

**Final
Data Summary Report
2012
Environmental Monitoring
Section 35
Lewis and Clark County, Montana**

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ACRONYMS AND ABBREVIATIONS

BTV	Background Threshold Value
DEQ	Montana Department of Environmental Quality
DO	Dissolved Oxygen
DQO	Data Quality Objective
DSR	Data Summary Report
EPA	U.S. Environmental Protection Agency
famsl	Feet Above Mean Sea Level
mg/l	milligrams per liter
MS	Matrix Spike
MS/MSD	Matrix Spike/Matrix Spike Duplicate
ORP	Oxygen Reduction Potential
PAET	Probable Apparent Effects Threshold
Portage	Portage, Inc.
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RPD	Relative Percent Difference
RSL	Regional Screening Level
SAP	Sampling and Analysis Plan
SC	Specific Conductance
SEL	Severe Effects Level
SSL	Sediment Screening Level
TEL	Threshold Effects Level
TRL	Target Reporting Limit
TerraGraphics	TerraGraphics Environmental Engineering, Inc.
UBMC	Upper Blackfoot Mining Complex
USFS	U.S. Forest Service

1. INTRODUCTION

Portage, Inc. (Portage) has prepared this Data Summary Report (DSR) for the Montana Department of Environmental Quality (DEQ) under DEQ Contract Number 407025, Task Order 14. The DSR presents the data associated with field sampling activities at the Upper Blackfoot Mining Complex (UBMC) within the northeast half of Section 35, Township 15 North, Range 7 West, Lewis and Clark County, Montana (Section 35) during 2012.

1.1 Site Location and Background

The UMBC is a mining district located approximately 15 miles east of Lincoln, Montana that contains the headwaters of the Blackfoot River. The Blackfoot River, a major tributary river to the Clark Fork and Columbia River watersheds, forms its headwaters at the UMBC. Section 35 is within the UBMC and is located northeast of Highway 279 and south of Highway 200 in moderately sloping, partially-timbered terrain. As shown in Figure 1, Section 35 is approximately five miles west-southwest of the Mike Horse Dam. The U.S. Forest Service (USFS) has selected Section 35 as the repository site to permanently isolate mine waste from USFS lands at the UBMC. Other possible uses of Section 35 include: a) acquisition of borrow soil, b) mine waste staging, or c) a composting facility. Additional site background information (including information on the site environmental setting and the results of previous studies) may be found in the Sampling and Analysis Plan (SAP) for Section 35, Lewis and Clark County, Montana (Portage, 2012).

1.2 2012 Sampling Activities

The purpose of the 2012 sampling effort was to collect surface water and groundwater environmental data to monitor the water quality and quantity at Section 35 and document baseline hydrogeologic and environmental conditions. In 2012, sediment samples were also collected at site surface water monitoring stations. Sampling at Section 35 was coordinated with sampling at other portions of the UBMC (performed under a separate DEQ Task Order) and the results of that UBMC sampling is detailed in a separate DSR. At Section 35, four quarters of data were collected, the first quarter representing spring/pre-high flow conditions, the second representing high flow conditions, the third representing fall conditions, and the fourth representing winter conditions. Portage staff were responsible for all sampling activities summarized in this DSR, and Energy Laboratories, Inc. was the contract laboratory responsible for analysis of all project samples.

1.3 Report Organization

The contents of this DSR are briefly described below:

- Section 2 presents surface water and groundwater sampling methods.
- Section 3 presents the data quality assessment, including data validation results.
- Section 4 presents analytical results, comparisons of analytical results to applicable standards, groundwater elevation data, surface water discharge data, and discussion of results.
- Conclusions are discussed in Section 5 and references are cited in Section 6.

- Appendix A contains the laboratory data reports.
- Appendix B contains copies of the data validation reports.
- Appendix C is copies of the field notes and logs.
- Appendix D contains the photographs.
- Appendix E contains data logger graphical output.
- Appendix F is copies of calibration certifications.
- Appendix G is a copy of the DEQ Purge Water Disposal Flowchart.
- Appendix H contains an electronic copy of the DSR and data logger electronic files on compact disk.

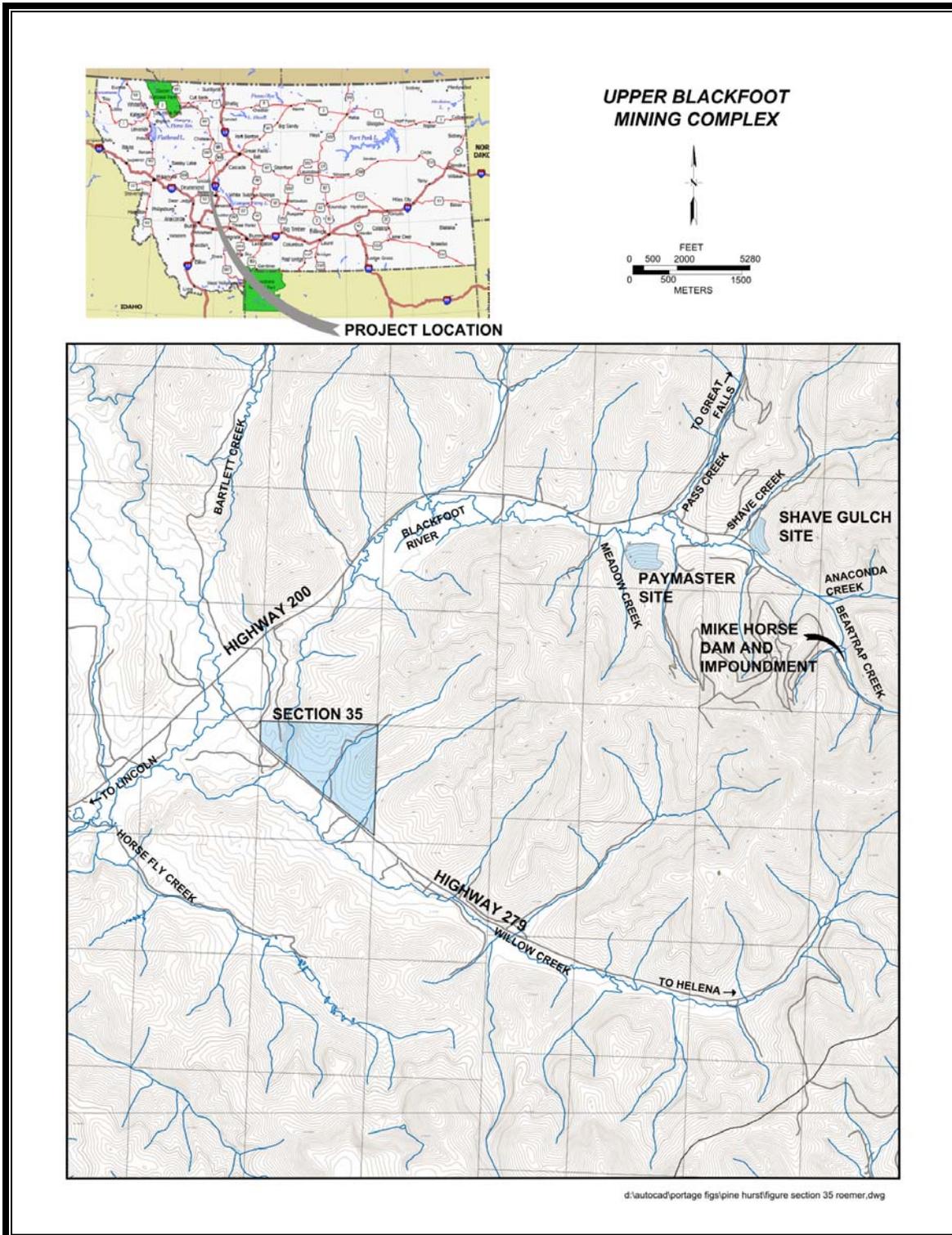


Figure 1. Section 35 general location map



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2. SAMPLING AND ANALYSIS PROCEDURES

2012 Section 35 sampling consisted of groundwater and surface water sampling at the locations shown on Figure 2. Groundwater, surface water, and sediment samples were analyzed at Energy Laboratories, Inc. in Helena, Montana for total recoverable metals in groundwater and surface water, dissolved metals in groundwater (and for aluminum in surface water), physiochemical properties, common anions, and common cations. The analytical results were compared to the applicable standards in *Circular DEQ-7, Montana Numeric Water Quality Standards* (DEQ, 2012).

Sediment sampling results are screened against the ecological risk based screening values from the *Final Remedial Investigation Report* for the UBMC (TetraTech, 2013). The sediment screening levels (SSL's) include the threshold effects level (TEL), the probable apparent effects threshold (PAET), and the severe effects level (SEL). SSL's represent contaminant levels at which adverse effects to benthic and invertebrate freshwater species may occur. Aluminum, cadmium, copper and zinc sediment sample results are also screened against United States Environmental Protection Agency (EPA) human health regional screening levels (RSLs) for residential use (EPA, 2012). Arsenic, iron, lead, and manganese sediment sample results are screened against the UBMC site specific background threshold values (BTVs)

Other sampling activities at Section 35 include measuring groundwater elevation with a hand held electronic water meter and dedicated continuous data loggers, and measuring surface water flows. All field activities were performed in accordance with the project SAP. Section 4 of the SAP provides additional sampling objectives, methods, and procedural detail.

2.1 Groundwater Sampling and Analysis

Six groundwater monitoring wells were installed at Section 35 in 2010 for the purpose of establishing baseline groundwater quality at the site. Table 1 summarizes the groundwater quality monitoring stations. The locations of each station are shown on Figure 2.

Purging and sampling of the groundwater monitoring wells was performed with a non-dedicated bladder pump suitable for low-flow sampling in accordance with DEQ's low flow sampling guidelines (DEQ, 2005). During purging, the field water quality parameters specific conductance (SC), temperature, pH, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured with field instrumentation. Prior to well purging, the static water level and total depth of each well were measured with a water level meter. All field measurements were recorded in field logbooks and field forms, copies of which are provided in Appendix C.

2.2 Groundwater Elevation Data

Groundwater elevation data was collected from site monitoring wells during each sampling event using a water level meter to record static water levels in the well to the nearest 1/100th of a foot. Several piezometers are also installed at the site for the purpose of monitoring groundwater elevation. In site wells and some piezometers, electronic down-hole instrumentation is installed for the purpose of continuously monitoring changes in groundwater elevation. This data was collected during each sampling event and provided to DEQ's project engineer for analysis. Groundwater elevation data may be used to develop an understanding of seasonal groundwater elevation and flow regimes at the site. Table 1 summarizes the groundwater elevation monitoring stations. The locations of each station are shown on Figure 2. The electronic data files for wells and piezometers equipped with continuous data loggers is attached in Appendix H. Appendix E includes a graphical representation of the data.

2.3 Surface Water Sampling and Analysis

Five surface water stations were monitored in 2012 for the purpose of establishing baseline surface water quality at the site. The surface water stations are located at the upgradient and downgradient Section 35 property boundaries on the Blackfoot River, Nora Creek, and mid-reach on an unnamed tributary to Willow Creek. Surface water samples were collected using the direct method to collect water samples directly into sample containers. The field water quality parameters, SC, pH, temperature, ORP, and DO were measured at each sampling location during each sampling event. Table 1 summarizes the surface water quality monitoring stations. The locations of each station are shown on Figure 2. All field measurements were recorded in field logbooks and field forms, copies of which are provided in Appendix C.

2.4 Sediment Sampling and Analysis

At each surface water monitoring station, a sediment sample was collected for metals analysis using grab sample techniques with disposable scoops. The sediment samples were all streambed sediments collected from the 0 to 2 inch depth interval.

2.5 Surface Water Flow Measurement

In-stream measurements were collected during surface water sampling events for the purpose of calculating flow at each monitoring station. The area-velocity method using an electronic hand-held velocity meter and wading staff was used to collect in-stream data. Using the 60% of depth method wading technique, velocity profiles were measured at each station with the hand held equipment. Velocity profiles and the measured cross sectional area of the stream were then used to calculate an instantaneous discharge flow rate at the time of sampling.

2.6 Investigation Derived Waste

Sampling effort investigation derived waste (IDW) included purge water from groundwater well pumping and disposable sampling supplies (filters, scoops, and wipes). Purge water was disposed of according to DEQ's Purge Water Disposal Flowchart (attached as Appendix G). Historically groundwater monitoring wells in the UBMC, including wells within Section 35, have not encountered water with characteristics approaching those of a RCRA hazardous waste (with the exception of wells UMHMW-1S and UMHMW-2S, both of which are located near the Mike Horse Mine and were not part of this sampling effort). Based on this information, development water was land applied in the vicinity of the well in a manner that did not cause a discharge to surface water. Disposable sampling supplies were bagged and disposed of as municipal waste.

2.7 Deviations from the SAP

Deviations from the SAP occurred when conditions in the field prohibited sampling or required a change in sampling procedures. As discussed in Section 3.1.3, Completeness, there were five instances in which monitoring wells were dry or did not contain enough water to sample, and the scheduled samples could not be collected. During the 2012 sampling effort, monitoring well S35-MW-01 was artesian during the second quarter sampling event. Because of the artesian flow, a grab sample of the well water was collected directly from the flowing wellhead rather than using the bladder pump for sample collection. Dissolved metals sample filtering was accomplished with a peristaltic pump.

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It was discovered during the first quarter sampling event that the inner polyvinyl chloride (PVC) well casing at monitoring well S35-MW-01 was partially collapsed. This was likely caused by water trapped between the steel outer casing and the PVC inner casing which froze solid during the 2011/2012 winter. No other damage to the well was observed and representative samples may still be collected.

This partial collapse of the inner casing blocked passage of the bladder pump and a peristaltic pump was used to sample the well during the first, third, and fourth quarter sampling events. A small hole was drilled at the bottom of the steel outer casing, allowing water to drain from the annulus prior to the 2012/2013 winter.

The SAP for Section 35 specified duplicate sampling of well S35-MW-04. Because of concerns about this wells productivity, duplicate sampling was switched to well S35-MW-03 for the third and fourth quarter sampling events. There were no other deviations from the SAP during the 2012 sampling.

Table 1. Section 35 groundwater and surface water samples and piezometer data collection points

Station ID	Laboratory Analyses	Sample Location
Groundwater		
S35-MW-01	¹ Dissolved metals, cations, chloride, sulfate, acidity, total alkalinity, hardness, carbonate, bicarbonate, pH, conductivity, total dissolved solids, total suspended solids	East of Nora Creek
S35-MW-02	Same as above	Ridge east of Nora Creek
S35-MW-03	Same as above	West of Nora Creek near Highway 279
S35-MW-04	Same as above	East of Blackfoot River
S35-MW-05	Same as above	East of Nora Creek near Highway 279
S35-MW-06	Same as above	Near top of ridge east of Blackfoot River
S35-MW-07	Same as above	Duplicate of S35MW04
S35-MW-08	Same as above	Blank
S35-MW-09	Same as above	Rinsate of sampling equipment
S35-PZ-04	None (static water level only)	West of potential wetland
S35-PZ-05	None (transducer data only)	East of potential wetland
S35-PZ-10	None (static water level only)	Northeast corner of Section 35
S35-PZ-22	None (static water level only)	Ridge east of Nora Creek
Surface Water		
S35-SW-01	² Dissolved metals, ¹ total metals, cations, chloride, sulfate, acidity, total alkalinity, hardness, carbonate, bicarbonate, pH, conductivity, total dissolved solids, total suspended solids	Nora Creek. Upstream of wetland and south of access road
S35-SW-02	Same as above	Nora Creek. Near NE corner of Section 35. Upstream of S35SW02
S35-SW-03	Same as above	Blackfoot River. Western portion of Section 35. Upstream of S35SW04.

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Table 1. Continued

Station ID	Laboratory Analyses	Sample Location
S35-SW-04	Same as above	Blackfoot River. Immediately upstream crossing of Highway 279. Downstream from S35SW03.
S35-SW-05	Same as above	Unnamed intermittent stream. Upstream from crossing Highway 279.
S35-SW-06	Same as above	Duplicate of S35SW01
S35-SW-07	Same as above	Rinsate of sampling equipment
Sediment		
S35-SD-01	¹ Total metals	Nora Creek. Upstream of wetland and south of access road
S35-SD-02	Same as above	Nora Creek. Near NE corner of Section 35. Upstream of S35SW02
S35-SD-03	Same as above	Blackfoot River. Western portion of Section 35. Upstream of S35SW04.
S35-SD-04	Same as above	Blackfoot River. Immediately upstream crossing of Highway 279. Downstream from S35SW03.
S35-SD-05	Same as above	Unnamed intermittent stream. Upstream from crossing Highway 279.
S35-SD-06	Same as above	Duplicate of S35SD01
¹ Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc ² Aluminum		

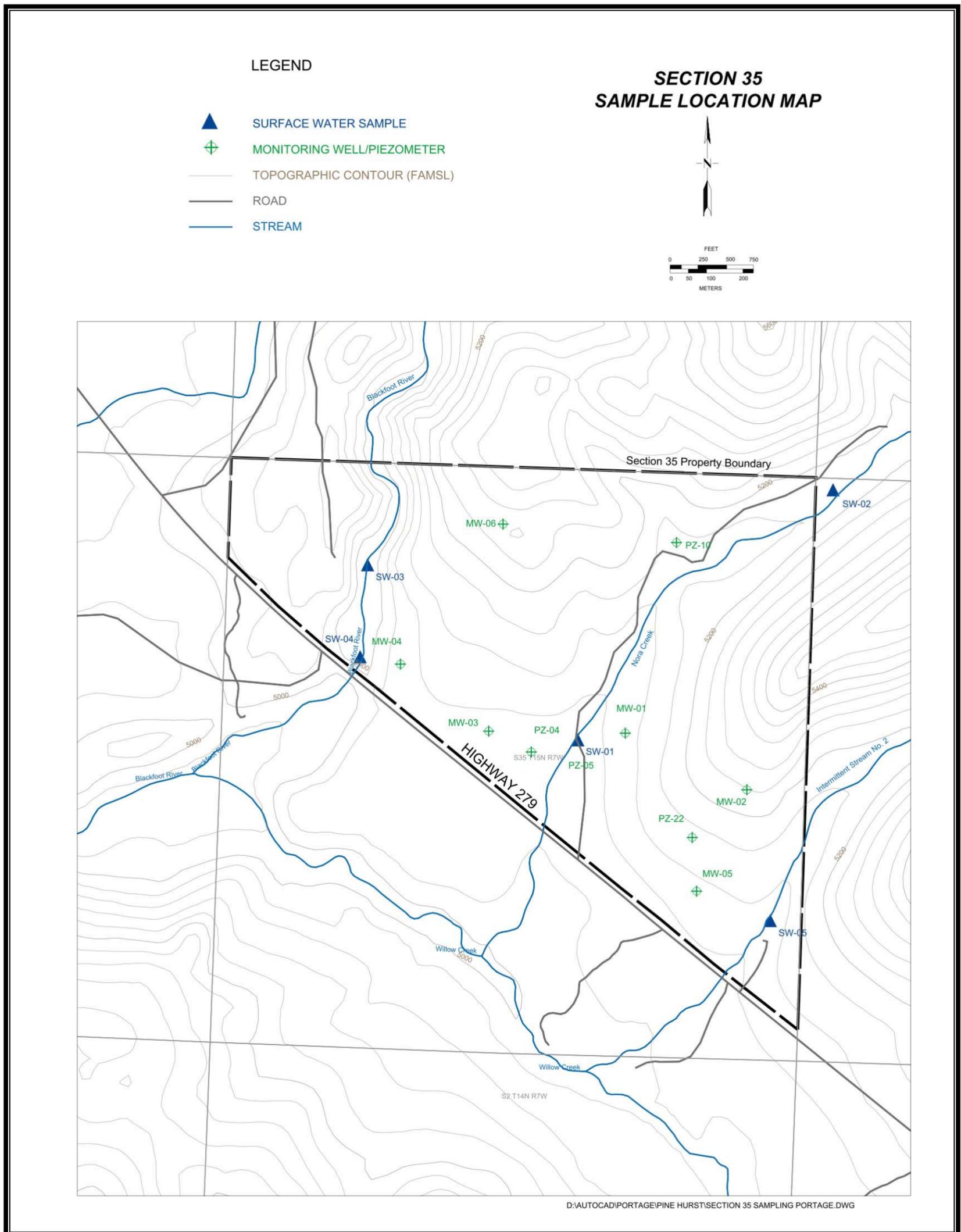


Figure 2. Section 35 monitoring locations

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3. DATA QUALITY ASSESSMENT

Section 4 of the Section 35 SAP presents the Quality Assurance Project Plan (QAPP) for 2012 field activities. The QAPP defines the data quality and QA objectives, and requirements for data validation. The data quality objectives (DQOs) are qualitative and quantitative statements that specify the quality of the data required for supporting sampling activities. The DQOs were prepared using EPA guidance for the DQO process (EPA 2006) and are summarized in Table 2. The QAPP also defines quantitative QA objectives that are evaluated against the laboratory data presented in this DSR. Quantitative QA objectives include calculated limits of control for data completeness, accuracy, and precision. Specific target reporting limits (TRLs) must also be achieved by the contract laboratory. The 2012 sampling data has also been subjected to a formal data validation process, including a review of laboratory performance criteria and sample-specific criteria.

