Chromium	0.063-1 mm	12		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Chromium	0.063-1 mm	16		4	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Chromium	0.063-1 mm	18		4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	0.063-1 mm	13		4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	0.063-1 mm	13		4	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Cobalt	0.063-1 mm	4	J	2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Cobalt	0.063-1 mm	7		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Cobalt	0.063-1 mm	6		3	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Cobalt	0.063-1 mm	4	J	3	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Cobalt	0.063-1 mm	4	J	3	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Cobalt	0.063-1 mm	6		3	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Cobalt	0.063-1 mm	4	J	2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Cobalt	0.063-1 mm	4	J	2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Cobalt	0.063-1 mm	5	J	2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Cobalt	0.063-1 mm	4	J	2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Cobalt	0.063-1 mm	7		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Cobalt	0.063-1 mm	6		3	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Cobalt	0.063-1 mm	5	J	3	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Cobalt	0.063-1 mm	4	J	2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Cobalt	0.063-1 mm	4	J	3	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Cobalt	0.063-1 mm	5		3	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Cobalt	0.063-1 mm	5	J	2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Cobalt	0.063-1 mm	4	J	2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Cobalt	0.063-1 mm	3	J	2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Cobalt	0.063-1 mm	7		2	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Cobalt	0.063-1 mm	4	J	2	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Cobalt	0.063-1 mm	4	J	2	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	2-Sep-22	12:45	S-ROUTINE	Cobalt	0.063-1 mm	4	J	2	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Cobalt	0.063-1 mm	5	J	2	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Cobalt	0.063-1 mm	4	J	2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Cobalt	0.063-1 mm	5		2	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Cobalt	0.063-1 mm	3	J	2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Cobalt	0.063-1 mm	6		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Cobalt	0.063-1 mm	6		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	0.063-1 mm	5		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	0.063-1 mm	5		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Copper	0.063-1 mm	171		7	7	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Copper	0.063-1 mm	157		6	6	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Copper	0.063-1 mm	180		7	7	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Copper	0.063-1 mm	102		7	7	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Copper	0.063-1 mm	75		7	7	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Copper	0.063-1 mm	241		8	8	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Copper	0.063-1 mm	141		6	6	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Copper	0.063-1 mm	99		6	6	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Copper	0.063-1 mm	67		6	6	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Copper	0.063-1 mm	57		4	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Copper	0.063-1 mm	163		4	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Copper	0.063-1 mm	226		5	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Copper	0.063-1 mm	95		5	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Copper	0.063-1 mm	67		4	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Copper	0.063-1 mm	116		4	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Copper	0.063-1 mm	432		5	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Copper	0.063-1 mm	87		4	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Copper	0.063-1 mm	58		4	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Copper	0.063-1 mm	135		4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Copper	0.063-1 mm	193		4	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Copper	0.063-1 mm	76		4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Copper	0.063-1 mm	80		4	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Copper	0.063-1 mm	52		4	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Copper	0.063-1 mm	213		4	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Copper	0.063-1 mm	130		4	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Copper	0.063-1 mm	85		4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Copper	0.063-1 mm	62		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Copper	0.063-1 mm	168		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Copper	0.063-1 mm	134		6	6	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	0.063-1 mm	50		6	6	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	0.063-1 mm	50		6	6	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Iron	0.063-1 mm	12200	D	100	100	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	16-Mar-22	16:00	S-ROUTINE	Iron	0.063-1 mm	19500	D	100	100	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Iron	0.063-1 mm	15000	D	200	200	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Iron	0.063-1 mm	13900	D	200	200	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Iron	0.063-1 mm	12300	D	200	200	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Iron	0.063-1 mm	21700	D	200	200	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Iron	0.063-1 mm	13500	D	100	100	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Iron	0.063-1 mm	23300	D	100	100	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Iron	0.063-1 mm	16100	D	100	100	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Iron	0.063-1 mm	16600	D	100	100	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Iron	0.063-1 mm	20200	D	100	100	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Iron	0.063-1 mm	20300	D	200	200	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Iron	0.063-1 mm	18300	D	200	200	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Iron	0.063-1 mm	15000	D	100	100	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Iron	0.063-1 mm	14300	D	200	200	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Iron	0.063-1 mm	24800	D	200	200	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Iron	0.063-1 mm	31700	D	100	100	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Iron	0.063-1 mm	14000	D	100	100	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Iron	0.063-1 mm	13800	D	100	100	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Iron	0.063-1 mm	23500	D	100	100	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Iron	0.063-1 mm	22900	D	100	100	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Iron	0.063-1 mm	16100	D	100	100	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Iron	0.063-1 mm	11200	D	100	100	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Iron	0.063-1 mm	36700	D	100	100	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Iron	0.063-1 mm	16600	D	100	100	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Iron	0.063-1 mm	20200	D	100	100	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Iron	0.063-1 mm	14600	D	100	100	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Iron	0.063-1 mm	30800	D	100	100	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Iron	0.063-1 mm	28100	D	100	100	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	0.063-1 mm	17800	D	100	100	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	0.063-1 mm	17800	D	100	100	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Lead	0.063-1 mm	41		2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Lead	0.063-1 mm	71		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Lead	0.063-1 mm	57		2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Lead	0.063-1 mm	22		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Lead	0.063-1 mm	14		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Lead	0.063-1 mm	59		2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Lead	0.063-1 mm	44		2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Lead	0.063-1 mm	31		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Lead	0.063-1 mm	26		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Lead	0.063-1 mm	27		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Lead	0.063-1 mm	78		2	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	8-Jun-22	15:15	S-ROUTINE	Lead	0.063-1 mm	63		2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Lead	0.063-1 mm	22		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Lead	0.063-1 mm	13		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Lead	0.063-1 mm	30		2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Lead	0.063-1 mm	115		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Lead	0.063-1 mm	29		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Lead	0.063-1 mm	30		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Lead	0.063-1 mm	43		2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Lead	0.063-1 mm	94		2	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Lead	0.063-1 mm	59		2	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Lead	0.063-1 mm	16		2	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Lead	0.063-1 mm	14		2	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Lead	0.063-1 mm	47		2	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Lead	0.063-1 mm	40		2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Lead	0.063-1 mm	44		2	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Lead	0.063-1 mm	22		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Lead	0.063-1 mm	80		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Lead	0.063-1 mm	62		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	0.063-1 mm	22		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	0.063-1 mm	22		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Manganese	0.063-1 mm	728		3	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Manganese	0.063-1 mm	1360		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Manganese	0.063-1 mm	1280		3	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Manganese	0.063-1 mm	688		3	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Manganese	0.063-1 mm	301		3	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Manganese	0.063-1 mm	1510		3	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Manganese	0.063-1 mm	529		3	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Manganese	0.063-1 mm	812		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Manganese	0.063-1 mm	239		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Manganese	0.063-1 mm	510		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Manganese	0.063-1 mm	474		3	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Manganese	0.063-1 mm	944		3	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Manganese	0.063-1 mm	547		3	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Manganese	0.063-1 mm	195		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Manganese	0.063-1 mm	470		3	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Manganese	0.063-1 mm	450		3	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Manganese	0.063-1 mm	784		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Manganese	0.063-1 mm	594		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Manganese	0.063-1 mm	386		4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Manganese	0.063-1 mm	1140		4	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Manganese	0.063-1 mm	615		4	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	2-Sep-22	13:30	S-ROUTINE	Manganese	0.063-1 mm	244		4	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Manganese	0.063-1 mm	199		4	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Manganese	0.063-1 mm	314		4	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Manganese	0.063-1 mm	463		4	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Manganese	0.063-1 mm	886		4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Manganese	0.063-1 mm	326		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Manganese	0.063-1 mm	1100		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Manganese	0.063-1 mm	1540		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	0.063-1 mm	400		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	0.063-1 mm	400		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Mercury	0.063-1 mm	0.13		0.006	0.1	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Mercury	0.063-1 mm	0.17		0.0055	0.1	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Mercury	0.063-1 mm	0.26		0.0063	0.1	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Mercury	0.063-1 mm	0.07	J	0.0064	0.1	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Mercury	0.063-1 mm	0.06	J	0.0061	0.1	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Mercury	0.063-1 mm	0.21		0.007	0.1	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Mercury	0.063-1 mm	0.2		0.0059	0.1	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Mercury	0.063-1 mm	0.07	J	0.0057	0.1	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Mercury	0.063-1 mm	0.09	J	0.0056	0.1	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Mercury	0.063-1 mm	0.05	J	0.0057	0.1	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Mercury	0.063-1 mm	0.35		0.0057	0.1	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Mercury	0.063-1 mm	0.22		0.0067	0.1	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Mercury	0.063-1 mm	0.08	J	0.0065	0.1	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Mercury	0.063-1 mm	0.05	J	0.0057	0.1	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Mercury	0.063-1 mm	0.08	J	0.0058	0.1	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Mercury	0.063-1 mm	0.56		0.0063	0.1	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Mercury	0.063-1 mm	0.09	J	0.0054	0.1	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Mercury	0.063-1 mm	0.1	J	0.0056	0.1	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Mercury	0.063-1 mm	0.17		0.009	0.1	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Mercury	0.063-1 mm	0.15		0.0094	0.1	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Mercury	0.063-1 mm	0.39		0.0093	0.1	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Mercury	0.063-1 mm	0.07	J	0.0094	0.1	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Mercury	0.063-1 mm	0.07	J	0.0089	0.1	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Mercury	0.063-1 mm	0.14		0.0088	0.1	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Mercury	0.063-1 mm	Not Detected		0.0091	0.1	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Mercury	0.063-1 mm	0.07	J	0.0087	0.1	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Mercury	0.063-1 mm	0.07	J	0.009	0.1	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Mercury	0.063-1 mm	0.19		0.0087	0.1	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Mercury	0.063-1 mm	0.15		0.0086	0.1	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	0.063-1 mm	0.06	J	0.0085	0.1	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	0.063-1 mm	0.06	J	0.0085	0.1	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	16-Mar-22	10:30	QC-FD	Moisture content	0.063-1 mm	29.3		0.02	0.2	% by wt
SS-07	16-Mar-22	16:00	S-ROUTINE	Moisture content	0.063-1 mm	20.9		0.02	0.2	% by wt
SS-10A	16-Mar-22	14:45	S-ROUTINE	Moisture content	0.063-1 mm	31.8		0.02	0.2	% by wt
SS-13	16-Mar-22	13:50	S-ROUTINE	Moisture content	0.063-1 mm	30.9		0.02	0.2	% by wt
SS-14	16-Mar-22	13:00	S-ROUTINE	Moisture content	0.063-1 mm	30.8		0.02	0.2	% by wt
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Moisture content	0.063-1 mm	39.6		0.02	0.2	% by wt
SS-16B	16-Mar-22	10:30	S-ROUTINE	Moisture content	0.063-1 mm	25.6		0.02	0.2	% by wt
SS-17D	16-Mar-22	9:45	S-ROUTINE	Moisture content	0.063-1 mm	23.4		0.02	0.2	% by wt
SS-19	16-Mar-22	9:00	S-ROUTINE	Moisture content	0.063-1 mm	23.9		0.02	0.2	% by wt
SS-19	8-Jun-22	9:30	QC-FD	Moisture content	0.063-1 mm	23.3		0	0.2	% by wt
SS-07	8-Jun-22	16:45	S-ROUTINE	Moisture content	0.063-1 mm	24.6		0	0.2	% by wt
SS-10A	8-Jun-22	15:15	S-ROUTINE	Moisture content	0.063-1 mm	35.6		0	0.2	% by wt
SS-13	8-Jun-22	14:20	S-ROUTINE	Moisture content	0.063-1 mm	32.4		0	0.2	% by wt
SS-14	8-Jun-22	13:45	S-ROUTINE	Moisture content	0.063-1 mm	22.6		0	0.2	% by wt
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Moisture content	0.063-1 mm	25.9		0	0.2	% by wt
SS-16B	8-Jun-22	11:30	S-ROUTINE	Moisture content	0.063-1 mm	30.2		0	0.2	% by wt
SS-17D	8-Jun-22	10:30	S-ROUTINE	Moisture content	0.063-1 mm	22.1		0	0.2	% by wt
SS-19	8-Jun-22	9:30	S-ROUTINE	Moisture content	0.063-1 mm	23.3		0	0.2	% by wt
SS-16B	2-Sep-22	10:30	QC-FD	Moisture content	0.063-1 mm	23.6		0.02	0.2	% by wt
SS-07	2-Sep-22	16:00	S-ROUTINE	Moisture content	0.063-1 mm	27.2		0.02	0.2	% by wt
SS-10A	2-Sep-22	14:30	S-ROUTINE	Moisture content	0.063-1 mm	26.1		0.02	0.2	% by wt
SS-13	2-Sep-22	13:30	S-ROUTINE	Moisture content	0.063-1 mm	27.3		0.02	0.2	% by wt
SS-14	2-Sep-22	12:45	S-ROUTINE	Moisture content	0.063-1 mm	25.8		0.02	0.2	% by wt
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Moisture content	0.063-1 mm	24.3		0.02	0.2	% by wt
SS-16B	2-Sep-22	10:30	S-ROUTINE	Moisture content	0.063-1 mm	25.8		0.02	0.2	% by wt
SS-17D	2-Sep-22	9:45	S-ROUTINE	Moisture content	0.063-1 mm	24.1		0.02	0.2	% by wt
SS-19	2-Sep-22	9:00	S-ROUTINE	Moisture content	0.063-1 mm	25.1		0.02	0.2	% by wt
SS-07	8-Dec-22	17:15	QC-FD	Moisture content	0.063-1 mm	21.4		0.02	0.2	% by wt
SS-07	8-Dec-22	17:15	S-ROUTINE	Moisture content	0.063-1 mm	21.8		0.02	0.2	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Moisture content	0.063-1 mm	20.8		0.02	0.2	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Moisture content	0.063-1 mm	20.8		0.02	0.2	% by wt
SS-16B	16-Mar-22	10:30	QC-FD	Molybdenum	0.063-1 mm	3.4	J	0.8	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Molybdenum	0.063-1 mm	18		0.8	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Molybdenum	0.063-1 mm	12		0.9	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Molybdenum	0.063-1 mm	9		0.9	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Molybdenum	0.063-1 mm	7		0.8	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Molybdenum	0.063-1 mm	8		1	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Molybdenum	0.063-1 mm	3.2	J	0.8	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Molybdenum	0.063-1 mm	4.6	J	0.8	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Molybdenum	0.063-1 mm	2.3	J	0.8	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Molybdenum	0.063-1 mm	1.9	J	0.8	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Jun-22	16:45	S-ROUTINE	Molybdenum	0.063-1 mm	14		0.8	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Molybdenum	0.063-1 mm	12		0.9	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Molybdenum	0.063-1 mm	5		0.9	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Molybdenum	0.063-1 mm	3.1	J	0.8	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Molybdenum	0.063-1 mm	2.8	J	0.8	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Molybdenum	0.063-1 mm	3.7	J	0.9	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Molybdenum	0.063-1 mm	2.9	J	0.8	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Molybdenum	0.063-1 mm	2.3	J	0.8	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Molybdenum	0.063-1 mm	2.4	J	0.8	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Molybdenum	0.063-1 mm	11		0.8	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Molybdenum	0.063-1 mm	2.3	J	0.8	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Molybdenum	0.063-1 mm	5		0.8	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Molybdenum	0.063-1 mm	4.8	J	0.8	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Molybdenum	0.063-1 mm	4.2	J	0.8	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Molybdenum	0.063-1 mm	1.4	J	0.8	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Molybdenum	0.063-1 mm	3.4	J	0.8	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Molybdenum	0.063-1 mm	1.1	J	0.8	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Molybdenum	0.063-1 mm	7		0.7	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Molybdenum	0.063-1 mm	14		0.8	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	0.063-1 mm	1.3	J	0.8	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	0.063-1 mm	1.3	J	0.8	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Nickel	0.063-1 mm	5	J	2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Nickel	0.063-1 mm	4	J	2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Nickel	0.063-1 mm	5		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Nickel	0.063-1 mm	7		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Nickel	0.063-1 mm	5	J	2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Nickel	0.063-1 mm	7		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Nickel	0.063-1 mm	5	J	2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Nickel	0.063-1 mm	7		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Nickel	0.063-1 mm	4	J	2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Nickel	0.063-1 mm	4	J	2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Nickel	0.063-1 mm	5	J	2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Nickel	0.063-1 mm	7		2	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	2-Sep-22	14:30	S-ROUTINE	Nickel	0.063-1 mm	3	J	2	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Nickel	0.063-1 mm	7		2	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Nickel	0.063-1 mm	5		2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Nickel	0.063-1 mm	5	J	2	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Nickel	0.063-1 mm	5	J	2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Nickel	0.063-1 mm	9		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Nickel	0.063-1 mm	6		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	0.063-1 mm	5	J	2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	0.063-1 mm	5	J	2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	42.5		0	0.1	% by wt
SS-07	2-Sep-22	16:00	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	28.8		0	0.1	% by wt
SS-10A	2-Sep-22	14:30	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	21.2		0	0.1	% by wt
SS-13	2-Sep-22	13:30	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	41.4		0	0.1	% by wt
SS-14	2-Sep-22	12:45	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	36.9		0	0.1	% by wt
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	10.7		0	0.1	% by wt
SS-16B	2-Sep-22	10:30	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	47.4		0	0.1	% by wt
SS-17D	2-Sep-22	9:45	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	13.7		0	0.1	% by wt
SS-19	2-Sep-22	9:00	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	26.9		0	0.1	% by wt
SS-07	8-Dec-22	17:15	QC-FD	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	22.4		0	0.1	% by wt
SS-07	8-Dec-22	17:15	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	18.5		0	0.1	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	33.8		0	0.1	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Particle size, Sieve No. 230, 250 mesh, (0.063mm)	0.063-1 mm	33.8		0	0.1	% by wt
SS-16B	16-Mar-22	10:30	QC-FD	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	43.4		0	0.1	% by wt