Table 2. Section 35 summary of data quality objectives

Analysis	Location	Analysis Method	¹ Analytical Support Level	Media	Data Use
Metals	Laboratory	E200.2, E200.7, E200.8	III	GW/SW	SC, EA, ED
TAL Metals	Laboratory	SW3050 B	III	SD	SC, RA, EA, ED
Acidity	Laboratory	A2310B	III	GW/SW	SC, EA, ED
Alkalinity, total as CaCO ₃	Laboratory	A2320B	III	GW/SW	SC, EA, ED
Hardness, total as CaCO ₃	Laboratory	A2340B	III	GW/SW	SC, EA, ED
Chloride	Laboratory	E300.0	III	GW/SW	SC, EA, ED
Carbonate	Laboratory	A2320B	III	GW/SW	SC, EA, ED
Bicarbonate	Laboratory	A2320B	III	GW/SW	SC, EA, ED
Sulfate	Laboratory	EPA 300.0	III	GW/SW	SC, EA, ED
Total Dissolved Solids	Laboratory	A2540D	III	GW/SW	SC, EA, ED
Total Suspended Solids	Laboratory	A2540C	III	GW/SW	SC, EA, ED
pH	Laboratory	A4500-HB	III	GW/SW	SC, EA, ED
Conductivity	Laboratory	A2510B	III	GW/SW	SC, EA, ED
EA = evaluation of alternatives ED = engineering design SC = site characterization SD = sediment		GW = monitoring well SW = surface water ¹ Equivalent to DEQ requirements (DEQ, 2010)			

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3.1 Quality Assurance Objectives

The overall QA objective is to produce well-documented data of known quality. To meet this objective, quantitative goals for data precision, accuracy, and completeness; qualitative goals for representativeness and comparability; and TRLs for the analytical methods have been established in the project QAPP. The evaluation of quantitative and qualitative QA objectives is presented below. Table 3 summarizes the precision, accuracy, and completeness results.

3.1.1 Precision

Precision and accuracy are indicators of data quality. Generally, precision is a measure of the variability of a group of measurements compared to their mean value. Laboratory analytical precision is estimated by calculating the relative percent difference (RPD) between the analytical results from the laboratory matrix spike (MS) and matrix spike duplicate (MSD) samples and the field duplicate samples. There is no extra sample volume required for the laboratory to perform MS/MSD sample analysis.

The RPD (precision) between the analyte levels measured in the MS and MSD sample (or sample duplicates) is calculated using Equation (1).

$$RPD = \frac{MS - MSD}{0.5(MS + MSD)} \times 100\% \quad (1)$$

Where:

RPD = relative percent difference

MS = matrix spike

MSD = matrix spike duplicate.

The goal established for precision in the project QAPP is <20% RPD for metals and common anions (chloride and sulfate) in water and <35% RPD for metals analysis in sediment. For laboratory MS/MSD analysis the overall project RPD is 95.03%, resulting in 95.03% precision. For field duplicate samples there were 236 duplicate data points analyzed for the four quarters of sampling in 2012. Of the 236 duplicate results, 3 (1.3% of the duplicate results) duplicate points exhibited RPDs outside the prescribed acceptance criteria, and 233 (98.7% of the duplicate results) exhibited RPDs with the prescribed acceptance criteria resulting in 98.7% precision.

3.1.2 Accuracy

Accuracy is a measure of the bias in a measurement system. Analytical accuracy for laboratory data is assessed by evaluating matrix spike sample percent recovery, instrument calibration data, and laboratory control sample results.

$$\%R = \frac{(C_j - C_o)}{C_t} \times 100\% \quad (2)$$

Where:

%R = percent recovery

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C_j = measured concentration in spiked sample aliquot

C_o = measured concentration in unspiked sample aliquot

C_t = actual concentration of spike added.

Accuracy was estimated for site analytical data by calculating the percent recovery of laboratory MS samples using Equation (2). By this metric, the laboratory data is 100% accurate. Accuracy was also calculated for the validated laboratory data which includes data flagged because of missed holding times and poor MS/MSD recoveries. There were 1994 data points associated with the four quarters of sampling in 2012. Of the 1994 data points: 180 (9.0% of the total) were qualified either with a “J-,” “J+,” “J”, or “UJ” validation flag due to missed holding times or poor MS/MSD recoveries, and 1814 (90.9% of the total) were assessed and left unqualified resulting in 90.9% accuracy.

3.1.3 Completeness

Completeness is defined as an assessment of the amount of valid analytical data obtained from a measurement system compared to the amount of analytical data needed to achieve a particular statistical level of confidence. The percent completeness is calculated by dividing the number of samples with acceptable data by the total number of samples planned to be collected, and multiplying the result by 100. Equation (3) is used to determine completeness:

$$\%C = (V/T) \times 100\% \tag{3}$$

Where:

$\%C$ = percent completeness

V = number of measurements judged valid

T = total number of measurements.

For 2012 Section 35 monitoring, the QA objective for sample collection and laboratory data degree of completeness was >90%. A total of 58 water samples, 210 field water quality measurements, and 40 data logger downloads/static water measurements were scheduled for 2012 field sampling. Site monitoring wells were dry in four instances, reducing the total number of water samples collected to 54. During scheduled sampling and data collection, there were 20 instances of scheduled field water quality parameters not being collected because of dry monitoring wells which reduced the total number of field parameters collected to 190. This results in a sample collection completeness of 93.1% and a field parameter collection completeness of 90.48%. All scheduled data logger downloads/static water measurements were collected resulting in a water level data completeness of 100%. The combined completeness of the field effort (samples, field parameters, and water level measurements) is 92.2%. Because all project analytical data was deemed useable after data validation, the completeness of the laboratory data packages is 100%.

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Table 3. Precision, accuracy, completeness summary

	Lab MS/MSD RPD	Field duplicates	All lab results	All field sampling/data collection
Precision	95.03%	98.7%	----	----
Accuracy	100%	----	90.9%	----
Completeness	----	----	100%	92.2%

3.1.4 Target Reporting Limits

The target reporting limits (TRLs) for water analyses are listed in Table 4. All TRLs for water analysis are DEQ-7 required reporting values and all TRLs for sediment analysis are the standard laboratory reporting limits. The TRL is defined as the lowest concentration that needs to be reported for undiluted samples to obtain project objectives. For Section 35, 2012 sampling, the contract laboratory achieved all project TRLs.

Table 4. Section 35 target reporting limits for water analysis

Analyte	Analytical Method	¹ Reporting Limit Water (mg/L)	² Reporting Limit Sediment (mg/kg)
Aluminum	EPA 200.8	0.03	0.1
Arsenic	EPA 200.8	0.003	0.02
Cadmium	EPA 200.8	0.00008	0.1
Copper	EPA 200.8	0.001	0.1
Iron	EPA 200.8	0.05	1.0
Lead	EPA 200.8	0.0005	0.1
Manganese	EPA 200.8	0.005	0.1
Zinc	EPA 200.8	0.01	0.1

¹DEQ-7 required reporting value except for iron and manganese which are the laboratory reporting limit
²Laboratory reporting limit

3.1.5 Qualitative QA Objectives

Qualitative QA objectives include sample representativeness and comparability. Representativeness is the degree to which sample data represent the site conditions and comparability expresses the confidence with which one data set can be compared to another. All 2012 Section 35 sampling locations were selected to obtain representative water samples and proper sample collection, handling, and analysis procedures were utilized to ensure comparability. Field blanks performed in the field were analyzed by the contract laboratory and the results verified that cross contamination from laboratory supplied deionized water, sample containers, and laboratory handling procedures did not

impact the analytical results. Rinsate blanks performed in the field were also analyzed by the contract laboratory and the results verified that cross contamination from sampling equipment did not impact the analytical results.

3.2 Data Validation

Data validation was performed according to the *Final EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (EPA 2004); EPA Publication SW-846, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (EPA 2008a); and *EPA Guidance on Environmental Data Verification and Data Validation* (EPA 2002a). The data validation reports also conform to DEQ Data Validation Guidelines (DEQ, 2010).

Data validation included verification of the following:

- Compliance with the SAP/QAPP.
- Proper sample collection and handling procedures.
- Holding times.
- Field QC results.
- Instrument calibration verification.
- Laboratory blank analysis.
- Detection limits.
- Laboratory duplicates.
- MS/MSD percent recoveries and relative percent differences.
- Surrogate percent recoveries.
- Data, event, completeness and format.
- Data qualifiers assigned by the laboratory.

In summary, the validation of laboratory data packages did not result in the rejection of any project data, but did result in additional data flags and qualifiers as described below. The complete data validation reports for individual laboratory data packages are attached in in Appendix B.

Nearly all 2012 pH sample results have been qualified with a “J-“ validation flag to denote the reported results are estimates with a low bias due to exceeded holding times. The pH holding time is 24-hours and was exceeded because of the remoteness of the site in relation to the contract laboratory and the time it takes to transport samples from the field. Field pH measurements were collected at the time of sample collection to supplement the laboratory data.

3.2.1 First Quarter Summary

Three (3) sample delivery groups (SDGs) were analyzed in the March 2012 sampling effort: H12030404, H12030390, and H12030340. Seven (7) surface water and seven (7) groundwater, and six (6) sediment samples were collected on 03/26/12, 03/27/12, 03/28/12, and 03/29/12. The surface water

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and groundwater samples were analyzed for pH, conductivity, TSS, TDS, alkalinity (total alkalinity, bicarbonate, and carbonate), chloride, sulfate, hardness, dissolved metals, and total metals. The sediment samples were analyzed for total metals.

All associated pH sample results have been qualified with a “J-“ validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

All groundwater conductivity sample have been qualified with a “J“ validation flag to denote the reported results are estimates due to poor MSD duplicate precision.

The chloride result for S35-SW-05 and the sulfate results for samples S35-SW-05, S35-SW-01, S35-SW-06, and S35-SW-02 have been qualified with a “J-“ validation flag to denote the reported results are estimates with a low bias due to low MS/MSD recovery. The remaining chloride and sulfate surface water sample results have been qualified with “UJ” validation flag to denote the reported concentrations are non-detect, and the reported concentration is an estimate due to low MS/MSD recoveries.

The copper, lead, manganese, and zinc sediment sample have been qualified with a “J“ validation flag to denote the reported results are estimates due to low MS/MSD recoveries and poor MSD duplicate precision.

A total of sixty one (61) sample data points have been qualified during data validation. Of the qualified sample data points: Thirty two (32) were assessed and qualified with a “J” validation flag, and twenty four (24) were assessed and qualified with a “J-“ validation flag, and five (5) were assessed and qualified with a “UJ” validation flag. The sixty one (61) field sample data points that have been qualified with a “UJ,” “J,” or a “J-“ validation flag are considered to be screening quality data. No data was rejected or deemed unusable in this validation effort.

3.2.2 Second Quarter Summary

Three (3) SDGs were analyzed in the May 2012 sampling effort: H12050148, H12050151, and H12050224. Seven (7) surface water, eight (8) groundwater, and six (6) sediment samples were collected on 05/08/12 and 05/10/12. The surface water and groundwater samples were analyzed for pH, conductivity, TSS, TDS, alkalinity (total alkalinity, bicarbonate, and carbonate), chloride, sulfate, hardness, dissolved metals, and total metals. The sediment samples were analyzed for total metals.

All associated pH sample results, excluding S35-SW-06, S35-SW-02, and S35-SW-05, have been qualified with a “J-“ validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

All total recoverable lead and total recoverable manganese sediment sample results have been qualified with a “J“ validation flag to denote the reported results are estimates due to poor field duplicate precision.

A total of twenty four (24) sample data points have been qualified during data validation. Of the qualified sample data points: Twelve (12) were assessed and qualified with a “J-“ validation flag and twelve (12) were assessed and qualified with a “J” validation flag. The twenty four (24) field sample data points that have been qualified with a “J,” or a “J-“ validation flag are considered to be screening quality data. No data was rejected or deemed unusable in this validation

3.2.3 Third Quarter Summary

Two (2) SDGs were analyzed in the October 2012 sampling effort: H12100142 and H12100097. Seven (7) surface water, eight (8) groundwater, and six (6) sediment samples were collected on 10/03/12 and 10/05/12. The surface water and groundwater samples were analyzed for pH, conductivity, TSS, TDS, alkalinity (total alkalinity, bicarbonate, and carbonate), chloride, sulfate, hardness, dissolved metals, and total metals. The sediment samples were analyzed for total metals.

All associated pH sample results, excluding S35-SW-02 and S35-SW-05, have been qualified with a “J-“ validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

The total recoverable arsenic and total recoverable lead results for sample S35-SD-02 have been qualified with a “UJ” validation flag to denote the reported concentrations are non-detect, and the reported concentration is an estimate due to low MS/MSD recoveries. The remaining total recoverable arsenic and total recoverable lead sediment sample results have been qualified with a “J-“ validation flag to denote the reported results are estimates with a low bias due to low MS/MSD recovery.

All total recoverable manganese and total recoverable zinc sediment sample results have been qualified with a “J-“ validation flag to denote the reported results are estimates with a low bias due to low MS/MSD recovery.

A total of thirty seven (37) sample data points have been qualified during data validation. Of the qualified sample data points: Two (2) were assessed and qualified with a “UJ” validation flag, and thirty five(35) were assessed and qualified with a “J-“ validation flag. The thirty seven (37) field sample data points that have been qualified with a “J-“ or a “UJ” validation flag are considered to be screening quality data. No data was rejected or deemed unusable in this validation

3.2.4 Fourth Quarter Summary

Three (3) SDGs were analyzed in the December 2012 sampling effort: H12120202, H12120182, and H12120240. Seven (7) surface water and seven (7) groundwater, and six (6) sediment samples were collected on 12/11/12 and 12/13/12. The surface water and groundwater samples were analyzed for pH, conductivity, TSS, TDS, alkalinity (total alkalinity, bicarbonate, and carbonate), chloride, sulfate, hardness, dissolved metals, and total metals. The sediment samples were analyzed for total metals.

All associated pH sample results have been qualified with a “J-“ validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

The chloride results for samples S35-SW-04 and S35-SW-03 have been qualified with “J-“ flag to denote the reported results are estimates with a low bias due to low MS recovery. The remaining chloride surface water sample results have been qualified with a “UJ” validation flag to denote the reported concentrations are non-detect, and the reported concentration is an estimate due to low MS recovery.

The total recoverable manganese sediment sample results have been qualified with a “J“ validation flag to denote the reported results are estimates due to high MS recovery, low MSD recovery, and poor duplicate precision.

The total recoverable zinc sediment sample results have been qualified with a “J+” validation flag



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to denote the reported results are estimates with a high bias due to high MS recovery.

A total of thirty three (33) sample data points have been qualified during data validation. Of the qualified sample data points: Five (5) were assessed and qualified with a “UJ” validation flag, six (6) were assessed and qualified with a “J” validation flag, six (6) were assessed and qualified with a “J+” validation flag, and sixteen were assessed and qualified with a “J-” validation flag. The thirty three (33) field sample data points that have been qualified with a “UJ,” “J,” “J+,” or a “J-“ validation flag are considered to be screening quality data. No data was rejected or deemed unusable in this validation effort.

4. ANALYTICAL RESULTS

Tabular analytical result summaries and summary discussion are provided in the following sections. All analytical data was compared to the applicable standards in DEQ-7. Groundwater sample results are compared to the human health standards while surface water sampling results are compared to both human health and aquatic life standards. Sediment data is compared to the human health risk screening values (RSLs and BTVs) and the UBMC ecological SSLs found in the *Final Remedial Investigation Report for the UBMC* (Tetra Tech, 2013). The raw analytical data packages are provided in Appendix A.

4.1 Groundwater

The dissolved metals analyzed and compared to human health standards for 2012 Section 35 monitoring wells are: aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc. The cations included are: calcium, magnesium, potassium, and sodium. The dissolved metals sample is passed through a filter designed to remove particles greater than 0.45 micrometers in diameter at the time of sample collection. The Section 35 groundwater analysis results for metals are shown in Tables 5 and 6.

As shown in Table 5, there were no exceedances of human health standards at Section 35 groundwater monitoring wells. Compared to 2011, detections of iron and manganese were fewer and would not exceed the DEQ-7 human health standard that applied in 2011 (the 2012 revision of DEQ-7 removed the iron and manganese human health standards.) Metals detected in Section 35 monitoring wells at concentration below the DEQ-7 standards included aluminum, cadmium, and copper.

Table 6 shows the analytical results for physiochemical properties, common anions, and common cations. The only applicable standard for human health found in DEQ-7 for these properties is for pH. As shown in the table, pH values were all within an acceptable range for human health. Table 7 shows field water quality measurements recorded during groundwater sampling. Field water quality measurements are not compared to standards (DEQ-7 standard for laboratory pH only), but provide additional information on groundwater quality.

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Table 5. Section 35 groundwater (dissolved metals, mg/l)

Section 35 Groundwater (dissolved metals, mg/l)									
Sample ID	Collection Date	Aluminum	Arsenic	Cadmium	Copper	Iron	Lead	Manganese	Zinc
	*Standard	----	0.010	0.005	1.3	----	0.015	----	2
S35-MW-01	3/30/2012	0.04	<0.003	<0.00008	0.002	<0.05	<0.0005	<0.005	<0.01
S35-MW-01	5/10/2012	<0.03	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-01	10/5/2012	<0.03	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-01	12/13/2012	<0.03	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-02	5/10/2012	<0.03	<0.003	0.00046	0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-02	10/5/2012	<0.03	<0.003	0.00015	0.001	<0.05	<0.0005	0.009	<0.01
S35-MW-03	3/28/2012	<0.03	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-03	5/10/2012	0.10	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-03	10/5/2012	0.06	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-07	10/5/2012	0.06	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-03	12/13/2012	0.05	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-07	12/13/2012	0.05	<0.003	<0.00008	0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-04	3/28/2012	0.05	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-07	3/28/2012	0.06	<0.003	<0.00008	<0.001	0.05	<0.0005	<0.005	<0.01
S35-MW-04	5/10/2012	<0.03	<0.003	<0.00008	0.002	<0.05	<0.0005	<0.005	<0.01
S35-MW-07	5/10/2012	<0.03	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-04	10/5/2012	<0.03	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-04	12/13/2012	0.03	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-06	3/28/2012	<0.03	<0.003	<0.00008	0.002	<0.05	<0.0005	<0.005	<0.01
S35-MW-06	5/10/2012	<0.03	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-06	10/5/2012	<0.03	<0.003	<0.00008	<0.001	<0.05	<0.0005	<0.005	<0.01
S35-MW-06	12/14/2012	<0.03	<0.003	<0.00008	0.001	<0.05	<0.0005	<0.005	<0.01

Note: < Indicates the concentration is less than the reporting limit
Exceeds standard
 * Montana Numeric Water Quality Standards Circular 7, 2012, human health standard
 Groundwater standards are for dissolved metals only
 ---- No standard
 Duplicate of S35-MW-04
 Duplicate of S35-MW-03
 mg/l = milligrams per liter

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Table 6. Section 35 groundwater (physiochemical, anions, cations)

Section 35 Groundwater																	
Sample ID	Collection Date	Physiochemical					Common Anions (mg/l)					Common Cations (mg/l)					
		pH		Conductivity, umhos	Hardness	Total Susp. Solids, mg/l	Total Diss. Solids, mg/L	Alkalinity	Bicarbonate	Carbonate	Chloride	Sulfate	Calcium (D)	Magnesium (D)	Potassium (D)	Sodium (D)	
	*Standard	6.5 - 8.5		----	----	----	----	----	----	----	----	----	----	----	----	----	
S35-MW-01	3/30/2012	7.4	J-	296	J	159	64	174	150	190	<4	<1	5	34	<0.005	1	2
S35-MW-01	5/10/2012	7.2	J-	302		148	<10	168	160	200	<4	<1	7	33	18	1	2
S35-MW-01	10/5/2012	7.5	J-	294		153	<10	157	160	190	<4	<1	6	32	18	1	2
S35-MW-01	12/13/2012	7.4	J-	295		148	<10	141	160	190	<4	<1	8	32	17	1	2
S35-MW-02	5/10/2012	7.2	J-	439		224	22	264	250	300	<4	2	7	69	15	1	4
S35-MW-02	10/5/2012	7.5	J-	369		190	64	208	200	240	<4	1	7	53	14	1	4
S35-MW-03	3/28/2012	7.7	J-	356	J	154	136	208	180	220	<4	1	4	44	10	2	11
S35-MW-03	5/10/2012	7.5	J-	336		150	86	208	190	230	<4	<1	5	45	11	2	11
S35-MW-03	10/5/2012	7.7	J-	324		151	89	187	170	210	<4	<1	4	43	10	2	11
S35-MW-07	10/5/2012	7.7	J-	326		151	84	180	170	210	<4	<1	4	44	10	2	11
S35-MW-03	12/13/2012	7.6	J-	329		149	70	190	180	210	<4	<1	6	43	10	2	10
S35-MW-07	12/13/2012	7.7	J-	329		147	62	193	180	210	4	<1	6	42	10	1	10
S35-MW-04	3/28/2012	7.6	J-	357	J	167	470	198	180	220	<4	<1	1	50	10	3	2
S35-MW-07	3/28/2012	7.7	J-	356	J	173	470	194	180	220	<4	<1	1	51	11	3	2
S35-MW-04	5/10/2012	7.4	J-	328		159	138	200	190	230	<4	<1	2	49	11	2	2
S35-MW-07	5/10/2012	7.4	J-	326		161	136	201	190	230	<4	<1	2	50	10	2	3
S35-MW-04	10/5/2012	7.5	J-	333		171	30	192	180	220	<4	<1	2	51	11	3	2
S35-MW-04	12/13/2012	7.6	J-	354		174	185	203	200	240	<4	<1	3	55	12	3	3
S35-MW-06	3/28/2012	7.5	J-	401	J	193	332	216	200	250	<4	<1	1	51	16	1	5
S35-MW-06	5/10/2012	7.1	J-	354		170	202	212	200	240	<4	<1	1	49	14	<1	5
S35-MW-06	10/5/2012	7.4	J-	368		186	422	189	200	250	<4	<1	<1	49	16	2	5
S35-MW-06	12/14/2012	7.4	J-	371		181	166	195	210	260	<4	<1	2	56	16	1	4

Note:

- < Indicates the concentration is less than the reporting limit
- Exceeds standard**
- * Montana Numeric Water Quality Standards Circular 7, 2012, human health standard
- No standard
- Duplicate of S35-MW-04
- Duplicate of S35-MW-03
- mg/l = milligrams per liter
- TR = Total Recoverable
- D = Dissolved
- umhos = micromhos
- J- validation flag denotes the reported results are estimates with a low bias due to exceeded holding times
- J validation flag denotes the reported results are estimates due to poor MSD duplicate precision

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Table 7. Section 35 groundwater quality field measurements

Section 35 Ground Water Field Parameters							
<i>Sample ID</i>	<i>Collection Date</i>	<i>pH</i>	<i>Conductivity, umhos</i>	<i>Temperature, °C</i>	<i>Dissolved Oxygen, % Saturation</i>	<i>Dissolved Oxygen, mg/l</i>	<i>Oxidation Reduction Potential, mv</i>
S35-MW-01	3/30/2012	7.46	301	6.83	66	8.08	205.5
S35-MW-01	5/10/2012	7.38	300	6.7	77.2	9.43	172.9
S35-MW-01	10/5/2012	7.27	302	6.91	57.1	6.91	57.3
S35-MW-01	12/13/2012	7.69	306	6.33	51.3	6.33	134.4
S35-MW-02	5/10/2012	7.23	427	9.35	69.5	7.96	170.5
S35-MW-02	10/5/2012	7.68	284	8.05	64.8	7.72	80.9
S35-MW-03	3/28/2012	7.63	329	5.04	31.3	3.96	213.6
S35-MW-03	5/10/2012	7.6	335	5.98	44.8	5.58	183
S35-MW-03	10/5/2012	7.35	332	6.97	38.4	4.68	77.5
S35-MW-03	12/13/2012	7.85	340	6.19	43.2	5.36	144.3
S35-MW-04	3/28/2012	7.55	331	5.88	82.7	10.29	209.4
S35-MW-04	5/10/2012	7.37	324	5.89	53.9	6.73	186.2
S35-MW-04	10/5/2012	6.95	338	5.79	83.9	10.41	72.9
S35-MW-04	12/13/2012	7.8	368	4.64	68.4	8.86	141.5
S35-MW-06	3/28/2012	7.38	371	6.88	65.1	7.91	207.5
S35-MW-06	5/10/2012	7.26	189.8	6.83	59.7	7.5	189.8
S35-MW-06	10/5/2012	6.9	359	5.82	64.1	8	66
S35-MW-06	12/13/2012	7.15	403	6.04	58.1	7.2	190.2

Note: °C = degrees Celsius
mg/l = milligrams per liter
mv = millivolts
umhos = micromhos

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4.1.1 Groundwater Elevation Data

Prior to each sampling event, groundwater elevation data was collected using a water level meter to record static water levels in monitoring wells and site piezometers to the nearest 1/100th of a foot. As shown in Table 8, the measurements reflect significant seasonal variation in several of the wells and piezometers. Table 8 shows the measured static water levels and the water elevation in feet above mean sea level (famsl). Compared to 2011, groundwater elevations across the site were generally lower in 2012 because of reduced recharge from snowmelt and rainfall. Figures 3 and 4 show the inferred water flow direction based on the elevation data measured during the early summer and winter sampling events (high and low water elevations). As shown in the figures, the seasonal variations in water elevations have little impact on the general direction of groundwater flow (generally southwest towards Highway 279).

Table 8. Section 35 Groundwater elevation data

Station ID	Date	Time	SWL (ft below measuring point)	GS Elevation (famsl)	MP Elevation (famsl)	GW Elevation (famsl)
S35-MW-01	3/28/2012	1230	14.60	5097.6	5097.962	5083.36
	5/10/2012	920	Artesian	5097.6	5097.962	Artesian
	10/5/2012	1015	6.95	5097.6	5097.962	5091.01
	12/13/2012	1415	13.04	5097.6	5097.962	5084.92
S35-MW-02	3/28/2012	1030	82.35	5236.45	5238.37	5156.02
	5/10/2012	1434	77.81	5236.45	5238.37	5160.56
	10/5/2012	1418	81.56	5236.45	5238.37	5156.81
	12/14/2012	1331	82.38	5236.45	5238.37	5155.99
S35-MW-03	3/28/2012	1600	12.85	5074.12	5076.61	5063.76
	5/10/2012	1304	6.72	5074.12	5076.61	5069.89
	10/5/2012	1059	13.89	5074.12	5076.61	5062.72
	12/13/2012	1519	15.32	5074.12	5076.61	5061.29
S35-MW-04	3/28/2012	1455	40.46	5062.87	5064.67	5024.21
	5/10/2012	1220	34.63	5062.87	5064.67	5024.21
	10/5/2012	1201	39.28	5062.87	5064.67	5024.21
	12/13/2012	1618	40.47	5062.87	5064.67	5024.21
S35-MW-05	3/28/2012	1055	45.70	5106	5107.76	5062.06
	5/10/2012	1429	44.69	5106	5107.76	5063.07
	10/5/2012	1341	Dry	5106	5107.76	Dry
	12/14/2012	1305	Dry	5106	5107.76	Dry

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Table 8. continued

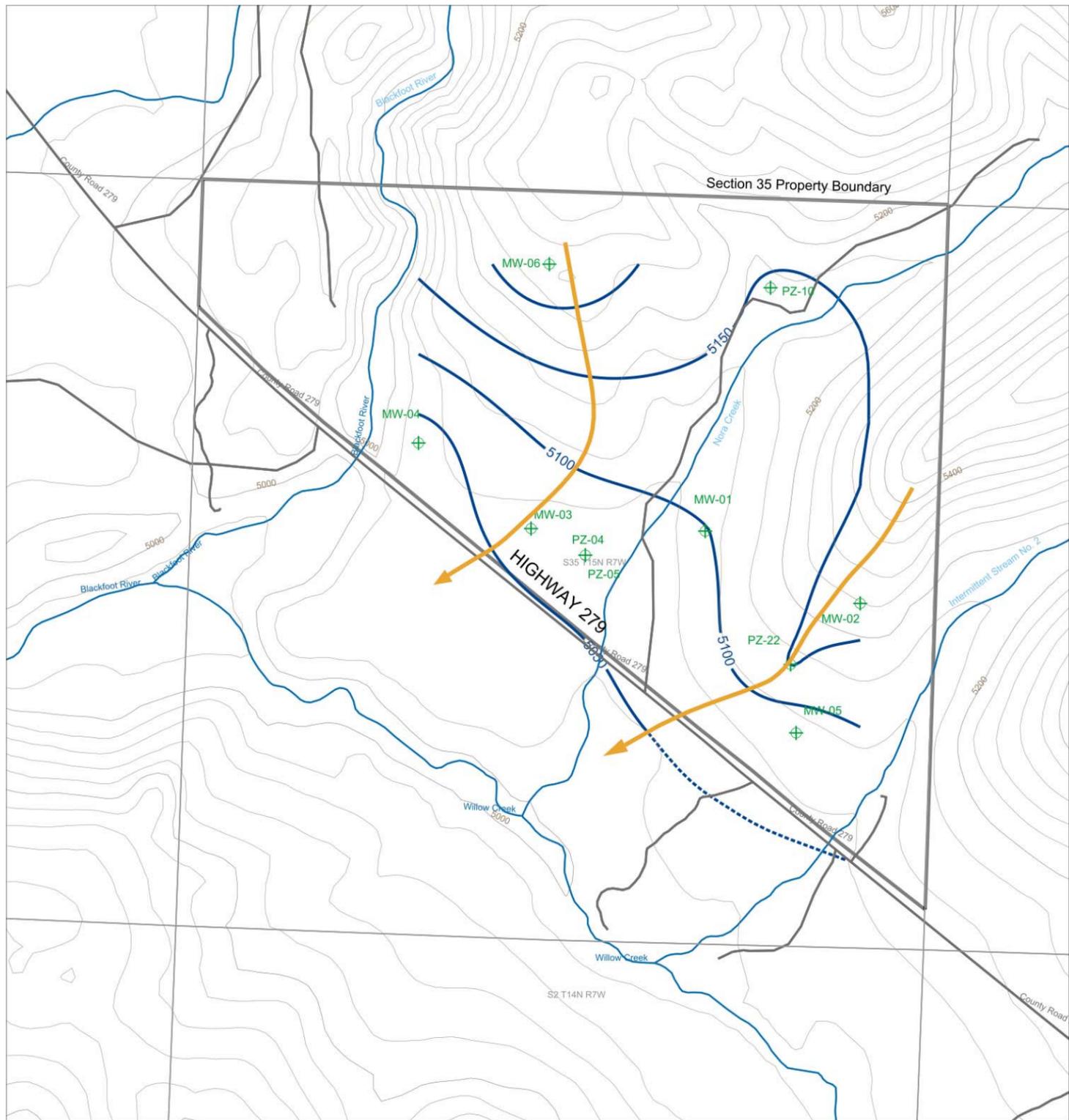
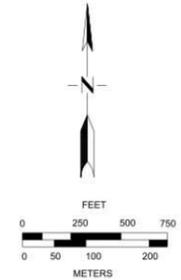
Station ID	Date	Time	SWL (ft below measuring point)	GS Elevation (famsl)	MP Elevation (famsl)	GW Elevation (famsl)
S35-MW-06	3/28/2012	1400	38.45	5260.52	5263.25	5224.80
	5/10/2012	1130	22.68	5260.52	5263.25	5240.57
	10/5/2012	1606	35.06	5260.52	5263.25	5228.19
	12/14/2012	1135	37.73	5260.52	5263.25	5225.52
S35-PZ-04	3/28/2012	1630	6.19	5082	5084.02	5077.83
	5/10/2012	1341	5.20	5082	5084.02	5078.82
	10/5/2012	920	7.70	5082	5084.02	5076.32
	12/13/2012	1508	7.39	5082	5084.02	5076.63
S35-PZ-05	3/28/2012	1145	10.62	5073	5075.6	5064.98
	5/10/2012	912	8.59	5073	5075.6	5067.01
	10/5/2012	833	11.68	5073	5075.6	5063.92
	12/13/2012	1300	11.74	5073	5075.6	5063.86
S35-PZ-10	3/28/2012	1320	10.66	5151	5154.181	5143.52
	5/10/2012	1050	10.66	5151	5154.181	5143.52
	10/5/2012	957	11.34	5151	5154.181	5143.52
	12/13/2012	1450	10.97	5151	5154.181	5143.52
S35-PZ-22	3/28/2012	1045	9.19	5157.897	5161.709	5152.52
	5/10/2012	1429	9.23	5157.897	5161.709	5152.48
	10/5/2012	1355	Dry	5157.897	5161.709	Dry
	12/14/2012	1316	Dry	5157.897	5161.709	Dry

Continuous level data, measured and recorded in Section 35 wells and piezometers by electronic transducers and data loggers, is attached in Appendix H. Graphs of the 2012 data are attached in Appendix E. The data represents the indicated head of water in the well/piezometer column above the well bottom in feet.

LEGEND

-  MONITORING WELL/PIEZOMETER
-  TOPOGRAPHIC CONTOUR (FAMSL)
-  ROAD
-  STREAM
-  POTENTIOMETRIC SURFACE (FAMSL)
-  GROUNDWATER DIRECTION

**SECTION 35
GROUNDWATER FLOW DIRECTION
May 2012**



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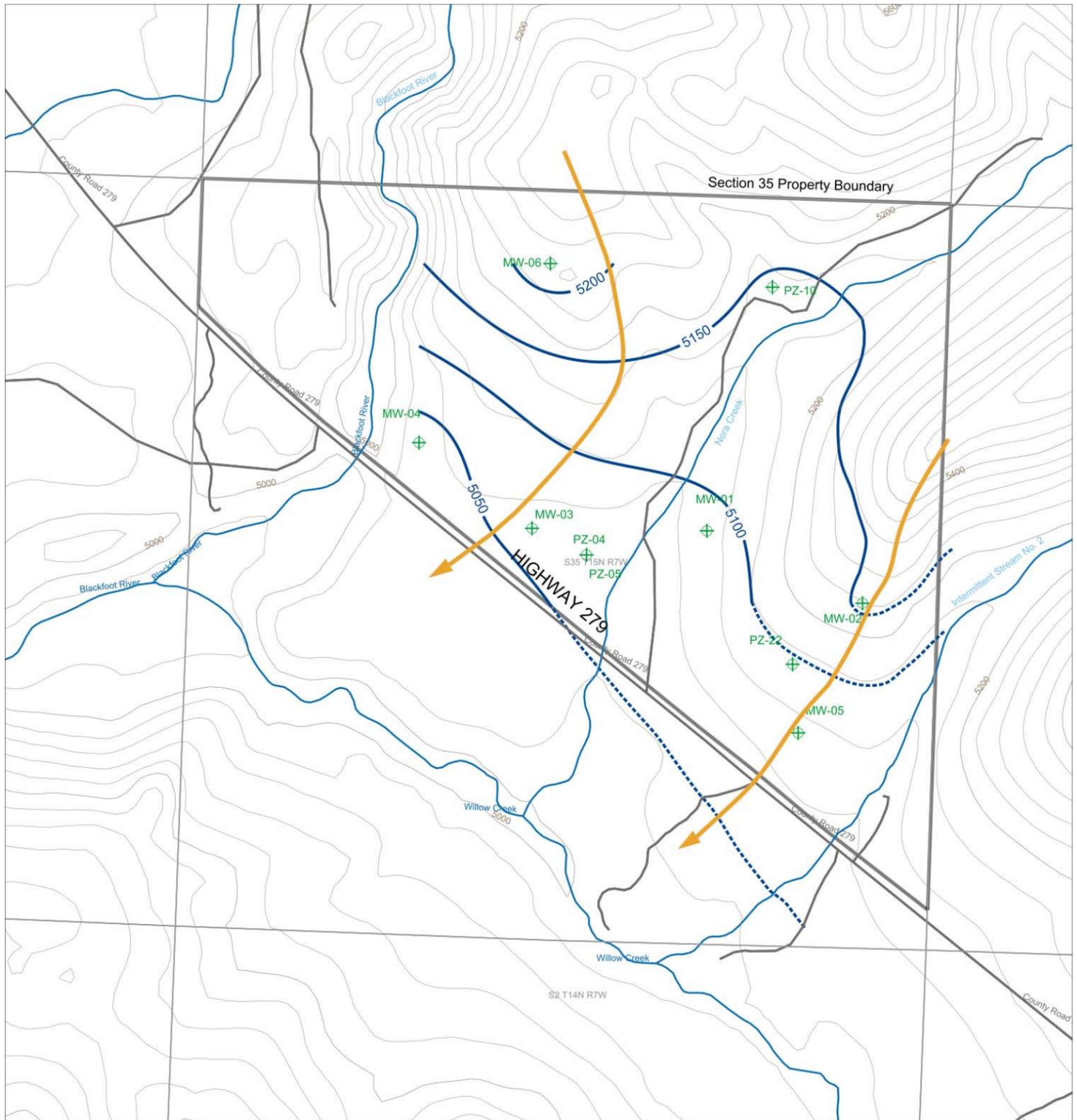
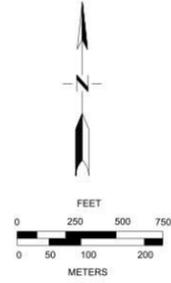
Figure 3. Second quarter groundwater flow direction

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LEGEND

-  MONITORING WELL/PIEZOMETER
-  TOPOGRAPHIC CONTOUR (FAMSL)
-  ROAD
-  STREAM
-  POTENTIOMETRIC SURFACE (FAMSL)
-  GROUNDWATER DIRECTION

**SECTION 35
GROUNDWATER FLOW DIRECTION
December 2012**



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Figure 4. Fourth quarter groundwater flow direction

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4.2 Surface Water

The metals analyzed for Section 35 surface water monitoring stations are aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc. The cations included are: calcium, magnesium, potassium, and sodium. Total recoverable metals concentrations were compared to both human health and aquatic life standards found in DEQ-7. Dissolved aluminum is compared to aquatic life standards when the pH of the sample is between 6.5 and 9. Samples for dissolved aluminum were passed through a filter designed to remove particles greater than 0.45 microns in diameter at the time of sample collection. Tables 9 through 14 show the results for metals in Section 35 surface water.

Figure 2 shows the locations of Section 35 surface water stations. They are identified as follows:

- S35-SW-01 – Nora Creek, downgradient.
- S35-SW-02 – Nora Creek, upgradient.
- S35-SW-03 – Blackfoot River, upgradient.
- S35-SW-04 – Blackfoot River downgradient.
- S35-SW-05 – unnamed tributary to Willow Creek.

As shown in Table 9, there were no DEQ-7 human health standards exceeded in 2012. Iron and manganese detections in 2012 are comparable to those measured in 2011. However, the DEQ-7 human health standards for iron and manganese were removed in an October 2012 revision of DEQ-7.