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	16-Mar-22	16:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	34.3		0	0.1	% by wt
SS-10A	16-Mar-22	14:45	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	24.4		0	0.1	% by wt
SS-13	16-Mar-22	13:50	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	25.8		0	0.1	% by wt
SS-14	16-Mar-22	13:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	40.2		0	0.1	% by wt
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	22.4		0	0.1	% by wt
SS-16B	16-Mar-22	10:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	41		0	0.1	% by wt
SS-17D	16-Mar-22	9:45	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	16.8		0	0.1	% by wt
SS-19	16-Mar-22	9:00	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	46.5		0	0.1	% by wt
SS-19	8-Jun-22	9:30	QC-FD	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	32.7		0	0.1	% by wt
SS-07	8-Jun-22	16:45	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	33.8		0	0.1	% by wt
SS-10A	8-Jun-22	15:15	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	31.1		0	0.1	% by wt
SS-13	8-Jun-22	14:20	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	30.3		0	0.1	% by wt
SS-14	8-Jun-22	13:45	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	25.8		0	0.1	% by wt
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	15.2		0	0.1	% by wt
SS-16B	8-Jun-22	11:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	31.9		0	0.1	% by wt
SS-17D	8-Jun-22	10:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	15		0	0.1	% by wt
SS-19	8-Jun-22	9:30	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	0.063-1 mm	27.5		0	0.1	% by wt
SS-16B	16-Mar-22	10:30	QC-FD	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Selenium	0.063-1 mm	0.4	J	0.4	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.6	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	16-Mar-22	10:30	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.4	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Selenium	0.063-1 mm	0.5	J	0.5	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.4	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.4	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.4	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Selenium	0.063-1 mm	0.5	J	0.5	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.5	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Selenium	0.063-1 mm	Not Detected		0.4	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	0.063-1 mm	Not Detected		0.4	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Silver	0.063-1 mm	Not Detected		3	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Silver	0.063-1 mm	Not Detected		3	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Silver	0.063-1 mm	Not Detected		3	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Silver	0.063-1 mm	Not Detected		3	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Silver	0.063-1 mm	Not Detected		3	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Silver	0.063-1 mm	Not Detected		3	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Silver	0.063-1 mm	Not Detected		3	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Silver	0.063-1 mm	Not Detected		3	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	8-Jun-22	10:30	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	0.063-1 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Uranium	0.063-1 mm	1.4	J	0.07	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Uranium	0.063-1 mm	1.8	J	0.07	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Uranium	0.063-1 mm	1.6	J	0.08	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Uranium	0.063-1 mm	6		0.08	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Uranium	0.063-1 mm	1.1	J	0.07	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Uranium	0.063-1 mm	2.2	J	0.09	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Uranium	0.063-1 mm	1.4	J	0.07	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Uranium	0.063-1 mm	3.8	J	0.07	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Uranium	0.063-1 mm	2.4	J	0.07	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Uranium	0.063-1 mm	2.2	J	0.07	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Uranium	0.063-1 mm	2.1	J	0.07	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Uranium	0.063-1 mm	2.1	J	0.08	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Uranium	0.063-1 mm	1.2	J	0.08	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Uranium	0.063-1 mm	1.1	J	0.07	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Uranium	0.063-1 mm	1.4	J	0.07	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Uranium	0.063-1 mm	2.4	J	0.08	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Uranium	0.063-1 mm	10		0.07	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Uranium	0.063-1 mm	2.3	J	0.07	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Uranium	0.063-1 mm	2.3	J	0.07	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Uranium	0.063-1 mm	2.4	J	0.07	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Uranium	0.063-1 mm	1.1	J	0.07	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Uranium	0.063-1 mm	3	J	0.07	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Uranium	0.063-1 mm	1.6	J	0.07	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Uranium	0.063-1 mm	5		0.07	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Uranium	0.063-1 mm	1.5	J	0.07	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Uranium	0.063-1 mm	2.6	J	0.07	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	2-Sep-22	9:00	S-ROUTINE	Uranium	0.063-1 mm	2.9	J	0.07	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Uranium	0.063-1 mm	7		0.07	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Uranium	0.063-1 mm	6		0.07	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium	0.063-1 mm	4	J	0.07	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium	0.063-1 mm	4	J	0.07	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Vanadium	0.063-1 mm	22		1	1	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Vanadium	0.063-1 mm	42		1	1	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Vanadium	0.063-1 mm	32		1	1	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Vanadium	0.063-1 mm	37		1	1	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Vanadium	0.063-1 mm	30		1	1	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Vanadium	0.063-1 mm	52		1	1	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Vanadium	0.063-1 mm	30		1	1	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Vanadium	0.063-1 mm	70		1	1	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Vanadium	0.063-1 mm	43		1	1	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Vanadium	0.063-1 mm	47		1	1	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Vanadium	0.063-1 mm	43		1	1	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Vanadium	0.063-1 mm	53		1	1	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Vanadium	0.063-1 mm	56		1	1	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Vanadium	0.063-1 mm	43		1	1	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Vanadium	0.063-1 mm	36		1	1	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Vanadium	0.063-1 mm	67		1	1	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Vanadium	0.063-1 mm	96		1	1	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Vanadium	0.063-1 mm	40		1	1	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Vanadium	0.063-1 mm	32		1	1	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Vanadium	0.063-1 mm	46		1	1	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Vanadium	0.063-1 mm	60		1	1	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Vanadium	0.063-1 mm	36		1	1	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Vanadium	0.063-1 mm	24		1	1	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Vanadium	0.063-1 mm	91		1	1	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Vanadium	0.063-1 mm	34		1	1	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Vanadium	0.063-1 mm	62		1	1	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Vanadium	0.063-1 mm	45		1	1	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Vanadium	0.063-1 mm	62		1	1	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Vanadium	0.063-1 mm	60		1	1	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	0.063-1 mm	50		1	1	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	0.063-1 mm	50		1	1	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Zinc	0.063-1 mm	332		7	7	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Zinc	0.063-1 mm	578		7	7	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Zinc	0.063-1 mm	429		8	8	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Zinc	0.063-1 mm	264		7	7	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Zinc	0.063-1 mm	210		7	7	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Zinc	0.063-1 mm	1190		9	9	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Zinc	0.063-1 mm	487		7	7	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Zinc	0.063-1 mm	405		7	7	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Zinc	0.063-1 mm	418		7	7	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Zinc	0.063-1 mm	238	D	10	10	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Zinc	0.063-1 mm	655	D	10	10	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Zinc	0.063-1 mm	442	D	10	10	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Zinc	0.063-1 mm	208	D	10	10	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Zinc	0.063-1 mm	156	D	10	10	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Zinc	0.063-1 mm	340	D	10	10	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Zinc	0.063-1 mm	698	D	10	10	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Zinc	0.063-1 mm	366	D	10	10	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Zinc	0.063-1 mm	193	D	10	10	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Zinc	0.063-1 mm	427	D	10	10	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Zinc	0.063-1 mm	802	D	10	10	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Zinc	0.063-1 mm	243	D	10	10	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Zinc	0.063-1 mm	209	D	10	10	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Zinc	0.063-1 mm	196	D	10	10	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Zinc	0.063-1 mm	653	D	10	10	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Zinc	0.063-1 mm	524	D	10	10	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Zinc	0.063-1 mm	225	D	10	10	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Zinc	0.063-1 mm	241	D	10	10	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Zinc	0.063-1 mm	858		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Zinc	0.063-1 mm	534		7	7	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	0.063-1 mm	205		7	7	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	0.063-1 mm	205		7	7	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Aluminum	1-2 mm	7280	D	10	10	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Aluminum	1-2 mm	2650	D	9	9	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Aluminum	1-2 mm	8470	D	9	9	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Aluminum	1-2 mm	4720	D	9	9	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Aluminum	1-2 mm	4240	D	9	9	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Aluminum	1-2 mm	4070	D	10	10	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Aluminum	1-2 mm	7870	D	10	10	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Aluminum	1-2 mm	2860	D	9	9	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Aluminum	1-2 mm	3490	D	9	9	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Aluminum	1-2 mm	3570	D	20	20	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Aluminum	1-2 mm	3750	D	20	20	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Aluminum	1-2 mm	13000	D	30	30	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Aluminum	1-2 mm	3910	D	20	20	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Aluminum	1-2 mm	4320	D	20	20	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Aluminum	1-2 mm	3520	D	20	20	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	8-Jun-22	11:30	S-ROUTINE	Aluminum	1-2 mm	5460	D	20	20	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Aluminum	1-2 mm	3710	D	20	20	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Aluminum	1-2 mm	3770	D	20	20	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Aluminum	1-2 mm	6340	D	20	20	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Aluminum	1-2 mm	2660	D	20	20	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Aluminum	1-2 mm	6700	D	20	20	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Aluminum	1-2 mm	5190	D	20	20	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Aluminum	1-2 mm	4190	D	20	20	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Aluminum	1-2 mm	3600	D	20	20	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Aluminum	1-2 mm	5050	D	20	20	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Aluminum	1-2 mm	2720	D	20	20	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Aluminum	1-2 mm	3560	D	20	20	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Aluminum	1-2 mm	3470	D	20	20	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Aluminum	1-2 mm	3470	D	20	20	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Aluminum	1-2 mm	3050	D	20	20	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Aluminum	1-2 mm	3050	D	20	20	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	1-2 mm	3590	D	20	20	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Aluminum	1-2 mm	3590	D	20	20	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Antimony	1-2 mm	Not Detected		4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Antimony	1-2 mm	Not Detected		4	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Antimony	1-2 mm	Not Detected		4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Antimony	1-2 mm	Not Detected		4	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Antimony	1-2 mm	Not Detected		4	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Antimony	1-2 mm	Not Detected		4	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Antimony	1-2 mm	Not Detected		4	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Antimony	1-2 mm	Not Detected		4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Antimony	1-2 mm	Not Detected		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Antimony	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Arsenic	1-2 mm	26		0.5	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Arsenic	1-2 mm	22		0.5	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Arsenic	1-2 mm	17		0.5	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Arsenic	1-2 mm	7		0.5	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Arsenic	1-2 mm	10		0.5	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Arsenic	1-2 mm	26		0.5	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Arsenic	1-2 mm	20		0.5	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Arsenic	1-2 mm	16		0.5	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Arsenic	1-2 mm	12		0.5	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Arsenic	1-2 mm	9		0.5	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Arsenic	1-2 mm	17		0.5	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Arsenic	1-2 mm	15		0.6	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Arsenic	1-2 mm	6		0.5	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Arsenic	1-2 mm	6		0.5	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Arsenic	1-2 mm	15		0.5	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Arsenic	1-2 mm	37		0.5	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Arsenic	1-2 mm	18		0.5	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Arsenic	1-2 mm	13		0.5	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Arsenic	1-2 mm	18		0.5	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Arsenic	1-2 mm	14		0.5	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Arsenic	1-2 mm	7		0.5	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Arsenic	1-2 mm	4.9	J	0.5	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Arsenic	1-2 mm	6		0.5	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Arsenic	1-2 mm	17		0.5	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Arsenic	1-2 mm	31	J	0.2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Arsenic	1-2 mm	49	J	0.5	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Arsenic	1-2 mm	18		0.5	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Arsenic	1-2 mm	27		0.5	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Arsenic	1-2 mm	27		0.5	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Arsenic	1-2 mm	31		0.5	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Arsenic	1-2 mm	31		0.5	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	1-2 mm	9		0.5	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Arsenic	1-2 mm	9		0.5	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Barium	1-2 mm	158		0.9	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Barium	1-2 mm	61		0.9	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Barium	1-2 mm	161		0.9	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Barium	1-2 mm	119		0.9	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Barium	1-2 mm	110		0.9	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Barium	1-2 mm	154		0.9	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Barium	1-2 mm	185		0.9	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Barium	1-2 mm	57		0.8	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Barium	1-2 mm	90		0.9	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Barium	1-2 mm	109		0.9	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Barium	1-2 mm	52		0.9	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Barium	1-2 mm	164		1	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Barium	1-2 mm	94		0.9	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Barium	1-2 mm	102		0.9	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Barium	1-2 mm	61		0.9	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Barium	1-2 mm	90		0.9	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Barium	1-2 mm	223		0.9	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Barium	1-2 mm	74		0.9	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Barium	1-2 mm	103		0.9	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Barium	1-2 mm	55		0.9	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Barium	1-2 mm	83		0.9	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Barium	1-2 mm	119		0.9	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Barium	1-2 mm	105		0.9	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Barium	1-2 mm	49		0.9	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Barium	1-2 mm	102		0.4	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Barium	1-2 mm	106		0.8	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Barium	1-2 mm	69		0.8	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Barium	1-2 mm	84		0.9	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Barium	1-2 mm	84		0.9	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Barium	1-2 mm	48		0.9	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Barium	1-2 mm	48		0.9	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	1-2 mm	54		0.9	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Barium	1-2 mm	54		0.9	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Beryllium	1-2 mm	Not Detected		2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Beryllium	1-2 mm	Not Detected		2	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	16-Mar-22	10:30	S-ROUTINE	Beryllium	1-2 mm	Not Detected		2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Beryllium	1-2 mm	Not Detected		2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Beryllium	1-2 mm	Not Detected		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Beryllium	1-2 mm	Not Detected		0.6	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Beryllium	1-2 mm	Not Detected		1	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Boron	1-2 mm	2	J	2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Boron	1-2 mm	3	J	2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Boron	1-2 mm	2	J	2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Boron	1-2 mm	2	J	2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Boron	1-2 mm	3	J	2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Boron	1-2 mm	Not Detected		5	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Boron	1-2 mm	Not Detected		5	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Boron	1-2 mm	Not Detected		5	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Boron	1-2 mm	Not Detected		5	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Boron	1-2 mm	Not Detected		5	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Boron	1-2 mm	Not Detected		5	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Boron	1-2 mm	Not Detected		5	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Boron	1-2 mm	Not Detected		5	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Boron	1-2 mm	Not Detected		5	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Boron	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Cadmium	1-2 mm	0.7		0.1	0.2	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Cadmium	1-2 mm	0.7		0.1	0.2	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Cadmium	1-2 mm	0.9		0.1	0.2	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Cadmium	1-2 mm	0.8		0.1	0.2	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Cadmium	1-2 mm	0.8		0.1	0.2	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Cadmium	1-2 mm	1.2		0.1	0.2	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Cadmium	1-2 mm	0.5		0.1	0.2	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Cadmium	1-2 mm	0.5		0.1	0.2	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Cadmium	1-2 mm	0.6		0.1	0.2	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Cadmium	1-2 mm	0.6		0.1	0.2	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Cadmium	1-2 mm	0.8		0.1	0.2	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Cadmium	1-2 mm	1.1		0.1	0.2	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Cadmium	1-2 mm	0.4		0.1	0.2	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Cadmium	1-2 mm	0.4		0.1	0.2	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Cadmium	1-2 mm	0.2		0.1	0.2	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Cadmium	1-2 mm	0.8		0.1	0.2	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Cadmium	1-2 mm	0.6		0.1	0.2	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Cadmium	1-2 mm	0.8		0.1	0.2	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Cadmium	1-2 mm	0.4		0.1	0.2	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Cadmium	1-2 mm	0.7		0.1	0.2	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Cadmium	1-2 mm	1		0.1	0.2	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Cadmium	1-2 mm	0.2		0.1	0.2	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	2-Sep-22	12:45	S-ROUTINE	Cadmium	1-2 mm	0.3		0.1	0.2	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Cadmium	1-2 mm	0.5		0.1	0.2	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Cadmium	1-2 mm	0.5		0.05	0.2	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Cadmium	1-2 mm	0.5		0.1	0.2	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Cadmium	1-2 mm	5.2		0.1	0.2	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Cadmium	1-2 mm	0.6		0.1	0.2	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Cadmium	1-2 mm	0.6		0.1	0.2	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Cadmium	1-2 mm	0.6		0.1	0.2	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Cadmium	1-2 mm	0.6		0.1	0.2	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	1-2 mm	0.6		0.1	0.2	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cadmium	1-2 mm	0.6		0.1	0.2	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Chromium	1-2 mm	10		4	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Chromium	1-2 mm	6		4	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Chromium	1-2 mm	4	J	4	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Chromium	1-2 mm	12		4	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Chromium	1-2 mm	11		4	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Chromium	1-2 mm	7		4	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Chromium	1-2 mm	7		4	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Chromium	1-2 mm	6		4	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Chromium	1-2 mm	8		4	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Chromium	1-2 mm	9		4	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Chromium	1-2 mm	6		4	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Chromium	1-2 mm	6		5	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Chromium	1-2 mm	9		4	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Chromium	1-2 mm	10		4	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Chromium	1-2 mm	Not Detected		4	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Chromium	1-2 mm	7		4	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Chromium	1-2 mm	9		4	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Chromium	1-2 mm	8		4	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Chromium	1-2 mm	7		4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Chromium	1-2 mm	Not Detected		4	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Chromium	1-2 mm	Not Detected		4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Chromium	1-2 mm	16		4	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Chromium	1-2 mm	12		4	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Chromium	1-2 mm	6		4	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Chromium	1-2 mm	7		2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Chromium	1-2 mm	7		4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Chromium	1-2 mm	6		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Chromium	1-2 mm	4	J	4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Chromium	1-2 mm	4	J	4	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Chromium	1-2 mm	5	J	4	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Dec-22	17:15	S-ROUTINE	Chromium	1-2 mm	5	J	4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	1-2 mm	6		4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Chromium	1-2 mm	6		4	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Cobalt	1-2 mm	4	J	2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Cobalt	1-2 mm	7		2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Cobalt	1-2 mm	4	J	2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Cobalt	1-2 mm	3	J	3	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Cobalt	1-2 mm	3	J	3	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Cobalt	1-2 mm	4	J	2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Cobalt	1-2 mm	6		3	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Cobalt	1-2 mm	2	J	2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Cobalt	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Cobalt	1-2 mm	3	J	3	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Cobalt	1-2 mm	10		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Cobalt	1-2 mm	13		2	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Cobalt	1-2 mm	Not Detected		2	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Cobalt	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Cobalt	1-2 mm	2	J	1	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Cobalt	1-2 mm	6		2	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Cobalt	1-2 mm	2	J	2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Cobalt	1-2 mm	9		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Cobalt	1-2 mm	9		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Cobalt	1-2 mm	3	J	2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Cobalt	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Copper	1-2 mm	114		3	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Copper	1-2 mm	87		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Copper	1-2 mm	130		3	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Copper	1-2 mm	59		3	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Copper	1-2 mm	56		3	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Copper	1-2 mm	135		3	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Copper	1-2 mm	92		3	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Copper	1-2 mm	60		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Copper	1-2 mm	47		3	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Copper	1-2 mm	37		4	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Copper	1-2 mm	86	J	4	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Copper	1-2 mm	87	J	5	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Copper	1-2 mm	22		4	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Copper	1-2 mm	36	J	4	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Copper	1-2 mm	82	J	4	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Copper	1-2 mm	187	J	4	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Copper	1-2 mm	77	J	4	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Copper	1-2 mm	71	J	4	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Copper	1-2 mm	83	J	4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Copper	1-2 mm	63	J	4	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Copper	1-2 mm	36	J	4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Copper	1-2 mm	15		4	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Copper	1-2 mm	20		4	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Copper	1-2 mm	78	J	4	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Copper	1-2 mm	130	J	2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Copper	1-2 mm	166	J	4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Copper	1-2 mm	63	J	4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Copper	1-2 mm	107		6	6	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Copper	1-2 mm	107		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Copper	1-2 mm	76		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Copper	1-2 mm	76		6	6	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	1-2 mm	43		6	6	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Copper	1-2 mm	43		6	6	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Iron	1-2 mm	9980	D	60	60	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Iron	1-2 mm	5800	D	50	50	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Iron	1-2 mm	10200	D	60	60	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Iron	1-2 mm	7640	D	60	60	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Iron	1-2 mm	7930	D	60	60	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Iron	1-2 mm	8060	D	60	60	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Iron	1-2 mm	8660	D	60	60	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Iron	1-2 mm	7310	D	50	50	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Iron	1-2 mm	6600	D	60	60	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Iron	1-2 mm	6760	D	100	100	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Iron	1-2 mm	8930	D	100	100	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Iron	1-2 mm	12200	D	200	200	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Iron	1-2 mm	5940	D	100	100	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	8-Jun-22	13:45	S-ROUTINE	Iron	1-2 mm	6390	D	100	100	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Iron	1-2 mm	7890	D	100	100	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Iron	1-2 mm	9870	D	200	200	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Iron	1-2 mm	11100	D	100	100	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Iron	1-2 mm	9390	D	100	100	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Iron	1-2 mm	8280	D	100	100	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Iron	1-2 mm	6300	D	100	100	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Iron	1-2 mm	7870	D	100	100	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Iron	1-2 mm	8870	D	100	100	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Iron	1-2 mm	7130	D	100	100	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Iron	1-2 mm	8440	D	100	100	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Iron	1-2 mm	9240	D	100	100	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Iron	1-2 mm	7870	D	100	100	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Iron	1-2 mm	6710	D	100	100	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Iron	1-2 mm	11100	D	100	100	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Iron	1-2 mm	11100	D	100	100	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Iron	1-2 mm	7800	D	100	100	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Iron	1-2 mm	7800	D	100	100	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	1-2 mm	6060	D	100	100	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Iron	1-2 mm	6060	D	100	100	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Lead	1-2 mm	34		2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Lead	1-2 mm	57		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Lead	1-2 mm	36		2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Lead	1-2 mm	19		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Lead	1-2 mm	16		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Lead	1-2 mm	184		2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Lead	1-2 mm	47		2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Lead	1-2 mm	22		2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Lead	1-2 mm	15		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Lead	1-2 mm	16		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Lead	1-2 mm	36		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Lead	1-2 mm	38		2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Lead	1-2 mm	9		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Lead	1-2 mm	9		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Lead	1-2 mm	17		2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Lead	1-2 mm	51		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Lead	1-2 mm	28		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Lead	1-2 mm	21		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Lead	1-2 mm	28	J	2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Lead	1-2 mm	22		2	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Lead	1-2 mm	51	J	2	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	2-Sep-22	13:30	S-ROUTINE	Lead	1-2 mm	6		2	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Lead	1-2 mm	11		2	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Lead	1-2 mm	28	J	2	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Lead	1-2 mm	74	J	0.7	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Lead	1-2 mm	17		2	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Lead	1-2 mm	15		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Lead	1-2 mm	34		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Lead	1-2 mm	34		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Lead	1-2 mm	56		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Lead	1-2 mm	56		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	1-2 mm	14		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Lead	1-2 mm	14		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Manganese	1-2 mm	535		1	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Manganese	1-2 mm	1280		0.9	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Manganese	1-2 mm	2130		1	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Manganese	1-2 mm	637		1	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Manganese	1-2 mm	232		1	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Manganese	1-2 mm	3130		1	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Manganese	1-2 mm	500		1	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Manganese	1-2 mm	456		0.9	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Manganese	1-2 mm	193		1	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Manganese	1-2 mm	407		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Manganese	1-2 mm	411		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Manganese	1-2 mm	1090		3	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Manganese	1-2 mm	382		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Manganese	1-2 mm	195		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Manganese	1-2 mm	245		2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Manganese	1-2 mm	226		3	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Manganese	1-2 mm	1420		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Manganese	1-2 mm	465		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Manganese	1-2 mm	363		4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Manganese	1-2 mm	1330		4	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Manganese	1-2 mm	789		4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Manganese	1-2 mm	150		4	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Manganese	1-2 mm	130		4	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Manganese	1-2 mm	134		4	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Manganese	1-2 mm	428		2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Manganese	1-2 mm	1020		4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Manganese	1-2 mm	280		4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Manganese	1-2 mm	1420		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Manganese	1-2 mm	1420		2	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-07	8-Dec-22	17:15	S-ROUTINE	Manganese	1-2 mm	954		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Manganese	1-2 mm	954		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	1-2 mm	292		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Manganese	1-2 mm	292		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Mercury	1-2 mm	0.07	J	0.0059	0.1	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Mercury	1-2 mm	0.13		0.0055	0.1	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Mercury	1-2 mm	0.13		0.0058	0.1	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Mercury	1-2 mm	0.02	J	0.006	0.1	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Mercury	1-2 mm	0.04	J	0.0059	0.1	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Mercury	1-2 mm	0.17		0.0059	0.1	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Mercury	1-2 mm	0.1		0.006	0.1	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Mercury	1-2 mm	0.18		0.0056	0.1	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Mercury	1-2 mm	0.22		0.0058	0.1	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Mercury	1-2 mm	0.03	J	0.0055	0.1	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Mercury	1-2 mm	0.07	J	0.0057	0.1	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Mercury	1-2 mm	0.06	J	0.0066	0.1	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Mercury	1-2 mm	0.01	J	0.0055	0.1	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Mercury	1-2 mm	0.01	J	0.0056	0.1	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Mercury	1-2 mm	0.03	J	0.0058	0.1	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Mercury	1-2 mm	0.15		0.0058	0.1	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Mercury	1-2 mm	0.15		0.0055	0.1	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Mercury	1-2 mm	0.12		0.0056	0.1	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Mercury	1-2 mm	0.04	J	0.0087	0.1	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Mercury	1-2 mm	0.02	J	0.0093	0.1	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Mercury	1-2 mm	0.03	J	0.009	0.1	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Mercury	1-2 mm	0.01	J	0.0091	0.1	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Mercury	1-2 mm	0.02	J	0.0089	0.1	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Mercury	1-2 mm	0.11		0.0087	0.1	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Mercury	1-2 mm	0.05	J	0.009	0.1	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Mercury	1-2 mm	0.04	J	0.0084	0.1	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Mercury	1-2 mm	0.03	J	0.0087	0.1	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Mercury	1-2 mm	0.03	J	0.0087	0.1	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Mercury	1-2 mm	0.03	J	0.0087	0.1	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Mercury	1-2 mm	0.02	J	0.0088	0.1	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Mercury	1-2 mm	0.02	J	0.0088	0.1	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	1-2 mm	0.03	J	0.0089	0.1	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Mercury	1-2 mm	0.03	J	0.0089	0.1	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Moisture content	1-2 mm	26.8		0.02	0.2	% by wt
SS-07	16-Mar-22	16:00	S-ROUTINE	Moisture content	1-2 mm	19.3		0.02	0.2	% by wt
SS-10A	16-Mar-22	14:45	S-ROUTINE	Moisture content	1-2 mm	26.8		0.02	0.2	% by wt
SS-13	16-Mar-22	13:50	S-ROUTINE	Moisture content	1-2 mm	26.2		0.02	0.2	% by wt

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	16-Mar-22	13:00	S-ROUTINE	Moisture content	1-2 mm	26		0.02	0.2	% by wt
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Moisture content	1-2 mm	27.4		0.02	0.2	% by wt
SS-16B	16-Mar-22	10:30	S-ROUTINE	Moisture content	1-2 mm	29.7		0.02	0.2	% by wt
SS-17D	16-Mar-22	9:45	S-ROUTINE	Moisture content	1-2 mm	21.9		0.02	0.2	% by wt
SS-19	16-Mar-22	9:00	S-ROUTINE	Moisture content	1-2 mm	24.5		0.02	0.2	% by wt
SS-19	8-Jun-22	9:30	QC-FD	Moisture content	1-2 mm	20.2		0	0.2	% by wt
SS-07	8-Jun-22	16:45	S-ROUTINE	Moisture content	1-2 mm	23.2		0	0.2	% by wt
SS-10A	8-Jun-22	15:15	S-ROUTINE	Moisture content	1-2 mm	34.3		0	0.2	% by wt
SS-13	8-Jun-22	14:20	S-ROUTINE	Moisture content	1-2 mm	23.7		0	0.2	% by wt
SS-14	8-Jun-22	13:45	S-ROUTINE	Moisture content	1-2 mm	22.9		0	0.2	% by wt
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Moisture content	1-2 mm	23.5		0	0.2	% by wt
SS-16B	8-Jun-22	11:30	S-ROUTINE	Moisture content	1-2 mm	23.8		0	0.2	% by wt
SS-17D	8-Jun-22	10:30	S-ROUTINE	Moisture content	1-2 mm	20.5		0	0.2	% by wt
SS-19	8-Jun-22	9:30	S-ROUTINE	Moisture content	1-2 mm	21.7		0	0.2	% by wt
SS-16B	2-Sep-22	10:30	QC-FD	Moisture content	1-2 mm	22.7		0.02	0.2	% by wt
SS-07	2-Sep-22	16:00	S-ROUTINE	Moisture content	1-2 mm	26.3		0.02	0.2	% by wt
SS-10A	2-Sep-22	14:30	S-ROUTINE	Moisture content	1-2 mm	23.6		0.02	0.2	% by wt
SS-13	2-Sep-22	13:30	S-ROUTINE	Moisture content	1-2 mm	25		0.02	0.2	% by wt
SS-14	2-Sep-22	12:45	S-ROUTINE	Moisture content	1-2 mm	21.9		0.02	0.2	% by wt
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Moisture content	1-2 mm	21.5		0.02	0.2	% by wt
SS-16B	2-Sep-22	10:30	S-ROUTINE	Moisture content	1-2 mm	24.2		0.02	0.2	% by wt
SS-17D	2-Sep-22	9:45	S-ROUTINE	Moisture content	1-2 mm	18.4		0.02	0.2	% by wt
SS-19	2-Sep-22	9:00	S-ROUTINE	Moisture content	1-2 mm	21.8		0.02	0.2	% by wt
SS-07	8-Dec-22	17:15	QC-FD	Moisture content	1-2 mm	20.7		0.02	0.2	% by wt
SS-07	8-Dec-22	17:15	QC-FD	Moisture content	1-2 mm	20.7		0.02	0.2	% by wt
SS-07	8-Dec-22	17:15	S-ROUTINE	Moisture content	1-2 mm	22.2		0.02	0.2	% by wt
SS-07	8-Dec-22	17:15	S-ROUTINE	Moisture content	1-2 mm	22.2		0.02	0.2	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Moisture content	1-2 mm	22.4		0.02	0.2	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Moisture content	1-2 mm	22.4		0.02	0.2	% by wt
SS-16B	16-Mar-22	10:30	QC-FD	Molybdenum	1-2 mm	3	J	0.8	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Molybdenum	1-2 mm	21		0.7	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Molybdenum	1-2 mm	18		0.8	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Molybdenum	1-2 mm	8		0.8	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Molybdenum	1-2 mm	6		0.8	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Molybdenum	1-2 mm	4.6	J	0.8	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Molybdenum	1-2 mm	2.9	J	0.8	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Molybdenum	1-2 mm	3.1	J	0.7	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Molybdenum	1-2 mm	3.1	J	0.8	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Molybdenum	1-2 mm	1.5	J	0.8	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Molybdenum	1-2 mm	11		0.8	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Molybdenum	1-2 mm	11		0.9	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-13	8-Jun-22	14:20	S-ROUTINE	Molybdenum	1-2 mm	2.9	J	0.8	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Molybdenum	1-2 mm	3.4	J	0.8	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Molybdenum	1-2 mm	1.6	J	0.8	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Molybdenum	1-2 mm	1.7	J	0.8	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Molybdenum	1-2 mm	4	J	0.7	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Molybdenum	1-2 mm	1.8	J	0.8	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Molybdenum	1-2 mm	1.5	J	0.8	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Molybdenum	1-2 mm	14		0.8	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Molybdenum	1-2 mm	3.1	J	0.8	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Molybdenum	1-2 mm	1.4	J	0.8	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Molybdenum	1-2 mm	3.6	J	0.8	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Molybdenum	1-2 mm	2.9	J	0.8	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Molybdenum	1-2 mm	1.3	J	0.3	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Molybdenum	1-2 mm	2.3	J	0.7	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Molybdenum	1-2 mm	0.9	J	0.7	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Molybdenum	1-2 mm	11		0.8	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Molybdenum	1-2 mm	11		0.8	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Molybdenum	1-2 mm	10		0.7	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Molybdenum	1-2 mm	10		0.7	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	1-2 mm	1	J	0.8	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Molybdenum	1-2 mm	1	J	0.8	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Nickel	1-2 mm	5		2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Nickel	1-2 mm	3	J	2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Nickel	1-2 mm	3	J	2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Nickel	1-2 mm	6		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Nickel	1-2 mm	6		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Nickel	1-2 mm	4	J	2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Nickel	1-2 mm	5	J	2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Nickel	1-2 mm	3	J	2	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Nickel	1-2 mm	4	J	2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Nickel	1-2 mm	5	J	2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Nickel	1-2 mm	3	J	2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Nickel	1-2 mm	3	J	2	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Nickel	1-2 mm	5		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Nickel	1-2 mm	5	J	2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Nickel	1-2 mm	2	J	2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Nickel	1-2 mm	4	J	2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Nickel	1-2 mm	4	J	2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Nickel	1-2 mm	4	J	2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Nickel	1-2 mm	5	J	2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Nickel	1-2 mm	3	J	2	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-10A	2-Sep-22	14:30	S-ROUTINE	Nickel	1-2 mm	2	J	2	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Nickel	1-2 mm	7		2	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Nickel	1-2 mm	6		2	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Nickel	1-2 mm	3	J	2	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Nickel	1-2 mm	3.8	J	0.7	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Nickel	1-2 mm	5		1	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Nickel	1-2 mm	4	J	2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Nickel	1-2 mm	8		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Nickel	1-2 mm	8		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Nickel	1-2 mm	3	J	2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Nickel	1-2 mm	3	J	2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	1-2 mm	4	J	2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Nickel	1-2 mm	4	J	2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	15.4		0	0.1	% by wt
SS-07	16-Mar-22	16:00	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	16.8		0	0.1	% by wt
SS-10A	16-Mar-22	14:45	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	19.9		0	0.1	% by wt
SS-13	16-Mar-22	13:50	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	17.1		0	0.1	% by wt
SS-14	16-Mar-22	13:00	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	17.3		0	0.1	% by wt
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	10.7		0	0.1	% by wt
SS-16B	16-Mar-22	10:30	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	14.1		0	0.1	% by wt
SS-17D	16-Mar-22	9:45	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	11.3		0	0.1	% by wt
SS-19	16-Mar-22	9:00	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	7.2		0	0.1	% by wt
SS-19	8-Jun-22	9:30	QC-FD	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	10.2		0	0.1	% by wt
SS-07	8-Jun-22	16:45	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	21.2		0	0.1	% by wt
SS-10A	8-Jun-22	15:15	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	11.6		0	0.1	% by wt
SS-13	8-Jun-22	14:20	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	14		0	0.1	% by wt