Table 10 shows the total metals results compared to chronic and acute aquatic life standards. As shown in Table 11, the standards for cadmium, copper, chromium, lead, nickel, silver, and zinc are calculated for each sampling event based on the hardness of the sample (hardness values are shown in Table 12). The standards for these metals are adjusted by hardness because in general the toxicity of these metals to aquatic life decreases with increasing hardness. The results indicate that the acute/chronic aquatic life standard for zinc at S35-SW-03 and S35-SW-04 was exceeded during the first, second, and fourth quarterly sampling events. No other aquatic life standard was exceeded. These results are comparable to those measured in 2011.

Table 13 shows one exceedance of the chronic aquatic life aluminum standard at S35-SW-05 during the first quarter sampling event. pH was in the required range of 6.5 to 9 for all samples. Aluminum was also detected at S35-SW-01 and S35-SW-02 in 2012, but the 2012 data indicates a decrease in aluminum concentrations when compared to 2011.

Table 12 shows the analytical results for physiochemical properties, common anions, and common cations. The only applicable standard for human health found in DEQ-7 for these properties is for pH. As shown in the table, pH values were all within an acceptable range for human health. Table 14 shows field water quality measurements recorded during surface water sampling. Field water quality measurements are not compared to standards, but provide additional information on the surface water quality.

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Table 9. Section 35 surface water human health comparison (total recoverable metals, mg/l)

Sample ID	Collection Date	Arsenic	Cadmium	Copper	Iron	Lead	Manganese	Zinc
	*Standard	0.010	0.005	1.3	----	0.015	----	2
S35-SW-01	3/26/2012	<0.003	<0.00008	<0.001	0.31	<0.0005	<0.005	<0.01
S35-SW-06	3/26/2012	<0.003	<0.00008	<0.001	0.30	<0.0005	<0.005	<0.01
S35-SW-01	5/8/2012	<0.003	<0.00008	0.002	0.09	<0.0005	0.008	<0.01
S35-SW-06	5/8/2012	<0.003	<0.00008	0.001	0.09	<0.0005	0.008	<0.01
S35-SW-01	10/3/2012	<0.003	<0.00008	0.002	0.15	<0.0005	0.013	<0.01
S35-SW-06	10/3/2012	<0.003	<0.00008	0.002	0.16	<0.0005	0.013	<0.01
S35-SW-01	12/11/2012	<0.003	<0.00008	<0.001	0.15	<0.0005	<0.005	<0.01
S35-SW-06	12/11/2012	<0.003	<0.00008	<0.001	0.15	<0.0005	<0.005	<0.01
S35-SW-02	3/26/2012	<0.003	<0.00008	0.001	0.04	<0.0005	<0.005	<0.01
S35-SW-02	5/8/2012	<0.003	<0.00008	0.002	0.06	<0.0005	<0.005	<0.01
S35-SW-02	10/3/2012	<0.003	<0.00008	0.002	0.09	<0.0005	0.011	<0.01
S35-SW-02	12/11/2012	<0.003	<0.00008	0.001	0.07	<0.0005	<0.005	<0.01
S35-SW-03	3/26/2012	<0.003	0.00017	0.002	0.20	<0.0005	0.024	0.12
S35-SW-03	5/8/2012	<0.003	0.00039	0.002	0.08	<0.0005	0.020	0.20
S35-SW-03	10/3/2012	<0.003	0.00011	0.001	0.05	<0.0005	<0.005	0.05
S35-SW-03	12/11/2012	<0.003	0.00029	<0.001	0.08	<0.0005	0.034	0.21
S35-SW-04	3/26/2012	<0.003	0.00018	0.002	0.19	<0.0005	0.015	0.11
S35-SW-04	5/8/2012	<0.003	0.00037	0.002	0.08	<0.0005	0.018	0.20
S35-SW-04	10/3/2012	<0.003	0.00012	0.001	0.05	<0.0005	<0.005	0.05
S35-SW-04	12/11/2012	<0.003	0.00029	0.001	0.07	<0.0005	0.028	0.20
S35-SW-05	3/26/2012	<0.003	<0.00008	0.003	0.36	<0.0005	0.023	<0.01
S35-SW-05	5/8/2012	<0.003	<0.00008	0.002	0.14	<0.0005	0.012	<0.01
S35-SW-05	10/3/2012	<0.003	<0.00008	<0.001	0.06	<0.0005	0.008	<0.01
S35-SW-05	12/11/2012	<0.003	<0.00008	<0.001	0.07	<0.0005	<0.005	<0.01

Note: < Indicates the concentration is less than the reporting limit
Exceeds standard
 * Montana Numeric Water Quality Standards Circular 7, 2012, human health standard
 ---- No standard
 Duplicate of S35-SW-01
 mg/l = milligrams per liter

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Table 10. Section 35 surface water aquatic life comparison (total recoverable metals, mg/l)

Section 35 Surface Water (total recoverable metals, mg/l)								
Sample ID	Collection Date	Arsenic	**Cadmium	**Copper	Iron	**Lead	Manganese	**Zinc
	*Standard (acute/chronic)	0.34/0.15	See Chart	See Chart	----/1.0	See Chart	----	See Chart
S35-SW-01	3/26/2012	<0.003	<0.00008	<0.001	0.31	<0.0005	<0.005	<0.01
S35-SW-06	3/26/2012	<0.003	<0.00008	<0.001	0.30	<0.0005	<0.005	<0.01
S35-SW-01	5/8/2012	<0.003	<0.00008	0.002	0.09	<0.0005	0.008	<0.01
S35-SW-06	5/8/2012	<0.003	<0.00008	0.001	0.09	<0.0005	0.008	<0.01
S35-SW-01	10/3/2012	<0.003	<0.00008	0.002	0.15	<0.0005	0.013	<0.01
S35-SW-06	10/3/2012	<0.003	<0.00008	0.002	0.16	<0.0005	0.013	<0.01
S35-SW-01	12/11/2012	<0.003	<0.00008	<0.001	0.15	<0.0005	<0.005	<0.01
S35-SW-06	12/11/2012	<0.003	<0.00008	<0.001	0.15	<0.0005	<0.005	<0.01
S35-SW-02	3/26/2012	<0.003	<0.00008	0.001	0.04	<0.0005	<0.005	<0.01
S35-SW-02	5/8/2012	<0.003	<0.00008	0.002	0.06	<0.0005	<0.005	<0.01
S35-SW-02	10/3/2012	<0.003	<0.00008	0.002	0.09	<0.0005	0.011	<0.01
S35-SW-02	12/11/2012	<0.003	<0.00008	0.001	0.07	<0.0005	<0.005	<0.01
S35-SW-03	3/26/2012	<0.003	0.00017	0.002	0.20	<0.0005	0.024	0.12
S35-SW-03	5/8/2012	<0.003	0.00039	0.002	0.08	<0.0005	0.020	0.20
S35-SW-03	10/3/2012	<0.003	0.00011	0.001	0.05	<0.0005	<0.005	0.05
S35-SW-03	12/11/2012	<0.003	0.00029	<0.001	0.08	<0.0005	0.034	0.21
S35-SW-04	3/26/2012	<0.003	0.00018	0.002	0.19	<0.0005	0.015	0.11
S35-SW-04	5/8/2012	<0.003	0.00037	0.002	0.08	<0.0005	0.018	0.20
S35-SW-04	10/3/2012	<0.003	0.00012	0.001	0.05	<0.0005	<0.005	0.05
S35-SW-04	12/11/2012	<0.003	0.00029	0.001	0.07	<0.0005	0.028	0.20
S35-SW-05	3/26/2012	<0.003	<0.00008	0.003	0.36	<0.0005	0.023	<0.01
S35-SW-05	5/8/2012	<0.003	<0.00008	0.002	0.14	<0.0005	0.012	<0.01
S35-SW-05	10/3/2012	<0.003	<0.00008	<0.001	0.06	<0.0005	0.008	<0.01
S35-SW-05	12/11/2012	<0.003	<0.00008	<0.001	0.07	<0.0005	<0.005	<0.01

Note: < Indicates the concentration is less than the reporting limit
Exceeds acute standard
Exceeds chronic standard
 * Montana Numeric Water Quality Standards Circular 7, 2012, aquatic life standards
 ** Calculated per Circular 7 @ 25 mg/l hardness
 *** Calculated per Circular 7 @ 25 mg/l hardness for Chromium III
 ---- No standard
 Duplicate of S35-SW-01
 mg/l = milligrams per liter

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Table 11. Hardness adjusted surface water quality standards (mg/l)

Hardness Adjusted Surface Water Quality Standards (mg/l)									
Sample ID	Collection Date	Cadmium		Copper		Lead		Zinc	
		Acute	Chronic	Acute	Chronic	Acute	Chronic	Acute	Chronic
S35-SW-01	3/26/2012	0.00155	0.00021	0.01041	0.00713	0.05469	0.00213	0.09177	0.09177
S35-SW-06	3/26/2012	0.00153	0.00021	0.01027	0.00705	0.05374	0.00209	0.09071	0.09071
S35-SW-01	5/8/2012	0.00123	0.00018	0.00838	0.00586	0.04081	0.00159	0.07552	0.07552
S35-SW-06	5/8/2012	0.00118	0.00018	0.00811	0.00568	0.03903	0.00152	0.07331	0.07331
S35-SW-01	10/3/2012	0.00257	0.00031	0.01662	0.01090	0.10297	0.00401	0.13983	0.13983
S35-SW-06	10/3/2012	0.00257	0.00031	0.01662	0.01090	0.10297	0.00401	0.13983	0.13983
S35-SW-01	12/11/2012	0.00181	0.00024	0.01201	0.00812	0.06639	0.00259	0.10440	0.10440
S35-SW-06	12/11/2012	0.00183	0.00024	0.01214	0.00820	0.06738	0.00263	0.10544	0.10544
S35-SW-02	3/26/2012	0.00146	0.00021	0.00987	0.00679	0.05091	0.00198	0.08749	0.08749
S35-SW-02	5/8/2012	0.00118	0.00018	0.00811	0.00568	0.03903	0.00152	0.07331	0.07331
S35-SW-02	10/3/2012	0.00148	0.00021	0.01000	0.00688	0.05185	0.00202	0.08857	0.08857
S35-SW-02	12/11/2012	0.00144	0.00020	0.00973	0.00671	0.04997	0.00195	0.08642	0.08642
S35-SW-03	3/26/2012	0.00205	0.00026	0.01347	0.00901	0.07751	0.00302	0.11574	0.11574
S35-SW-03	5/8/2012	0.00181	0.00024	0.01201	0.00812	0.06639	0.00259	0.10440	0.10440
S35-SW-03	10/3/2012	0.00233	0.00029	0.01518	0.01004	0.09111	0.00355	0.12889	0.12889
S35-SW-03	12/11/2012	0.00244	0.00030	0.01584	0.01043	0.09647	0.00376	0.13388	0.13388
S35-SW-04	3/26/2012	0.00211	0.00027	0.01387	0.00925	0.08061	0.00314	0.11880	0.11880
S35-SW-04	5/8/2012	0.00183	0.00024	0.01214	0.00820	0.06738	0.00263	0.10544	0.10544
S35-SW-04	10/3/2012	0.00235	0.00029	0.01531	0.01012	0.09218	0.00359	0.12989	0.12989
S35-SW-04	12/11/2012	0.00244	0.00030	0.01584	0.01043	0.09647	0.00376	0.13388	0.13388
S35-SW-05	3/26/2012	0.00138	0.00020	0.00933	0.00646	0.04718	0.00184	0.08318	0.08318
S35-SW-05	5/8/2012	0.00127	0.00019	0.00865	0.00603	0.04261	0.00166	0.07772	0.07772
S35-SW-05	10/3/2012	0.00226	0.00028	0.01479	0.00981	0.08793	0.00343	0.12588	0.12588
S35-SW-05	12/11/2012	0.00185	0.00024	0.01228	0.00828	0.06838	0.00266	0.10648	0.10648

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Table 12. Section 35 surface water physiochemical, anions, cations

Section 35 Surface Water																	
Sample ID	Collection Date	Physiochemical						Common Anions (mg/l)					Common Cations (mg/l)				
		pH	Conductivity, umhos		Hardness	Total Susp. Solids, mg/l	Total Diss. Solids, mg/L	Alkalinity	Bicarbonate	Carbonate	Chloride	Sulfate	Calcium (D)	Magnesium (D)	Potassium (D)	Zinc (D)	
	*Standard	6.5 - 8.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S35-SW-01	3/26/2012	7.4 J-	154	73	<10	88	77	94	<4	<1 UJ	2 J-	19	7	<1	2		
S35-SW-06	3/26/2012	7.4 J-	155	72	<10	78	77	94	<4	<1 UJ	2 J-	18	6	<1	2		
S35-SW-01	5/8/2012	7.4 J-	122	58	<10	80	64	78	<4	<1	3	14	6	<1	2		
S35-SW-06	5/8/2012	7.4 J-	123	56	<10	83	64	78	<4	<1	3	13	6	<1	2		
S35-SW-01	10/3/2012	7.8 J-	255	120	<10	157	120	150	<4	5 UJ	2	32	10	7	2		
S35-SW-06	10/3/2012	7.9 J-	257	120	<10	138	120	140	<4	5 UJ	2	32	10	7	2		
S35-SW-01	12/11/2012	7.7 J-	168	85	<10	100	91	110	<4	<1	2	22	8	<1	2		
S35-SW-06	12/11/2012	7.6 J-	168	86	<10	99	89	110	<4	<1	2	22	8	<1	2		
S35-SW-02	3/26/2012	6.8 J-	148	69	<10	74	69	85	<4	<1 UJ	4 J-	17	7	<1	2		
S35-SW-02	5/8/2012	6.9	122	56	<10	81	62	76	<4	<1	3	13	6	<1	2		
S35-SW-02	10/3/2012	6.8	150	70	<10	89	74	90	<4	<1 UJ	2	17	7	<1	2		
S35-SW-02	12/11/2012	6.7 J-	134	68	<10	86	69	84	<4	<1	3	16	7	<1	2		
S35-SW-03	3/26/2012	7.6 J-	217	96	<10	110	70	85	<4	4 UJ	26 UJ	22	10	<1	3		
S35-SW-03	5/8/2012	7.3 J-	190	85	<10	113	66	80	<4	3	26	19	9	<1	2		
S35-SW-03	10/3/2012	7.7 J-	227	109	<10	129	86	100	<4	2 J-	23	24	12	<1	3		
S35-SW-03	12/11/2012	7.5 J-	246	114	<10	146	70	86	<4	2	37	25	12	<1	3		
S35-SW-04	3/26/2012	7.6 J-	217	99	<10	116	70	86	<4	4 UJ	26 UJ	23	10	<1	3		
S35-SW-04	5/8/2012	7.3 J-	192	86	<10	117	64	79	<4	3	26	19	9	<1	2		
S35-SW-04	10/3/2012	7.7 J-	228	110	<10	125	86	110	<4	2 J-	23	25	12	<1	3		
S35-SW-04	12/11/2012	7.5 J-	242	114	<10	141	70	86	<4	2	37	25	12	<1	3		
S35-SW-05	3/26/2012	7.3 J-	146	65	<10	98	65	79	<4	2 J-	4 J-	16	6	1	2		
S35-SW-05	5/8/2012	6.9	129	60	<10	76	64	78	<4	<1	3	14	6	<1	2		
S35-SW-05	10/3/2012	7.8	212	106	<10	124	110	130	<4	1 UJ	3	24	11	2	2		
S35-SW-05	12/11/2012	7.6 J-	171	87	<10	99	85	100	<4	<1	5	20	9	<1	2		

Note: < Indicates the concentration is less than the reporting limit

Exceeds standard

* Montana Numeric Water Quality Standards Circular 7, 2012, human health standard

---- No standard

Duplicate of S35-SW-01

mg/l = milligrams per liter

TR = Total Recoverable

D = Dissolved

umhos = micromhos

J- validation flag denotes the reported results are estimates with a low bias due to exceeded holding times or low MS/MSD recovery

UJ- validation flag denotes the reported results are non-detect and the reported result is an estimate due to low MS/MSD recovery

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Table 13. Section 35 surface water aquatic life comparison (dissolved metals, mg/l)

Section 35 Surface Water (dissolved metals, mg/l)		
<i>Sample ID</i>	<i>Collection Date</i>	<i>Aluminum</i>
	*Standard (acute/chronic)	0.75/0.087
S35-SW-01	3/26/2012	<0.03
S35-SW-06	3/26/2012	<0.03
S35-SW-01	5/8/2012	<0.03
S35-SW-06	5/8/2012	<0.03
S35-SW-01	10/3/2012	0.07
S35-SW-06	10/3/2012	0.06
S35-SW-01	12/11/2012	<0.03
S35-SW-06	12/11/2012	<0.03
S35-SW-02	3/26/2012	<0.03
S35-SW-02	5/8/2012	0.04
S35-SW-02	10/3/2012	<0.03
S35-SW-02	12/11/2012	<0.03
S35-SW-03	3/26/2012	<0.03
S35-SW-03	5/8/2012	<0.03
S35-SW-03	10/3/2012	<0.03
S35-SW-03	12/11/2012	<0.03
S35-SW-04	3/26/2012	<0.03
S35-SW-04	5/8/2012	<0.03
S35-SW-04	10/3/2012	<0.03
S35-SW-04	12/11/2012	<0.03
S35-SW-05	3/26/2012	<u>0.21</u>
S35-SW-05	5/8/2012	0.06
S35-SW-05	10/3/2012	<0.03
S35-SW-05	12/11/2012	0.04

Note:

< Indicates the concentration is less than the reporting limit

Exceeds acute standard

Exceeds chronic standard

* Montana Numeric Water Quality Standards Circular 7, 2012, aquatic life standards

The aluminum standard is for dissolved metals only per Circular 7

Dissolved aluminum is only analyzed when pH is between 6.5 and 9

Duplicate of S35-SW-01

mg/l = milligrams per liter

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Table 14. Section 35 surface water field parameters

Section 35 Surface Water Field Parameters							
<i>Sample ID</i>	<i>Collection Date</i>	<i>pH</i>	<i>Conductivity, umhos</i>	<i>Temperature, °C</i>	<i>Dissolved Oxygen, % Saturation</i>	<i>Dissolved Oxygen, mg/l</i>	<i>Oxidation Reduction Potential, mv</i>
S35-SW-01	3/26/2012	7.18	153	0.13	76.4	11.13	245.8
S35-SW-01	5/8/2012	7.58	119	7.32	85.9	10.35	207.5
S35-SW-01	10/3/2012	7.87	259	5.29	89.1	11.25	17.3
S35-SW-01	12/11/2012	7.91	204	0.28	79.9	11.59	105.8
S35-SW-02	3/26/2012	6.79	145	2.95	51.9	6.94	230.4
S35-SW-02	5/8/2012	6.99	116	6.09	71.9	8.93	200.1
S35-SW-02	10/3/2012	6.83	154	5.06	38.8	4.93	2.4
S35-SW-02	12/11/2012	7.04	164	3.06	42.4	5.72	102.8
S35-SW-03	3/26/2012	7.35	210	0.24	76.3	11.05	253.3
S35-SW-03	5/8/2012	7.7	192	5.9	77.3	9.68	206.6
S35-SW-03	10/3/2012	7.85	234	5.38	95	12.01	43.3
S35-SW-03	12/11/2012	7.57	307	0.09	81.2	11.83	117.6
S35-SW-04	3/26/2012	7.35	212	0.44	80	11.54	252.3
S35-SW-04	5/8/2012	7.6	190	5.87	69.9	8.71	203.7
S35-SW-04	10/3/2012	7.7	241	5.5	94.6	11.95	51.7
S35-SW-04	12/11/2012	7.41	305	0.07	83.7	12.2	121.2
S35-SW-05	3/26/2012	7.15	143	0.4	85.7	12.31	253.8
S35-SW-05	5/8/2012	7.57	125	8.56	79.8	9.33	196.2
S35-SW-05	10/3/2012	7.8	212	3.88	93	12.25	212
S35-SW-05	12/11/2012	7.66	213	0.13	81.1	11.8	92.7

Note: °C = degrees Celcius
mg/l = milligrams per liter
mv = millivolts
umhos = micromhos

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4.2.1 Surface Water Flow

For each sampling event the cross section of the stream was gauged with a hand-held, electronic velocity measurement instrument. Cross section thickness (depth of stream) and the cross section intervals (width of stream) were recorded for each measurement point to the nearest 1/10th of a foot. The average stream discharge in feet per second for each point was also recorded. The cross sectional area of the stream and the velocity profile was then used to calculate an instantaneous discharge flowrate at the time of sampling. Table 15 summarizes the Section 35 flow measurements for 2012 in cubic feet per second (cfs). Compared to 2011, surface flows at section 35 were significantly lower in 2012 because of reduced snowpack and annual rainfall.

Table 15. Section 35 surface water discharge

Station	S35-SW-01	S35-SW-01	S35-SW-01	S35-SW-01
Date	3/26/2012	5/8/2012	10/3/2012	12/11/2012
Discharge (cfs)	0.03	0.60	0.005	0.038
Station	S35-SW-02	S35-SW-02	S35-SW-02	S35-SW-02
Date	3/26/2012	5/8/2012	10/3/2012	12/11/2012
Discharge (cfs)	0.01	0.68	0.003	0.010
Station	S35-SW-03	S35-SW-03	S35-SW-03	S35-SW-03
Date	3/26/2012	5/8/2012	10/3/2012	12/11/2012
Discharge (cfs)	1.71	37.74	6.04	3.57
Station	S35-SW-04	S35-SW-04	S35-SW-04	S35-SW-04
Date	3/26/2012	5/8/2012	10/3/2012	12/11/2012
Discharge (cfs)	1.81	34.83	4.53	3.86
Station	S35-SW-05	S35-SW-05	S35-SW-05	S35-SW-05
Date	3/26/2012	5/8/2012	10/3/2012	12/11/2012
Discharge (cfs)	0.08	1.00	0.04	0.14

4.3 Sediment

Sediment samples were collected at surface water sampling stations during sampling events and analyzed for total metals: aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc. Table 16 shows the analytical results compared to the SSLs selected to screen sediments in the *Final Remedial Investigation Report for the UBMC* (TetraTech, 2013). As shown in Table 16 there were several exceedances of SSLs, the analytes exceeding SSLs predominantly being: arsenic, copper, and manganese at S35-SD-01 (downgradient sampling station on Nora Creek); arsenic, cadmium, and zinc at S35-SD-03 and 04 (Blackfoot River sampling stations); and, arsenic at S35-SD-05 (unnamed tributary to Willow Creek.)

Sediment sample results were also compared to EPA RSLs (EPA, 2012) for aluminum, cadmium,



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copper, and zinc and to the UBMC BTVs (TetraTech, 2013) for arsenic, iron, lead, and manganese. Table 17 shows the results of screening total recoverable metals in Section 35 sediments against the human health residential RSLs and BTVs. As shown in Table 17 there were no exceedances RSLs or UBMC BTVs in 2012 sediment samples.

Table 16. Section 35 sediments vs. SSLs (total recoverable metals, mg/kg)

Section 35 Sediments (total recoverable metals, mg/kg)											
Sample ID	Collection Date	Aluminum	Arsenic	Cadmium	Copper	Iron	Lead	Manganese	Zinc		
Sediment Screening Levels	^{abfg} TEL	----	5.9	0.596	35.7	----	35	----	123		
	^{cbdfg} PAET	----	19	97.5	340	----	240	1400	500		
	^{ebfg} SEL	----	33	10	110	----	250	1100	820		
S35-SD-01	3/26/2012	11300	14	<1	48 J	17600	14 J	2550 J	68 J		
S35-SD-06	3/26/2012	11500	14	<1	51 J	17800	21 J	1860 J	64 J		
S35-SD-01	5/8/2012	6970	10	<1	27	18500	13 J	811 J	59		
S35-SD-06	5/8/2012	6200	6	<1	36	17000	9 J	1300 J	48		
S35-SD-01	10/3/2012	13900	8 J-	<1	51	14400	15 J-	788 J-	61 J-		
S35-SD-06	10/3/2012	13300	9 J-	<1	54	14700	15 J-	882 J-	62 J-		
S35-SD-01	12/11/2012	13900	9	<1	55	15600	13	1450 J	67 J+		
S35-SD-06	12/11/2012	12700	7	<1	48	14800	12	1130 J	62 J+		
S35-SD-02	3/26/2012	4790	<5	<1	63 J	2980	8 J	21 J	19 J		
S35-SD-02	5/8/2012	3740	<5	<1	39	1780	5 J	13 J	14		
S35-SD-02	10/3/2012	2610	<5 UJ	<1	27	1800	<5 UJ	14 J-	11 J-		
S35-SD-02	12/11/2012	3640	<5	<1	36	2370	<5	21 J	17 J+		
S35-SD-03	3/26/2012	5640	10	1	33 J	15300	57 J	888 J	375 J		
S35-SD-03	5/8/2012	7350	<5	2	30	13800	35 J	1110 J	719		
S35-SD-03	10/3/2012	5440	7 J-	1	27	12400	21 J-	882 J-	401 J-		
S35-SD-03	12/11/2012	5430	5	<1	26	11300	20	686 J	263 J+		
S35-SD-04	3/26/2012	4430	7	1	25 J	13700	20 J	877 J	555 J		
S35-SD-04	5/8/2012	6080	<5	2	24	11200	21 J	936 J	793		
S35-SD-04	10/3/2012	4970	5 J-	2	32	13000	19 J-	909 J-	609 J-		
S35-SD-04	12/11/2012	5600	9	2	44	15700	26	1720 J	766 J+		
S35-SD-05	3/26/2012	4660	6	<1	68 J	24600	5 J	401 J	35 J		
S35-SD-05	5/8/2012	7650	9	<1	29	28700	10 J	462 J	44		
S35-SD-05	10/3/2012	6030	6 J-	<1	29	16600	7 J-	266 J-	39 J-		
S35-SD-05	12/11/2012	6230	6	<1	24	13100	9	202 J	38 J+		

Note: < Indicates the concentration is less than the reporting limit

Exceeds screening levels

---- No standard

Duplicate of S35-SD-01

mg/kg = milligrams per kilogram

J validation flag denotes the reported results are estimates due to low MS/MSD recoveries and/or poor MSD/field duplicate precision

J- validation flag denotes the reported results are estimates with low bias due to low MS/MSD recovery

J+ validation flag denotes the reported results are estimates with high bias due to high MS/MSD recovery

UJ- validation flag denotes the reported concentrations are non-detect and the reported concentration is an estimate due to low MS/MSD recovery

^aThe TEL is calculated as the geometric mean of the 15th percentile concentration of the toxic effects data set and the median of the no-effect data set. As such it represents the concentration below which adverse effects are expected to occur only rarely. Freshwater TELs are based on benthic community metrics and toxicity tests results. Adverse biological effects rarely seen below TEL.

^bCabbage, James, David Batts, Scott Breidenback. 1997. "Creation and Analysis of Freshwater Sediment Quality Values in Washington State". July. <http://www.ecy.wa.gov/pubs/97323a.pdf>

^cThe PAET is defined as the 95th percentile of values with no significant biological effects and concentrations greater than the lowest "hit" level. It is designed as an alternative value to the Apparent Effect Threshold to reduce the effects of random error.

^dEntry is lowest, reliable value among a compilation of PAET levels for; H – Hyalella azteca bioassay or M – Microtox bioassay.

^eThe SEL is defined as the 90th-95th percentile screening level concentration based on in-situ benthic community structure. Contaminant concentration above the SEL is likely detrimental to the majority of benthic species.

^fSAIC and Avocet Consulting. 2002. "Phase I Report: Development of Freshwater Sediment Quality Values for Use in Washington State." September. – Prioritizing Areas for Attention – Areas exceeding the SEL are considered the highest-priority areas for biological testing. Areas between the PAET and the SEL are considered medium priority for attention, and areas between the TEL and the PAET are considered low priority. Areas below the TEL are screened out entirely. <http://www.ecy.wa.gov/pubs/0209050.pdf>

^gSAIC and Avocet Consulting. 2003. "Phase II Report: Development and recommendation of SQVs for Freshwater Sediments in Washington State." September. – Recommendations for Screening – Report recommends SQVs as defined in the Phase I report be used (see note f above). <http://www.ecy.wa.gov/pubs/0309088.pdf>

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Table 17. Section 35 sediments vs. RSLs (total recoverable metals, mg/kg)

Section 35 Sediments (total recoverable metals, mg/kg)										
Sample ID	Collection Date	Aluminum	Arsenic	Cadmium	Copper	Iron	Lead	Manganese	Zinc	
¹Regional Screening Level										
²Background Threshold Value		77000	40.4	70	3100	58270	1109	4893	23000	
S35-SD-01	3/26/2012	11300	14	<1	48 J	17600	14 J	2550 J	68 J	J
S35-SD-06	3/26/2012	11500	14	<1	51 J	17800	21 J	1860 J	64 J	J
S35-SD-01	5/8/2012	6970	10	<1	27	18500	13 J	811 J	59	
S35-SD-06	5/8/2012	6200	6	<1	36	17000	9 J	1300 J	48	
S35-SD-01	10/3/2012	13900	8 J-	<1	51	14400	15 J-	788 J-	61 J-	J-
S35-SD-06	10/3/2012	13300	9 J-	<1	54	14700	15 J-	882 J-	62 J-	J-
S35-SD-01	12/11/2012	13900	9	<1	55	15600	13	1450 J	67 J+	J+
S35-SD-06	12/11/2012	12700	7	<1	48	14800	12	1130 J	62 J+	J+
S35-SD-02	3/26/2012	4790	<5	<1	63 J	2980	8 J	21 J	19 J	J
S35-SD-02	5/8/2012	3740	<5	<1	39	1780	5 J	13 J	14	
S35-SD-02	10/3/2012	2610	<5 UJ	<1	27	1800	<5 UJ	14 J-	11 J-	J-
S35-SD-02	12/11/2012	3640	<5	<1	36	2370	<5	21 J	17 J+	J+
S35-SD-03	3/26/2012	5640	10	1	33 J	15300	57 J	888 J	375 J	J
S35-SD-03	5/8/2012	7350	<5	2	30	13800	35 J	1110 J	719	
S35-SD-03	10/3/2012	5440	7 J-	1	27	12400	21 J-	882 J-	401 J-	J-
S35-SD-03	12/11/2012	5430	5	<1	26	11300	20	686 J	263 J+	J+
S35-SD-04	3/26/2012	4430	7	1	25 J	13700	20 J	877 J	555 J	J
S35-SD-04	5/8/2012	6080	<5	2	24	11200	21 J	936 J	793	
S35-SD-04	10/3/2012	4970	5 J-	2	32	13000	19 J-	909 J-	609 J-	J-
S35-SD-04	12/11/2012	5600	9	2	44	15700	26	1720 J	766 J+	J+
S35-SD-05	3/26/2012	4660	6	<1	68 J	24600	5 J	401 J	35 J	J
S35-SD-05	5/8/2012	7650	9	<1	29	28700	10 J	462 J	44	
S35-SD-05	10/3/2012	6030	6 J-	<1	29	16600	7 J-	266 J-	39 J-	J-
S35-SD-05	12/11/2012	6230	6	<1	24	13100	9	202 J	38 J+	J+

Note:

- Exceeds screening level**
- Duplicate of S35-SD-01
- mg/kg = milligrams per kilogram
- ¹EPA RSLs (EPA 2012)
- ²BTV (TetraTech 2013) for arsenic, iron, lead, and manganese
- J validation flag denotes the reported results are estimates due to low MS/MSD recoveries and/or poor MSD/field duplicate precision
- J- validation flag denotes the reported results are estimates with low bias due to low MS/MSD recovery
- J+ validation flag denotes the reported results are estimates with high bias due to high MS/MSD recovery
- UJ- validation flag denotes the reported concentrations are non-detect and the reported concentration is an estimate due to low MS/MSD recovery

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5. CONCLUSIONS

This section presents conclusions relevant to the use of 2012 Section 35 data for establishing baseline environmental conditions at the site.

5.1 Groundwater

Section 35 groundwater generally exhibits good quality based on comparison of the analytical results to DEQ-7 human health standards. In 2012 there were no constituents which exceeded the human health standards in the five groundwater monitoring wells sampled.

These results are consistent with the results of 2010 monitoring performed by TerraGraphics and by monitoring performed by Portage in 2011. In 2011 there were exceedances of the iron and manganese standards in site monitoring wells, but both the concentrations and number of detections decreased in 2012. The iron and manganese human health standards were removed from DEQ-7 in its October 2012 revision.

5.2 Surface Water

Section 35 surface water also exhibits generally good quality based on comparison of the analytical results to DEQ-7 human health standards and aquatic life standards. In 2011 iron and manganese exceeded the human health standards in three samples collected on the Blackfoot River and one sample collected on the unnamed tributary to Willow Creek. If the same standards are applied to 2012 data, iron would have exceeded the human health standard in the first quarter samples at the downgradient sampling station on Nora Creek and the station on the unnamed tributary to Willow Creek. There would have been no exceedances of the manganese standard. The iron and manganese human health standards were removed from DEQ-7 in its October 2012 revision.

In 2011 there were exceedances of the chronic aquatic life standards for cadmium occurred in four samples, for zinc in six samples, and aluminum in two samples collected on the Blackfoot River. Except for two zinc exceedances, all of the elevated concentrations occurred at higher river flows during the first and second quarter sampling events. These results are consistent with the June, 2010 sampling results (TerraGraphics, 2011) which also show the chronic aquatic life standards for cadmium and zinc exceeded at both sampling stations on the Blackfoot River. In comparison, 2012 sampling resulted in exceedances of the zinc standard at both sampling stations on the Blackfoot River during three of the four quarterly sampling events. The source of the contaminants is likely mobilization of contaminated soils and sediments from upstream reaches within the UBMC mining area.

In 2011 exceedances of the aluminum chronic aquatic life standard occurred at both sampling stations on Nora Creek during the first quarter sampling event, and one exceedance of the acute aquatic life standard occurred on the unnamed tributary to Willow Creek during the first quarter sampling event. In comparison there was one exceedance of the chronic aquatic life standard for aluminum at the unnamed tributary to Willow Creek for the first quarter 2012 sampling event. Neither Nora Creek nor the unnamed tributary drainage are impacted by historic mining or other significant human industrial activity with the exception of logging and gravel road construction to facilitate logging. The source of the elevated aluminum may be naturally occurring in site soils and sediments.

5.3 Sediment

2012 was the first monitoring year in which sediment samples were collected at Section 35 surface water stations. In 2012 there were no exceedances of EPA RSLs or of the UBMC BTVs for the metals analyzed.

Commonly detected metals in Section 35 sediments include aluminum, arsenic, iron, lead, and zinc. Cadmium was only detected at the sampling stations on the Blackfoot River and zinc concentrations in sediment samples collected from the Blackfoot River were elevated in comparison to the other sites. The source of the cadmium and elevated zinc is likely mobilization of contaminated soils and sediments from upstream reaches within the UBMC mining area.

6. REFERENCES

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Portage, Inc., 2012, Final Sampling and Analysis Plan for Environmental Monitoring of Section 35 Lewis and Clark County, Montana; March, 2012

Portage, Inc., 2012, Final Data Summary Report, 2011 Environmental Monitoring, Section 35, Lewis and Clark County, Montana; July 12, 2012.

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TerraGraphics, 2011, Data Summary Report Addendum, Section 35 Quarterly Monitoring, Upper Blackfoot Mining Complex, April 14, 2011.

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Appendix A
Laboratory Data Reports



**DATA SUMMARY REPORT, 2012 ENVIRONMENTAL MONITORING,
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ANALYTICAL SUMMARY REPORT

April 17, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12030340 Quote ID: H645 - UBMC

Project Name: UBMC Surface Water and Sediment

Energy Laboratories Inc Helena MT received the following 32 samples for MT DEQ-Site Response on 3/27/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12030340-001	S35SW05	03/26/12 10:10	03/27/12	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H12030340-002	S35SW07	03/26/12 9:00	03/27/12	Aqueous	Same As Above
H12030340-003	S35SW01	03/26/12 11:10	03/27/12	Aqueous	Same As Above
H12030340-004	S35SW06	03/26/12 11:10	03/27/12	Aqueous	Same As Above
H12030340-005	S35SW02	03/26/12 12:00	03/27/12	Aqueous	Same As Above
H12030340-006	S35SW04	03/26/12 13:45	03/27/12	Aqueous	Same As Above
H12030340-007	S35SW03	03/26/12 14:25	03/27/12	Aqueous	Same As Above
H12030340-008	UBMCBRSW25	03/26/12 15:10	03/27/12	Aqueous	Same As Above
H12030340-009	UBMCBRSW26	03/26/12 15:15	03/27/12	Aqueous	Same As Above
H12030340-010	UBMCBRSW22	03/26/12 15:50	03/27/12	Aqueous	Same As Above
H12030340-011	UBMCBRSW24	03/26/12 15:55	03/27/12	Aqueous	Same As Above
H12030340-012	UBMCBRSW01	03/26/12 16:50	03/27/12	Aqueous	Same As Above
H12030340-013	UBMCBRSW2	03/26/12 17:25	03/27/12	Aqueous	Same As Above
H12030340-014	UBMCBRSW38	03/27/12 8:50	03/27/12	Aqueous	Same As Above
H12030340-015	UBMCBRSW48	03/27/12 10:05	03/27/12	Aqueous	Same As Above
H12030340-016	UBMCBRSW23	03/27/12 10:30	03/27/12	Aqueous	Same As Above
H12030340-017	UBMCBRSW3A	03/27/12 10:55	03/27/12	Aqueous	Same As Above
H12030340-018	UBMCBRSW3B	03/27/12 11:15	03/27/12	Aqueous	Same As Above
H12030340-019	S35SD05	03/26/12 10:10	03/27/12	Sediment	Metals by ICP/ICPMS, Total Digestion, Total Metals
H12030340-020	S35SD06	03/26/12 11:10	03/27/12	Sediment	Same As Above
H12030340-021	S35SD01	03/26/12 11:10	03/27/12	Sediment	Same As Above