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-14	8-Jun-22	13:45	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	14.5		0	0.1	% by wt
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	15.4		0	0.1	% by wt
SS-16B	8-Jun-22	11:30	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	13.5		0	0.1	% by wt
SS-17D	8-Jun-22	10:30	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	10.4		0	0.1	% by wt
SS-19	8-Jun-22	9:30	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	13		0	0.1	% by wt
SS-16B	2-Sep-22	10:30	QC-FD	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	30.6		0	0.1	% by wt
SS-07	2-Sep-22	16:00	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	16.1		0	0.1	% by wt
SS-10A	2-Sep-22	14:30	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	19.9		0	0.1	% by wt
SS-13	2-Sep-22	13:30	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	16.9		0	0.1	% by wt
SS-14	2-Sep-22	12:45	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	19.4		0	0.1	% by wt
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	13.1		0	0.1	% by wt
SS-16B	2-Sep-22	10:30	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	24.7		0	0.1	% by wt
SS-17D	2-Sep-22	9:45	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	17.6		0	0.1	% by wt
SS-19	2-Sep-22	9:00	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	18.9		0	0.1	% by wt
SS-07	8-Dec-22	17:15	QC-FD	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	13		0	0.1	% by wt
SS-07	8-Dec-22	17:15	QC-FD	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	13		0	0.1	% by wt
SS-07	8-Dec-22	17:15	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	13.6		0	0.1	% by wt
SS-07	8-Dec-22	17:15	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	13.6		0	0.1	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	9		0	0.1	% by wt
SS-19	8-Dec-22	9:15	S-ROUTINE	Particle size, Sieve No. 18, 16 mesh, (1.00mm)	1-2 mm	9		0	0.1	% by wt

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	16-Mar-22	10:30	QC-FD	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.5	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.2	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Selenium	1-2 mm	Not Detected		0.4	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	16-Mar-22	9:00	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Silver	1-2 mm	Not Detected		3	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Silver	1-2 mm	Not Detected		1	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Silver	1-2 mm	3	J	2	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Silver	1-2 mm	3	J	2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Silver	1-2 mm	Not Detected		2	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Uranium	1-2 mm	1.5	J	0.07	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Uranium	1-2 mm	1.7	J	0.07	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Uranium	1-2 mm	1	J	0.07	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Uranium	1-2 mm	1.2	J	0.07	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Uranium	1-2 mm	0.83	J	0.07	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Uranium	1-2 mm	1.7	J	0.07	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Uranium	1-2 mm	1.4	J	0.07	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Uranium	1-2 mm	1.4	J	0.07	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Uranium	1-2 mm	3.4	J	0.07	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Uranium	1-2 mm	1.1	J	0.07	5	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Uranium	1-2 mm	1.3	J	0.07	5	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Uranium	1-2 mm	1.2	J	0.08	5	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Uranium	1-2 mm	0.8	J	0.07	5	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Uranium	1-2 mm	0.73	J	0.07	5	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Uranium	1-2 mm	1.6	J	0.07	5	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Uranium	1-2 mm	1.6	J	0.07	5	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-17D	8-Jun-22	10:30	S-ROUTINE	Uranium	1-2 mm	1.4	J	0.07	5	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Uranium	1-2 mm	1.3	J	0.07	5	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Uranium	1-2 mm	1.3	J	0.07	5	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Uranium	1-2 mm	1.1	J	0.07	5	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Uranium	1-2 mm	1.1	J	0.07	5	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Uranium	1-2 mm	1	J	0.07	5	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Uranium	1-2 mm	0.81	J	0.07	5	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Uranium	1-2 mm	1.5	J	0.07	5	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Uranium	1-2 mm	1.8	J	0.03	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Uranium	1-2 mm	1.1	J	0.06	5	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Uranium	1-2 mm	1.8	J	0.07	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Uranium	1-2 mm	1	J	0.07	5	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Uranium	1-2 mm	1	J	0.07	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Uranium	1-2 mm	1.3	J	0.07	5	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Uranium	1-2 mm	1.3	J	0.07	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium	1-2 mm	1.1	J	0.07	5	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Uranium	1-2 mm	1.1	J	0.07	5	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Vanadium	1-2 mm	17		1	1	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Vanadium	1-2 mm	14		1	1	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Vanadium	1-2 mm	17		1	1	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Vanadium	1-2 mm	20		1	1	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Vanadium	1-2 mm	18		1	1	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Vanadium	1-2 mm	18		1	1	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Vanadium	1-2 mm	14		1	1	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Vanadium	1-2 mm	15		1	1	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Vanadium	1-2 mm	17		1	1	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Vanadium	1-2 mm	15		1	1	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Vanadium	1-2 mm	22		1	1	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Vanadium	1-2 mm	19		1	1	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Vanadium	1-2 mm	14		1	1	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Vanadium	1-2 mm	14		1	1	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Vanadium	1-2 mm	14		1	1	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Vanadium	1-2 mm	17		1	1	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Vanadium	1-2 mm	21		1	1	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Vanadium	1-2 mm	22		1	1	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Vanadium	1-2 mm	16		1	1	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Vanadium	1-2 mm	13		1	1	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Vanadium	1-2 mm	11		1	1	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Vanadium	1-2 mm	17		1	1	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Vanadium	1-2 mm	12		1	1	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Vanadium	1-2 mm	16		1	1	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-16B	2-Sep-22	10:30	S-ROUTINE	Vanadium	1-2 mm	14		0.4	1	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Vanadium	1-2 mm	15		1	1	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Vanadium	1-2 mm	15		1	1	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Vanadium	1-2 mm	18		1	1	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Vanadium	1-2 mm	18		1	1	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Vanadium	1-2 mm	14		1	1	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Vanadium	1-2 mm	14		1	1	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	1-2 mm	13		1	1	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Vanadium	1-2 mm	13		1	1	mg/kg
SS-16B	16-Mar-22	10:30	QC-FD	Zinc	1-2 mm	256		3	5	mg/kg
SS-07	16-Mar-22	16:00	S-ROUTINE	Zinc	1-2 mm	230		3	5	mg/kg
SS-10A	16-Mar-22	14:45	S-ROUTINE	Zinc	1-2 mm	290		3	5	mg/kg
SS-13	16-Mar-22	13:50	S-ROUTINE	Zinc	1-2 mm	169		3	5	mg/kg
SS-14	16-Mar-22	13:00	S-ROUTINE	Zinc	1-2 mm	148		3	5	mg/kg
SS-15A-2	16-Mar-22	12:00	S-ROUTINE	Zinc	1-2 mm	285		3	5	mg/kg
SS-16B	16-Mar-22	10:30	S-ROUTINE	Zinc	1-2 mm	229		3	5	mg/kg
SS-17D	16-Mar-22	9:45	S-ROUTINE	Zinc	1-2 mm	251		3	5	mg/kg
SS-19	16-Mar-22	9:00	S-ROUTINE	Zinc	1-2 mm	256		3	5	mg/kg
SS-19	8-Jun-22	9:30	QC-FD	Zinc	1-2 mm	144	D	10	10	mg/kg
SS-07	8-Jun-22	16:45	S-ROUTINE	Zinc	1-2 mm	286	D	10	10	mg/kg
SS-10A	8-Jun-22	15:15	S-ROUTINE	Zinc	1-2 mm	283	D	10	10	mg/kg
SS-13	8-Jun-22	14:20	S-ROUTINE	Zinc	1-2 mm	102	D	10	10	mg/kg
SS-14	8-Jun-22	13:45	S-ROUTINE	Zinc	1-2 mm	83	D	10	10	mg/kg
SS-15A-2	8-Jun-22	12:40	S-ROUTINE	Zinc	1-2 mm	90	D	10	10	mg/kg
SS-16B	8-Jun-22	11:30	S-ROUTINE	Zinc	1-2 mm	366	D	10	10	mg/kg
SS-17D	8-Jun-22	10:30	S-ROUTINE	Zinc	1-2 mm	199	D	10	10	mg/kg
SS-19	8-Jun-22	9:30	S-ROUTINE	Zinc	1-2 mm	213	D	10	10	mg/kg
SS-16B	2-Sep-22	10:30	QC-FD	Zinc	1-2 mm	216	D	10	10	mg/kg
SS-07	2-Sep-22	16:00	S-ROUTINE	Zinc	1-2 mm	259	D	10	10	mg/kg
SS-10A	2-Sep-22	14:30	S-ROUTINE	Zinc	1-2 mm	177	D	10	10	mg/kg
SS-13	2-Sep-22	13:30	S-ROUTINE	Zinc	1-2 mm	68	D	10	10	mg/kg
SS-14	2-Sep-22	12:45	S-ROUTINE	Zinc	1-2 mm	97	D	10	10	mg/kg
SS-15A-2	2-Sep-22	12:00	S-ROUTINE	Zinc	1-2 mm	144	D	10	10	mg/kg
SS-16B	2-Sep-22	10:30	S-ROUTINE	Zinc	1-2 mm	169		4	5	mg/kg
SS-17D	2-Sep-22	9:45	S-ROUTINE	Zinc	1-2 mm	151	D	9	9	mg/kg
SS-19	2-Sep-22	9:00	S-ROUTINE	Zinc	1-2 mm	312	D	9	9	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Zinc	1-2 mm	298		6	6	mg/kg
SS-07	8-Dec-22	17:15	QC-FD	Zinc	1-2 mm	298		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Zinc	1-2 mm	215		6	6	mg/kg
SS-07	8-Dec-22	17:15	S-ROUTINE	Zinc	1-2 mm	215		6	6	mg/kg
SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	1-2 mm	117		7	7	mg/kg

Table D-1. Sediment monitoring data for the Streamside Tailings Operable Unit, 2022.

SS-19	8-Dec-22	9:15	S-ROUTINE	Zinc	1-2 mm	117		7	7	mg/kg

APPENDIX E

Groundwater Data

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

Site ID	Date	Time	Sample Type	Characteristic Name	Sample Fraction	Result Value	Result Qualifier	Method Detection Limit	Lower Reporting Limit	Unit
1GW-1056	24-May-22	14:20	S-ROUTINE	Alkalinity, total	Total	130		2	4	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Aluminum	Dissolved	0.147		0.003	0.009	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Arsenic	Dissolved	0.006		0.0002	0.001	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Barium	Dissolved	0.035		0.0002	0.003	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Bicarbonate	Total	150		3	4	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Boron	Dissolved	0.039	J	0.004	0.1	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Calcium	Dissolved	89		0.2	1	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Chloride	Total	39		0.02	1	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Copper	Dissolved	0.0005	J	0.0001	0.001	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Hardness, Ca, Mg	NA	299		1	1	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Iron	Dissolved	0.08		0.004	0.02	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Magnesium	Dissolved	19		0.01	1	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Manganese	Dissolved	0.018		0.0003	0.001	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Mercury	Dissolved	0.002	J	0.001	0.005	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Molybdenum	Dissolved	0.006		0.0003	0.005	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Nickel	Dissolved	0.0008	J	0.0002	0.002	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Potassium	Dissolved	3		0.04	1	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Selenium	Dissolved	0.005		0.00007	0.001	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Sodium	Dissolved	28		0.02	1	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Sulfate	Total	164		0.06	1	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Uranium	Dissolved	0.0397		0.00002	0.0002	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Vanadium	Dissolved	0.0028	J	0.0001	0.1	mg/l
1GW-1056	24-May-22	14:20	S-ROUTINE	Zinc	Dissolved	0.002	J	0.001	0.008	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Alkalinity, total	Total	200		2	4	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Antimony	Dissolved	0.0005	J	0.0002	0.0005	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Arsenic	Dissolved	0.005		0.0002	0.001	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Barium	Dissolved	0.055		0.0002	0.003	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Bicarbonate	Total	240		3	4	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Boron	Dissolved	0.046	J	0.004	0.1	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

LYP-07	24-May-22	14:55	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Calcium	Dissolved	99		0.2	1	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Chloride	Total	42		0.02	1	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Cobalt	Dissolved	0.002	J	0.001	0.01	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Copper	Dissolved	0.0002	J	0.0001	0.001	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Hardness, Ca, Mg	NA	327		1	1	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Iron	Dissolved	0.55		0.004	0.02	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Magnesium	Dissolved	19		0.01	1	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Manganese	Dissolved	0.165		0.0003	0.001	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Mercury	Dissolved	0.009		0.001	0.005	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Molybdenum	Dissolved	0.003	J	0.0003	0.005	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Nickel	Dissolved	0.002		0.0002	0.002	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Potassium	Dissolved	11		0.04	1	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Selenium	Dissolved	0.003		0.00007	0.001	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Sodium	Dissolved	35		0.02	1	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Sulfate	Total	143		0.06	1	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Uranium	Dissolved	0.0361		0.00002	0.0002	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Vanadium	Dissolved	0.0033	J	0.0001	0.1	mg/l
LYP-07	24-May-22	14:55	S-ROUTINE	Zinc	Dissolved	0.002	J	0.001	0.008	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Alkalinity, total	Total	120		2	4	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Arsenic	Dissolved	0.012		0.0002	0.001	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Barium	Dissolved	0.013		0.0002	0.003	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Bicarbonate	Total	140		3	4	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Boron	Dissolved	0.025	J	0.004	0.1	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Calcium	Dissolved	87		0.1	1	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Chloride	Total	8		0.02	1	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Copper	Dissolved	Not Detected		0.0001	0.001	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Hardness, Ca, Mg	NA	269		1	1	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Iron	Dissolved	Not Detected		0.008	0.02	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Magnesium	Dissolved	13		0.02	1	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Manganese	Dissolved	Not Detected		0.0003	0.001	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

MW-2A	24-May-22	15:25	S-ROUTINE	Mercury	Dissolved	Not Detected		0.003	0.005	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Molybdenum	Dissolved	0.008		0.0003	0.005	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Potassium	Dissolved	4		0.06	1	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Selenium	Dissolved	0.011		0.00007	0.001	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Sodium	Dissolved	26		0.02	1	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Sulfate	Total	193		0.06	1	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Uranium	Dissolved	0.0382		0.00002	0.0002	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Vanadium	Dissolved	0.0032	J	0.0001	0.1	mg/l
MW-2A	24-May-22	15:25	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Alkalinity, total	Total	92		2	4	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Arsenic	Dissolved	0.012		0.0002	0.001	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Barium	Dissolved	0.027		0.0002	0.003	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Bicarbonate	Total	110		3	4	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Boron	Dissolved	0.028	J	0.004	0.1	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Calcium	Dissolved	57		0.1	1	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Chloride	Total	33		0.02	1	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Copper	Dissolved	0.0008	J	0.0001	0.001	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Hardness, Ca, Mg	NA	196		1	1	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Iron	Dissolved	Not Detected		0.008	0.02	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Magnesium	Dissolved	13		0.02	1	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Manganese	Dissolved	Not Detected		0.0003	0.001	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Mercury	Dissolved	0.001	J	0.001	0.005	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Molybdenum	Dissolved	0.0022	J	0.0003	0.005	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Potassium	Dissolved	3		0.06	1	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Selenium	Dissolved	0.003		0.00007	0.001	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Sodium	Dissolved	22		0.02	1	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Sulfate	Total	106		0.06	1	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Uranium	Dissolved	0.0068		0.00002	0.0002	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Vanadium	Dissolved	0.0029	J	0.0001	0.1	mg/l
MW-2B	24-May-22	11:50	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

MW-2C	24-May-22	13:05	S-ROUTINE	Alkalinity, total	Total	99		2	4	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Arsenic	Dissolved	0.006		0.0002	0.001	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Barium	Dissolved	0.019		0.0002	0.003	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Bicarbonate	Total	120		3	4	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Boron	Dissolved	0.038	J	0.004	0.1	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Calcium	Dissolved	67		0.1	1	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Chloride	Total	37		0.02	1	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Copper	Dissolved	Not Detected		0.0001	0.001	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Hardness, Ca, Mg	NA	229		1	1	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Iron	Dissolved	Not Detected		0.008	0.02	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Magnesium	Dissolved	15		0.02	1	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Manganese	Dissolved	Not Detected		0.0003	0.001	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Mercury	Dissolved	Not Detected		0.001	0.005	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Molybdenum	Dissolved	0.0015	J	0.0003	0.005	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Potassium	Dissolved	3		0.06	1	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Selenium	Dissolved	0.003		0.00007	0.001	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Sodium	Dissolved	29		0.02	1	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Sulfate	Total	140		0.06	1	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Uranium	Dissolved	0.0062		0.00002	0.0002	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Vanadium	Dissolved	0.0025	J	0.0001	0.1	mg/l
MW-2C	24-May-22	13:05	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Alkalinity, total	Total	150		2	4	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Barium	Dissolved	0.045		0.0002	0.003	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Bicarbonate	Total	180		3	4	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Boron	Dissolved	0.05	J	0.004	0.1	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Calcium	Dissolved	104		0.1	1	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Chloride	Total	50		0.02	1	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

MW-2D	24-May-22	14:00	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Copper	Dissolved	Not Detected		0.0001	0.001	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Hardness, Ca, Mg	NA	342		1	1	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Iron	Dissolved	Not Detected		0.008	0.02	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Magnesium	Dissolved	20		0.02	1	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Manganese	Dissolved	0.0007	J	0.0003	0.001	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Mercury	Dissolved	Not Detected		0.001	0.005	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Molybdenum	Dissolved	0.005		0.0003	0.005	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Potassium	Dissolved	4		0.06	1	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Selenium	Dissolved	0.005		0.00007	0.001	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Sodium	Dissolved	30		0.02	1	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Sulfate	Total	178		0.06	1	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Uranium	Dissolved	0.0468		0.00002	0.0002	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Vanadium	Dissolved	0.0027	J	0.0001	0.1	mg/l
MW-2D	24-May-22	14:00	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Alkalinity, total	Total	120		2	4	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Bicarbonate	Total	140		3	4	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Chloride	Total	39		0.02	1	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Sulfate	Total	261		0.06	1	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Arsenic	Dissolved	0.001		0.0002	0.001	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Barium	Dissolved	0.159		0.0002	0.003	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Boron	Dissolved	0.056	J	0.004	0.1	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Cadmium	Dissolved	0.0001		0.00002	0.00003	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Calcium	Dissolved	108		0.2	1	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Copper	Dissolved	0.0009	J	0.0001	0.001	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Iron	Dissolved	0.007	J	0.004	0.02	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Magnesium	Dissolved	19		0.01	1	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Manganese	Dissolved	3.26		0.0003	0.001	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Molybdenum	Dissolved	0.065		0.0003	0.005	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Nickel	Dissolved	0.0016	J	0.0002	0.002	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Potassium	Dissolved	5		0.04	1	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Selenium	Dissolved	0.00014	J	0.00007	0.001	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Sodium	Dissolved	35		0.04	1	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Uranium	Dissolved	0.0022		0.00002	0.0002	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Vanadium	Dissolved	0.0014	J	0.0001	0.1	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Zinc	Dissolved	0.172		0.001	0.008	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
GW-FM-WS	16-Sep-22	9:00	S-ROUTINE	Hardness, Ca, Mg	NA	348		1	1	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Alkalinity, total	Total	110		2	4	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Bicarbonate	Total	130		3	4	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Chloride	Total	47		0.02	1	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Sulfate	Total	224		0.06	1	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Arsenic	Dissolved	0.001		0.0002	0.001	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Barium	Dissolved	0.062		0.0002	0.003	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Boron	Dissolved	0.063	J	0.004	0.1	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Cadmium	Dissolved	0.00005		0.00002	0.00003	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Calcium	Dissolved	90		0.2	1	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Cobalt	Dissolved	0.003	J	0.001	0.01	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Copper	Dissolved	0.002		0.0001	0.001	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Iron	Dissolved	0.009	J	0.004	0.02	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Magnesium	Dissolved	17		0.01	1	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Manganese	Dissolved	1.85		0.0003	0.001	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Molybdenum	Dissolved	0.098		0.0003	0.005	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Nickel	Dissolved	0.0019	J	0.0002	0.002	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Potassium	Dissolved	6		0.04	1	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Selenium	Dissolved	Not Detected		0.00007	0.001	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Sodium	Dissolved	41		0.04	1	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Uranium	Dissolved	0.0006		0.00002	0.0002	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Vanadium	Dissolved	Not Detected		0.0001	0.1	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Zinc	Dissolved	0.424		0.001	0.008	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Mercury	Dissolved	Not Detected		0.003	0.005	mg/l
GW-FM-ES	16-Sep-22	8:30	S-ROUTINE	Hardness, Ca, Mg	NA	295		1	1	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Alkalinity, total	Total	40		2	4	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Bicarbonate	Total	48		3	4	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Chloride	Total	27		0.02	1	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Sulfate	Total	106		0.06	1	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Aluminum	Dissolved	0.007	J	0.003	0.009	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Arsenic	Dissolved	0.001		0.0002	0.001	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Barium	Dissolved	0.041		0.0002	0.003	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Beryllium	Dissolved	0.0004	J	0.0002	0.0008	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Boron	Dissolved	0.033	J	0.004	0.1	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Cadmium	Dissolved	0.00081		0.00002	0.00003	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Calcium	Dissolved	35		0.2	1	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Copper	Dissolved	0.002		0.0001	0.001	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Iron	Dissolved	0.06		0.004	0.02	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Lead	Dissolved	0.0002	J	0.0001	0.0003	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Magnesium	Dissolved	8		0.01	1	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Manganese	Dissolved	0.594		0.0003	0.001	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Molybdenum	Dissolved	0.0003	J	0.0003	0.005	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Nickel	Dissolved	0.007		0.0002	0.002	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Potassium	Dissolved	5		0.04	1	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Selenium	Dissolved	0.00046	J	0.00007	0.001	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Sodium	Dissolved	26		0.04	1	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Uranium	Dissolved	0.0003		0.00002	0.0002	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Vanadium	Dissolved	0.0015	J	0.0001	0.1	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Zinc	Dissolved	0.018		0.001	0.008	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Mercury	Dissolved	0.004	J	0.002	0.005	mg/l
GW-FM-BG	16-Sep-22	9:30	S-ROUTINE	Hardness, Ca, Mg	NA	119		1	1	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Alkalinity, total	Total	140		2	4	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Bicarbonate	Total	170		3	4	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Chloride	Total	27		0.02	1	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Sulfate	Total	151		0.06	1	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Aluminum	Dissolved	0.009	J	0.003	0.009	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Antimony	Dissolved	0.0011		0.0002	0.0005	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Arsenic	Dissolved	0.023		0.0002	0.001	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Barium	Dissolved	0.017		0.0002	0.003	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Boron	Dissolved	0.2	B	0.004	0.1	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Calcium	Dissolved	21		0.2	1	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Copper	Dissolved	0.002		0.0001	0.001	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Magnesium	Dissolved	3		0.01	1	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Manganese	Dissolved	0.0006	J	0.0003	0.001	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Molybdenum	Dissolved	0.021		0.0003	0.005	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Nickel	Dissolved	0.0003	J	0.0002	0.002	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Potassium	Dissolved	4		0.04	1	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Selenium	Dissolved	0.00014	J	0.00007	0.001	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Sodium	Dissolved	130		0.04	1	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Uranium	Dissolved	0.0021		0.00002	0.0002	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Vanadium	Dissolved	0.0054	J	0.0001	0.1	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Mercury	Dissolved	0.004	J	0.002	0.005	mg/l
GW-CR-BG	16-Sep-22	10:15	S-ROUTINE	Hardness, Ca, Mg	NA	63		1	1	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Alkalinity, total	Total	110		2	4	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Bicarbonate	Total	140		3	4	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Chloride	Total	47		0.02	1	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Sulfate	Total	281		0.06	1	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Arsenic	Dissolved	0.008		0.0002	0.001	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Barium	Dissolved	0.064		0.0002	0.003	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Boron	Dissolved	0.077	J	0.004	0.1	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Cadmium	Dissolved	0.0164		0.00002	0.00003	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Calcium	Dissolved	110		0.2	1	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Cobalt	Dissolved	0.004	J	0.001	0.01	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Copper	Dissolved	0.034		0.0001	0.001	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Iron	Dissolved	0.008	J	0.004	0.02	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Magnesium	Dissolved	17		0.01	1	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Manganese	Dissolved	3.11		0.0003	0.001	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Molybdenum	Dissolved	0.093		0.0003	0.005	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Nickel	Dissolved	0.002		0.0002	0.002	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Potassium	Dissolved	6		0.04	1	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Selenium	Dissolved	Not Detected		0.00007	0.001	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Sodium	Dissolved	58		0.04	1	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Uranium	Dissolved	0.0097		0.00002	0.0002	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Vanadium	Dissolved	Not Detected		0.0001	0.1	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Zinc	Dissolved	0.263		0.001	0.008	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Mercury	Dissolved	0.013		0.002	0.005	mg/l
GW-CR-WS	16-Sep-22	10:30	S-ROUTINE	Hardness, Ca, Mg	NA	345		1	1	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Alkalinity, total	Total	110		2	4	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Bicarbonate	Total	130		3	4	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Chloride	Total	50		0.02	1	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Sulfate	Total	172		0.06	1	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Aluminum	Dissolved	0.009		0.003	0.009	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Arsenic	Dissolved	0.0009	J	0.0002	0.001	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Barium	Dissolved	0.021		0.0002	0.003	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Boron	Dissolved	0.069	J	0.004	0.1	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Cadmium	Dissolved	0.00202		0.00002	0.00003	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Calcium	Dissolved	78		0.2	1	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Copper	Dissolved	0.004		0.0001	0.001	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Magnesium	Dissolved	13		0.01	1	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Manganese	Dissolved	0.007		0.0003	0.001	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Molybdenum	Dissolved	0.046		0.0003	0.005	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Nickel	Dissolved	0.002		0.0002	0.002	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Potassium	Dissolved	3		0.04	1	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Selenium	Dissolved	0.00015	J	0.00007	0.001	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Sodium	Dissolved	54		0.04	1	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Uranium	Dissolved	0.0028		0.00002	0.0002	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Vanadium	Dissolved	0.0023	J	0.0001	0.1	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Zinc	Dissolved	0.433		0.001	0.008	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Mercury	Dissolved	0.003	J	0.002	0.005	mg/l
GW-CR-ES	16-Sep-22	11:30	S-ROUTINE	Hardness, Ca, Mg	NA	247		1	1	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Alkalinity, total	Total	16		2	4	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Bicarbonate	Total	19		3	4	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Chloride	Total	46		0.02	1	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Sulfate	Total	281		0.06	1	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Aluminum	Dissolved	0.029		0.003	0.009	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Barium	Dissolved	0.027		0.0002	0.003	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Beryllium	Dissolved	0.0003	J	0.0002	0.0008	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Boron	Dissolved	0.076	J	0.004	0.1	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Cadmium	Dissolved	0.003		0.00002	0.00003	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Calcium	Dissolved	89		0.2	1	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Chromium	Dissolved	0.0003	J	0.0001	0.01	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Copper	Dissolved	0.004		0.0001	0.001	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Magnesium	Dissolved	19		0.01	1	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Manganese	Dissolved	0.524		0.0003	0.001	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Molybdenum	Dissolved	Not Detected		0.0003	0.005	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Nickel	Dissolved	0.027		0.0002	0.002	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Potassium	Dissolved	4		0.04	1	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Selenium	Dissolved	Not Detected		0.00007	0.001	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Sodium	Dissolved	28		0.04	1	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Uranium	Dissolved	0.0001	J	0.00002	0.0002	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Vanadium	Dissolved	0.0013	J	0.0001	0.1	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Zinc	Dissolved	1.76		0.001	0.008	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	mg/l
GW-ST-BG	16-Sep-22	12:20	S-ROUTINE	Hardness, Ca, Mg	NA	302		1	1	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Alkalinity, total	Total	10		2	4	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Bicarbonate	Total	11		3	4	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Chloride	Total	41		0.02	1	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Sulfate	Total	332		0.06	1	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Aluminum	Dissolved	0.491		0.003	0.009	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Arsenic	Dissolved	0.0003	J	0.0002	0.001	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Barium	Dissolved	0.017		0.0002	0.003	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Beryllium	Dissolved	0.0012		0.0002	0.0008	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Boron	Dissolved	0.058	J	0.004	0.1	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Cadmium	Dissolved	0.0394		0.00002	0.00003	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Calcium	Dissolved	96		0.2	1	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Cobalt	Dissolved	0.01		0.001	0.01	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Copper	Dissolved	2.2		0.0001	0.001	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Iron	Dissolved	0.008	J	0.004	0.02	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Lead	Dissolved	0.0027		0.0001	0.0003	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Magnesium	Dissolved	13		0.01	1	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Manganese	Dissolved	2.54		0.0003	0.001	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Molybdenum	Dissolved	0.0022	J	0.0003	0.005	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Nickel	Dissolved	0.016		0.0002	0.002	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Potassium	Dissolved	7		0.04	1	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Selenium	Dissolved	0.00021	J	0.00007	0.001	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Sodium	Dissolved	40		0.04	1	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Uranium	Dissolved	0.0054		0.00002	0.0002	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Vanadium	Dissolved	0.0002	J	0.0001	0.1	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Zinc	Dissolved	5.26		0.001	0.008	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	mg/l
GW-ST-ES	16-Sep-22	12:45	S-ROUTINE	Hardness, Ca, Mg	NA	293		1	1	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Alkalinity, total	Total	45		2	4	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Bicarbonate	Total	54		3	4	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Chloride	Total	48		0.02	1	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Sulfate	Total	214		0.06	1	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Aluminum	Dissolved	0.056		0.003	0.009	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Antimony	Dissolved	0.0004	J	0.0002	0.0005	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Barium	Dissolved	0.033		0.0002	0.003	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Beryllium	Dissolved	0.0004	J	0.0002	0.0008	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Boron	Dissolved	0.066	J	0.004	0.1	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Cadmium	Dissolved	0.0369		0.00002	0.00003	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Calcium	Dissolved	73		0.2	1	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Cobalt	Dissolved	0.01		0.001	0.01	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Copper	Dissolved	0.207		0.0001	0.001	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Magnesium	Dissolved	11		0.01	1	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Manganese	Dissolved	2.86		0.0003	0.001	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Molybdenum	Dissolved	0.083		0.0003	0.005	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Nickel	Dissolved	0.019		0.0002	0.002	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Potassium	Dissolved	7		0.04	1	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Selenium	Dissolved	0.00015	J	0.00007	0.001	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Sodium	Dissolved	36		0.04	1	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Uranium	Dissolved	0.003		0.00002	0.0002	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Vanadium	Dissolved	0.0024	J	0.0001	0.1	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Zinc	Dissolved	5.42		0.001	0.008	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Mercury	Dissolved	0.006		0.002	0.005	mg/l
GW-ST-WS	16-Sep-22	13:20	S-ROUTINE	Hardness, Ca, Mg	NA	226		1	1	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Alkalinity, total	Total	140		2	4	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Bicarbonate	Total	170		3	4	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Chloride	Total	19		0.02	1	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Sulfate	Total	203		0.06	1	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Barium	Dissolved	0.047		0.0002	0.003	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Boron	Dissolved	0.031	J	0.004	0.1	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Calcium	Dissolved	86		0.2	1	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Copper	Dissolved	0.0006	J	0.0001	0.001	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Iron	Dissolved	0.1		0.004	0.02	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Magnesium	Dissolved	17		0.01	1	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Manganese	Dissolved	0.063		0.0003	0.001	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Molybdenum	Dissolved	0.011		0.0003	0.005	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Potassium	Dissolved	3		0.04	1	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Selenium	Dissolved	0.00007	J	0.00007	0.001	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Sodium	Dissolved	22		0.04	1	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Uranium	Dissolved	0.0053		0.00002	0.0002	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Vanadium	Dissolved	Not Detected		0.0001	0.1	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	mg/l
GW-FR-ES	16-Sep-22	15:10	S-ROUTINE	Hardness, Ca, Mg	NA	285		1	1	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Alkalinity, total	Total	190		2	4	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Bicarbonate	Total	230		3	4	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Chloride	Total	1		0.02	1	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Sulfate	Total	27		0.06	1	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Aluminum	Dissolved	0.005	J	0.003	0.009	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Antimony	Dissolved	0.0014		0.0002	0.0005	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Arsenic	Dissolved	0.008		0.0002	0.001	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Barium	Dissolved	0.039		0.0002	0.003	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Boron	Dissolved	0.009	J	0.004	0.1	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Cadmium	Dissolved	0.00005		0.00002	0.00003	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Calcium	Dissolved	36		0.2	1	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Copper	Dissolved	0.003		0.0001	0.001	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Iron	Dissolved	0.009	J	0.004	0.02	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Magnesium	Dissolved	7		0.01	1	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Manganese	Dissolved	0.237		0.0003	0.001	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Molybdenum	Dissolved	0.004	J	0.0003	0.005	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Nickel	Dissolved	0.0006	J	0.0002	0.002	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Potassium	Dissolved	1		0.04	1	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Selenium	Dissolved	0.00033	J	0.00007	0.001	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Sodium	Dissolved	8		0.04	1	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Uranium	Dissolved	0.0025		0.00002	0.0002	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Vanadium	Dissolved	0.0068	J	0.0001	0.1	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Mercury	Dissolved	0.003	J	0.002	0.005	mg/l
GW-FR-BG	16-Sep-22	14:00	S-ROUTINE	Hardness, Ca, Mg	NA	120		1	1	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Alkalinity, total	Total	140		2	4	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Bicarbonate	Total	170		3	4	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Chloride	Total	1		0.02	1	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Sulfate	Total	24		0.06	1	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Antimony	Dissolved	0.0005		0.0002	0.0005	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Arsenic	Dissolved	0.009		0.0002	0.001	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Barium	Dissolved	0.043		0.0002	0.003	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Boron	Dissolved	0.013	J	0.004	0.1	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Calcium	Dissolved	43		0.2	1	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Copper	Dissolved	0.001		0.0001	0.001	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Iron	Dissolved	0.007	J	0.004	0.02	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Magnesium	Dissolved	8		0.01	1	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Manganese	Dissolved	0.008		0.0003	0.001	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Molybdenum	Dissolved	0.005		0.0003	0.005	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Potassium	Dissolved	2		0.04	1	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Selenium	Dissolved	0.00013	J	0.00007	0.001	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Sodium	Dissolved	10		0.04	1	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Uranium	Dissolved	0.0096		0.00002	0.0002	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Vanadium	Dissolved	0.0034	J	0.0001	0.1	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
GW-FR-WS	16-Sep-22	14:35	S-ROUTINE	Hardness, Ca, Mg	NA	142		1	1	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Alkalinity, total	Total	120		2	4	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Bicarbonate	Total	150		3	4	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Chloride	Total	39		0.02	1	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Sulfate	Total	171		0.06	1	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Barium	Dissolved	0.036		0.0002	0.003	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Boron	Dissolved	0.057	J	0.004	0.1	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Cadmium	Dissolved	0.00002	J	0.00002	0.00003	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Calcium	Dissolved	89		0.2	1	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Copper	Dissolved	0.0008	J	0.0001	0.001	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Magnesium	Dissolved	18		0.01	1	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Manganese	Dissolved	0.009		0.0003	0.001	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Molybdenum	Dissolved	0.007		0.0003	0.005	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Nickel	Dissolved	0.0003	J	0.0002	0.002	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Potassium	Dissolved	3		0.04	1	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Selenium	Dissolved	0.004		0.00007	0.001	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Sodium	Dissolved	29		0.04	1	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Uranium	Dissolved	0.0419		0.00002	0.0002	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Vanadium	Dissolved	0.0028	J	0.0001	0.1	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Mercury	Dissolved	Not Detected		0.003	0.005	mg/l
1GW-1056	14-Sep-22	15:10	S-ROUTINE	Hardness, Ca, Mg	NA	295		1	1	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Alkalinity, total	Total	180		2	4	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