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H12030340-022	S35SD02	03/26/12 12:00	03/27/12	Sediment	Same As Above
H12030340-023	S35SD04	03/26/12 13:45	03/27/12	Sediment	Same As Above
H12030340-024	S35SD03	03/26/12 14:25	03/27/12	Sediment	Same As Above
H12030340-025	UBMCBRS22	03/26/12 15:50	03/27/12	Sediment	Same As Above
H12030340-026	UBMCBRS24	03/26/12 15:55	03/27/12	Sediment	Same As Above
H12030340-027	UBMCBRS01	03/26/12 16:50	03/27/12	Sediment	Same As Above
H12030340-028	UBMCBRS38	03/27/12 8:50	03/27/12	Sediment	Same As Above
H12030340-029	UBMCBRS48	03/27/12 10:05	03/27/12	Sediment	Same As Above
H12030340-030	UBMCBRS23	03/27/12 10:30	03/27/12	Sediment	Same As Above
H12030340-031	UBMCBRS3A	03/27/12 10:55	03/27/12	Sediment	Same As Above
H12030340-032	UBMCBRS3B	03/27/12 11:15	03/27/12	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 reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW05
Lab ID: H12030340-001
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 10:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	03/28/12 11:19 / cmm		PHSC_101-H_120328A : 17		R78847
Conductivity @ 25 C	146	umhos/cm		1		A2510 B	03/28/12 11:19 / cmm		PHSC_101-H_120328A : 18		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:10 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 11			16073
Solids, Total Dissolved TDS @ 180 C	98	mg/L		10		A2540 C	03/28/12 14:22 / cmm	03/28/12 13:55 J-124 (14410200)_120328B : 9			16075
INORGANICS											
Alkalinity, Total as CaCO3	65	mg/L		4		A2320 B	03/29/12 15:28 / cmm		MAN-TECH_120329A : 24		R78897
Bicarbonate as HCO3	79	mg/L		4		A2320 B	03/29/12 15:28 / cmm		MAN-TECH_120329A : 24		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 15:28 / cmm		MAN-TECH_120329A : 24		R78897
Chloride	2	mg/L		1		E300.0	03/28/12 20:58 / cmm		IC102-H_120328A : 58		R78880
Sulfate	4	mg/L		1		E300.0	03/28/12 20:58 / cmm		IC102-H_120328A : 58		R78880
Hardness as CaCO3	65	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 2		R78918
METALS, DISSOLVED											
Aluminum	0.21	mg/L		0.03		E200.7	03/28/12 12:18 / sld		ICP2-HE_120328B : 41		R78872
Calcium	16	mg/L		1		E200.7	03/28/12 12:18 / sld		ICP2-HE_120328B : 41		R78872
Magnesium	6	mg/L		1		E200.7	03/28/12 12:18 / sld		ICP2-HE_120328B : 41		R78872
Potassium	1	mg/L		1		E200.7	03/28/12 12:18 / sld		ICP2-HE_120328B : 41		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 12:18 / sld		ICP2-HE_120328B : 41		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Copper	0.003	mg/L		0.001		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Iron	0.36	mg/L		0.03		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Manganese	0.023	mg/L		0.005		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Zinc	ND	mg/L		0.01		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW07
Lab ID: H12030340-002
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 09:00 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.5	s.u.		0.1		A4500-H B	03/28/12 11:21 / cmm		PHSC_101-H_120328A : 19		R78847
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	03/28/12 11:21 / cmm		PHSC_101-H_120328A : 20		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:11 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 12			16073
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/28/12 14:22 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 10			16075
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/29/12 15:32 / cmm		MAN-TECH_120329A : 26		R78897
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/29/12 15:32 / cmm		MAN-TECH_120329A : 26		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 15:32 / cmm		MAN-TECH_120329A : 26		R78897
Chloride	ND	mg/L		1		E300.0	03/28/12 21:12 / cmm		IC102-H_120328A : 59		R78880
Sulfate	ND	mg/L		1		E300.0	03/28/12 21:12 / cmm		IC102-H_120328A : 59		R78880
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 3		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:40 / sld		ICP2-HE_120328B : 47		R78872
Calcium	ND	mg/L		1		E200.7	03/28/12 12:40 / sld		ICP2-HE_120328B : 47		R78872
Magnesium	ND	mg/L		1		E200.7	03/28/12 12:40 / sld		ICP2-HE_120328B : 47		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:40 / sld		ICP2-HE_120328B : 47		R78872
Sodium	ND	mg/L		1		E200.7	03/28/12 12:40 / sld		ICP2-HE_120328B : 47		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Copper	ND	mg/L		0.001		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Iron	ND	mg/L		0.03		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Lead	ND	mg/L		0.0005		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Manganese	ND	mg/L		0.005		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Zinc	ND	mg/L		0.01		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW01
Lab ID: H12030340-003
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 11:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	03/28/12 11:24 / cmm		PHSC_101-H_120328A : 21		R78847
Conductivity @ 25 C	154	umhos/cm		1		A2510 B	03/28/12 11:24 / cmm		PHSC_101-H_120328A : 22		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:11 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 13			16073
Solids, Total Dissolved TDS @ 180 C	88	mg/L		10		A2540 C	03/28/12 14:22 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 11			16075
INORGANICS											
Alkalinity, Total as CaCO3	77	mg/L		4		A2320 B	03/29/12 15:39 / cmm		MAN-TECH_120329A : 28		R78897
Bicarbonate as HCO3	94	mg/L		4		A2320 B	03/29/12 15:39 / cmm		MAN-TECH_120329A : 28		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 15:39 / cmm		MAN-TECH_120329A : 28		R78897
Chloride	ND	mg/L		1		E300.0	03/28/12 21:25 / cmm		IC102-H_120328A : 60		R78880
Sulfate	2	mg/L		1		E300.0	03/28/12 21:25 / cmm		IC102-H_120328A : 60		R78880
Hardness as CaCO3	73	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 4		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:44 / sld		ICP2-HE_120328B : 48		R78872
Calcium	19	mg/L		1		E200.7	03/28/12 12:44 / sld		ICP2-HE_120328B : 48		R78872
Magnesium	7	mg/L		1		E200.7	03/28/12 12:44 / sld		ICP2-HE_120328B : 48		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:44 / sld		ICP2-HE_120328B : 48		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 12:44 / sld		ICP2-HE_120328B : 48		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Copper	ND	mg/L		0.001		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Iron	0.31	mg/L		0.03		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Manganese	ND	mg/L		0.005		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Zinc	ND	mg/L		0.01		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW06
Lab ID: H12030340-004
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 11:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	03/28/12 11:26 / cmm		PHSC_101-H_120328A : 23		R78847
Conductivity @ 25 C	155	umhos/cm		1		A2510 B	03/28/12 11:26 / cmm		PHSC_101-H_120328A : 24		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:11 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 14			16073
Solids, Total Dissolved TDS @ 180 C	78	mg/L		10		A2540 C	03/28/12 14:22 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 12			16075
INORGANICS											
Alkalinity, Total as CaCO3	77	mg/L		4		A2320 B	03/29/12 15:46 / cmm		MAN-TECH_120329A : 30		R78897
Bicarbonate as HCO3	94	mg/L		4		A2320 B	03/29/12 15:46 / cmm		MAN-TECH_120329A : 30		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 15:46 / cmm		MAN-TECH_120329A : 30		R78897
Chloride	ND	mg/L		1		E300.0	03/28/12 21:39 / cmm		IC102-H_120328A : 61		R78880
Sulfate	2	mg/L		1		E300.0	03/28/12 21:39 / cmm		IC102-H_120328A : 61		R78880
Hardness as CaCO3	72	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 5		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:47 / sld		ICP2-HE_120328B : 49		R78872
Calcium	18	mg/L		1		E200.7	03/28/12 12:47 / sld		ICP2-HE_120328B : 49		R78872
Magnesium	6	mg/L		1		E200.7	03/28/12 12:47 / sld		ICP2-HE_120328B : 49		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:47 / sld		ICP2-HE_120328B : 49		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 12:47 / sld		ICP2-HE_120328B : 49		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Copper	ND	mg/L		0.001		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Iron	0.30	mg/L		0.03		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Manganese	ND	mg/L		0.005		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Zinc	ND	mg/L		0.01		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW02
Lab ID: H12030340-005
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 12:00 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.8	s.u.		0.1		A4500-H B	03/28/12 11:29 / cmm		PHSC_101-H_120328A : 25		R78847
Conductivity @ 25 C	148	umhos/cm		1		A2510 B	03/28/12 11:29 / cmm		PHSC_101-H_120328A : 26		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:12 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 16			16073
Solids, Total Dissolved TDS @ 180 C	74	mg/L		10		A2540 C	03/28/12 14:23 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 14			16075
INORGANICS											
Alkalinity, Total as CaCO3	69	mg/L		4		A2320 B	03/29/12 15:53 / cmm		MAN-TECH_120329A : 32		R78897
Bicarbonate as HCO3	85	mg/L		4		A2320 B	03/29/12 15:53 / cmm		MAN-TECH_120329A : 32		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 15:53 / cmm		MAN-TECH_120329A : 32		R78897
Chloride	ND	mg/L		1		E300.0	03/28/12 21:52 / cmm		IC102-H_120328A : 62		R78880
Sulfate	4	mg/L		1		E300.0	03/28/12 21:52 / cmm		IC102-H_120328A : 62		R78880
Hardness as CaCO3	69	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 6		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:51 / sld		ICP2-HE_120328B : 50		R78872
Calcium	17	mg/L		1		E200.7	03/28/12 12:51 / sld		ICP2-HE_120328B : 50		R78872
Magnesium	7	mg/L		1		E200.7	03/28/12 12:51 / sld		ICP2-HE_120328B : 50		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:51 / sld		ICP2-HE_120328B : 50		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 12:51 / sld		ICP2-HE_120328B : 50		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Copper	0.001	mg/L		0.001		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Iron	0.04	mg/L		0.03		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Manganese	ND	mg/L		0.005		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Zinc	ND	mg/L		0.01		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW04
Lab ID: H12030340-006
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 13:45 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.		0.1		A4500-H B	03/28/12 11:34 / cmm		PHSC_101-H_120328A : 29		R78847
Conductivity @ 25 C	217	umhos/cm		1		A2510 B	03/28/12 11:34 / cmm		PHSC_101-H_120328A : 30		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:12 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 17			16073
Solids, Total Dissolved TDS @ 180 C	116	mg/L		10		A2540 C	03/28/12 14:23 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 15			16075
INORGANICS											
Alkalinity, Total as CaCO3	70	mg/L		4		A2320 B	03/29/12 16:08 / cmm		MAN-TECH_120329A : 36		R78897
Bicarbonate as HCO3	86	mg/L		4		A2320 B	03/29/12 16:08 / cmm		MAN-TECH_120329A : 36		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:08 / cmm		MAN-TECH_120329A : 36		R78897
Chloride	4	mg/L		1		E300.0	03/29/12 15:52 / cmm		IC102-H_120329A : 24		R78898
Sulfate	26	mg/L		1		E300.0	03/29/12 15:52 / cmm		IC102-H_120329A : 24		R78898
Hardness as CaCO3	99	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 7		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:55 / sld		ICP2-HE_120328B : 51		R78872
Calcium	23	mg/L		1		E200.7	03/28/12 12:55 / sld		ICP2-HE_120328B : 51		R78872
Magnesium	10	mg/L		1		E200.7	03/28/12 12:55 / sld		ICP2-HE_120328B : 51		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:55 / sld		ICP2-HE_120328B : 51		R78872
Sodium	3	mg/L		1		E200.7	03/28/12 12:55 / sld		ICP2-HE_120328B : 51		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Cadmium	0.00018	mg/L		0.00008		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Copper	0.002	mg/L		0.001		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Iron	0.19	mg/L		0.03		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Manganese	0.015	mg/L		0.005		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Zinc	0.11	mg/L		0.01		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW03
Lab ID: H12030340-007
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 14:25 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.		0.1		A4500-H B	03/28/12 11:36 / cmm		PHSC_101-H_120328A : 31		R78847
Conductivity @ 25 C	217	umhos/cm		1		A2510 B	03/28/12 11:36 / cmm		PHSC_101-H_120328A : 32		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:12 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 18			16073
Solids, Total Dissolved TDS @ 180 C	110	mg/L		10		A2540 C	03/28/12 14:23 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 16			16075
INORGANICS											
Alkalinity, Total as CaCO3	70	mg/L		4		A2320 B	03/29/12 16:15 / cmm		MAN-TECH_120329A : 38		R78897
Bicarbonate as HCO3	85	mg/L		4		A2320 B	03/29/12 16:15 / cmm		MAN-TECH_120329A : 38		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:15 / cmm		MAN-TECH_120329A : 38		R78897
Chloride	4	mg/L		1		E300.0	03/29/12 16:05 / cmm		IC102-H_120329A : 25		R78898
Sulfate	26	mg/L		1		E300.0	03/29/12 16:05 / cmm		IC102-H_120329A : 25		R78898
Hardness as CaCO3	96	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 8		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:59 / sld		ICP2-HE_120328B : 52		R78872
Calcium	22	mg/L		1		E200.7	03/28/12 12:59 / sld		ICP2-HE_120328B : 52		R78872
Magnesium	10	mg/L		1		E200.7	03/28/12 12:59 / sld		ICP2-HE_120328B : 52		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:59 / sld		ICP2-HE_120328B : 52		R78872
Sodium	3	mg/L		1		E200.7	03/28/12 12:59 / sld		ICP2-HE_120328B : 52		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Cadmium	0.00017	mg/L		0.00008		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Copper	0.002	mg/L		0.001		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Iron	0.20	mg/L		0.03		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Lead	ND	mg/L		0.0005		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Manganese	0.024	mg/L		0.005		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Zinc	0.12	mg/L		0.01		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW25
Lab ID: H12030340-008
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.4	s.u.		0.1		A4500-H B	03/28/12 11:39 / cmm		PHSC_101-H_120328A : 33		R78847
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	03/28/12 11:39 / cmm		PHSC_101-H_120328A : 34		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:12 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 19			16073
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/28/12 14:24 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 17			16075
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/29/12 16:19 / cmm		MAN-TECH_120329A : 40		R78897
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/29/12 16:19 / cmm		MAN-TECH_120329A : 40		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:19 / cmm		MAN-TECH_120329A : 40		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 16:19 / cmm		IC102-H_120329A : 26		R78898
Sulfate	ND	mg/L		1		E300.0	03/29/12 16:19 / cmm		IC102-H_120329A : 26		R78898
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 9		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:02 / sld		ICP2-HE_120328B : 53		R78872
Calcium	ND	mg/L		1		E200.7	03/28/12 13:02 / sld		ICP2-HE_120328B : 53		R78872
Magnesium	ND	mg/L		1		E200.7	03/28/12 13:02 / sld		ICP2-HE_120328B : 53		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:02 / sld		ICP2-HE_120328B : 53		R78872
Sodium	ND	mg/L		1		E200.7	03/28/12 13:02 / sld		ICP2-HE_120328B : 53		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Copper	ND	mg/L		0.001		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Iron	ND	mg/L		0.03		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Lead	ND	mg/L		0.0005		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Manganese	ND	mg/L		0.005		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Zinc	ND	mg/L		0.01		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW26
Lab ID: H12030340-009
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:15 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.2	s.u.		0.1		A4500-H B	03/28/12 11:42 / cmm		PHSC_101-H_120328A : 35		R78847
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	03/28/12 11:42 / cmm		PHSC_101-H_120328A : 36		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:13 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 20			16073
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/28/12 14:24 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 18			16075
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/29/12 16:23 / cmm		MAN-TECH_120329A : 42		R78897
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/29/12 16:23 / cmm		MAN-TECH_120329A : 42		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:23 / cmm		MAN-TECH_120329A : 42		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 17:00 / cmm		IC102-H_120329A : 29		R78898
Sulfate	ND	mg/L		1		E300.0	03/29/12 17:00 / cmm		IC102-H_120329A : 29		R78898
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 10		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:06 / sld		ICP2-HE_120328B : 54		R78872
Calcium	ND	mg/L		1		E200.7	03/28/12 13:06 / sld		ICP2-HE_120328B : 54		R78872
Magnesium	ND	mg/L		1		E200.7	03/28/12 13:06 / sld		ICP2-HE_120328B : 54		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:06 / sld		ICP2-HE_120328B : 54		R78872
Sodium	ND	mg/L		1		E200.7	03/28/12 13:06 / sld		ICP2-HE_120328B : 54		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Copper	ND	mg/L		0.001		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Iron	ND	mg/L		0.03		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Lead	ND	mg/L		0.0005		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Manganese	ND	mg/L		0.005		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Zinc	ND	mg/L		0.01		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW22
Lab ID: H12030340-010
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:50 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	03/28/12 11:44 / cmm		PHSC_101-H_120328A : 37		R78847
Conductivity @ 25 C	680	umhos/cm		1		A2510 B	03/28/12 11:44 / cmm		PHSC_101-H_120328A : 38		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:14 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 21			16073
Solids, Total Dissolved TDS @ 180 C	420	mg/L		10		A2540 C	03/28/12 14:24 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 19			16075
INORGANICS											
Alkalinity, Total as CaCO3	95	mg/L		4		A2320 B	03/29/12 16:29 / cmm		MAN-TECH_120329A : 44		R78897
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/29/12 16:29 / cmm		MAN-TECH_120329A : 44		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:29 / cmm		MAN-TECH_120329A : 44		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 17:13 / cmm		IC102-H_120329A : 30		R78898
Sulfate	260	mg/L		1		E300.0	03/29/12 17:13 / cmm		IC102-H_120329A : 30		R78898
Hardness as CaCO3	335	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 11		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:10 / sld		ICP2-HE_120328B : 55		R78872
Calcium	91	mg/L		1		E200.7	03/28/12 13:10 / sld		ICP2-HE_120328B : 55		R78872
Magnesium	26	mg/L		1		E200.7	03/28/12 13:10 / sld		ICP2-HE_120328B : 55		R78872
Potassium	1	mg/L		1		E200.7	03/28/12 13:10 / sld		ICP2-HE_120328B : 55		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 13:10 / sld		ICP2-HE_120328B : 55		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Cadmium	0.0154	mg/L		0.00008		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Copper	0.023	mg/L		0.001		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Iron	ND	mg/L		0.03		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Lead	0.0059	mg/L		0.0005		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Manganese	ND	mg/L		0.005		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Zinc	3.45	mg/L		0.01		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW24
Lab ID: H12030340-011
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:55 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	03/28/12 11:47 / cmm		PHSC_101-H_120328A : 39		R78847
Conductivity @ 25 C	679	umhos/cm		1		A2510 B	03/28/12 11:47 / cmm		PHSC_101-H_120328A : 40		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:14 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 22			16073
Solids, Total Dissolved TDS @ 180 C	442	mg/L		10		A2540 C	03/28/12 14:24 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 20			16075
INORGANICS											
Alkalinity, Total as CaCO3	95	mg/L		4		A2320 B	03/29/12 16:43 / cmm		MAN-TECH_120329A : 48		R78897
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/29/12 16:43 / cmm		MAN-TECH_120329A : 48		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:43 / cmm		MAN-TECH_120329A : 48		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 17:27 / cmm		IC102-H_120329A : 31		R78898
Sulfate	260	mg/L		1		E300.0	03/29/12 17:27 / cmm		IC102-H_120329A : 31		R78898
Hardness as CaCO3	347	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 12		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:14 / sld		ICP2-HE_120328B : 56		R78872
Calcium	95	mg/L		1		E200.7	03/28/12 13:14 / sld		ICP2-HE_120328B : 56		R78872
Magnesium	27	mg/L		1		E200.7	03/28/12 13:14 / sld		ICP2-HE_120328B : 56		R78872
Potassium	1	mg/L		1		E200.7	03/28/12 13:14 / sld		ICP2-HE_120328B : 56		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 13:14 / sld		ICP2-HE_120328B : 56		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Cadmium	0.0156	mg/L		0.00008		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Copper	0.023	mg/L		0.001		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Iron	ND	mg/L		0.03		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Lead	0.0059	mg/L		0.0005		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Manganese	ND	mg/L		0.005		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Zinc	3.43	mg/L		0.01		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW01
Lab ID: H12030340-012
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 16:50 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.		0.1		A4500-H B	03/28/12 11:49 / cmm		PHSC_101-H_120328A : 41		R78847
Conductivity @ 25 C	131	umhos/cm		1		A2510 B	03/28/12 11:49 / cmm		PHSC_101-H_120328A : 42		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:14 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 23			16073
Solids, Total Dissolved TDS @ 180 C	62	mg/L		10		A2540 C	03/28/12 14:24 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 21			16075
INORGANICS											
Alkalinity, Total as CaCO3	65	mg/L		4		A2320 B	03/29/12 16:50 / cmm		MAN-TECH_120329A : 50		R78897
Bicarbonate as HCO3	79	mg/L		4		A2320 B	03/29/12 16:50 / cmm		MAN-TECH_120329A : 50		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:50 / cmm		MAN-TECH_120329A : 50		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 17:40 / cmm		IC102-H_120329A : 32		R78898
Sulfate	2	mg/L		1		E300.0	03/29/12 17:40 / cmm		IC102-H_120329A : 32		R78898
Hardness as CaCO3	63	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 13		R78918
METALS, DISSOLVED											
Aluminum	0.19	mg/L		0.03		E200.7	03/28/12 13:36 / sld		ICP2-HE_120328B : 62		R78872
Calcium	13	mg/L		1		E200.7	03/28/12 13:36 / sld		ICP2-HE_120328B : 62		R78872
Magnesium	7	mg/L		1		E200.7	03/28/12 13:36 / sld		ICP2-HE_120328B : 62		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:36 / sld		ICP2-HE_120328B : 62		R78872
Sodium	1	mg/L		1		E200.7	03/28/12 13:36 / sld		ICP2-HE_120328B : 62		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Copper	0.002	mg/L		0.001		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Iron	0.25	mg/L		0.03		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Manganese	0.006	mg/L		0.005		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Zinc	ND	mg/L		0.01		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW2
Lab ID: H12030340-013
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 17:25 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.7	s.u.		0.1		A4500-H B	03/28/12 11:52 / cmm		PHSC_101-H_120328A : 43		R78847
Conductivity @ 25 C	440	umhos/cm		1		A2510 B	03/28/12 11:52 / cmm		PHSC_101-H_120328A : 44		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:15 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 24			16073
Solids, Total Dissolved TDS @ 180 C	282	mg/L		10		A2540 C	03/28/12 14:25 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 22			16075
INORGANICS											
Alkalinity, Total as CaCO3	8	mg/L		4		A2320 B	03/29/12 16:55 / cmm		MAN-TECH_120329A : 52		R78897
Bicarbonate as HCO3	10	mg/L		4		A2320 B	03/29/12 16:55 / cmm		MAN-TECH_120329A : 52		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:55 / cmm		MAN-TECH_120329A : 52		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 17:54 / cmm		IC102-H_120329A : 33		R78898
Sulfate	190	mg/L		1		E300.0	03/29/12 17:54 / cmm		IC102-H_120329A : 33		R78898
Hardness as CaCO3	193	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 14		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:40 / sld		ICP2-HE_120328B : 63		R78872
Calcium	51	mg/L		1		E200.7	03/28/12 13:40 / sld		ICP2-HE_120328B : 63		R78872
Magnesium	16	mg/L		1		E200.7	03/28/12 13:40 / sld		ICP2-HE_120328B : 63		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:40 / sld		ICP2-HE_120328B : 63		R78872
Sodium	ND	mg/L		1		E200.7	03/28/12 13:40 / sld		ICP2-HE_120328B : 63		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Cadmium	0.00537	mg/L		0.00008		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Copper	0.006	mg/L		0.001		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Iron	0.11	mg/L		0.03		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Lead	0.0219	mg/L		0.0005		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Manganese	1.72	mg/L		0.005		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Zinc	1.18	mg/L		0.01		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW38
Lab ID: H12030340-014
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 08:50 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.		0.1		A4500-H B	03/28/12 11:55 / cmm		PHSC_101-H_120328A : 45		R78847
Conductivity @ 25 C	306	umhos/cm		1		A2510 B	03/28/12 11:55 / cmm		PHSC_101-H_120328A : 46		R78847
Solids, Total Suspended TSS @ 105 C	24	mg/L		10		A2540 D	03/28/12 14:15 / cmm	03/28/12 13:50-124 (14410200)_120328A : 27			16074
Solids, Total Dissolved TDS @ 180 C	172	mg/L		10		A2540 C	03/28/12 14:25 / cmm	03/28/12 13:55-124 (14410200)_120328B : 23			16075
INORGANICS											
Alkalinity, Total as CaCO3	51	mg/L		4		A2320 B	03/29/12 17:01 / cmm		MAN-TECH_120329A : 54		R78897
Bicarbonate as HCO3	63	mg/L		4		A2320 B	03/29/12 17:01 / cmm		MAN-TECH_120329A : 54		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 17:01 / cmm		MAN-TECH_120329A : 54		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 18:08 / cmm		IC102-H_120329A : 34		R78898
Sulfate	91	mg/L		1		E300.0	03/29/12 18:08 / cmm		IC102-H_120329A : 34		R78898
Hardness as CaCO3	130	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 15		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:43 / sld		ICP2-HE_120328B : 64		R78872
Calcium	28	mg/L		1		E200.7	03/28/12 13:43 / sld		ICP2-HE_120328B : 64		R78872
Magnesium	14	mg/L		1		E200.7	03/28/12 13:43 / sld		ICP2-HE_120328B : 64		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:43 / sld		ICP2-HE_120328B : 64		R78872
Sodium	1	mg/L		1		E200.7	03/28/12 13:43 / sld		ICP2-HE_120328B : 64		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Cadmium	0.0130	mg/L		0.00008		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Copper	0.118	mg/L		0.001		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Iron	5.88	mg/L		0.03		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Lead	0.0647	mg/L		0.0005		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Manganese	1.66	mg/L		0.005		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Zinc	2.64	mg/L		0.01		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW48
Lab ID: H12030340-015
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:05 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.7	s.u.		0.1		A4500-H B	03/28/12 11:57 / cmm		PHSC_101-H_120328A : 47		R78847
Conductivity @ 25 C	301	umhos/cm		1		A2510 B	03/28/12 11:57 / cmm		PHSC_101-H_120328A : 48		R78847
Solids, Total Suspended TSS @ 105 C	30	mg/L		10		A2540 D	03/28/12 14:16 / cmm	03/28/12 13:50-124 (14410200)_120328A : 28			16074
Solids, Total Dissolved TDS @ 180 C	166	mg/L		10		A2540 C	03/28/12 14:25 / cmm	03/28/12 13:55-124 (14410200)_120328B : 24			16075
INORGANICS											
Alkalinity, Total as CaCO3	43	mg/L		4		A2320 B	03/29/12 17:08 / cmm		MAN-TECH_120329A : 56		R78897
Bicarbonate as HCO3	52	mg/L		4		A2320 B	03/29/12 17:08 / cmm		MAN-TECH_120329A : 56		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 17:08 / cmm		MAN-TECH_120329A : 56		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 18:48 / cmm		IC102-H_120329A : 37		R78898
Sulfate	94	mg/L		1		E300.0	03/29/12 18:48 / cmm		IC102-H_120329A : 37		R78898
Hardness as CaCO3	130	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 16		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:47 / sld		ICP2-HE_120328B : 65		R78872
Calcium	28	mg/L		1		E200.7	03/28/12 13:47 / sld		ICP2-HE_120328B : 65		R78872
Magnesium	15	mg/L		1		E200.7	03/28/12 13:47 / sld		ICP2-HE_120328B : 65		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:47 / sld		ICP2-HE_120328B : 65		R78872
Sodium	1	mg/L		1		E200.7	03/28/12 13:47 / sld		ICP2-HE_120328B : 65		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	0.004	mg/L		0.003		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Cadmium	0.0103	mg/L		0.00008		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Copper	0.120	mg/L		0.001		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Iron	6.77	mg/L		0.03		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Lead	0.0619	mg/L		0.0005		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Manganese	1.57	mg/L		0.005		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Zinc	2.30	mg/L		0.01		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW23
Lab ID: H12030340-016
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:30 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	03/28/12 12:46 / cmm		PHSC_101-H_120328A : 61		R78847
Conductivity @ 25 C	270	umhos/cm		1		A2510 B	03/28/12 12:46 / cmm		PHSC_101-H_120328A : 62		R78847
Solids, Total Suspended TSS @ 105 C	10	mg/L		10		A2540 D	03/28/12 14:16 / cmm	03/28/12 13:50-124 (14410200)_120328A : 29			16074
Solids, Total Dissolved TDS @ 180 C	154	mg/L		10		A2540 C	03/28/12 14:25 / cmm	03/28/12 13:55-124 (14410200)_120328B : 25			16075
INORGANICS											
Alkalinity, Total as CaCO3	61	mg/L		4		A2320 B	03/30/12 11:53 / cmm		MAN-TECH_120330A : 12		R78916
Bicarbonate as HCO3	74	mg/L		4		A2320 B	03/30/12 11:53 / cmm		MAN-TECH_120330A : 12		R78916
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/12 11:53 / cmm		MAN-TECH_120330A : 12		R78916
Chloride	ND	mg/L		1		E300.0	03/29/12 19:02 / cmm		IC102-H_120329A : 38		R78898
Sulfate	63	mg/L		1		E300.0	03/29/12 19:02 / cmm		IC102-H_120329A : 38		R78898
Hardness as CaCO3	117	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 17		R78918
METALS, DISSOLVED											
Aluminum	0.13	mg/L		0.03		E200.7	03/28/12 13:51 / sld		ICP2-HE_120328B : 66		R78872
Calcium	25	mg/L		1		E200.7	03/28/12 13:51 / sld		ICP2-HE_120328B : 66		R78872
Magnesium	13	mg/L		1		E200.7	03/28/12 13:51 / sld		ICP2-HE_120328B : 66		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:51 / sld		ICP2-HE_120328B : 66		R78872
Sodium	1	mg/L		1		E200.7	03/28/12 13:51 / sld		ICP2-HE_120328B : 66		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Cadmium	0.00790	mg/L		0.00008		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Copper	0.031	mg/L		0.001		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Iron	0.64	mg/L		0.03		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Lead	0.0360	mg/L		0.0005		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Manganese	0.595	mg/L		0.005		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Zinc	1.91	mg/L		0.01		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW3A
Lab ID: H12030340-017
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:55 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	03/28/12 12:51 / cmm		PHSC_101-H_120328A : 65		R78847
Conductivity @ 25 C	448	umhos/cm		1		A2510 B	03/28/12 12:51 / cmm		PHSC_101-H_120328A : 66		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:16 / cmm	03/28/12 13:50-124 (14410200)_120328A : 30			16074
Solids, Total Dissolved TDS @ 180 C	260	mg/L		10		A2540 C	03/28/12 14:26 / cmm	03/28/12 13:57-124 (14410200)_120328B : 28			16076
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	03/30/12 12:00 / cmm		MAN-TECH_120330A : 14		R78916
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/30/12 12:00 / cmm		MAN-TECH_120330A : 14		R78916
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/12 12:00 / cmm		MAN-TECH_120330A : 14		R78916
Chloride	ND	mg/L		1		E300.0	03/29/12 19:16 / cmm		IC102-H_120329A : 39		R78898
Sulfate	120	mg/L		1		E300.0	03/29/12 19:16 / cmm		IC102-H_120329A : 39		R78898
Hardness as CaCO3	210	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 18		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:54 / sld		ICP2-HE_120328B : 67		R78872
Calcium	46	mg/L		1		E200.7	03/28/12 13:54 / sld		ICP2-HE_120328B : 67		R78872
Magnesium	23	mg/L		1		E200.7	03/28/12 13:54 / sld		ICP2-HE_120328B : 67		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:54 / sld		ICP2-HE_120328B : 67		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 13:54 / sld		ICP2-HE_120328B : 67		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Cadmium	0.00426	mg/L		0.00008		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Copper	0.022	mg/L		0.001		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Iron	0.44	mg/L		0.03		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Lead	0.0032	mg/L		0.0005		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Manganese	1.50	mg/L		0.005		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Zinc	1.36	mg/L		0.01		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW3B
Lab ID: H12030340-018
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 11:15 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.0	s.u.		0.1		A4500-H B	03/28/12 12:53 / cmm		PHSC_101-H_120328A : 67		R78847
Conductivity @ 25 C	526	umhos/cm		1		A2510 B	03/28/12 12:53 / cmm		PHSC_101-H_120328A : 68		R78847
Solids, Total Suspended TSS @ 105 C	62	mg/L		10		A2540 D	03/28/12 14:16 / cmm	03/28/12 13:50 -124 (14410200)_120328A : 32			16074
Solids, Total Dissolved TDS @ 180 C	324	mg/L		10		A2540 C	03/28/12 14:26 / cmm	03/28/12 13:57 -124 (14410200)_120328B : 30			16076
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	03/30/12 12:06 / cmm		MAN-TECH_120330A : 16		R78916
Bicarbonate as HCO3	130	mg/L		4		A2320 B	03/30/12 12:06 / cmm		MAN-TECH_120330A : 16		R78916
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/12 12:06 / cmm		MAN-TECH_120330A : 16		R78916
Chloride	ND	mg/L		1		E300.0	03/29/12 19:56 / cmm		IC102-H_120329A : 42		R78898
Sulfate	160	mg/L		1		E300.0	03/29/12 19:56 / cmm		IC102-H_120329A : 42		R78898
Hardness as CaCO3	240	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 19		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:58 / sld		ICP2-HE_120328B : 68		R78872
Calcium	54	mg/L		1		E200.7	03/28/12 13:58 / sld		ICP2-HE_120328B : 68		R78872
Magnesium	28	mg/L		1		E200.8	04/03/12 18:23 / dck		ICPMS204-B_120402A : 331		R78968
Potassium	ND	mg/L		1		E200.7	03/28/12 13:58 / sld		ICP2-HE_120328B : 68		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 13:58 / sld		ICP2-HE_120328B : 68		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	0.012	mg/L		0.003		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Cadmium	0.00363	mg/L		0.00008		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Copper	0.033	mg/L		0.001		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Iron	3.70	mg/L		0.03		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Lead	0.129	mg/L		0.0005		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Manganese	2.01	mg/L		0.005		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Zinc	1.56	mg/L		0.01		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD05
Lab ID: H12030340-019
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 10:10 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	4660	mg/kg		5		SW6010B	04/06/12 08:02 / sld	04/02/12 14:34	ICP2-HE_120405B : 204		16117
Arsenic	6	mg/kg		5		SW6010B	04/10/12 19:58 / sld	04/02/12 14:34	ICP2-HE_120410C : 130		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:02 / sld	04/02/12 14:34	ICP2-HE_120405B : 204		16117
Copper	68	mg/kg		5		SW6010B	04/06/12 08:02 / sld	04/02/12 14:34	ICP2-HE_120405B : 204		16117
Iron	24600	mg/kg		5		SW6010B	04/10/12 19:58 / sld	04/02/12 14:34	ICP2-HE_120410C : 130		16117
Lead	5	mg/kg		5		SW6010B	04/11/12 18:49 / sld	04/02/12 14:34	ICP2-HE_120411C : 96		16117
Manganese	401	mg/kg		5		SW6010B	04/06/12 08:02 / sld	04/02/12 14:34	ICP2-HE_120405B : 204		16117
Zinc	35	mg/kg		5		SW6010B	04/06/12 08:02 / sld	04/02/12 14:34	ICP2-HE_120405B : 204		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD06
Lab ID: H12030340-020
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 11:10 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	11500	mg/kg		5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Arsenic	14	mg/kg		5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Copper	51	mg/kg		5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Iron	17800	mg/kg		5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Lead	21	mg/kg		5		SW6010B	04/10/12 20:02 / sld	04/02/12 14:34	ICP2-HE_120410C : 131		16117
Manganese	1860	mg/kg		5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Zinc	64	mg/kg		5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD01
Lab ID: H12030340-021
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 11:10 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	11300	mg/kg		5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Arsenic	14	mg/kg		5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Copper	48	mg/kg		5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Iron	17600	mg/kg		5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Lead	14	mg/kg		5		SW6010B	04/10/12 20:05 / sld	04/02/12 14:34	ICP2-HE_120410C : 132		16117
Manganese	2550	mg/kg		5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Zinc	68	mg/kg		5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD02
Lab ID: H12030340-022
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 12:00 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	4790	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Arsenic	ND	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Copper	63	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Iron	2980	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Lead	8	mg/kg		5		SW6010B	04/10/12 20:09 / sld	04/02/12 14:34	ICP2-HE_120410C : 133		16117
Manganese	21	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Zinc	19	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD04
Lab ID: H12030340-023
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 13:45 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	4430	mg/kg		5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Arsenic	7	mg/kg		5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Cadmium	1	mg/kg		1		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Copper	25	mg/kg		5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Iron	13700	mg/kg		5		SW6010B	04/10/12 20:13 / sld	04/02/12 14:34	ICP2-HE_120410C : 134		16117
Lead	20	mg/kg		5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Manganese	877	mg/kg		5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Zinc	555	mg/kg		5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD03
Lab ID: H12030340-024
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 14:25 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	5640	mg/kg		5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Arsenic	10	mg/kg		5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Cadmium	1	mg/kg		1		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Copper	33	mg/kg		5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Iron	15300	mg/kg		5		SW6010B	04/10/12 20:24 / sld	04/02/12 14:34	ICP2-HE_120410C : 137		16117
Lead	57	mg/kg		5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Manganese	888	mg/kg		5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Zinc	375	mg/kg		5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD22
Lab ID: H12030340-025
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:50 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	8620	mg/kg		5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Arsenic	58	mg/kg		5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Cadmium	53	mg/kg		1		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Copper	1550	mg/kg		5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Iron	29100	mg/kg		5		SW6010B	04/10/12 20:27 / sld	04/02/12 14:34	ICP2-HE_120410C : 138		16117
Lead	5480	mg/kg		5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Manganese	13200	mg/kg		5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Zinc	6420	mg/kg		5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD24
Lab ID: H12030340-026
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:55 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6980	mg/kg		5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Arsenic	66	mg/kg		5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Cadmium	64	mg/kg		1		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Copper	1690	mg/kg		5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Iron	28600	mg/kg		5		SW6010B	04/10/12 20:31 / sld	04/02/12 14:34	ICP2-HE_120410C : 139		16117
Lead	5970	mg/kg		5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Manganese	15000	mg/kg		5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Zinc	7400	mg/kg		5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD01
Lab ID: H12030340-027
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 16:50 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	61.10	mg/kg		5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Arsenic	10	mg/kg		5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Copper	13	mg/kg		5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Iron	13500	mg/kg		5		SW6010B	04/10/12 20:35 / sld	04/02/12 14:34	ICP2-HE_120410C : 140		16117
Lead	19	mg/kg		5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Manganese	349	mg/kg		5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Zinc	92	mg/kg		5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD38
Lab ID: H12030340-028
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 08:50 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6690	mg/kg		5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Arsenic	52	mg/kg		5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Cadmium	22	mg/kg		1		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Copper	512	mg/kg		5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Iron	33000	mg/kg		5		SW6010B	04/10/12 20:38 / sld	04/02/12 14:34	ICP2-HE_120410C : 141		16117
Lead	1780	mg/kg		5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Manganese	4230	mg/kg		5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Zinc	3860	mg/kg		5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD48
Lab ID: H12030340-029
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:05 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6530	mg/kg		5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Arsenic	84	mg/kg		5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Cadmium	35	mg/kg		1		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Copper	692	mg/kg		5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Iron	44500	mg/kg		5		SW6010B	04/10/12 20:42 / sld	04/02/12 14:34	ICP2-HE_120410C : 142		16117
Lead	9090	mg/kg		5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Manganese	4810	mg/kg		5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Zinc	6260	mg/kg		5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD23
Lab ID: H12030340-030
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:30 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	2130	mg/kg		5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Arsenic	26	mg/kg		5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Cadmium	4	mg/kg		1		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Copper	190	mg/kg		5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Iron	8660	mg/kg		5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Lead	380	mg/kg		5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Manganese	394	mg/kg		5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Zinc	1120	mg/kg		5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD3A
Lab ID: H12030340-031
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:55 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	3760	mg/kg		5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Arsenic	34	mg/kg		5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Cadmium	19	mg/kg		1		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Copper	588	mg/kg		5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Iron	15000	mg/kg		5		SW6010B	04/10/12 20:46 / sld	04/02/12 14:34	ICP2-HE_120410C : 143		16117
Lead	286	mg/kg		5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Manganese	20400	mg/kg		5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Zinc	4010	mg/kg		5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD3B
Lab ID: H12030340-032
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 11:15 **DateReceived:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	4440	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Arsenic	5	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Copper	31	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Iron	8970	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Lead	22	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Manganese	555	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Zinc	101	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: 16071