LYP-07	14-Sep-22	16:20	S-ROUTINE	Bicarbonate	Total	220		3	4	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Chloride	Total	45		0.02	1	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Sulfate	Total	181		0.06	1	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Antimony	Dissolved	0.001		0.0002	0.0005	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Barium	Dissolved	0.065		0.0002	0.003	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Boron	Dissolved	0.057	J	0.004	0.1	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Calcium	Dissolved	104		0.2	1	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Cobalt	Dissolved	0.001	J	0.001	0.01	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Copper	Dissolved	0.0002	J	0.0001	0.001	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Iron	Dissolved	0.01	J	0.004	0.02	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Magnesium	Dissolved	19		0.01	1	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Manganese	Dissolved	0.051		0.0003	0.001	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Molybdenum	Dissolved	0.011		0.0003	0.005	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Nickel	Dissolved	0.004		0.0002	0.002	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Potassium	Dissolved	5		0.04	1	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Selenium	Dissolved	0.003		0.00007	0.001	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Sodium	Dissolved	35		0.04	1	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Uranium	Dissolved	0.12		0.00002	0.0002	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Vanadium	Dissolved	0.0004	J	0.0001	0.1	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Zinc	Dissolved	0.005	J	0.001	0.008	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
LYP-07	14-Sep-22	16:20	S-ROUTINE	Hardness, Ca, Mg	NA	338		1	1	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Alkalinity, total	Total	120		2	4	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Bicarbonate	Total	140		3	4	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Chloride	Total	8		0.02	1	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Sulfate	Total	191		0.06	1	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Antimony	Dissolved	0.0004	J	0.0002	0.0005	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Arsenic	Dissolved	0.014		0.0002	0.001	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Barium	Dissolved	0.012		0.0002	0.003	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Boron	Dissolved	0.034	J	0.004	0.1	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Cadmium	Dissolved	0.00002	J	0.00002	0.00003	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Calcium	Dissolved	91		0.2	1	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

MW-2A	14-Sep-22	13:00	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Copper	Dissolved	0.004		0.0001	0.001	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Magnesium	Dissolved	12		0.01	1	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Manganese	Dissolved	0.0009	J	0.0003	0.001	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Molybdenum	Dissolved	0.009		0.0003	0.005	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Potassium	Dissolved	3		0.04	1	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Selenium	Dissolved	0.009		0.00007	0.001	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Sodium	Dissolved	26		0.04	1	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Uranium	Dissolved	0.0399		0.00002	0.0002	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Vanadium	Dissolved	0.0022	J	0.0001	0.1	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Zinc	Dissolved	0.002	J	0.001	0.008	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
MW-2A	14-Sep-22	13:00	S-ROUTINE	Hardness, Ca, Mg	NA	279		1	1	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Alkalinity, total	Total	100		2	4	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Bicarbonate	Total	130		3	4	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Chloride	Total	33		0.02	1	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Sulfate	Total	109		0.06	1	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Arsenic	Dissolved	0.013		0.0002	0.001	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Barium	Dissolved	0.031		0.0002	0.003	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Boron	Dissolved	0.045	J	0.004	0.1	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Calcium	Dissolved	61		0.2	1	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Copper	Dissolved	0.002		0.0001	0.001	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Iron	Dissolved	0.005	J	0.004	0.02	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Magnesium	Dissolved	15		0.01	1	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Manganese	Dissolved	0.0005	J	0.0003	0.001	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Molybdenum	Dissolved	0.0027	J	0.0003	0.005	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Potassium	Dissolved	3		0.04	1	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Selenium	Dissolved	0.002		0.00007	0.001	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

MW-2B	14-Sep-22	13:40	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Sodium	Dissolved	25		0.04	1	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Uranium	Dissolved	0.0092		0.00002	0.0002	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Vanadium	Dissolved	0.0033	J	0.0001	0.1	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
MW-2B	14-Sep-22	13:40	S-ROUTINE	Hardness, Ca, Mg	NA	212		1	1	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Alkalinity, total	Total	100		2	4	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Bicarbonate	Total	130		3	4	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Chloride	Total	36		0.02	1	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Sulfate	Total	143		0.06	1	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Arsenic	Dissolved	0.006		0.0002	0.001	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Barium	Dissolved	0.02		0.0002	0.003	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Boron	Dissolved	0.052	J	0.004	0.1	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Calcium	Dissolved	69		0.2	1	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Copper	Dissolved	0.001		0.0001	0.001	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Magnesium	Dissolved	15		0.01	1	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Manganese	Dissolved	0.001	J	0.0003	0.001	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Molybdenum	Dissolved	0.0017	J	0.0003	0.005	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Potassium	Dissolved	3		0.04	1	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Selenium	Dissolved	0.002		0.00007	0.001	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Sodium	Dissolved	31		0.04	1	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Uranium	Dissolved	0.0075		0.00002	0.0002	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Vanadium	Dissolved	0.0024	J	0.0001	0.1	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Zinc	Dissolved	0.003	J	0.001	0.008	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
MW-2C	14-Sep-22	17:55	S-ROUTINE	Hardness, Ca, Mg	NA	234		1	1	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Alkalinity, total	Total	150		2	4	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Bicarbonate	Total	180		3	4	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Chloride	Total	50		0.02	1	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Sulfate	Total	173		0.06	1	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

MW-2D	14-Sep-22	14:40	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Barium	Dissolved	0.046		0.0002	0.003	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Boron	Dissolved	0.06	J	0.004	0.1	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Calcium	Dissolved	100		0.2	1	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Copper	Dissolved	0.001		0.0001	0.001	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Magnesium	Dissolved	20		0.01	1	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Manganese	Dissolved	0.001	J	0.0003	0.001	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Molybdenum	Dissolved	0.006		0.0003	0.005	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Potassium	Dissolved	4		0.04	1	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Selenium	Dissolved	0.004		0.00007	0.001	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Sodium	Dissolved	29		0.04	1	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Uranium	Dissolved	0.0498		0.00002	0.0002	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Vanadium	Dissolved	0.0026	J	0.0001	0.1	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Zinc	Dissolved	0.002	J	0.001	0.008	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
MW-2D	14-Sep-22	14:40	S-ROUTINE	Hardness, Ca, Mg	NA	332		1	1	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Alkalinity, total	Total	280		2	4	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Bicarbonate	Total	340		3	4	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Chloride	Total	31		0.02	1	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Sulfate	Total	140		0.06	1	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Arsenic	Dissolved	0.012		0.0002	0.001	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Barium	Dissolved	0.063		0.0002	0.003	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Boron	Dissolved	0.4		0.004	0.1	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Cadmium	Dissolved	0.00005		0.00002	0.00003	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Calcium	Dissolved	94		0.2	1	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Copper	Dissolved	0.026		0.0001	0.001	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

P-39R	15-Sep-22	16:05	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Magnesium	Dissolved	17		0.01	1	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Manganese	Dissolved	0.0006	J	0.0003	0.001	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Molybdenum	Dissolved	0.009		0.0003	0.005	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Potassium	Dissolved	10		0.04	1	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Selenium	Dissolved	0.001		0.00007	0.001	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Sodium	Dissolved	76		0.04	1	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Uranium	Dissolved	0.0476		0.00002	0.0002	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Vanadium	Dissolved	0.009	J	0.0001	0.1	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Zinc	Dissolved	0.003	J	0.001	0.008	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Mercury	Dissolved	0.002	J	0.002	0.005	mg/l
P-39R	15-Sep-22	16:05	S-ROUTINE	Hardness, Ca, Mg	NA	306		1	1	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Alkalinity, total	Total	140		2	4	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Bicarbonate	Total	170		3	4	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Chloride	Total	74		0.02	1	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Sulfate	Total	234		0.06	1	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Aluminum	Dissolved	0.004	J	0.003	0.009	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Barium	Dissolved	0.019		0.0002	0.003	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Boron	Dissolved	0.08	J	0.004	0.1	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Cadmium	Dissolved	0.00156		0.00002	0.00003	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Calcium	Dissolved	89		0.2	1	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Cobalt	Dissolved	0.003	J	0.001	0.01	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Copper	Dissolved	0.023		0.0001	0.001	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Iron	Dissolved	0.007	J	0.004	0.02	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Magnesium	Dissolved	15		0.01	1	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Manganese	Dissolved	2.43		0.0003	0.001	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Molybdenum	Dissolved	0.0018	J	0.0003	0.005	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Nickel	Dissolved	0.002	J	0.0002	0.002	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Potassium	Dissolved	7		0.04	1	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Selenium	Dissolved	Not Detected		0.00007	0.001	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Sodium	Dissolved	84		0.04	1	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Uranium	Dissolved	0.0018		0.00002	0.0002	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

P-37A	15-Sep-22	16:30	S-ROUTINE	Vanadium	Dissolved	Not Detected		0.0001	0.1	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Zinc	Dissolved	0.422		0.001	0.008	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Mercury	Dissolved	0.005	J	0.002	0.005	mg/l
P-37A	15-Sep-22	16:30	S-ROUTINE	Hardness, Ca, Mg	NA	285		1	1	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Alkalinity, total	Total	150		2	4	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Bicarbonate	Total	180		3	4	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Chloride	Total	22		0.02	1	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Sulfate	Total	59		0.06	1	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Aluminum	Dissolved	0.005	J	0.003	0.009	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Barium	Dissolved	0.054		0.0002	0.003	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Boron	Dissolved	0.028	J	0.004	0.1	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Cadmium	Dissolved	0.00003		0.00002	0.00003	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Calcium	Dissolved	50		0.2	1	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Copper	Dissolved	0.0008	J	0.0001	0.001	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Magnesium	Dissolved	10		0.01	1	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Manganese	Dissolved	0.0009	J	0.0003	0.001	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Molybdenum	Dissolved	0.0012	J	0.0003	0.005	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Nickel	Dissolved	0.0002	J	0.0002	0.002	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Potassium	Dissolved	7		0.04	1	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Selenium	Dissolved	0.00023	J	0.00007	0.001	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Sodium	Dissolved	30		0.04	1	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Uranium	Dissolved	0.0082		0.00002	0.0002	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Vanadium	Dissolved	0.0066	J	0.0001	0.1	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
GW-RM-SS	15-Sep-22	17:00	S-ROUTINE	Hardness, Ca, Mg	NA	168		1	1	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Alkalinity, total	Total	140		2	4	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Bicarbonate	Total	170		3	4	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Chloride	Total	19		0.02	1	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Sulfate	Total	57		0.06	1	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Barium	Dissolved	0.049		0.0002	0.003	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Boron	Dissolved	0.022	J	0.004	0.1	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Calcium	Dissolved	48		0.2	1	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Copper	Dissolved	0.0007	J	0.0001	0.001	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Magnesium	Dissolved	9		0.01	1	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Manganese	Dissolved	0.001		0.0003	0.001	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Molybdenum	Dissolved	0.0012	J	0.0003	0.005	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Potassium	Dissolved	7		0.04	1	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Selenium	Dissolved	0.00018	J	0.00007	0.001	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Sodium	Dissolved	29		0.04	1	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Uranium	Dissolved	0.0071		0.00002	0.0002	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Vanadium	Dissolved	0.0065	J	0.0001	0.1	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
GW-RM-NS	15-Sep-22	17:30	S-ROUTINE	Hardness, Ca, Mg	NA	158		1	1	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Alkalinity, total	Total	3	J	2	4	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Bicarbonate	Total	3	J	3	4	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Chloride	Total	62		0.05	1	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Sulfate	Total	506		0.1	1	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Aluminum	Dissolved	0.475		0.003	0.009	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Barium	Dissolved	0.02		0.0002	0.003	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Beryllium	Dissolved	0.0004	J	0.0002	0.0008	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Boron	Dissolved	0.054	J	0.004	0.1	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Cadmium	Dissolved	0.0525		0.00002	0.00003	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Calcium	Dissolved	124		0.2	1	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Cobalt	Dissolved	0.03		0.001	0.01	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Copper	Dissolved	1.8		0.0001	0.001	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Iron	Dissolved	0.02		0.004	0.02	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Lead	Dissolved	0.0018		0.0001	0.0003	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Magnesium	Dissolved	29		0.01	1	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Manganese	Dissolved	8.42		0.0003	0.001	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Molybdenum	Dissolved	Not Detected		0.0003	0.005	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Nickel	Dissolved	0.022		0.0002	0.002	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Potassium	Dissolved	8		0.04	1	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Selenium	Dissolved	Not Detected		0.00007	0.001	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Sodium	Dissolved	63		0.04	1	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Uranium	Dissolved	0.0019		0.00002	0.0002	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Vanadium	Dissolved	Not Detected		0.0001	0.1	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Zinc	Dissolved	13.2		0.003	0.008	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
GW-MC-NS	15-Sep-22	18:45	S-ROUTINE	Hardness, Ca, Mg	NA	431		1	1	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Alkalinity, total	Total	290		2	4	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Bicarbonate	Total	350		3	4	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Chloride	Total	96		0.05	1	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Sulfate	Total	290		0.1	1	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Aluminum	Dissolved	0.028		0.003	0.009	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Arsenic	Dissolved	0.04		0.0002	0.001	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Barium	Dissolved	0.022		0.0002	0.003	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Boron	Dissolved	0.066	J	0.004	0.1	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Cadmium	Dissolved	0.00009		0.00002	0.00003	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Calcium	Dissolved	43		0.2	1	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Copper	Dissolved	0.008		0.0001	0.001	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Iron	Dissolved	0.012	J	0.004	0.02	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Lead	Dissolved	0.0004		0.0001	0.0003	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Magnesium	Dissolved	10		0.01	1	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Manganese	Dissolved	0.003		0.0003	0.001	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Molybdenum	Dissolved	0.057		0.0003	0.005	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Nickel	Dissolved	0.0009	J	0.0002	0.002	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Potassium	Dissolved	6		0.04	1	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Selenium	Dissolved	0.00028	J	0.00007	0.001	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Sodium	Dissolved	269		0.04	1	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Uranium	Dissolved	0.0067		0.00002	0.0002	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Vanadium	Dissolved	0.0061	J	0.0001	0.1	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Zinc	Dissolved	0.004	J	0.001	0.008	mg/l
GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-MC-BG	15-Sep-22	18:10	S-ROUTINE	Hardness, Ca, Mg	NA	149		1	1	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Alkalinity, total	Total	120		2	4	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Bicarbonate	Total	150		3	4	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Chloride	Total	61		0.02	1	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Sulfate	Total	146		0.06	1	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Aluminum	Dissolved	0.187		0.003	0.009	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Antimony	Dissolved	0.0005	J	0.0002	0.0005	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Barium	Dissolved	0.051		0.0002	0.003	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Boron	Dissolved	0.072	J	0.004	0.1	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Cadmium	Dissolved	0.0532		0.00002	0.00003	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Calcium	Dissolved	83		0.2	1	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Chromium	Dissolved	0.0002	J	0.0001	0.01	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Copper	Dissolved	0.115		0.0001	0.001	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Iron	Dissolved	0.2		0.004	0.02	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Lead	Dissolved	0.0003		0.0001	0.0003	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Magnesium	Dissolved	11		0.01	1	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Manganese	Dissolved	2.75		0.0003	0.001	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Molybdenum	Dissolved	0.186		0.0003	0.005	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Nickel	Dissolved	0.005		0.0002	0.002	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Potassium	Dissolved	8		0.04	1	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Selenium	Dissolved	0.0001	J	0.00007	0.001	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Sodium	Dissolved	42		0.04	1	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Uranium	Dissolved	0.0055		0.00002	0.0002	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Vanadium	Dissolved	0.007	J	0.0001	0.1	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Zinc	Dissolved	1.88		0.001	0.008	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Mercury	Dissolved	0.008		0.002	0.005	mg/l
GW-MC-SS	15-Sep-22	19:30	S-ROUTINE	Hardness, Ca, Mg	NA	252		1	1	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Alkalinity, total	Total	250		2	4	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Bicarbonate	Total	310		3	4	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Chloride	Total	26		0.05	1	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Sulfate	Total	387		0.1	1	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Antimony	Dissolved	0.0004	J	0.0002	0.0005	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Barium	Dissolved	0.028		0.0002	0.003	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Boron	Dissolved	0.1		0.004	0.1	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-1010R	15-Sep-22	9:45	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Calcium	Dissolved	114		0.2	1	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Chromium	Dissolved	0.0005	J	0.0001	0.01	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Copper	Dissolved	0.003		0.0001	0.001	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Magnesium	Dissolved	22		0.01	1	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Manganese	Dissolved	0.003		0.0003	0.001	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Molybdenum	Dissolved	0.009		0.0003	0.005	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Potassium	Dissolved	7		0.04	1	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Selenium	Dissolved	0.00009	J	0.00007	0.001	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Sodium	Dissolved	146		0.04	1	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Uranium	Dissolved	0.0827		0.00002	0.0002	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Vanadium	Dissolved	0.0009	J	0.0001	0.1	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Zinc	Dissolved	0.004	J	0.001	0.008	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
GW-1010R	15-Sep-22	9:45	S-ROUTINE	Hardness, Ca, Mg	NA	374		1	1	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Alkalinity, total	Total	140		2	4	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Bicarbonate	Total	170		3	4	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Chloride	Total	16		0.02	1	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Sulfate	Total	162		0.06	1	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Aluminum	Dissolved	0.013		0.003	0.009	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Antimony	Dissolved	0.0012		0.0002	0.0005	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Arsenic	Dissolved	0.021		0.0002	0.001	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Barium	Dissolved	0.005		0.0002	0.003	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Boron	Dissolved	0.095	J	0.004	0.1	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Cadmium	Dissolved	0.00008		0.00002	0.00003	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Calcium	Dissolved	50		0.2	1	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Chromium	Dissolved	0.0003	J	0.0001	0.01	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Copper	Dissolved	0.001		0.0001	0.001	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Iron	Dissolved	0.04		0.004	0.02	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Magnesium	Dissolved	7		0.01	1	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Manganese	Dissolved	0.0008	J	0.0003	0.001	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Molybdenum	Dissolved	0.026		0.0003	0.005	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Nickel	Dissolved	0.0008	J	0.0002	0.002	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Potassium	Dissolved	6		0.04	1	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Selenium	Dissolved	0.00026	J	0.00007	0.001	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Sodium	Dissolved	84		0.04	1	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Uranium	Dissolved	0.0097		0.00002	0.0002	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Vanadium	Dissolved	0.0011	J	0.0001	0.1	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Zinc	Dissolved	0.002	J	0.001	0.008	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
GW-WG-SS	15-Sep-22	10:45	S-ROUTINE	Hardness, Ca, Mg	NA	156		1	1	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Alkalinity, total	Total	160	H	2	4	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Bicarbonate	Total	190	H	3	4	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Chloride	Total	38		0.05	1	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Sulfate	Total	419		0.1	1	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Aluminum	Dissolved	0.006	J	0.003	0.009	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Arsenic	Dissolved	0.001		0.0002	0.001	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Barium	Dissolved	0.03		0.0002	0.003	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Boron	Dissolved	0.1		0.004	0.1	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Cadmium	Dissolved	0.0002		0.00002	0.00003	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Calcium	Dissolved	141		0.2	1	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Cobalt	Dissolved	0.003	J	0.001	0.01	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Copper	Dissolved	0.0009	J	0.0001	0.001	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Iron	Dissolved	0.012	J	0.004	0.02	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Magnesium	Dissolved	23		0.01	1	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Manganese	Dissolved	3.98		0.0003	0.001	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Molybdenum	Dissolved	0.031		0.0003	0.005	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Nickel	Dissolved	0.0008	J	0.0002	0.002	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Potassium	Dissolved	8		0.04	1	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Selenium	Dissolved	Not Detected		0.00007	0.001	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Sodium	Dissolved	84		0.04	1	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Uranium	Dissolved	0.0099		0.00002	0.0002	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Vanadium	Dissolved	0.0002	J	0.0001	0.1	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Zinc	Dissolved	0.593		0.001	0.008	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Mercury	Dissolved	0.003	J	0.002	0.005	mg/l
GW-WG-NS	15-Sep-22	10:15	S-ROUTINE	Hardness, Ca, Mg	NA	445		1	1	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Alkalinity, total	Total	160		2	4	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Bicarbonate	Total	190		3	4	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Chloride	Total	40		0.02	1	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Sulfate	Total	126		0.06	1	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Barium	Dissolved	0.079		0.0002	0.003	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Boron	Dissolved	0.041	J	0.004	0.1	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Cadmium	Dissolved	0.00002	J	0.00002	0.00003	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Calcium	Dissolved	70		0.2	1	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Chromium	Dissolved	0.0003	J	0.0001	0.01	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Copper	Dissolved	0.0005	J	0.0001	0.001	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Magnesium	Dissolved	16		0.01	1	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Manganese	Dissolved	0.0005	J	0.0003	0.001	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Molybdenum	Dissolved	0.013		0.0003	0.005	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Potassium	Dissolved	6		0.04	1	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Selenium	Dissolved	0.00095	J	0.00007	0.001	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Sodium	Dissolved	44		0.04	1	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Uranium	Dissolved	0.0085		0.00002	0.0002	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Vanadium	Dissolved	0.0051	J	0.0001	0.1	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Mercury	Dissolved	Not Detected		0.003	0.005	mg/l
GW-RK-BG	15-Sep-22	13:15	S-ROUTINE	Hardness, Ca, Mg	NA	240		1	1	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Alkalinity, total	Total	Not Detected	H	2	4	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Bicarbonate	Total	Not Detected	H	3	4	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Chloride	Total	103		0.02	1	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Sulfate	Total	307		0.06	1	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Aluminum	Dissolved	0.146		0.003	0.009	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Barium	Dissolved	0.024		0.0002	0.003	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Beryllium	Dissolved	0.0002	J	0.0002	0.0008	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Boron	Dissolved	0.088	J	0.004	0.1	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Cadmium	Dissolved	0.0056		0.00002	0.00003	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Calcium	Dissolved	82		0.2	1	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

MW-10	15-Sep-22	11:45	S-ROUTINE	Cobalt	Dissolved	0.04		0.001	0.01	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Copper	Dissolved	0.081		0.0001	0.001	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Iron	Dissolved	24.1		0.004	0.02	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Lead	Dissolved	0.0003		0.0001	0.0003	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Magnesium	Dissolved	21		0.01	1	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Manganese	Dissolved	15.8		0.001	0.001	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Molybdenum	Dissolved	Not Detected		0.0003	0.005	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Nickel	Dissolved	0.013		0.0002	0.002	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Potassium	Dissolved	7		0.04	1	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Selenium	Dissolved	Not Detected		0.00007	0.001	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Sodium	Dissolved	39		0.04	1	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Uranium	Dissolved	0.0006		0.00002	0.0002	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Vanadium	Dissolved	Not Detected		0.0001	0.1	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Zinc	Dissolved	6.92		0.001	0.008	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
MW-10	15-Sep-22	11:45	S-ROUTINE	Hardness, Ca, Mg	NA	292		1	1	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Alkalinity, total	Total	160		2	4	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Bicarbonate	Total	200		3	4	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Chloride	Total	19		0.02	1	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Sulfate	Total	151		0.06	1	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Arsenic	Dissolved	0.011		0.0002	0.001	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Barium	Dissolved	0.025		0.0002	0.003	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Boron	Dissolved	0.1		0.004	0.1	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Cadmium	Dissolved	0.00139		0.00002	0.00003	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Calcium	Dissolved	92		0.2	1	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Copper	Dissolved	0.077		0.0001	0.001	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Iron	Dissolved	0.007	J	0.004	0.02	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Magnesium	Dissolved	16		0.01	1	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Manganese	Dissolved	0.544		0.0003	0.001	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Molybdenum	Dissolved	0.0039	J	0.0003	0.005	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Nickel	Dissolved	0.0009	J	0.0002	0.002	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Potassium	Dissolved	8		0.04	1	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Selenium	Dissolved	0.00009	J	0.00007	0.001	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

MW-01	15-Sep-22	12:30	S-ROUTINE	Sodium	Dissolved	23		0.04	1	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Uranium	Dissolved	0.0094		0.00002	0.0002	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Vanadium	Dissolved	0.0006	J	0.0001	0.1	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Zinc	Dissolved	0.302		0.001	0.008	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
MW-01	15-Sep-22	12:30	S-ROUTINE	Hardness, Ca, Mg	NA	297		1	1	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Alkalinity, total	Total	120		2	4	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Bicarbonate	Total	150		3	4	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Chloride	Total	15		0.02	1	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Sulfate	Total	52		0.06	1	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Arsenic	Dissolved	0.012		0.0002	0.001	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Barium	Dissolved	0.044		0.0002	0.003	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Boron	Dissolved	0.039	J	0.004	0.1	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Calcium	Dissolved	36		0.2	1	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Chromium	Dissolved	0.0001	J	0.0001	0.01	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Copper	Dissolved	0.0008	J	0.0001	0.001	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Magnesium	Dissolved	7		0.01	1	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Manganese	Dissolved	0.0009	J	0.0003	0.001	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Molybdenum	Dissolved	0.011		0.0003	0.005	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Potassium	Dissolved	6		0.04	1	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Selenium	Dissolved	0.00032	J	0.00007	0.001	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Sodium	Dissolved	33		0.04	1	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Uranium	Dissolved	0.0031		0.00002	0.0002	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Vanadium	Dissolved	0.0056	J	0.0001	0.1	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
GW-1003R	15-Sep-22	14:10	S-ROUTINE	Hardness, Ca, Mg	NA	119		1	1	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Alkalinity, total	Total	Not Detected		2	4	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Bicarbonate	Total	Not Detected		3	4	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Chloride	Total	76		0.05	1	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Sulfate	Total	467		0.1	1	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Aluminum	Dissolved	0.68		0.003	0.009	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Arsenic	Dissolved	0.0002	J	0.0002	0.001	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Barium	Dissolved	0.01		0.0002	0.003	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Beryllium	Dissolved	0.0004	J	0.0002	0.0008	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Boron	Dissolved	0.097	J	0.004	0.1	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Cadmium	Dissolved	0.00433		0.00002	0.00003	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Calcium	Dissolved	81		0.2	1	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Cobalt	Dissolved	0.04		0.001	0.01	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Copper	Dissolved	0.198		0.0001	0.001	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Iron	Dissolved	27.8		0.004	0.02	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Lead	Dissolved	0.0416		0.0001	0.0003	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Magnesium	Dissolved	37		0.01	1	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Manganese	Dissolved	15.9		0.001	0.001	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Molybdenum	Dissolved	Not Detected		0.0003	0.005	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Nickel	Dissolved	0.015		0.0002	0.002	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Potassium	Dissolved	7		0.04	1	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Selenium	Dissolved	Not Detected		0.00007	0.001	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Sodium	Dissolved	59		0.04	1	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Uranium	Dissolved	0.0014		0.00002	0.0002	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Vanadium	Dissolved	Not Detected		0.0001	0.1	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Zinc	Dissolved	5.68		0.001	0.008	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Mercury	Dissolved	0.006		0.002	0.005	mg/l
1GW-1004A	15-Sep-22	14:40	S-ROUTINE	Hardness, Ca, Mg	NA	355		1	1	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Alkalinity, total	Total	Not Detected		2	4	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Bicarbonate	Total	Not Detected		3	4	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Chloride	Total	61		0.02	1	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Sulfate	Total	377		0.06	1	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Aluminum	Dissolved	3.76		0.003	0.009	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Barium	Dissolved	0.03		0.0002	0.003	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Beryllium	Dissolved	0.002		0.0002	0.0008	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Boron	Dissolved	0.067	J	0.004	0.1	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Cadmium	Dissolved	0.0236		0.00002	0.00003	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Calcium	Dissolved	78		0.2	1	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Cobalt	Dissolved	0.05		0.001	0.01	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Copper	Dissolved	2.7		0.0001	0.001	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Iron	Dissolved	29.2		0.004	0.02	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

P-58A	15-Sep-22	15:00	S-ROUTINE	Lead	Dissolved	0.0011		0.0001	0.0003	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Magnesium	Dissolved	19		0.01	1	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Manganese	Dissolved	12.4		0.001	0.001	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Molybdenum	Dissolved	Not Detected		0.0003	0.005	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Nickel	Dissolved	0.028		0.0002	0.002	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Potassium	Dissolved	8		0.04	1	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Selenium	Dissolved	0.00015	J	0.00007	0.001	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Sodium	Dissolved	32		0.04	1	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Uranium	Dissolved	0.0178		0.00002	0.0002	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Vanadium	Dissolved	Not Detected		0.0001	0.1	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Zinc	Dissolved	8.8		0.003	0.008	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
P-58A	15-Sep-22	15:00	S-ROUTINE	Hardness, Ca, Mg	NA	271		1	1	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Alkalinity, total	Total	200		2	4	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Bicarbonate	Total	240		3	4	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Chloride	Total	45		0.02	1	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Sulfate	Total	162		0.06	1	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Antimony	Dissolved	0.0004	J	0.0002	0.0005	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Barium	Dissolved	0.022		0.0002	0.003	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Boron	Dissolved	0.072	J	0.004	0.1	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Cadmium	Dissolved	0.00005		0.00002	0.00003	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Calcium	Dissolved	65		0.2	1	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Copper	Dissolved	0.004		0.0001	0.001	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Magnesium	Dissolved	7		0.01	1	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Manganese	Dissolved	0.0009	J	0.0003	0.001	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Molybdenum	Dissolved	0.007		0.0003	0.005	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Potassium	Dissolved	5		0.04	1	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Selenium	Dissolved	0.00091	J	0.00007	0.001	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Sodium	Dissolved	108		0.04	1	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Uranium	Dissolved	0.0036		0.00002	0.0002	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Vanadium	Dissolved	0.0002	J	0.0001	0.1	mg/l

Table E-1. Groundwater monitoring data for the Streamside Tailings Operable Unit, 2022.

P-114	15-Sep-22	15:40	S-ROUTINE	Zinc	Dissolved	0.003	J	0.001	0.008	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Mercury	Dissolved	0.018		0.002	0.005	mg/l
P-114	15-Sep-22	15:40	S-ROUTINE	Hardness, Ca, Mg	NA	190		1	1	mg/l

APPENDIX F

Vadose Zone Water Data

Table F-1. Vadose zone water monitoring data for the Streamside Tailings Operable Unit, 2022.

Site ID	Date	Time	Sample Type	Characteristic Name	Sample Fraction	Result Value	Result Qualifier	Method Detection Limit	Lower Reporting Limit	Unit
LYS-01	24-May-22	16:29	S-ROUTINE	Alkalinity, total	Total	170		2	4	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Arsenic	Dissolved	0.003		0.0002	0.001	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Barium	Dissolved	0.038		0.0002	0.003	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Bicarbonate	Total	210		3	4	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Boron	Dissolved	0.043	J	0.004	0.1	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Cadmium	Dissolved	0.00002	J	0.00002	0.00003	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Calcium	Dissolved	108		0.1	1	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Chloride	Total	46		0.02	1	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Copper	Dissolved	0.0007	J	0.0001	0.001	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Hardness, Ca, Mg	NA	360		1	1	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Iron	Dissolved	Not Detected		0.008	0.02	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Magnesium	Dissolved	22		0.02	1	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Manganese	Dissolved	Not Detected		0.0003	0.001	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Mercury	Dissolved	0.002	J	0.001	0.005	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Molybdenum	Dissolved	0.0044	J	0.0003	0.005	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Potassium	Dissolved	3		0.06	1	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Selenium	Dissolved	0.008		0.00007	0.001	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Sodium	Dissolved	34		0.02	1	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Sulfate	Total	203		0.06	1	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Uranium	Dissolved	0.0809		0.00002	0.0002	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Vanadium	Dissolved	0.002	J	0.0001	0.1	mg/l
LYS-01	24-May-22	16:29	S-ROUTINE	Zinc	Dissolved	0.003	J	0.001	0.008	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Alkalinity, total	Total	560		2	4	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Antimony	Dissolved	0.0007		0.0002	0.0005	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Arsenic	Dissolved	0.016		0.0002	0.001	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Barium	Dissolved	0.009		0.0002	0.003	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Bicarbonate	Total	680		3	4	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Boron	Dissolved	0.6		0.004	0.1	mg/l

Table F-1. Vadose zone water monitoring data for the Streamside Tailings Operable Unit, 2022.

LYS-02	24-May-22	15:44	S-ROUTINE	Cadmium	Dissolved	0.00004		0.00002	0.00003	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Calcium	Dissolved	388		0.2	1	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Chloride	Total	270		1	1	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Chromium	Dissolved	0.0012	J	0.0001	0.01	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Copper	Dissolved	0.016		0.0001	0.001	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Hardness, Ca, Mg	NA	1920		1	1	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Iron	Dissolved	Not Detected		0.008	0.02	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Magnesium	Dissolved	282		0.01	1	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Manganese	Dissolved	Not Detected		0.0003	0.001	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Mercury	Dissolved	0.027		0.001	0.005	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Molybdenum	Dissolved	0.049		0.0003	0.005	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Nickel	Dissolved	0.0009	J	0.0002	0.002	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Potassium	Dissolved	3		0.06	1	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Selenium	Dissolved	0.023		0.00007	0.001	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Sodium	Dissolved	2420		0.7	1	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Sulfate	Total	6820	D	3	5	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Uranium	Dissolved	1.37		0.00002	0.0002	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Vanadium	Dissolved	0.027	J	0.0001	0.1	mg/l
LYS-02	24-May-22	15:44	S-ROUTINE	Zinc	Dissolved	0.146		0.001	0.008	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Aluminum	Dissolved	0.021		0.007	0.009	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Antimony	Dissolved	0.0009		0.0003	0.0005	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Arsenic	Dissolved	0.205		0.0004	0.001	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Barium	Dissolved	0.074		0.0003	0.003	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0004	0.0008	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Boron	Dissolved	0.7		0.008	0.1	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Cadmium	Dissolved	0.00009		0.00003	0.00003	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Calcium	Dissolved	92		0.3	1	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Chromium	Dissolved	0.004	J	0.0002	0.01	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.002	0.01	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Copper	Dissolved	0.006		0.0003	0.001	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Hardness, Ca, Mg	NA	323		1	1	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Iron	Dissolved	0.02		0.009	0.02	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Lead	Dissolved	0.0005		0.0002	0.0003	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Magnesium	Dissolved	23		0.05	1	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Manganese	Dissolved	0.003		0.0005	0.001	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Molybdenum	Dissolved	0.079		0.0005	0.005	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0003	0.002	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Potassium	Dissolved	3		0.1	1	mg/l

Table F-1. Vadose zone water monitoring data for the Streamside Tailings Operable Unit, 2022.

LYS-03	24-May-22	16:16	S-ROUTINE	Selenium	Dissolved	0.002		0.0001	0.001	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Silver	Dissolved	Not Detected		0.0002	0.0002	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Sodium	Dissolved	106		0.04	1	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Uranium	Dissolved	0.0072		0.00004	0.0002	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Vanadium	Dissolved	0.1		0.0002	0.1	mg/l
LYS-03	24-May-22	16:16	S-ROUTINE	Zinc	Dissolved	0.017		0.003	0.008	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Antimony	Dissolved	0.0006		0.0002	0.0005	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Arsenic	Dissolved	0.03		0.0002	0.001	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Barium	Dissolved	0.074		0.0002	0.003	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Boron	Dissolved	0.2		0.004	0.1	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Cadmium	Dissolved	0.00004		0.00002	0.00003	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Calcium	Dissolved	109		0.1	1	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Chromium	Dissolved	0.0011	J	0.0001	0.01	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Copper	Dissolved	0.007		0.0001	0.001	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Hardness, Ca, Mg	NA	448		1	1	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Iron	Dissolved	Not Detected		0.008	0.02	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Lead	Dissolved	0.0001	J	0.0001	0.0003	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Magnesium	Dissolved	42		0.02	1	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Manganese	Dissolved	0.0008	J	0.0003	0.001	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Mercury	Dissolved	0.004	J	0.001	0.005	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Molybdenum	Dissolved	0.015		0.0003	0.005	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Potassium	Dissolved	28		0.06	1	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Selenium	Dissolved	0.006		0.00007	0.001	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Sodium	Dissolved	185		0.02	1	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Uranium	Dissolved	0.0365		0.00002	0.0002	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Vanadium	Dissolved	0.0098	J	0.0001	0.1	mg/l
LYS-04R	24-May-22	15:53	S-ROUTINE	Zinc	Dissolved	0.009		0.001	0.008	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Antimony	Dissolved	0.0012		0.0002	0.0005	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Arsenic	Dissolved	0.017		0.0002	0.001	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Barium	Dissolved	0.013		0.0002	0.003	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Boron	Dissolved	1.9		0.004	0.1	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Cadmium	Dissolved	0.00014		0.00002	0.00003	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Calcium	Dissolved	437		0.1	1	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Chloride	Total	5		1	1	mg/l

Table F-1. Vadose zone water monitoring data for the Streamside Tailings Operable Unit, 2022.

LYS-05	24-May-22	15:59	S-ROUTINE	Chromium	Dissolved	0.0066	J	0.0001	0.01	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Copper	Dissolved	0.009		0.0001	0.001	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Hardness, Ca, Mg	NA	1600		1	1	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Iron	Dissolved	Not Detected		0.008	0.02	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Magnesium	Dissolved	122		0.02	1	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Manganese	Dissolved	0.0004	J	0.0003	0.001	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Mercury	Dissolved	0.007		0.001	0.005	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Molybdenum	Dissolved	0.021		0.0003	0.005	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0002	0.002	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Potassium	Dissolved	21		0.06	1	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Selenium	Dissolved	0.002		0.00007	0.001	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Sodium	Dissolved	1090		0.7	1	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Sulfate	Total	3960	D	3	5	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Uranium	Dissolved	1.43		0.00002	0.0002	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Vanadium	Dissolved	0.0044	J	0.0001	0.1	mg/l
LYS-05	24-May-22	15:59	S-ROUTINE	Zinc	Dissolved	0.017		0.001	0.008	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Arsenic	Dissolved	0.002		0.0002	0.001	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Barium	Dissolved	0.016		0.0002	0.003	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Boron	Dissolved	0.1		0.004	0.1	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Calcium	Dissolved	81		0.1	1	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Chromium	Dissolved	0.0007	J	0.0001	0.01	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Copper	Dissolved	0.006		0.0001	0.001	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Hardness, Ca, Mg	NA	251		1	1	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Iron	Dissolved	Not Detected		0.008	0.02	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Magnesium	Dissolved	12		0.02	1	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Manganese	Dissolved	Not Detected		0.0003	0.001	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Mercury	Dissolved	0.008		0.001	0.005	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Molybdenum	Dissolved	0.011		0.0003	0.005	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Nickel	Dissolved	0.0002	J	0.0002	0.002	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Potassium	Dissolved	0.14	J	0.06	1	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Selenium	Dissolved	0.017		0.00007	0.001	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l

Table F-1. Vadose zone water monitoring data for the Streamside Tailings Operable Unit, 2022.

LYS-06	24-May-22	16:24	S-ROUTINE	Sodium	Dissolved	136		0.02	1	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Uranium	Dissolved	0.0013		0.00002	0.0002	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Vanadium	Dissolved	0.013	J	0.0001	0.1	mg/l
LYS-06	24-May-22	16:24	S-ROUTINE	Zinc	Dissolved	0.004	J	0.001	0.008	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Aluminum	Dissolved	0.008	J	0.007	0.009	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0003	0.0005	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Arsenic	Dissolved	0.007		0.0004	0.001	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Barium	Dissolved	0.009		0.0003	0.003	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0004	0.0008	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Boron	Dissolved	0.2		0.008	0.1	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Cadmium	Dissolved	0.00005	D	0.00004	0.00004	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Calcium	Dissolved	378		0.3	1	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Chromium	Dissolved	0.0015	J	0.0002	0.01	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.002	0.01	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Copper	Dissolved	0.003		0.0003	0.001	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Hardness, Ca, Mg	NA	1280		1	1	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Iron	Dissolved	Not Detected		0.02	0.02	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Lead	Dissolved	Not Detected		0.0002	0.0003	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Magnesium	Dissolved	82		0.05	1	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Manganese	Dissolved	Not Detected		0.0005	0.001	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Mercury	Dissolved	0.008	D	0.005	0.008	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Molybdenum	Dissolved	0.068		0.0005	0.005	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Nickel	Dissolved	Not Detected		0.0003	0.002	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Potassium	Dissolved	10		0.1	1	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Selenium	Dissolved	0.001		0.0001	0.001	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Silver	Dissolved	Not Detected		0.0002	0.0002	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Sodium	Dissolved	446		0.04	1	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Uranium	Dissolved	0.179		0.00004	0.0002	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Vanadium	Dissolved	0.0036	J	0.0002	0.1	mg/l
LYS-07	24-May-22	16:35	S-ROUTINE	Zinc	Dissolved	0.007	J	0.003	0.008	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Antimony	Dissolved	0.0002	J	0.0002	0.0005	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Barium	Dissolved	0.018		0.0002	0.003	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Boron	Dissolved	0.077	J	0.004	0.1	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Cadmium	Dissolved	0.00008		0.00002	0.00003	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Calcium	Dissolved	430		0.1	1	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Chloride	Total	73		0.5	1	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Chromium	Dissolved	0.0003	J	0.0001	0.01	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l

Table F-1. Vadose zone water monitoring data for the Streamside Tailings Operable Unit, 2022.

LYS-08	24-May-22	16:10	S-ROUTINE	Copper	Dissolved	0.002		0.0001	0.001	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Hardness, Ca, Mg	NA	1900		1	1	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Iron	Dissolved	Not Detected		0.008	0.02	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Magnesium	Dissolved	201		0.02	1	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Manganese	Dissolved	0.005		0.0003	0.001	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Mercury	Dissolved	0.003	J	0.001	0.005	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Molybdenum	Dissolved	0.006		0.0003	0.005	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Nickel	Dissolved	0.0002	J	0.0002	0.002	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Potassium	Dissolved	6		0.06	1	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Selenium	Dissolved	0.014		0.00007	0.001	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Sodium	Dissolved	202		0.02	1	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Sulfate	Total	1970	D	1	2	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Uranium	Dissolved	0.188		0.00002	0.0002	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Vanadium	Dissolved	0.025	J	0.0001	0.1	mg/l
LYS-08	24-May-22	16:10	S-ROUTINE	Zinc	Dissolved	0.014		0.001	0.008	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Alkalinity, total	Total	220		2	4	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Bicarbonate	Total	270		3	4	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Chloride	Total	70		0.05	1	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Sulfate	Total	291		0.1	1	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Aluminum	Dissolved	0.004	J	0.003	0.009	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Antimony	Dissolved	Not Detected		0.0002	0.0005	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Barium	Dissolved	0.056		0.0002	0.003	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Boron	Dissolved	0.066	J	0.004	0.1	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Calcium	Dissolved	150		0.1	1	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Chromium	Dissolved	Not Detected		0.0001	0.01	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Copper	Dissolved	0.002		0.0001	0.001	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Magnesium	Dissolved	32		0.02	1	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Manganese	Dissolved	Not Detected		0.0003	0.001	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Molybdenum	Dissolved	0.007		0.0003	0.005	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Nickel	Dissolved	0.0002	J	0.0002	0.002	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Potassium	Dissolved	3		0.06	1	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Selenium	Dissolved	0.007		0.00007	0.001	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l

Table F-1. Vadose zone water monitoring data for the Streamside Tailings Operable Unit, 2022.

LYS-01	25-Oct-22	12:42	S-ROUTINE	Sodium	Dissolved	48		0.02	1	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Uranium-238	Dissolved	0.16		0.00002	0.0002	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Vanadium	Dissolved	0.003	J	0.0001	0.1	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Zinc	Dissolved	0.003	J	0.001	0.008	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Hardness, Ca, Mg	NA	508		1	1	mg/l
LYS-01	25-Oct-22	12:42	S-ROUTINE	Mercury	Dissolved	Not Detected		0.002	0.005	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Chloride	Total	658		0.5	1	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Sulfate	Total	10400	D	1	2	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Antimony	Dissolved	0.0009		0.0002	0.0005	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Arsenic	Dissolved	0.02		0.0002	0.001	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Barium	Dissolved	0.015		0.0002	0.003	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Boron	Dissolved	0.8		0.004	0.1	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Cadmium	Dissolved	0.00003		0.00002	0.00003	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Calcium	Dissolved	495		0.1	1	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Chromium	Dissolved	0.0017	J	0.0001	0.01	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Copper	Dissolved	0.019		0.0001	0.001	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Magnesium	Dissolved	535		0.2	1	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Manganese	Dissolved	Not Detected		0.0003	0.001	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Molybdenum	Dissolved	0.077		0.0003	0.005	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Nickel	Dissolved	0.0014	J	0.0002	0.002	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Potassium	Dissolved	5		0.06	1	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Selenium	Dissolved	0.059		0.00007	0.001	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Sodium	Dissolved	3840		0.5	1	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Uranium-238	Dissolved	2.37		0.00002	0.0002	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Vanadium	Dissolved	0.042	J	0.0001	0.1	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Zinc	Dissolved	0.02		0.001	0.008	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Hardness, Ca, Mg	NA	3440		1	1	mg/l
LYS-02	25-Oct-22	12:55	S-ROUTINE	Mercury	Dissolved	0.032		0.002	0.005	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Aluminum	Dissolved	0.004	J	0.003	0.009	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Antimony	Dissolved	0.0016		0.0002	0.0005	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Arsenic	Dissolved	0.312		0.0002	0.001	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Barium	Dissolved	0.066		0.0002	0.003	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Boron	Dissolved	1.1		0.008	0.1	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Cadmium	Dissolved	0.00002	J	0.00002	0.00003	mg/l

Table F-1. Vadose zone water monitoring data for the Streamside Tailings Operable Unit, 2022.