Run ID :Run Order: ICPMS204-B_120402A: 79	SampType: Method Blank	Sample ID: MB-16071	Method: E200.8								
Analysis Date: 04/02/12 20:35	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0001	5E-05									
Cadmium	ND	2E-05									
Copper	ND	0.0004									
Iron	0.005	0.0006									
Lead	ND	2E-05									
Manganese	ND	6E-05									
Zinc	0.003	0.0003									

Associated samples: H12030340-001C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 80	SampType: Laboratory Control Sample	Sample ID: LCS-16071	Method: E200.8								
Analysis Date: 04/02/12 20:40	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.510	0.0010	0.5	0.0001254	102	85	115				
Cadmium	0.265	0.0010	0.25		106	85	115				
Copper	0.512	0.0050	0.5		102	85	115				
Iron	2.52	0.030	2.5	0.005099	101	85	115				
Lead	0.536	0.0010	0.5		107	85	115				
Manganese	2.51	0.0010	2.5		100	85	115				
Zinc	0.509	0.010	0.5	0.002527	101	85	115				

Associated samples: H12030340-001C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 95	SampType: Sample Matrix Spike	Sample ID: H12030340-001CMS3	Method: E200.8								
Analysis Date: 04/02/12 21:50	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.510	0.0010	0.5	0.0006482	102	70	130				
Cadmium	0.263	0.0010	0.25		105	70	130				
Copper	0.514	0.0050	0.5	0.00254	102	70	130				
Iron	2.89	0.030	2.5	0.3573	101	70	130				
Lead	0.548	0.0010	0.5	0.0001873	110	70	130				
Manganese	2.57	0.0010	2.5	0.02279	102	70	130				
Zinc	0.504	0.010	0.5	0.004048	100	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: 16071