LYS-03	25-Oct-22	12:25	S-ROUTINE	Calcium	Dissolved	71		0.3	1	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Chromium	Dissolved	0.005	J	0.0001	0.01	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Copper	Dissolved	0.005		0.0001	0.001	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Magnesium	Dissolved	46		0.05	1	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Manganese	Dissolved	0.0004	J	0.0003	0.001	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Molybdenum	Dissolved	0.12		0.0003	0.005	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Nickel	Dissolved	0.0005	J	0.0002	0.002	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Potassium	Dissolved	1		0.1	1	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Selenium	Dissolved	0.003		0.00007	0.001	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Sodium	Dissolved	208		0.04	1	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Uranium-238	Dissolved	0.0254		0.00002	0.0002	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Vanadium	Dissolved	0.3		0.0001	0.1	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Zinc	Dissolved	Not Detected		0.001	0.008	mg/l
LYS-03	25-Oct-22	12:25	S-ROUTINE	Hardness, Ca, Mg	NA	367		1	1	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Chloride	Total	65		0.2	1	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Sulfate	Total	1300		0.6	1	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Aluminum	Dissolved	Not Detected		0.003	0.009	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Antimony	Dissolved	0.0006		0.0002	0.0005	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Arsenic	Dissolved	0.004		0.0002	0.001	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Barium	Dissolved	0.016		0.0002	0.003	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Boron	Dissolved	0.2		0.008	0.1	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Calcium	Dissolved	232		0.3	1	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Chromium	Dissolved	0.0012	J	0.0001	0.01	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Copper	Dissolved	0.015		0.0001	0.001	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Magnesium	Dissolved	42		0.05	1	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Manganese	Dissolved	0.001	J	0.0003	0.001	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Molybdenum	Dissolved	0.019		0.0003	0.005	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Nickel	Dissolved	0.0013	J	0.0002	0.002	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Potassium	Dissolved	0.2	J	0.1	1	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Selenium	Dissolved	0.075		0.00007	0.001	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Sodium	Dissolved	270		0.04	1	mg/l

Table F-1. Vadose zone water monitoring data for the Streamside Tailings Operable Unit, 2022.

LYS-06	25-Oct-22	12:35	S-ROUTINE	Uranium-238	Dissolved	0.0084		0.00002	0.0002	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Vanadium	Dissolved	0.014	J	0.0001	0.1	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Zinc	Dissolved	0.012		0.001	0.008	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Hardness, Ca, Mg	NA	753		1	1	mg/l
LYS-06	25-Oct-22	12:35	S-ROUTINE	Mercury	Dissolved	0.02		0.003	0.005	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Aluminum	Dissolved	0.011		0.003	0.009	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Antimony	Dissolved	0.0003	J	0.0002	0.0005	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Arsenic	Dissolved	0.007		0.0002	0.001	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Barium	Dissolved	0.008		0.0002	0.003	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Beryllium	Dissolved	Not Detected		0.0002	0.0008	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Boron	Dissolved	0.2		0.008	0.1	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Cadmium	Dissolved	Not Detected		0.00002	0.00003	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Calcium	Dissolved	573		0.3	1	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Chromium	Dissolved	0.0014	J	0.0001	0.01	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Cobalt	Dissolved	Not Detected		0.001	0.01	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Copper	Dissolved	0.005		0.0001	0.001	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Iron	Dissolved	Not Detected		0.004	0.02	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Lead	Dissolved	Not Detected		0.0001	0.0003	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Magnesium	Dissolved	136		0.05	1	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Manganese	Dissolved	0.0006	J	0.0003	0.001	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Molybdenum	Dissolved	0.082		0.0003	0.005	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Nickel	Dissolved	0.0003	J	0.0002	0.002	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Potassium	Dissolved	14		0.1	1	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Selenium	Dissolved	0.003		0.00007	0.001	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Silver	Dissolved	Not Detected		0.00008	0.0002	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Sodium	Dissolved	623		0.04	1	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Uranium-238	Dissolved	0.343		0.00002	0.0002	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Vanadium	Dissolved	0.0033	J	0.0001	0.1	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Zinc	Dissolved	0.004	J	0.001	0.008	mg/l
LYS-07	25-Oct-22	12:15	S-ROUTINE	Hardness, Ca, Mg	NA	1990		1	1	mg/l

APPENDIX G

Periphyton Data

Metric Summary

Project ID: CC22SBCP
RAI No.: CC22SBCP001

Client ID: SS-07
Date Collected: 8/24/2022
Station Name: Silver Bow Creek at Butte
STORET ID:
Latitude: 45.996658611
Longitude: -112.5638122

Metrics (Bahls 1993)

Metric	Value	MTM	MTP
Community Structure			
Shannon H (log2)	4.098	Excellent	Excellent
Species Richness	48	Excellent	Excellent
Native Taxa Percent	0.00%		
Cosmopolitan Taxa Percent	69.45%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	19.08%	Excellent	Excellent
Sediment			
Siltation Taxa Percent	32.92%	Good	Excellent
Motile Taxa Percent	18.45%		
Mountains Brackish Taxa Percent	65.46%		
Plains Brackish Taxa Percent	0.12%		
Organic Nutrients			
Pollution Index	2.619	Excellent	Excellent
Nitrogen Heterotroph Taxa Percent	3.87%		
Polysaprobous Taxa Percent	26.18%		
Low DO Taxa Percent	9.10%		
Inorganic Nutrients			
Nitrogen Autotroph Taxa Percent	72.94%		
Eutraphentic Taxa Percent	39.90%		
Rhopalodiales Percent	0.00%		
Metals			
Disturbance Taxa Percent	8.23%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	3.99%		
Saprobity / Oxygen			
% oligosaprobous and β-mesosaprobous diatoms:	50.75%		
% diatoms requiring > 75% DO saturation (Van Dam categories 1 and 2):	39.4%		

BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Good
MTP	Montana DEQ Plains (Bahls 1992)	Excellent

Increaser/Decreaser Taxa

Metric	Value	Prob.
Teply and Bahls 2005		
Mountains General Increasers Taxa Percent	43.64%	83.40%
Mountains Metals Increasers Taxa Percent	16.46%	21.77%
Mountains Nutrient Increasers Taxa Percent	20.82%	35.20%
Mountains Sediment Increasers Taxa Percent	23.94%	58.71%
Plains General Decreasers Taxa Percent	19.33%	50.40%
Plains General Increasers Taxa Percent	24.81%	27.09%
Teply 2010		
Middle Rockies Sediment Increasers Taxa	23.94	75%
Northern Rockies Nutrient Increasers Taxa	12.59	42.55%
Northern Rockies Sediment Increasers Taxa	25.69	65.84%
Warm Water Fisheries Nutrient Increasers Taxa	7.36%	37.49%
Warm Water Fisheries Sediment Increasers Taxa	24.06	61.87%

Dominant Taxa

Category	A	PRA
Nitzschia soratensis	153	19.08%
Cocconeis placentula sensu lato	90	11.22%
Planothidium frequentissimum	82	10.22%
Achnanthidium minutissimum	66	8.23%
Rhoicosphenia abbreviata	62	7.73%

Metric Summary

Project ID: CC22SBCP
RAI No.: CC22SBCP002

Client ID: SS-10A
Date Collected: 8/24/2022
Station Name: Silver Bow Creek above Sand Creek
STORET ID:
Latitude: 46.003749722
Longitude: -112.6608394

Metrics (Bahls 1993)

Metric	Value	MTM	MTP
Community Structure			
Shannon H (log2)	3.989	Excellent	Good
Species Richness	48	Excellent	Excellent
Native Taxa Percent	0.00%		
Cosmopolitan Taxa Percent	57.55%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	25.47%	Good	Good
Sediment			
Siltation Taxa Percent	48.81%	Fair	Excellent
Motile Taxa Percent	14.98%		
Mountains Brackish Taxa Percent	48.44%		
Plains Brackish Taxa Percent	0.62%		
Organic Nutrients			
Pollution Index	2.387	Good	Excellent
Nitrogen Heterotroph Taxa Percent	13.23%		
Polysaprobous Taxa Percent	30.46%		
Low DO Taxa Percent	12.36%		
Inorganic Nutrients			
Nitrogen Autotroph Taxa Percent	46.82%		
Eutraphentic Taxa Percent	43.82%		
Rhopalodiales Percent	0.00%		
Metals			
Disturbance Taxa Percent	4.62%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	11.99%		
Saprobity / Oxygen			
% oligosaprobous and β-mesosaprobous diatoms:	30.59%		
% diatoms requiring > 75% DO saturation (Van Dam categories 1 and 2):	13.73%		

BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Fair
MTP	Montana DEQ Plains (Bahls 1992)	Good

Increaser/Decreaser Taxa

Metric	Value	Prob.
Teply and Bahls 2005		
Mountains General Increasers Taxa Percent	36.58%	72.58%
Mountains Metals Increasers Taxa Percent	4.12%	5.37%
Mountains Nutrient Increasers Taxa Percent	22.60%	39.36%
Mountains Sediment Increasers Taxa Percent	13.23%	30.15%
Plains General Decreasers Taxa Percent	27.47%	30.50%
Plains General Increasers Taxa Percent	10.61%	5.16%
Teply 2010		
Middle Rockies Sediment Increasers Taxa	24.97	76.76%
Northern Rockies Nutrient Increasers Taxa	16.6%	52.49%
Northern Rockies Sediment Increasers Taxa	18.6%	50.19%
Warm Water Fisheries Nutrient Increasers Taxa	4.62%	30.28%
Warm Water Fisheries Sediment Increasers Taxa	23.22	60.74%

Dominant Taxa

Category	A	PRA
Nitzschia soratensis	204	25.47%
Cocconeis placentula sensu lato	139	17.35%
Sellaphora atomoides	71	8.86%
Planothidium frequentissimum	45	5.62%
Cyclotella meneghiniana	44	5.49%

Metric Summary

Project ID: CC22SBCP
RAI No.: CC22SBCP003

Client ID: SS-13
Date Collected: 8/24/2022
Station Name: Silver Bow Creek in Reach L
STORET ID:
Latitude: 46.006465
Longitude: -112.713941

Metrics (Bahls 1993)

Metric	Value	MTM	MTP
Community Structure			
Shannon H (log2)	4.407	Excellent	Excellent
Species Richness	46	Excellent	Excellent
Native Taxa Percent	0.00%		
Cosmopolitan Taxa Percent	67.54%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	12.48%	Excellent	Excellent
Sediment			
Siltation Taxa Percent	35.83%	Good	Excellent
Motile Taxa Percent	16.23%		
Mountains Brackish Taxa Percent	57.05%		
Plains Brackish Taxa Percent	0.12%		
Organic Nutrients			
Pollution Index	2.270	Good	Excellent
Nitrogen Heterotroph Taxa Percent	19.60%		
Polysaprobous Taxa Percent	44.44%		
Low DO Taxa Percent	21.72%		
Inorganic Nutrients			
Nitrogen Autotroph Taxa Percent	56.43%		
Eutraphentic Taxa Percent	48.94%		
Rhopalodiales Percent	0.00%		
Metals			
Disturbance Taxa Percent	0.62%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	19.48%		
Saprobity / Oxygen			
% oligosaprobous and β-mesosaprobous diatoms:	31.71%		
% diatoms requiring > 75% DO saturation (Van Dam categories 1 and 2):	19.48%		

BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Good
MTP	Montana DEQ Plains (Bahls 1992)	Excellent

Increaser/Decreaser Taxa

Metric	Value	Prob.
Teply and Bahls 2005		
Mountains General Increasers Taxa Percent	42.32%	81.59%
Mountains Metals Increasers Taxa Percent	9.24%	10.38%
Mountains Nutrient Increasers Taxa Percent	18.85%	30.50%
Mountains Sediment Increasers Taxa Percent	19.73%	47.21%
Plains General Decreasers Taxa Percent	28.09%	29.12%
Plains General Increasers Taxa Percent	10.74%	5.26%
Teply 2010		
Middle Rockies Sediment Increasers Taxa	30.84	88.06%
Northern Rockies Nutrient Increasers Taxa	21.1%	63.14%
Northern Rockies Sediment Increasers Taxa	34.08	81.3%
Warm Water Fisheries Nutrient Increasers Taxa	4.99%	31.16%
Warm Water Fisheries Sediment Increasers Taxa	15.61	45%

Dominant Taxa

Category	A	PRA
Cocconeis placentula sensu lato	100	12.48%
Cyclotella meneghiniana	85	10.61%
Sellaphora atomoides	79	9.86%
Staurosira binodis	71	8.86%
Nitzschia soratensis	67	8.36%

Metric Summary

Project ID: CC22SBCP
RAI No.: CC22SBCP004

Client ID: SS-14
Date Collected: 8/24/2022
Station Name: Silver Bow Creek at Miles Crossing
STORET ID:
Latitude: 46.011434094
Longitude: -112.7222886

Metrics (Bahls 1993)

Metric	Value	MTM	MTP
Community Structure			
Shannon H (log2)	4.333	Excellent	Excellent
Species Richness	48	Excellent	Excellent
Native Taxa Percent	0.00%		
Cosmopolitan Taxa Percent	75.41%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	21.97%	Excellent	Excellent
Sediment			
Siltation Taxa Percent	25.22%	Good	Excellent
Motile Taxa Percent	14.73%		
Mountains Brackish Taxa Percent	56.68%		
Plains Brackish Taxa Percent	0.00%		
Organic Nutrients			
Pollution Index	2.275	Good	Excellent
Nitrogen Heterotroph Taxa Percent	28.96%		
Polysaprobous Taxa Percent	52.43%		
Low DO Taxa Percent	27.34%		
Inorganic Nutrients			
Nitrogen Autotroph Taxa Percent	56.93%		
Eutraphentic Taxa Percent	59.18%		
Rhopalodiales Percent	0.00%		
Metals			
Disturbance Taxa Percent	0.87%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	18.10%		
Saprobity / Oxygen			
% oligosaprobous and β-mesosaprobous diatoms:	33.46%		
% diatoms requiring > 75% DO saturation (Van Dam categories 1 and 2):	22.1%		

BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Good
MTP	Montana DEQ Plains (Bahls 1992)	Excellent

Increaser/Decreaser Taxa

Metric	Value	Prob.
Teply and Bahls 2005		
Mountains General Increasers Taxa Percent	54.93%	93.82%
Mountains Metals Increasers Taxa Percent	8.11%	9.01%
Mountains Nutrient Increasers Taxa Percent	18.35%	29.46%
Mountains Sediment Increasers Taxa Percent	33.96%	81.59%
Plains General Decreasers Taxa Percent	37.83%	12.10%
Plains General Increasers Taxa Percent	13.23%	7.49%
Teply 2010		
Middle Rockies Sediment Increasers Taxa	23.97	75.13%
Northern Rockies Nutrient Increasers Taxa	11.99	41.42%
Northern Rockies Sediment Increasers Taxa	28.21	70.98%
Warm Water Fisheries Nutrient Increasers Taxa	4.74%	30.58%
Warm Water Fisheries Sediment Increasers Taxa	16.73	46.75%

Dominant Taxa

Category	A	PRA
Cyclotella meneghiniana	176	21.97%
Cocconeis placentula sensu lato	98	12.23%
Staurosira binodis	68	8.49%
Planothidium lanceolatum	57	7.12%
Planothidium frequentissimum	51	6.37%

Metric Summary

Project ID: CC22SBCP
RAI No.: CC22SBCP005

Client ID: SS-15A-2
Date Collected: 8/24/2022
Station Name: Silver Bow Creek above German Gulch
STORET ID:
Latitude: 46.02096
Longitude: -112.78802

Metrics (Bahls 1993)

Metric	Value	MTM	MTP
Community Structure			
Shannon H (log2)	4.022	Excellent	Excellent
Species Richness	40	Excellent	Excellent
Native Taxa Percent	0.00%		
Cosmopolitan Taxa Percent	62.67%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	21.60%	Excellent	Excellent
Sediment			
Siltation Taxa Percent	46.94%	Fair	Excellent
Motile Taxa Percent	27.34%		
Mountains Brackish Taxa Percent	49.94%		
Plains Brackish Taxa Percent	0.12%		
Organic Nutrients			
Pollution Index	2.159	Good	Good
Nitrogen Heterotroph Taxa Percent	22.72%		
Polysaprobous Taxa Percent	41.20%		
Low DO Taxa Percent	28.71%		
Inorganic Nutrients			
Nitrogen Autotroph Taxa Percent	51.06%		
Eutraphentic Taxa Percent	62.67%		
Rhopalodiales Percent	0.00%		
Metals			
Disturbance Taxa Percent	0.00%		
Acidophilous Taxa Percent	0.12%		
Metals Tolerant Taxa Percent	14.11%		
Saprobity / Oxygen			
% oligosaprobous and β-mesosaprobous diatoms:	32.58%		
% diatoms requiring > 75% DO saturation (Van Dam categories 1 and 2):	10.99%		

BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Fair
MTP	Montana DEQ Plains (Bahls 1992)	Good

Increaser/Decreaser Taxa

Metric	Value	Prob.
Teply and Bahls 2005		
Mountains General Increasers Taxa Percent	50.31%	90.49%
Mountains Metals Increasers Taxa Percent	4.24%	5.48%
Mountains Nutrient Increasers Taxa Percent	26.22%	48.40%
Mountains Sediment Increasers Taxa Percent	21.35%	51.60%
Plains General Decreasers Taxa Percent	44.32%	5.71%
Plains General Increasers Taxa Percent	12.98%	7.21%
Teply 2010		
Middle Rockies Sediment Increasers Taxa	16.1%	51.65%
Northern Rockies Nutrient Increasers Taxa	15.11	48.42%
Northern Rockies Sediment Increasers Taxa	27.09	67.8%
Warm Water Fisheries Nutrient Increasers Taxa	10.36	46.68%
Warm Water Fisheries Sediment Increasers Taxa	22.47	58.08%

Dominant Taxa

Category	A	PRA
Cocconeis placentula sensu lato	173	21.60%
Cyclotella meneghiniana	95	11.86%
Sellaphora atomoides	93	11.61%
Navicula veneta	81	10.11%
Nitzschia soratensis	48	5.99%

Metric Summary

Project ID: CC22SBCP
RAI No.: CC22SBCP006

Client ID: SS-16B
Date Collected: 8/24/2022
Station Name: Silver Bow Creekat Fairmont
STORET ID:
Latitude: 46.054935
Longitude: -112.796114

Metrics (Bahls 1993)

Metric	Value	MTM	MTP
Community Structure			
Shannon H (log2)	4.033	Excellent	Excellent
Species Richness	40	Excellent	Excellent
Native Taxa Percent	0.00%		
Cosmopolitan Taxa Percent	71.45%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	24.19%	Excellent	Excellent
Sediment			
Siltation Taxa Percent	31.67%	Good	Excellent
Motile Taxa Percent	17.96%		
Mountains Brackish Taxa Percent	63.97%		
Plains Brackish Taxa Percent	0.00%		
Organic Nutrients			
Pollution Index	2.455	Good	Excellent
Nitrogen Heterotroph Taxa Percent	20.45%		
Polysaprobous Taxa Percent	31.67%		
Low DO Taxa Percent	20.57%		
Inorganic Nutrients			
Nitrogen Autotroph Taxa Percent	59.48%		
Eutraphentic Taxa Percent	60.22%		
Rhopalodiales Percent	0.00%		
Metals			
Disturbance Taxa Percent	0.12%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	11.10%		
Saprobity / Oxygen			
% oligosaprobous and β-mesosaprobous diatoms:	48.25%		
% diatoms requiring > 75% DO saturation (Van Dam categories 1 and 2):	24.31%		

BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Good
MTP	Montana DEQ Plains (Bahls 1992)	Excellent

Increaser/Decreaser Taxa

Metric	Value	Prob.
Teply and Bahls 2005		
Mountains General Increasers Taxa Percent	59.73%	96.33%
Mountains Metals Increasers Taxa Percent	13.47%	16.35%
Mountains Nutrient Increasers Taxa Percent	31.05%	60.64%
Mountains Sediment Increasers Taxa Percent	24.56%	60.26%
Plains General Decreasers Taxa Percent	39.78%	9.68%
Plains General Increasers Taxa Percent	17.71%	13.14%
Teply 2010		
Middle Rockies Sediment Increasers Taxa	18.33	57.9%
Northern Rockies Nutrient Increasers Taxa	16.96	53.11%
Northern Rockies Sediment Increasers Taxa	30.3%	75.32%
Warm Water Fisheries Nutrient Increasers Taxa	10.47	46.92%
Warm Water Fisheries Sediment Increasers Taxa	27.93	70.21%

Dominant Taxa

Category	A	PRA
Cocconeis placentula sensu lato	194	24.19%
Cyclotella meneghiniana	102	12.72%
Sellaphora atomoides	95	11.85%
Staurosira construens v. venter	44	5.49%
Staurosira binodis	41	5.11%

Metric Summary

Project ID: CC22SBCP
RAI No.: CC22SBCP007

Client ID: SS-17D
Date Collected: 8/24/2022
Station Name: Silver Bow Creek at Opportunity
STORET ID:
Latitude: 46.107873333
Longitude: -112.8055278

Metrics (Bahls 1993)

Metric	Value	MTM	MTP
Community Structure			
Shannon H (log2)	4.153	Excellent	Excellent
Species Richness	50	Excellent	Excellent
Native Taxa Percent	0.25%		
Cosmopolitan Taxa Percent	70.95%		
Mountains Rare Taxa Percent	0.25%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	24.81%	Excellent	Excellent
Sediment			
Siltation Taxa Percent	29.55%	Good	Excellent
Motile Taxa Percent	19.83%		
Mountains Brackish Taxa Percent	64.09%		
Plains Brackish Taxa Percent	0.00%		
Organic Nutrients			
Pollution Index	2.350	Good	Excellent
Nitrogen Heterotroph Taxa Percent	18.95%		
Polysaprobous Taxa Percent	39.90%		
Low DO Taxa Percent	20.20%		
Inorganic Nutrients			
Nitrogen Autotroph Taxa Percent	62.84%		
Eutraphentic Taxa Percent	60.85%		
Rhopalodiales Percent	0.62%		
Metals			
Disturbance Taxa Percent	0.50%	Excellent	Excellent
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	19.20%		
Saprobity / Oxygen			
% oligosaprobous and β-mesosaprobous diatoms:	42.39%		
% diatoms requiring > 75% DO saturation (Van Dam categories 1 and 2):	17.21%		

BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Good
MTP	Montana DEQ Plains (Bahls 1992)	Excellent

Increaser/Decreaser Taxa

Metric	Value	Prob.
Teply and Bahls 2005		
Mountains General Increasers Taxa Percent	46.76%	86.86%
Mountains Metals Increasers Taxa Percent	4.24%	5.48%
Mountains Nutrient Increasers Taxa Percent	30.17%	58.32%
Mountains Sediment Increasers Taxa Percent	13.72%	31.21%
Plains General Decreasers Taxa Percent	39.65%	9.85%
Plains General Increasers Taxa Percent	8.60%	3.75%
Teply 2010		
Middle Rockies Sediment Increasers Taxa	16.58	52.68%
Northern Rockies Nutrient Increasers Taxa	15.46	50.49%
Northern Rockies Sediment Increasers Taxa	29.93	73.21%
Warm Water Fisheries Nutrient Increasers Taxa	4.86%	30.85%
Warm Water Fisheries Sediment Increasers Taxa	27.68	68.22%

Dominant Taxa

Category	A	PRA
Cocconeis placentula sensu lato	199	24.81%
Staurosira binodis	80	9.98%
Cyclotella meneghiniana	74	9.23%
Sellaphora atomoides	72	8.98%
Fragilaria vaucheriae	45	5.61%

Metric Summary

Project ID: CC22SBCP
RAI No.: CC22SBCP008

Client ID: SS-19
Date Collected: 8/24/2022
Station Name: Silver Bow Creek at Frontage Road
STORET ID:
Latitude: 46.12247
Longitude: -112.80077

Metrics (Bahls 1993)

Metric	Value	MTM	MTP
Community Structure			
Shannon H (log2)	3.674	Excellent	Good
Species Richness	37	Excellent	Good
Native Taxa Percent	0.00%		
Cosmopolitan Taxa Percent	60.05%		
Mountains Rare Taxa Percent	0.00%		
Plains Rare Taxa Percent	0.00%		
Dominant Taxon Percent	20.22%	Excellent	Excellent
Sediment			
Siltation Taxa Percent	46.19%	Fair	Excellent
Motile Taxa Percent	14.48%		
Mountains Brackish Taxa Percent	45.69%		
Plains Brackish Taxa Percent	0.00%		
Organic Nutrients			
Pollution Index	2.289	Good	Excellent
Nitrogen Heterotroph Taxa Percent	21.35%		
Polysaprobous Taxa Percent	34.83%		
Low DO Taxa Percent	21.72%		
Inorganic Nutrients			
Nitrogen Autotroph Taxa Percent	41.82%		
Eutraphentic Taxa Percent	51.56%		
Rhopalodiales Percent	1.37%		
Metals			
Disturbance Taxa Percent	0.00%		
Acidophilous Taxa Percent	0.00%		
Metals Tolerant Taxa Percent	14.61%		
Saprobity / Oxygen			
% oligosaprobous and β-mesosaprobous diatoms:	28.46%		
% diatoms requiring > 75% DO saturation (Van Dam categories 1 and 2):	7.99%		

BioIndex	Description	Rating
MTM	Montana DEQ Mountains (Bahls 1992)	Fair
MTP	Montana DEQ Plains (Bahls 1992)	Good

Increaser/Decreaser Taxa

Metric	Value	Prob.
Teply and Bahls 2005		
Mountains General Increasers Taxa Percent	44.57%	84.38%
Mountains Metals Increasers Taxa Percent	4.99%	6.06%
Mountains Nutrient Increasers Taxa Percent	25.97%	48.01%
Mountains Sediment Increasers Taxa Percent	16.35%	38.21%
Plains General Decreasers Taxa Percent	35.71%	14.92%
Plains General Increasers Taxa Percent	8.61%	3.75%
Teply 2010		
Middle Rockies Sediment Increasers Taxa	21.22	66.88%
Northern Rockies Nutrient Increasers Taxa	21.1%	63.14%
Northern Rockies Sediment Increasers Taxa	25.97	66.24%
Warm Water Fisheries Nutrient Increasers Taxa	4.37%	29.23%
Warm Water Fisheries Sediment Increasers Taxa	21.97	57.38%

Dominant Taxa

Category	A	PRA
Cocconeis placentula sensu lato	162	20.22%
Nitzschia soratensis	140	17.48%
Sellaphora atomoides	131	16.35%
Cyclotella meneghiniana	103	12.86%
Planothidium frequentissimum	28	3.50%

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP001

RAI No.: CC22SBCP001 Sta. Name: Silver Bow Creek at Butte
Client ID: SS-07
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Diatoms				
Bacillariophyta				
Achnanthidium minutissimum	66	8.23%		
Amphora pediculus	44	5.49%		
Cocconeis pediculus	4	0.50%		
Cocconeis placentula sensu lato	90	11.22%		
Craticula buderi	2	0.25%		
Ctenophora pulchella	1	0.12%		broken valve
Cyclotella meneghiniana	11	1.37%		
Diatoma moniliformis	4	0.50%		
Diatoma vulgaris	2	0.25%		
Encyonema minutum	4	0.50%		
Encyonema reichardtii	2	0.25%		
Encyonema silesiacum	4	0.50%		
Fragilaria pectinalis	2	0.25%		
Fragilaria vaucheriae	1	0.12%		
Halamphora veneta	6	0.75%		
Mayamaea permitis	1	0.12%		
Melosira varians	6	0.75%		
Navicula cryptotenella	1	0.12%		
Navicula gregaria	52	6.48%		
Navicula lanceolata	7	0.87%		
Navicula tripunctata	1	0.12%		big GV
Navicula trivialis	2	0.25%		
Navicula veneta	2	0.25%		
Nitzschia acidoclinata	1	0.12%		
Nitzschia adamata	1	0.12%		with nodule
Nitzschia amphibia	6	0.75%		GV
Nitzschia dissipata	4	0.50%		
Nitzschia fonticola	7	0.87%		
Nitzschia palea	4	0.50%		
Nitzschia palea v. debilis	5	0.62%		
Nitzschia soratensis	153	19.08%		GV small
Planothidium amphibium	1	0.12%		
Planothidium frequentissimum	82	10.22%		
Planothidium lanceolatum	13	1.62%		
Planothidium reichardtii	4	0.50%		
Punctastriata mimetica	1	0.12%		
Reimeria sinuata	2	0.25%		
Rhoicosphenia abbreviata	62	7.73%		
Rhoicosphenia californica	1	0.12%		
Sellaphora sp.	3	0.37%		obscure
Sellaphora atomoides	9	1.12%		

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP001

RAI No.: CC22SBCP001 Sta. Name: Silver Bow Creek at Butte
Client ID: SS-07
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Sellaphora nigri	3	0.37%		
Staurosira binodis	52	6.48%		GV (20 SMALL SIZE)
Staurosira construens v. venter	43	5.36%		
Staurosirella leptostauron	18	2.24%		
Staurosirella leptostauron v. dubia	1	0.12%		
Staurosirella pinnata	10	1.25%		
Stephanodiscus sp.	1	0.12%		obscure view

Sample Count 802

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP002

RAI No.: CC22SBCP002 Sta. Name: Silver Bow Creek above Sand Creek
Client ID: SS-10A
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Diatoms				
Bacillariophyta				
Achnanthidium minutissimum	37	4.62%		
Adlafia minuscula v. muralis	7	0.87%		
Amphora pediculus	10	1.25%		
Caloneis lancettula	7	0.87%		
Cocconeis pediculus	2	0.25%		
Cocconeis placentula sensu lato	139	17.35%		
Cyclotella meneghiniana	44	5.49%		
Diatoma moniliformis	6	0.75%		
Discostella pseudostelligera	1	0.12%		
Encyonema minutum	5	0.62%		
Encyonema silesiacum	5	0.62%		
Fragilaria pectinalis	5	0.62%		
Fragilaria vaucheriae	2	0.25%		
Geissleria acceptata	5	0.62%		
Gomphonema sp.	1	0.12%		GV
Gomphonema parvulum	10	1.25%		
Halamphora veneta	4	0.50%		
Luticola ventriconfusa	2	0.25%		translate to genus Luticola..(L-14 W-6 S21)
Mayamaea permitis	13	1.62%		
Meridion sp.	1	0.12%		GV
Navicula antonii	1	0.12%		
Navicula cryptotenella	2	0.25%		
Navicula gregaria	27	3.37%		
Navicula lanceolata	1	0.12%		
Navicula veneta	3	0.37%		
Nitzschia sp.	1	0.12%		GV
Nitzschia adamata	2	0.25%		
Nitzschia amphibia	10	1.25%		
Nitzschia communis	1	0.12%		
Nitzschia fonticola	5	0.62%		
Nitzschia palea	1	0.12%		
Nitzschia palea v. debilis	10	1.25%		
Nitzschia paleacea	12	1.50%		
Nitzschia soratensis	204	25.47%		
Nitzschia supralitorea	7	0.87%		
Planothidium frequentissimum	45	5.62%		
Planothidium lanceolatum	38	4.74%		
Planothidium reichardtii	4	0.50%		
Reimeria sinuata	2	0.25%		
Rhoicosphenia abbreviata	11	1.37%		
Sellaphora sp.	4	0.50%		GV/obscure

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP002

RAI No.: CC22SBCP002 Sta. Name: Silver Bow Creek above Sand Creek
Client ID: SS-10A
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Sellaphora atomoides	71	8.86%		
Sellaphora pupula	1	0.12%		
Sellaphora saugerresii	1	0.12%		
Staurosira binodis	13	1.62%		
Staurosira construens v. venter	7	0.87%		
Staurosirella leptostauron	8	1.00%		
Staurosirella pinnata	3	0.37%		GV
Sample Count	801			

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP003

RAI No.: CC22SBCP003 Sta. Name: Silver Bow Creek in Reach L
Client ID: SS-13
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Diatoms				
Bacillariophyta				
Achnanthidium minutissimum	5	0.62%		
Adlafia minuscula v. muralis	4	0.50%		
Caloneis lancettula	5	0.62%		
Cocconeis pediculus	4	0.50%		
Cocconeis placentula sensu lato	100	12.48%		
Cyclotella meneghiniana	85	10.61%		
Diatoma moniliformis	4	0.50%		
Encyonema minutum	13	1.62%		
Encyonema silesiacum	7	0.87%		
Fragilaria pectinalis	9	1.12%		
Fragilaria vaucheriae	4	0.50%		
Geissleria acceptata	1	0.12%		
Gomphonema parvulum	17	2.12%		
Halamphora veneta	3	0.37%		
Mayamaea permitis	17	2.12%		
Melosira varians	2	0.25%		
Meridion circulare	4	0.50%		
Navicula sp.	1	0.12%		GV
Navicula gregaria	19	2.37%		
Navicula lanceolata	4	0.50%		
Navicula veneta	17	2.12%		
Nitzschia sp.	1	0.12%		GV
Nitzschia amphibia	5	0.62%		
Nitzschia archibaldii	1	0.12%		
Nitzschia dissipata	2	0.25%		broken
Nitzschia fonticola	15	1.87%		
Nitzschia linearis	2	0.25%		
Nitzschia palea	11	1.37%		
Nitzschia palea v. debilis	14	1.75%		
Nitzschia paleacea	6	0.75%		
Nitzschia soratensis	67	8.36%		
Nitzschia supralitorea	2	0.25%		
Planothidium amphibium	2	0.25%		
Planothidium frequentissimum	59	7.37%		
Planothidium lanceolatum	63	7.87%		
Planothidium reichardtii	4	0.50%		
Rhoicosphenia abbreviata	16	2.00%		
Sellaphora atomoides	79	9.86%		
Sellaphora nigri	7	0.87%		
Sellaphora saugerresii	1	0.12%		
Staurosira binodis	71	8.86%		13-longer forms & 51 smaller forms

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP003

RAI No.: CC22SBCP003 Sta. Name: Silver Bow Creek in Reach L
Client ID: SS-13
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Staurosira construens v. venter	25	3.12%		
Staurosirella leptostauron	7	0.87%		
Staurosirella pinnata	1	0.12%		
Surirella brebissonii	11	1.37%		
Ulnaria ulna	4	0.50%		

Sample Count 801

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP004

RAI No.: CC22SBCP004 Sta. Name: Silver Bow Creek at Miles Crossing
Client ID: SS-14
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Diatoms				
Bacillariophyta				
Achnanthidium minutissimum	7	0.87%		
Adlafia minuscula v. muralis	16	2.00%		
Caloneis lancettula	3	0.37%		
Cocconeis pediculus	7	0.87%		
Cocconeis placentula sensu lato	98	12.23%		
Cyclostephanos invisitatus	2	0.25%		
Cyclotella meneghiniana	176	21.97%		
Diatoma moniliformis	14	1.75%		
Diatoma vulgaris	4	0.50%		
Encyonema minutum	15	1.87%		
Encyonema silesiacum	4	0.50%		
Fallacia pygmaea	1	0.12%		
Fragilaria pectinalis	9	1.12%		
Fragilaria vaucheriae	10	1.25%		
Gomphonema parvulum	9	1.12%		
Luticola mutica	2	0.25%		L10 W5.5 s22
Mayamaea permitis	11	1.37%		
Melosira varians	3	0.37%		
Navicula gregaria	15	1.87%		
Navicula lanceolata	10	1.25%		
Navicula tripunctata	1	0.12%		
Navicula veneta	5	0.62%		
Nitzschia sp.	6	0.75%		GV
Nitzschia adamata	4	0.50%		
Nitzschia amphibia	7	0.87%		
Nitzschia archibaldii	14	1.75%		
Nitzschia dissipata	1	0.12%		
Nitzschia fonticola	3	0.37%		
Nitzschia linearis	4	0.50%		
Nitzschia palea	3	0.37%		
Nitzschia palea v. debilis	32	4.00%		
Nitzschia paleacea	1	0.12%		
Nitzschia soratensis	25	3.12%		
Nitzschia supralitorea	5	0.62%		
Planothidium frequentissimum	51	6.37%		
Planothidium lanceolatum	57	7.12%		
Pseudostaurosira parasitica v. subconstricta	2	0.25%		
Reimeria sinuata	3	0.37%		
Rhoicosphenia abbreviata	8	1.00%		5-GV
Sellaphora atomoides	26	3.25%		
Sellaphora pupula	3	0.37%		

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP004

RAI No.: CC22SBCP004
Sta. Name: Silver Bow Creek at Miles Crossing
Client ID: SS-14
Date Coll.: 8/24/2022
No Jars: 1
STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Staurosira binodis	68	8.49%		32-longer forms & 16-smaller forms
Staurosira construens v. venter	26	3.25%		
Staurosirella leptostauron	19	2.37%		GV
Staurosirella pinnata	2	0.25%		
Surirella angusta	1	0.12%		
Surirella brebissonii	6	0.75%		
Ulnaria contracta	2	0.25%		

Sample Count 801

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP005

RAI No.: CC22SBCP005 Sta. Name: Silver Bow Creek above German Gulch
Client ID: SS-15A-2
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Diatoms				
Bacillariophyta				
Adlafia minuscula v. muralis	5	0.62%		
Caloneis lancettula	16	2.00%		
Chamaepinnularia mediocris	1	0.12%		L-9 W-3
Cocconeis placentula sensu lato	173	21.60%		
Cyclotella meneghiniana	95	11.86%		
Diatoma moniliformis	1	0.12%		
Diatoma vulgaris	1	0.12%		
Encyonema minutum	11	1.37%		
Encyonema silesiacum	3	0.37%		
Fragilaria pectinalis	1	0.12%		
Fragilaria vaucheriae	3	0.37%		small
Gomphonema parvulum	24	3.00%		
Halamphora veneta	15	1.87%		
Mayamaea permitis	13	1.62%		
Navicula gregaria	4	0.50%		
Navicula lanceolata	1	0.12%		
Navicula veneta	81	10.11%		
Nitzschia adamata	2	0.25%		
Nitzschia amphibia	26	3.25%		
Nitzschia archibaldii	25	3.12%		
Nitzschia dissipata v. media	20	2.50%		
Nitzschia fonticola	6	0.75%		
Nitzschia linearis	2	0.25%		
Nitzschia palea	8	1.00%		
Nitzschia palea v. debilis	29	3.62%		
Nitzschia paleacea	6	0.75%		
Nitzschia soratensis	48	5.99%		
Planothidium frequentissimum	14	1.75%		
Planothidium lanceolatum	12	1.50%		
Rhoicosphenia abbreviata	5	0.62%		GV
Sellaphora atomoides	93	11.61%		
Sellaphora nigri	3	0.37%		
Sellaphora saugerresii	1	0.12%		
Sellaphora seminulum	1	0.12%		
Staurosira binodis	35	4.37%		18 smaller size & 12 larger forms
Staurosira construens v. venter	10	1.25%		
Staurosirella leptostauron	2	0.25%		
Staurosirella pinnata	1	0.12%		
Surirella brebissonii	1	0.12%		
Ulnaria contracta	3	0.37%		
Sample Count	801			

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP006

RAI No.: CC22SBCP006 Sta. Name: Silver Bow Creekat Fairmont
Client ID: SS-16B
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Diatoms				
Bacillariophyta				
Achnanthidium minutissimum	1	0.12%		
Adlafia minuscula v. muralis	3	0.37%		
Amphora pediculus	21	2.62%		
Caloneis lancettula	11	1.37%		
Cocconeis placentula sensu lato	194	24.19%		
Cyclotella meneghiniana	102	12.72%		
Diatoma moniliformis	2	0.25%		
Encyonema minutum	14	1.75%		
Encyonema silesiacum	7	0.87%		
Fragilaria vaucheriae	5	0.62%		small GV-2
Gomphonema parvulum	14	1.75%		4-GV
Halamphora veneta	5	0.62%		
Luticola mutica	1	0.12%		
Mayamaea permitis	26	3.24%		
Melosira varians	4	0.50%		
Navicula gregaria	1	0.12%		
Navicula lanceolata	3	0.37%		
Navicula tripunctata	2	0.25%		
Navicula veneta	18	2.24%		
Nitzschia amphibia	10	1.25%		
Nitzschia archibaldii	20	2.49%		
Nitzschia dissipata v. media	6	0.75%		
Nitzschia fonticola	14	1.75%		
Nitzschia linearis	3	0.37%		
Nitzschia palea	2	0.25%		
Nitzschia palea v. debilis	10	1.25%		
Nitzschia soratensis	34	4.24%		
Nitzschia supralitorea	1	0.12%		
Planothidium frequentissimum	23	2.87%		
Planothidium lanceolatum	11	1.37%		
Reimeria sinuata	3	0.37%		
Rhoicosphenia abbreviata	36	4.49%		
Sellaphora atomoides	95	11.85%		
Sellaphora nigri	1	0.12%		
Sellaphora saugerresii	1	0.12%		
Staurosira binodis	41	5.11%		12 smaller forms & 8 bigger forms
Staurosira construens v. venter	44	5.49%		
Staurosirella leptostauron	8	1.00%		
Surirella brebissonii	3	0.37%		
Ulnaria sp.	2	0.25%		
Sample Count	802			

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP007

RAI No.: CC22SBCP007 Sta. Name: Silver Bow Creek at Opportunity
Client ID: SS-17D
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Diatoms				
Bacillariophyta				
Achnanthidium minutissimum	4	0.50%		
Achnanthidium rivulare	2	0.25%		
Adlafia minuscula v. muralis	5	0.62%		
Amphora pediculus	4	0.50%		
Caloneis lancettula	19	2.37%		
Cocconeis pediculus	1	0.12%		
Cocconeis placentula sensu lato	199	24.81%		
Ctenophora pulchella	1	0.12%		
Cyclotella atomus	1	0.12%		
Cyclotella meneghiniana	74	9.23%		
Diatoma moniliformis	1	0.12%		
Diatoma vulgaris	1	0.12%		
Encyonema minutum	4	0.50%		
Encyonema silesiacum	14	1.75%		
Epithemia sp.	1	0.12%		obscure view
Epithemia sorex	4	0.50%		
Fragilaria pectinalis	3	0.37%		
Fragilaria vaucheriae	45	5.61%		
Gomphonema micropus	1	0.12%		
Gomphonema minutum	4	0.50%		small
Gomphonema parvulum	15	1.87%		5-GV
Halamphora veneta	9	1.12%		
Hippodonta capitata	1	0.12%		
Mayamaea permitis	19	2.37%		
Melosira varians	2	0.25%		
Navicula gregaria	1	0.12%		
Navicula veneta	39	4.86%		
Nitzschia amphibia	1	0.12%		
Nitzschia archibaldii	9	1.12%		
Nitzschia dissipata v. media	11	1.37%		
Nitzschia fonticola	6	0.75%		
Nitzschia liebethruthii	1	0.12%		
Nitzschia linearis	4	0.50%		
Nitzschia palea	8	1.00%		
Nitzschia palea v. debilis	6	0.75%		
Nitzschia paleacea	22	2.74%		
Nitzschia soratensis	22	2.74%		
Placoneis clementioides	1	0.12%		
Planothidium frequentissimum	33	4.11%		
Planothidium lanceolatum	17	2.12%		
Reimeria sinuata	4	0.50%		

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP007

RAI No.: CC22SBCP007 Sta. Name: Silver Bow Creek at Opportunity
Client ID: SS-17D
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Rhoicosphenia sp.	1	0.12%		GV
Sellaphora atomoides	72	8.98%		
Sellaphora nigri	4	0.50%		
Sellaphora seminulum	2	0.25%		
Staurosira binodis	80	9.98%		47 smaller forms & 16 bigger forms
Staurosira construens v. venter	18	2.24%		
Staurosirella leptostauron	1	0.12%		
Surirella brebissonii	3	0.37%		
Ulnaria contracta	2	0.25%		
Sample Count	802			

Taxa Listing

Project ID: CC22SBCP
RAI No.: CC22SBCP008

RAI No.: CC22SBCP008 Sta. Name: Silver Bow Creek at Frontage Road
Client ID: SS-19
Date Coll.: 8/24/2022 No Jars: 1 STORET ID:
Sample Notes:

Taxonomic Name	Count	PRA	Cell Count	Comment
Diatoms				
Bacillariophyta				
Adlafia minuscula v. muralis	1	0.12%		
Caloneis lancettula	8	1.00%		
Cocconeis placentula sensu lato	162	20.22%		
Cyclotella meneghiniana	103	12.86%		
Encyonema minutum	5	0.62%		
Encyonema silesiacum	15	1.87%		
Epithemia sorex	11	1.37%		
Fragilaria pectinalis	1	0.12%		
Fragilaria vaucheriae	27	3.37%		
Gomphonella olivacea	2	0.25%		
Gomphonema parvulum	19	2.37%		
Halamphora veneta	6	0.75%		
Mayamaea permitis	24	3.00%		
Navicula cryptotenella	1	0.12%		
Navicula gregaria	1	0.12%		
Navicula veneta	19	2.37%		
Nitzschia archibaldii	8	1.00%		
Nitzschia dissipata v. media	10	1.25%		
Nitzschia fonticola	6	0.75%		
Nitzschia linearis	1	0.12%		
Nitzschia palea	5	0.62%		
Nitzschia paleacea	16	2.00%		
Nitzschia soratensis	140	17.48%		
Parlibellus protractoides	1	0.12%		
Planothidium frequentissimum	28	3.50%		
Planothidium lanceolatum	5	0.62%		
Rhoicosphenia sp.	2	0.25%		GV
Sellaphora sp.	1	0.12%		obscure
Sellaphora atomoides	131	16.35%		
Sellaphora nigri	3	0.37%		
Sellaphora pupula	1	0.12%		
Staurosira binodis	17	2.12%		12 smalller forms &3 larger forms
Staurosira construens v. venter	16	2.00%		
Staurosirella leptostauron	1	0.12%		
Staurosirella pinnata	2	0.25%		
Surirella brebissonii	1	0.12%		
Ulnaria contracta	1	0.12%		
Sample Count	801			

Non-Diatom Algae Study: Silver Bow Creek 2022
Non-Diatom Algae Data

Determinations by Rhithron Associates, Inc.

RAI Sample ID	Client ID	Station ID	Sample Date	Taxon	Division	RA	RB
CC22SBCP001	SS-07	Silver Bow Creek at Butte	8/24/2022	Diatoms	Bacillariophyta	A	1
CC22SBCP001	SS-07	Silver Bow Creek at Butte	8/24/2022	*Monoraphidium*	Chlorophyta	R	0
CC22SBCP001	SS-07	Silver Bow Creek at Butte	8/24/2022	*Pediastrum*	Chlorophyta	R	0
CC22SBCP001	SS-07	Silver Bow Creek at Butte	8/24/2022	*Phormidium*	Cyanophyta	R	0
CC22SBCP001	SS-07	Silver Bow Creek at Butte	8/24/2022	Undetermined Rhodophyte	Rhodophyta	R	0
CC22SBCP002	SS-10A	Silver Bow Creek above Sand Creek	8/24/2022	Diatoms	Bacillariophyta	VC	1
CC22SBCP002	SS-10A	Silver Bow Creek above Sand Creek	8/24/2022	*Phormidium*	Cyanophyta	C	2
CC22SBCP002	SS-10A	Silver Bow Creek above Sand Creek	8/24/2022	*Closterium*	Chlorophyta	R	0
CC22SBCP002	SS-10A	Silver Bow Creek above Sand Creek	8/24/2022	*Cosmarium*	Chlorophyta	R	0
CC22SBCP002	SS-10A	Silver Bow Creek above Sand Creek	8/24/2022	*Monoraphidium*	Chlorophyta	R	0
CC22SBCP002	SS-10A	Silver Bow Creek above Sand Creek	8/24/2022	*Mougeotia*	Chlorophyta	R	0
CC22SBCP002	SS-10A	Silver Bow Creek above Sand Creek	8/24/2022	*Pediastrum*	Chlorophyta	R	0
CC22SBCP002	SS-10A	Silver Bow Creek above Sand Creek	8/24/2022	*Scenedesmus*	Chlorophyta	R	0
CC22SBCP003	SS-13	Silver Bow Creek in Reach L	8/24/2022	Diatoms	Bacillariophyta	C	1
CC22SBCP003	SS-13	Silver Bow Creek in Reach L	8/24/2022	*Mougeotia*	Chlorophyta	C	2
CC22SBCP003	SS-13	Silver Bow Creek in Reach L	8/24/2022	*Phormidium*	Cyanophyta	R	0
CC22SBCP004	SS-14	Silver Bow Creek at Miles Crossing	8/24/2022	Diatoms	Bacillariophyta	VC	1
CC22SBCP004	SS-14	Silver Bow Creek at Miles Crossing	8/24/2022	*Mougeotia*	Chlorophyta	C	2
CC22SBCP004	SS-14	Silver Bow Creek at Miles Crossing	8/24/2022	*Closterium*	Chlorophyta	C	3
CC22SBCP004	SS-14	Silver Bow Creek at Miles Crossing	8/24/2022	*Pediastrum*	Chlorophyta	R	0
CC22SBCP005	SS-15A-2	Silver Bow Creek above German Gulch	8/24/2022	Diatoms	Bacillariophyta	VC	1
CC22SBCP005	SS-15A-2	Silver Bow Creek above German Gulch	8/24/2022	*Mougeotia*	Chlorophyta	C	2
CC22SBCP005	SS-15A-2	Silver Bow Creek above German Gulch	8/24/2022	*Chroococcus*	Cyanophyta	R	0
CC22SBCP005	SS-15A-2	Silver Bow Creek above German Gulch	8/24/2022	*Homoeothrix*	Cyanophyta	R	0
CC22SBCP005	SS-15A-2	Silver Bow Creek above German Gulch	8/24/2022	*Monoraphidium*	Chlorophyta	R	0
CC22SBCP005	SS-15A-2	Silver Bow Creek above German Gulch	8/24/2022	*Phormidium*	Cyanophyta	R	0
CC22SBCP005	SS-15A-2	Silver Bow Creek above German Gulch	8/24/2022	*Scenedesmus*	Chlorophyta	R	0
CC22SBCP005	SS-15A-2	Silver Bow Creek above German Gulch	8/24/2022	*Stigeoclonium*	Chlorophyta	R	0
CC22SBCP005	SS-15A-2	Silver Bow Creek above German Gulch	8/24/2022	Undetermined Chlorophyte	Chlorophyta	R	0
CC22SBCP006	SS-16B	Silver Bow Creekat Fairmont	8/24/2022	*Mougeotia*	Chlorophyta	A	1
CC22SBCP006	SS-16B	Silver Bow Creekat Fairmont	8/24/2022	Diatoms	Bacillariophyta	A	2
CC22SBCP006	SS-16B	Silver Bow Creekat Fairmont	8/24/2022	*Anabaena*	Cyanophyta	R	0
CC22SBCP006	SS-16B	Silver Bow Creekat Fairmont	8/24/2022	*Cosmarium*	Chlorophyta	R	0
CC22SBCP006	SS-16B	Silver Bow Creekat Fairmont	8/24/2022	*Nostoc*	Cyanophyta	R	0
CC22SBCP006	SS-16B	Silver Bow Creekat Fairmont	8/24/2022	*Phormidium*	Cyanophyta	R	0
CC22SBCP006	SS-16B	Silver Bow Creekat Fairmont	8/24/2022	*Scenedesmus*	Chlorophyta	R	0

CC22SBCP006	SS-16B	Silver Bow Creekat Fairmont	8/24/2022	*Stigeoclonium*	Chlorophyta	R	0
CC22SBCP007	SS-17D	Silver Bow Creek at Opportunity	8/24/2022	*Cladophora*	Chlorophyta	A	1
CC22SBCP007	SS-17D	Silver Bow Creek at Opportunity	8/24/2022	*Mougeotia*	Chlorophyta	C	2
CC22SBCP007	SS-17D	Silver Bow Creek at Opportunity	8/24/2022	Diatoms	Bacillariophyta	C	3
CC22SBCP007	SS-17D	Silver Bow Creek at Opportunity	8/24/2022	*Phormidium*	Cyanophyta	C	4
CC22SBCP007	SS-17D	Silver Bow Creek at Opportunity	8/24/2022	*Anabaena*	Cyanophyta	C	5
CC22SBCP007	SS-17D	Silver Bow Creek at Opportunity	8/24/2022	*Chroococcus*	Cyanophyta	R	0
CC22SBCP007	SS-17D	Silver Bow Creek at Opportunity	8/24/2022	*Stigeoclonium*	Chlorophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	Diatoms	Bacillariophyta	VC	1
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	*Mougeotia*	Chlorophyta	C	2
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	*Actinastrum*	Chlorophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	*Anabaena*	Cyanophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	*Calothrix*	Cyanophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	*Closterium*	Chlorophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	*Cosmarium*	Chlorophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	*Monoraphidium*	Chlorophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	*Pediastrum*	Chlorophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	*Phormidium*	Cyanophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	*Stigeoclonium*	Chlorophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	Undetermined Dinoflagellate	Pyrrhophyta	R	0
CC22SBCP008	SS-19	Silver Bow Creek at Frontage Road	8/24/2022	Undetermined Rhodophyte	Rhodophyta	R	0

APPENDIX H

Macroinvertebrate Data

Metric Summary

Project ID: CC22SBC
RAI No.: CC22SBC001

Client ID: SS-07
Date Coll.: 8/24/2022
Sta. Name: Silver Bow Creek below WWTP
STORET ID:
Sample portion used: 6.67%
Latitude: 45.99679 Longitude: –112.56470

Air Breathers
- Air Breather Percent: 0.19%
- Air Breather Richness: 1

Cold
- Cold Stenotherm Percent: 0.00%
- Cold Stenotherm Richness: 0
- Calculated thermal preference: 17.14

Diversity
- Shannon H (log2): 3.75
- Taxa Richness: 29
- Dominant Taxon Percent: 22.22%

Function
- Collector-gatherer percent: 30.37%
- Filterer percent: 31.30%
- Filterer Richness: 5
- Predator Percent: 3.89%
- Predator Richness: 6
- Scraper percent: 32.22%
- Shredder percent: 0.74%
- Percent predatory mites: 1.48%

Hemoglobin
- Hemoglobin Bearer Percent: 4.26%
- Hemoglobin Bearer Richness: 2

Metals Tolerance
- Metals Tolerance Index: 4.33

Tolerance
- Sensitive taxa richness: 0
- Tolerant taxa percent: 44.44%
- MDEQ HBI: 5.763157
- MDEQ HBI without mites: 5.774810
- All Non-Insect Percent: 43.89%
- All Non-Insect Richness: 10
- Ephemeroptera richness: 1
- Plecoptera richness: 0
- Orthocladius + Nais + Hydroptilidae: 1.30%

Sediment
- Clinger Percent: 42.04%
- Clinger Richness: 10
- FSBI (2012): 5.00
- Trichoptera richness: 6

Voltinism
- Semivoltine Richness: 3

Biological Assessment
- O/E (2012): 0.44
- MVFP: 16.7

Metric Summary

Project ID: CC22SBC
RAI No.: CC22SBC002

Client ID: SS-10A
Date Coll.: 8/24/2022
Sta. Name: Silver Bow Creek above Sand Creek
STORET ID:
Sample portion used: 6.67%
Latitude: 46.00375 Longitude: –112.66084

Air Breathers
- Air Breather Percent: 0.20%
- Air Breather Richness: 1

Cold
- Cold Stenotherm Percent: 0.00%
- Cold Stenotherm Richness: 0
- Calculated thermal preference: 17.05

Diversity
- Shannon H (log2): 3.79
- Taxa Richness: 39
- Dominant Taxon Percent: 20.20%

Function
- Collector-gatherer percent: 24.31%
- Filterer percent: 21.18%
- Filterer Richness: 4
- Predator Percent: 7.84%
- Predator Richness: 9
- Scraper percent: 38.04%
- Shredder percent: 6.67%
- Percent predatory mites: 0.39%

Hemoglobin
- Hemoglobin Bearer Percent: 10.00%
- Hemoglobin Bearer Richness: 6

Metals Tolerance
- Metals Tolerance Index: 3.72

Tolerance
- Sensitive taxa richness: 0
- Tolerant taxa percent: 41.96%
- MDEQ HBI: 5.498985
- MDEQ HBI without mites: 5.501019
- All Non-Insect Percent: 32.35%
- All Non-Insect Richness: 14
- Ephemeroptera richness: 3
- Plecoptera richness: 0
- Orthocladius + Nais + Hydroptilidae: 0.78%

Sediment
- Clinger Percent: 43.33%
- Clinger Richness: 9
- FSBI (2012): 10.00
- Trichoptera richness: 8

Voltinism
- Semivoltine Richness: 4

Biological Assessment
- O/E (2012): 0.54
- MVFP: 27.8

Metric Summary

Project ID: CC22SBC
RAI No.: CC22SBC003

Client ID: SS-13
Date Coll.: 8/24/2022
Sta. Name: Silver Bow Creek in Reach L
STORET ID:
Sample portion used: 3.33%
Latitude: 46.00647 Longitude: –112.71394

Air Breathers
- Air Breather Percent: 0.19%
- Air Breather Richness: 1

Cold
- Cold Stenotherm Percent: 0.00%
- Cold Stenotherm Richness: 0
- Calculated thermal preference: 17.71

Diversity
- Shannon H (log2): 3.25
- Taxa Richness: 41
- Dominant Taxon Percent: 44.51%

Function
- Collector-gatherer percent: 16.86%
- Filterer percent: 14.58%
- Filterer Richness: 6
- Predator Percent: 9.28%
- Predator Richness: 7
- Scraper percent: 52.27%
- Shredder percent: 2.46%
- Percent predatory mites: 1.14%

Hemoglobin
- Hemoglobin Bearer Percent: 2.84%
- Hemoglobin Bearer Richness: 3

Metals Tolerance
- Metals Tolerance Index: 3.48

Tolerance
- Sensitive taxa richness: 0
- Tolerant taxa percent: 61.36%
- MDEQ HBI: 4.732285
- MDEQ HBI without mites: 4.729083
- All Non-Insect Percent: 23.86%
- All Non-Insect Richness: 14
- Ephemeroptera richness: 4
- Plecoptera richness: 0
- Orthocladius + Nais + Hydroptilidae: 2.84%

Sediment
- Clinger Percent: 62.31%
- Clinger Richness: 9
- FSBI (2012): 0.00
- Trichoptera richness: 7

Voltinism
- Semivoltine Richness: 4

Biological Assessment
- O/E (2012): 0.59
- MVFP: 33.3

Metric Summary

Project ID: CC22SBC
RAI No.: CC22SBC004

Client ID: SS-14
Date Coll.: 8/24/2022
Sta. Name: Silver Bow Creek at Miles Crossing
STORET ID:
Sample portion used: 6.67%
Latitude: 46.01142 Longitude: –112.72270

Air Breathers
- Air Breather Percent: 0.00%
- Air Breather Richness: 0

Cold
- Cold Stenotherm Percent: 0.00%
- Cold Stenotherm Richness: 0
- Calculated thermal preference: 17.66

Diversity
- Shannon H (log2): 3.16
- Taxa Richness: 37
- Dominant Taxon Percent: 44.86%

Function
- Collector-gatherer percent: 11.07%
- Filterer percent: 22.13%
- Filterer Richness: 6
- Predator Percent: 8.50%
- Predator Richness: 8
- Scraper percent: 49.01%
- Shredder percent: 2.57%
- Percent predatory mites: 1.58%

Hemoglobin
- Hemoglobin Bearer Percent: 4.94%
- Hemoglobin Bearer Richness: 7

Metals Tolerance
- Metals Tolerance Index: 3.46

Tolerance
- Sensitive taxa richness: 0
- Tolerant taxa percent: 55.53%
- MDEQ HBI: 4.745902
- MDEQ HBI without mites: 4.741666
- All Non-Insect Percent: 23.91%
- All Non-Insect Richness: 9
- Ephemeroptera richness: 3
- Plecoptera richness: 0
- Orthocladius + Nais + Hydroptilidae: 4.35%

Sediment
- Clinger Percent: 59.68%
- Clinger Richness: 11
- FSBI (2012): 0.00
- Trichoptera richness: 6

Voltinism
- Semivoltine Richness: 5

Biological Assessment
- O/E (2012): 0.51
- MVFP: 27.8

Metric Summary

Project ID: CC22SBC
RAI No.: CC22SBC005

Client ID: SS-15A-2
Date Coll.: 8/24/2022
Sta. Name: Silver Bow Creek above German Gulch
STORET ID:
Sample portion used: 4.17%
Latitude: 46.02096 Longitude: –112.78802

Air Breathers
- Air Breather Percent: 0.00%
- Air Breather Richness: 0

Cold
- Cold Stenotherm Percent: 0.00%
- Cold Stenotherm Richness: 0
- Calculated thermal preference: 16.80

Diversity
- Shannon H (log2): 3.52
- Taxa Richness: 32
- Dominant Taxon Percent: 20.73%

Function
- Collector-gatherer percent: 22.73%
- Filterer percent: 29.82%
- Filterer Richness: 4
- Predator Percent: 6.55%
- Predator Richness: 8
- Scraper percent: 38.00%
- Shredder percent: 1.82%
- Percent predatory mites: 1.82%

Hemoglobin
- Hemoglobin Bearer Percent: 0.36%
- Hemoglobin Bearer Richness: 2

Metals Tolerance
- Metals Tolerance Index: 4.20

Tolerance
- Sensitive taxa richness: 0
- Tolerant taxa percent: 43.09%
- MDEQ HBI: 5.440587
- MDEQ HBI without mites: 5.448789
- All Non-Insect Percent: 32.00%
- All Non-Insect Richness: 8
- Ephemeroptera richness: 2
- Plecoptera richness: 0
- Orthocladius + Nais + Hydroptilidae: 0.55%

Sediment
- Clinger Percent: 58.73%
- Clinger Richness: 11
- FSBI (2012): 15.00
- Trichoptera richness: 8

Voltinism
- Semivoltine Richness: 4

Biological Assessment
- O/E (2012): 0.59
- MVFP: 22.2

Metric Summary

Project ID: **CC22SBC**
RAI No.: **CC22SBC006**

Client ID: SS-16B
Date Coll.: 8/24/2022
Sta. Name: Silver Bow Creek in Reach P near Fairmont
STORET ID:
Sample portion used: 4.17%
Latitude: 46.05494 Longitude: –112.79611

Air Breathers
- Air Breather Percent: 0.19%
- Air Breather Richness: 1

Cold
- Cold Stenotherm Percent: 0.19%
- Cold Stenotherm Richness: 1
- Calculated thermal preference: 17.53

Diversity
- Shannon H (log2): 4.00
- Taxa Richness: 35
- Dominant Taxon Percent: 19.73%

Function
- Collector-gatherer percent: 28.05%
- Filterer percent: 12.57%
- Filterer Richness: 6
- Predator Percent: 4.06%
- Predator Richness: 5
- Scraper percent: 35.98%
- Shredder percent: 12.96%
- Percent predatory mites: 0.97%

Hemoglobin
- Hemoglobin Bearer Percent: 4.06%
- Hemoglobin Bearer Richness: 3

Metals Tolerance
- Metals Tolerance Index: 3.67

Tolerance
- Sensitive taxa richness: 0
- Tolerant taxa percent: 42.75%
- MDEQ HBI: 5.259920
- MDEQ HBI without mites: 5.262525
- All Non-Insect Percent: 31.14%
- All Non-Insect Richness: 9
- Ephemeroptera richness: 4
- Plecoptera richness: 0
- Orthocladius + Nais + Hydroptilidae: 5.42%

Sediment
- Clinger Percent: 45.45%
- Clinger Richness: 11
- FSBI (2012): 10.00
- Trichoptera richness: 8

Voltinism
- Semivoltine Richness: 5

Biological Assessment
- O/E (2012): 0.49
- MVFP: 33.3

Metric Summary

Project ID: CC22SBC
RAI No.: CC22SBC007

Client ID: SS-17D
Date Coll.: 8/24/2022
Sta. Name: Silver Bow Creek below Stewart Street at Opportunity
STORET ID:
Sample portion used: 6.67%
Latitude: 46.10787 Longitude: –112.80553

Air Breathers
- Air Breather Percent: 0.55%
- Air Breather Richness: 2

Cold
- Cold Stenotherm Percent: 0.00%
- Cold Stenotherm Richness: 0
- Calculated thermal preference: 18.11

Diversity
- Shannon H (log2): 3.64
- Taxa Richness: 38
- Dominant Taxon Percent: 30.22%

Function
- Collector-gatherer percent: 8.42%
- Filterer percent: 30.22%
- Filterer Richness: 7
- Predator Percent: 6.23%
- Predator Richness: 7
- Scraper percent: 50.55%
- Shredder percent: 1.47%
- Percent predatory mites: 0.73%

Hemoglobin
- Hemoglobin Bearer Percent: 3.11%
- Hemoglobin Bearer Richness: 4

Metals Tolerance
- Metals Tolerance Index: 3.99

Tolerance
- Sensitive taxa richness: 0
- Tolerant taxa percent: 54.95%
- MDEQ HBI: 4.117870
- MDEQ HBI without mites: 4.111112
- All Non-Insect Percent: 6.78%
- All Non-Insect Richness: 7
- Ephemeroptera richness: 3
- Plecoptera richness: 0
- Orthocladius + Nais + Hydroptilidae: 3.11%

Sediment
- Clinger Percent: 82.23%
- Clinger Richness: 13
- FSBI (2012): 5.00
- Trichoptera richness: 9

Voltinism
- Semivoltine Richness: 4

Biological Assessment
- O/E (2012): 0.51
- MVFP: 22.2

Metric Summary

Project ID: CC22SBC
RAI No.: CC22SBC008

Client ID: SS-19
Date Coll.: 8/24/2022
Sta. Name: Silver Bow Creek at Frontage Road
STORET ID:
Sample portion used: 6.67%
Latitude: 46.1225 Longitude: –112.80077

Air Breathers
- Air Breather Percent: 0.78%
- Air Breather Richness: 2

Cold
- Cold Stenotherm Percent: 0.00%
- Cold Stenotherm Richness: 0
- Calculated thermal preference: 17.61

Diversity
- Shannon H (log2): 4.00
- Taxa Richness: 40
- Dominant Taxon Percent: 16.67%

Function
- Collector-gatherer percent: 28.49%
- Filterer percent: 25.78%
- Filterer Richness: 5
- Predator Percent: 3.49%
- Predator Richness: 7
- Scraper percent: 35.66%
- Shredder percent: 1.94%
- Percent predatory mites: 0.58%

Hemoglobin
- Hemoglobin Bearer Percent: 17.83%
- Hemoglobin Bearer Richness: 4

Metals Tolerance
- Metals Tolerance Index: 4.02

Tolerance
- Sensitive taxa richness: 0
- Tolerant taxa percent: 40.12%
- MDEQ HBI: 5.523903
- MDEQ HBI without mites: 5.527055
- All Non-Insect Percent: 22.87%
- All Non-Insect Richness: 10
- Ephemeroptera richness: 4
- Plecoptera richness: 2
- Orthocladius + Nais + Hydroptilidae: 4.65%

Sediment
- Clinger Percent: 59.69%
- Clinger Richness: 12
- FSBI (2012): 0.00
- Trichoptera richness: 6

Voltinism
- Semivoltine Richness: 3

Biological Assessment
- O/E (2012): 0.54
- MVFP: 38.9

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

Site ID	Date	Biological Taxonomic Name	Result Value	Unit	Laboratory Name	Analytical Method ID	Analysis Start Date	Laboratory Sample ID	Result Comment
SS-07	24-Aug-22	Acari	8	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Amiocentrus aspilus	2	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Baetis tricaudatus	50	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	Baetis tricaudatus complex
SS-07	24-Aug-22	Brachycentridae	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Brachycentrus occidentalis	46	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Caecidotea	57	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Cheumatopsyche	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Conchapelopia	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Cricotopus (Isocladius)	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Gastropoda	3	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Gyraulus	21	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Helobdella stagnalis	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Hydropsyche	33	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Hydropsychidae	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Hydroptila	3	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Hydroptilidae	4	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Lymnaeidae	19	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Micropsectra	6	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Naididae	35	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-07	24-Aug-22	Nematoda	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Oecetis	6	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Optioservus	120	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Pagastia	11	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Parametriocnemus	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Physella	11	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Pisidiidae	79	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	Sphaeriidae
SS-07	24-Aug-22	Polypedilum	2	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Prodiamesa	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Sciomyzidae	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Simulium	8	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Theromyzon	2	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Thienemannimyia	2	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	Thienemannimyia Group
SS-07	24-Aug-22	Tipula	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-07	24-Aug-22	Zaitzevia	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC001	
SS-10A	24-Aug-22	Acari	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Alotanypus	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Baetis tricaudatus	13	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	Baetis tricaudatus complex
SS-10A	24-Aug-22	Brachycentrus occidentalis	8	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Callibaetis	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-10A	24-Aug-22	Ceratopogoninae	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Chironomini	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Cladocera	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Conchapelopia	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Copepoda	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Cricotopus (Isocladius)	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Enchytraeidae	3	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Glossosoma	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Gomphidae	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Gyraulus	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Helicopsyche	103	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Hydroptila	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Hydroptilidae	3	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Lepidostoma	3	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Limnephilidae	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Micropsectra	13	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Naididae	74	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Nectopsyche	21	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Nematoda	6	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Oecetis	12	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-10A	24-Aug-22	Optioservus	55	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Ostracoda	4	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Parametriocnemus	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Phaenopsectra	31	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Physella	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Pisidiidae	53	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	Sphaeriidae
SS-10A	24-Aug-22	Polypedilum	6	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Procladius	4	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Prostoma	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Stagnicola	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Tanypodinae	3	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Tanytarsini	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Tanytarsus	44	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Thienemannimyia	4	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	Thienemannimyia Group
SS-10A	24-Aug-22	Tipula	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Trepaxonemata	9	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Tricorythodes	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Tubificidae	6	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-10A	24-Aug-22	Zaitzevia	5	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC002	
SS-13	24-Aug-22	Acari	6	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-13	24-Aug-22	Baetis tricaudatus	21	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	Baetis tricaudatus complex
SS-13	24-Aug-22	Brachycentrus occidentalis	9	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Caecidotea	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Callibaetis	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Ceratopogoninae	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Cladocera	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Enchytraeidae	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Eukiefferiella brehmi	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	Eukiefferiella Brehmi Group
SS-13	24-Aug-22	Gomphidae	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Gyraulus	4	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Helicopsyche	235	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Hemerodromia	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Hyalella	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Hydropsyche	7	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Hydroptila	11	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Hydroptilidae	4	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Iswaeon	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Lepidostoma	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Lymnaeidae	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Micropsectra	7	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-13	24-Aug-22	Naididae	36	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	Tubificinae
SS-13	24-Aug-22	Nectopsyche	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Nematoda	7	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Oecetis	28	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Ophiogomphus	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Optioservus	29	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Ostracoda	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Pagastia	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Parametriocnemus	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Phaenopsectra	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Physella	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Pisidiidae	53	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	Sphaeriidae
SS-13	24-Aug-22	Polypedilum	9	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Simulium	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Stratiomyidae	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Tanytarsus	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Thienemannimyia	9	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	Thienemannimyia Group
SS-13	24-Aug-22	Trepaxonemata	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Tricorythodes	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-13	24-Aug-22	Tvetenia bavarica	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	Tvetenia Bavarica Group

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-13	24-Aug-22	Zaitzevia	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC003	
SS-14	24-Aug-22	Acari	8	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Baetis tricaudatus	16	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	Baetis tricaudatus complex
SS-14	24-Aug-22	Brachycentrus occidentalis	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Copepoda	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Cryptochironomus	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Eukiefferiella brehmi	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	Eukiefferiella Brehmi Group
SS-14	24-Aug-22	Gomphidae	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Gyraulus	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Helicopsyche	227	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Hemerodromia	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Hydropsyche	4	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Hydroptila	16	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Hydroptilidae	6	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Iswaeon	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Lepidostoma	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Microcylloepus	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Micropsectra	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Microtendipes	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Naididae	11	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	Tubificinae

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-14	24-Aug-22	Nematoda	11	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Oecetis	12	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Ophiogomphus	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Optioservus	9	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Ostracoda	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Pagastia	7	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Parametriocnemus	10	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Paratendipes	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Pentaneura	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Phaenopsectra	7	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Physella	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Pisidiidae	84	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	Sphaeriidae
SS-14	24-Aug-22	Polypedilum	10	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Procladius	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Simulium	9	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Tanytarsus	9	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Thienemannimyia	15	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	Thienemannimyia Group
SS-14	24-Aug-22	Tricorythodes	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-14	24-Aug-22	Zaitzevia	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC004	
SS-15A-2	24-Aug-22	Acari	10	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-15A-2	24-Aug-22	Amiocentrus aspilus	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Atherix	5	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Baetis tricaudatus	24	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	Baetis tricaudatus complex
SS-15A-2	24-Aug-22	Brachycentrus occidentalis	3	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Ceratopogoninae	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Cricotopus (Isocladius)	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Cryptochironomus	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Eukiefferiella brehmi	3	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	Eukiefferiella Brehmi Group
SS-15A-2	24-Aug-22	Helicopsyche	91	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Hemerodromia	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Hydropsyche	48	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Hydropsychidae	4	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Hydroptila	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Hydroptilidae	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Iswaeon	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Lepidostoma	8	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Naididae	81	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	Tubificinae
SS-15A-2	24-Aug-22	Nematoda	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Oecetis	12	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Ophiogomphus	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-15A-2	24-Aug-22	Optioservus	114	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Ostracoda	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Pagastia	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Parametriocnemus	3	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Physella	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Pisidiidae	75	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	Sphaeriidae
SS-15A-2	24-Aug-22	Polypedilum	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Protoptila	2	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Simulium	34	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Trepaxonemata	5	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-15A-2	24-Aug-22	Tvetenia bavarica	1	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	Tvetenia Bavarica Group
SS-15A-2	24-Aug-22	Zaitzevia	9	COUNT	RHITHRON	10500-C	3/7/2023	CC22SBC005	
SS-16B	24-Aug-22	Acari	5	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Amiocentrus aspilus	3	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Apsectrotanypus	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	Radotanypus
SS-16B	24-Aug-22	Atherix	11	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Baetis tricaudatus	2	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	Baetis tricaudatus complex
SS-16B	24-Aug-22	Brachycentrus occidentalis	20	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Callibaetis	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Chironomini	4	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-16B	24-Aug-22	Cladocera	4	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Cleptelmis addenda	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Corixidae	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Gomphidae	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Gyraulus	5	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Helicopsyche	49	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Hydropsychidae	2	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Hydroptila	20	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Hydroptilidae	8	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Iswaeon	4	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Lepidostoma	65	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Lymnaeidae	5	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Micropsectra	5	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Naididae	106	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	Tubificinae
SS-16B	24-Aug-22	Oecetis	3	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Optioservus	102	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Ostracoda	2	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Parametriocnemus	5	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Phaenopsectra	15	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Physella	10	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-16B	24-Aug-22	Pisidiidae	24	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	Sphaeriidae
SS-16B	24-Aug-22	Psychoglypha	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Simulium	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Tanytarsus	14	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Tipula	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Tricorythodes	4	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-16B	24-Aug-22	Tvetenia bavarica	1	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	Tvetenia Bavarica Group
SS-16B	24-Aug-22	Zaitzevia	11	COUNT	RHITHRON	10500-C	3/3/2023	CC22SBC006	
SS-17D	24-Aug-22	Acari	4	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Brachycentrus occidentalis	129	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Callibaetis	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Cheumatopsyche	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Corynoneura	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Dasyhelea	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Gomphidae	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Helicopsyche	83	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Hydropsyche	18	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Hydroptila	8	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Hydroptilidae	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Iswaeon	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-17D	24-Aug-22	Lepidostoma	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Microtendipes	10	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Naididae	8	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	Tubificinae
SS-17D	24-Aug-22	Nematoda	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Neophylax rickeri	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Oecetis	8	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Optioservus	165	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Orthocladius	6	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Pagastia	9	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Pentaneura	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Phaenopsectra	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Physella	14	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Pisidiidae	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	Sphaeriidae
SS-17D	24-Aug-22	Polypedilum	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Procladius	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Protoptila	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Simulium	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Stagnicola	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Tabanidae	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Tanytarsus	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-17D	24-Aug-22	Thienemanniella	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Thienemannimyia	16	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	Thienemannimyia Group
SS-17D	24-Aug-22	Tipula	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Tricorythodes	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-17D	24-Aug-22	Tvetenia vitracies	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	Tvetenia tshernovskii
SS-17D	24-Aug-22	Zaitzevia	12	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC007	
SS-19	24-Aug-22	Acari	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Baetis	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Brachycentrus occidentalis	31	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Callibaetis	8	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Chironomini	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Chloroperlidae	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Corixidae	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Cricotopus (Cricotopus)	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Enchytraeidae	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Ephemerella	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Galba	6	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Helicopsyche	70	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Hyalella	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Hydropsyche	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-19	24-Aug-22	Hydroptila	17	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Hydroptilidae	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Isoperla	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Micropsectra	9	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Microtendipes	70	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Naididae	88	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	Tubificinae
SS-19	24-Aug-22	Nanocladius	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Nectoporus	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Nectopsyche	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Oecetis	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Optioservus	86	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Orthocladiinae	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	Cricotopus / Orthocladius
SS-19	24-Aug-22	Orthocladius	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Ostracoda	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Pagastia	4	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Parametriocnemus	5	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Phaenopsectra	17	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Physella	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Pisidiidae	9	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	Sphaeriidae
SS-19	24-Aug-22	Polypedilum	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	

Table H-1. Macroinvertebrate taxa counts in Streamside Tailings Operable Unit samples, 2022.

SS-19	24-Aug-22	Procladius	2	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Psectrocladius	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Stagnicola	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Tanypodinae	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Tanytarsini	1	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Tanytarsus	19	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Thienemannimyia	6	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	Thienemannimyia Group
SS-19	24-Aug-22	Tipula	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Tricorythodes	15	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	
SS-19	24-Aug-22	Tvetenia vitracies	3	COUNT	RHITHRON	10500-C	3/6/2023	CC22SBC008	Tvetenia tshernovskii