Run ID :Run Order: ICPMS204-B_120402A: 95	SampType: Sample Matrix Spike	Sample ID: H12030340-001CMS3	Method: E200.8								
Analysis Date: 04/02/12 21:50	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: H12030340-001C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 96	SampType: Sample Matrix Spike Duplicate	Sample ID: H12030340-001CMSD3	Method: E200.8								
Analysis Date: 04/02/12 21:54	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.508	0.0010	0.5	0.0006482	102	70	130	0.5098	0.3	20	
Cadmium	0.264	0.0010	0.25		105	70	130	0.263	0.3	20	
Copper	0.505	0.0050	0.5	0.00254	100	70	130	0.5136	1.7	20	
Iron	2.92	0.030	2.5	0.3573	102	70	130	2.89	0.9	20	
Lead	0.541	0.0010	0.5	0.0001873	108	70	130	0.5477	1.2	20	
Manganese	2.58	0.0010	2.5	0.02279	102	70	130	2.574	0.4	20	
Zinc	0.498	0.010	0.5	0.004048	99	70	130	0.5044	1.3	20	

Associated samples: H12030340-001C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 245	SampType: Sample Matrix Spike	Sample ID: H12030333-002DMS3	Method: E200.8								
Analysis Date: 04/03/12 09:33	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.03	0.0010	1	0.000557	103	70	130				
Cadmium	0.493	0.0010	0.5	0.000794	98	70	130				
Copper	0.983	0.0050	1	0.007354	98	70	130				
Iron	6.12	0.030	5	0.9708	103	70	130				
Lead	1.18	0.0010	1	0.01776	116	70	130				
Manganese	5.26	0.0010	5	0.02666	105	70	130				
Zinc	1.12	0.010	1	0.1471	97	70	130				

Associated samples: H12030340-001C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 250	SampType: Sample Matrix Spike Duplicate	Sample ID: H12030333-002DMSD3	Method: E200.8								
Analysis Date: 04/03/12 09:59	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.02	0.0010	1	0.000557	102	70	130	1.027	1.1	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: 16071

Run ID :Run Order: ICPMS204-B_120402A: 250	SampType: Sample Matrix Spike Duplicate				Sample ID: H12030333-002DMSD3				Method: E200.8		
Analysis Date: 04/03/12 09:59	Units: mg/L				Prep Info: Prep Date: 3/28/2012				Prep Method: E200.2		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.487	0.0010	0.5	0.000794	97	70	130	0.4932	1.3	20	
Copper	0.967	0.0050	1	0.007354	96	70	130	0.9832	1.7	20	
Iron	6.02	0.030	5	0.9708	101	70	130	6.124	1.7	20	
Lead	1.18	0.0010	1	0.01776	116	70	130	1.179	0.1	20	
Manganese	5.27	0.0010	5	0.02666	105	70	130	5.264	0.1	20	
Zinc	1.11	0.010	1	0.1471	96	70	130	1.117	0.8	20	

Associated samples: **H12030340-001C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-018C**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: 16073

Run ID :Run Order: ACCU-124 (14410200)_120328A: 1	SampType: Method Blank	Sample ID: MB-16073	Method: A2540 D								
Analysis Date: 03/28/12 14:08	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 D								
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 2											

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A**

Run ID :Run Order: ACCU-124 (14410200)_120328A: 2	SampType: Laboratory Control Sample	Sample ID: LCS-16073	Method: A2540 D								
Analysis Date: 03/28/12 14:08	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C											
1870 10 2000 94 70 130											

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A**

Run ID :Run Order: ACCU-124 (14410200)_120328A: 7	SampType: Sample Duplicate	Sample ID: H12030338-001ADUP	Method: A2540 D								
Analysis Date: 03/28/12 14:09	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C											
114 10 112 1.8 5											

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A**

Run ID :Run Order: ACCU-124 (14410200)_120328A: 15	SampType: Sample Duplicate	Sample ID: H12030340-004ADUP	Method: A2540 D								
Analysis Date: 03/28/12 14:11	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 D								
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 10 5											

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: 16074

Run ID :Run Order: ACCU-124 (14410200)_120328A: 25	SampType: Method Blank	Sample ID: MB-16074	Method: A2540 D								
Analysis Date: 03/28/12 14:15	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 D								
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	2									

Associated samples: **H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: ACCU-124 (14410200)_120328A: 26	SampType: Laboratory Control Sample	Sample ID: LCS-16074	Method: A2540 D								
Analysis Date: 03/28/12 14:15	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1870	10	2000		94	70	130				

Associated samples: **H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: ACCU-124 (14410200)_120328A: 31	SampType: Sample Duplicate	Sample ID: H12030340-017ADUP	Method: A2540 D								
Analysis Date: 03/28/12 14:16	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	8.00	10						8		5	

Associated samples: **H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: 16075

Run ID :Run Order: ACCU-124 (14410200)_120328B: 1	SampType: Method Blank	Sample ID: MB-16075	Method: A2540 C								
Analysis Date: 03/28/12 14:20	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	3	3									

Associated samples: H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A

Run ID :Run Order: ACCU-124 (14410200)_120328B: 2	SampType: Laboratory Control Sample	Sample ID: LCS-16075	Method: A2540 C								
Analysis Date: 03/28/12 14:20	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	1950	10	2000	3	98	90	110				

Associated samples: H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A

Run ID :Run Order: ACCU-124 (14410200)_120328B: 4	SampType: Sample Duplicate	Sample ID: H12030338-001ADUP	Method: A2540 C								
Analysis Date: 03/28/12 14:20	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	658	10						690	4.7	5	

Associated samples: H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A

Run ID :Run Order: ACCU-124 (14410200)_120328B: 6	SampType: Sample Matrix Spike	Sample ID: H12030338-003AMS	Method: A2540 C								
Analysis Date: 03/28/12 14:21	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2790	10	2000	762	102	80	120				

Associated samples: H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A

Run ID :Run Order: ACCU-124 (14410200)_120328B: 13	SampType: Sample Duplicate	Sample ID: H12030340-004ADUP	Method: A2540 C								
Analysis Date: 03/28/12 14:22	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	78.0	10						78	0.0	5	

Associated samples: H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: 16076

Run ID :Run Order: ACCU-124 (14410200)_120328B: 26	SampType: Method Blank	Sample ID: MB-16076	Method: A2540 C								
Analysis Date: 03/28/12 14:25	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	ND	3									

Associated samples: **H12030340-017A; H12030340-018A**

Run ID :Run Order: ACCU-124 (14410200)_120328B: 27	SampType: Laboratory Control Sample	Sample ID: LCS-16076	Method: A2540 C								
Analysis Date: 03/28/12 14:26	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	1950	10	2000		97	90	110				

Associated samples: **H12030340-017A; H12030340-018A**

Run ID :Run Order: ACCU-124 (14410200)_120328B: 29	SampType: Sample Duplicate	Sample ID: H12030340-017ADUP	Method: A2540 C								
Analysis Date: 03/28/12 14:26	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	264	10						260	1.5	5	

Associated samples: **H12030340-017A; H12030340-018A**

Run ID :Run Order: ACCU-124 (14410200)_120328B: 31	SampType: Sample Matrix Spike	Sample ID: H12030340-018AMS	Method: A2540 C								
Analysis Date: 03/28/12 14:27	Units: mg/L	Prep Info: Prep Date: 3/28/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2230	10	2000	324	95	80	120				

Associated samples: **H12030340-017A; H12030340-018A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: ICP2-HE_120405B: 199		SampType: Method Blank			Sample ID: MB-16117				Method: SW6010B		
Analysis Date: 04/06/12 07:43		Units: mg/kg			Prep Info: Prep Date: 4/2/2012				Prep Method: SW3050 B		
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.7									
Arsenic	0.7	0.3									
Cadmium	ND	0.02									
Copper	ND	0.1									
Iron	1	0.3									
Lead	ND	0.6									

Associated samples: **H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A**

Run ID :Run Order: ICP2-HE_120405B: 200		SampType: Laboratory Fortified Blank			Sample ID: LFB-16117				Method: SW6010B		
Analysis Date: 04/06/12 07:47		Units: mg/kg			Prep Info: Prep Date: 4/2/2012				Prep Method: SW3050 B		
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	250	5.0	250		100	80	120				
Arsenic	47.8	1.0	50	0.699	94	80	120				
Cadmium	23.8	1.0	25		95	80	120				
Copper	49.2	1.0	50		98	80	120				
Iron	244	5.0	250	1.327	97	80	120				
Lead	48.0	1.0	50		96	80	120				

Associated samples: **H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A**

Run ID :Run Order: ICP2-HE_120405B: 201		SampType: Laboratory Control Sample			Sample ID: LCS-16117				Method: SW6010B		
Analysis Date: 04/06/12 07:51		Units: mg/kg			Prep Info: Prep Date: 4/2/2012				Prep Method: SW3050 B		
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	13300	5.0	14610		91	50.7	131.3				
Arsenic	275	1.5	341	0.699	81	72.3	106.4				
Cadmium	116	1.0	136.2		85	73	105.1				
Copper	245	1.0	278.3		88	77.5	109.6				
Iron	20100	5.0	22860	1.327	88	39.6	138.3				
Lead	176	3.1	185.9		95	75.9	108.6				

Associated samples: **H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Date: 17-Apr-12

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BatchID: 16117

Run ID :Run Order: ICP2-HE_120405B: 222		SampType: Sample Matrix Spike			Sample ID: H12030340-032AMS				Method: SW6010B		
Analysis Date: 04/06/12 09:09		Units: mg/kg			Prep Info: Prep Date: 4/2/2012				Prep Method: SW3050 B		
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5310	5.0	113.2	4444		75	125				A
Arsenic	26.5	1.0	22.64	5.356	93	75	125				
Cadmium	10.2	1.0	11.32	0.2849	87	75	125				
Copper	44.4	1.0	22.64	30.7	61	75	125				S
Iron	9490	5.0	113.2	8970		75	125				A
Lead	47.2	1.4	22.64	22.27	110	75	125				

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A

Run ID :Run Order: ICP2-HE_120405B: 223		SampType: Sample Matrix Spike Duplicate			Sample ID: H12030340-032AMSD				Method: SW6010B		
Analysis Date: 04/06/12 09:13		Units: mg/kg			Prep Info: Prep Date: 4/2/2012				Prep Method: SW3050 B		
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	6000	5.0	113.6	4444		75	125	5309	12	20	A
Arsenic	29.2	1.0	22.73	5.356	105	75	125	26.51	9.5	20	
Cadmium	10.7	1.0	11.36	0.2849	92	75	125	10.15	5.3	20	
Copper	54.2	1.0	22.73	30.7	103	75	125	44.41	20	20	
Iron	10700	5.0	113.6	8970		75	125	9491	12	20	A
Lead	57.7	1.4	22.73	22.27	156	75	125	47.25	20	20	S

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A

Run ID :Run Order: ICP2-HE_120410C: 129		SampType: Method Blank			Sample ID: MB-16117				Method: SW6010B		
Analysis Date: 04/10/12 19:54		Units: mg/kg			Prep Info: Prep Date: 4/2/2012				Prep Method: SW3050 B		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.7									
Arsenic	ND	0.3									
Cadmium	0.03	0.02									
Copper	0.4	0.1									
Iron	1	0.3									
Lead	1	0.6									
Manganese	0.2	0.03									
Zinc	0.3	0.07									

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: ICP2-HE_120410C: 156		SampType: Sample Matrix Spike			Sample ID: H12030340-032AMS				Method: SW6010B		
Analysis Date: 04/10/12 21:35		Units: mg/kg			Prep Info: Prep Date: 4/2/2012		Prep Method: SW3050 B				
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5420	5.0	113.2	4554		75	125				A
Arsenic	27.0	1.0	22.64	3.65	103	75	125				
Cadmium	10.3	1.0	11.32	0.3456	88	75	125				
Copper	45.1	1.0	22.64	31.77	59	75	125				S
Iron	9910	5.0	113.2	9052		75	125				A
Lead	45.5	1.4	22.64	23.46	97	75	125				
Manganese	592	1.0	113.2	569.3		75	125				A
Zinc	129	1.0	22.64	105.2		75	125				A

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A

Run ID :Run Order: ICP2-HE_120410C: 157		SampType: Sample Matrix Spike Duplicate			Sample ID: H12030340-032AMSD				Method: SW6010B		
Analysis Date: 04/10/12 21:38		Units: mg/kg			Prep Info: Prep Date: 4/2/2012		Prep Method: SW3050 B				
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	6110	5.0	113.6	4554		75	125	5416	12	20	A
Arsenic	29.5	1.0	22.73	3.65	114	75	125	26.97	9.0	20	
Cadmium	11.0	1.0	11.36	0.3456	94	75	125	10.32	6.5	20	
Copper	55.2	1.0	22.73	31.77	103	75	125	45.05	20	20	R
Iron	11200	5.0	113.6	9052		75	125	9909	12	20	A
Lead	58.8	1.4	22.73	23.46	155	75	125	45.53	25	20	SR
Manganese	1100	1.0	113.6	569.3		75	125	592.2	60	20	AR
Zinc	207	1.0	22.73	105.2		75	125	128.8	47	20	AR

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A

Run ID :Run Order: ICP2-HE_120411C: 95		SampType: Method Blank			Sample ID: MB-16117				Method: SW6010B		
Analysis Date: 04/11/12 18:45		Units: mg/kg			Prep Info: Prep Date: 4/2/2012		Prep Method: SW3050 B				
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.7									
Arsenic	ND	0.3									
Cadmium	ND	0.02									
Copper	0.2	0.1									
Iron	1.0	0.3									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: ICP2-HE_120411C: 95	SampType: Method Blank	Sample ID: MB-16117	Method: SW6010B								
Analysis Date: 04/11/12 18:45	Units: mg/kg	Prep Info: Prep Date: 4/2/2012	Prep Method: SW3050 B								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.6									
Manganese	0.2	0.03									
Zinc	0.2	0.07									

Associated samples: **H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A**



Client: MT DEQ-Site Response
Work Order: H12030340

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Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78847

Run ID :Run Order: PHSC_101-H_120328A: 2	SampType: Initial Calibration Verification Standard	Sample ID: SC 150	Method: A2510 B								
Analysis Date: 03/28/12 09:33	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	158	1.0	150		105	90	110				

Associated samples: H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: PHSC_101-H_120328A: 3	SampType: Initial Calibration Verification Standard	Sample ID: SC 5000	Method: A2510 B								
Analysis Date: 03/28/12 09:37	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	5100	1.0	5000		102	90	110				

Associated samples: H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: PHSC_101-H_120328A: 4	SampType: Initial Calibration Verification Standard	Sample ID: SC 20000	Method: A2510 B								
Analysis Date: 03/28/12 09:39	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	20500	1.0	20000		102	90	110				

Associated samples: H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: PHSC_101-H_120328A: 5	SampType: Initial Calibration Verification Standard	Sample ID: SC 2nd 1000	Method: A2510 B								
Analysis Date: 03/28/12 09:41	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	1030	1.0	1000		103	90	110				

Associated samples: H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: PHSC_101-H_120328A: 28	SampType: Sample Duplicate	Sample ID: H12030340-005ADUP	Method: A2510 B								
Analysis Date: 03/28/12 11:31	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	149	1.0						148	0.7	10	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: PHSC_101-H_120328A: 28	SampType: Sample Duplicate	Sample ID: H12030340-005ADUP	Method: A2510 B								
Analysis Date: 03/28/12 11:31	Units: umhos/cm	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: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: PHSC_101-H_120328A: 50	SampType: Sample Duplicate	Sample ID: H12030340-015ADUP	Method: A2510 B								
Analysis Date: 03/28/12 11:59	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	301	1.0						301	0.0	10	

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: PHSC_101-H_120328A: 59	SampType: Continuing Calibration Verification Standard	Sample ID: CCV - SC 1413	Method: A2510 B								
Analysis Date: 03/28/12 12:40	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	1480	1.0	1413		105	90	110				

Associated samples: **H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: PHSC_101-H_120328A: 64	SampType: Sample Duplicate	Sample ID: H12030340-016ADUP	Method: A2510 B								
Analysis Date: 03/28/12 12:48	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	270	1.0						271	0.0	10	

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78847

Run ID :Run Order: PHSC_101-H_120328A: 1		SampType: Initial Calibration Verification Standard			Sample ID: pH 7			Method: A4500-H B			
Analysis Date: 03/28/12 09:30		Units: s.u.			Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.55	0.10	7		94	98	102				S

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: PHSC_101-H_120328A: 27		SampType: Sample Duplicate			Sample ID: H12030340-005ADUP			Method: A4500-H B			
Analysis Date: 03/28/12 11:31		Units: s.u.			Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.76	0.10						6.75	0.1	3	

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: PHSC_101-H_120328A: 49		SampType: Sample Duplicate			Sample ID: H12030340-015ADUP			Method: A4500-H B			
Analysis Date: 03/28/12 11:59		Units: s.u.			Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.70	0.10						6.7	0.0	3	

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: PHSC_101-H_120328A: 58		SampType: Continuing Calibration Verification Standard			Sample ID: CCV - pH 7			Method: A4500-H B			
Analysis Date: 03/28/12 12:30		Units: s.u.			Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.05	0.10	7		101	98	102				

Associated samples: **H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: PHSC_101-H_120328A: 63		SampType: Sample Duplicate			Sample ID: H12030340-016ADUP			Method: A4500-H B			
Analysis Date: 03/28/12 12:48		Units: s.u.			Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.48	0.10						7.42	0.0	3	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78847

Run ID :Run Order: PHSC_101-H_120328A: 63	SampType: Sample Duplicate	Sample ID: H12030340-016ADUP	Method: A4500-H B								
Analysis Date: 03/28/12 12:48	Units: s.u.	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: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78872

Run ID :Run Order: ICP2-HE_120328B: 6	SampType: Initial Calibration Verification Standard				Sample ID: ICV			Method: E200.7				
Analysis Date: 03/28/12 10:02	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	
Aluminum	3.99	0.10	4		100	95	105					
Calcium	39.7	1.0	40		99	95	105					
Magnesium	39.8	1.0	40		99	95	105					
Potassium	39.0	1.0	40		97	95	105					
Sodium	39.2	1.0	40		98	95	105					

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Run ID :Run Order: ICP2-HE_120328B: 7	SampType: Continuing Calibration Verification Standard				Sample ID: CCV-1			Method: E200.7				
Analysis Date: 03/28/12 10:06	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	
Aluminum	2.50	0.10	2.5		100	95	105					
Calcium	24.7	1.0	25		99	95	105					
Magnesium	24.2	1.0	25		97	95	105					
Potassium	24.0	1.0	25		96	95	105					
Sodium	24.0	1.0	25		96	95	105					

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Run ID :Run Order: ICP2-HE_120328B: 10	SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.7				
Analysis Date: 03/28/12 10:17	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	
Aluminum	500	0.10	500		100	80	120					
Calcium	463	1.0	500		93	80	120					
Magnesium	486	1.0	500		97	80	120					
Potassium	-0.0847	1.0				0	0					
Sodium	0.0402	1.0				0	0					

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78872

Run ID :Run Order: ICP2-HE_120328B: 11	SampType: Interference Check Sample AB				Sample ID: ICSAB			Method: E200.7			
Analysis Date: 03/28/12 10:21	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
Aluminum	493	0.10	500		99	80	120				
Calcium	453	1.0	500		91	80	120				
Magnesium	480	1.0	500		96	80	120				
Potassium	20.5	1.0	20		102	80	120				
Sodium	20.4	1.0	20		102	80	120				

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Run ID :Run Order: ICP2-HE_120328B: 13	SampType: Method Blank				Sample ID: ICB			Method: E200.7			
Analysis Date: 03/28/12 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
Aluminum	ND	0.002									
Calcium	0.04	0.008									
Magnesium	ND	0.003									
Potassium	ND	0.04									
Sodium	ND	0.01									

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Run ID :Run Order: ICP2-HE_120328B: 14	SampType: Laboratory Fortified Blank				Sample ID: LFB			Method: E200.7			
Analysis Date: 03/28/12 10:33	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
Aluminum	4.86	0.10	5		97	85	115				
Calcium	48.8	1.0	50	0.04405	98	85	115				
Magnesium	47.3	1.0	50		95	85	115				
Potassium	48.0	1.0	50		96	85	115				
Sodium	48.5	1.0	50		97	85	115				

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78872

Run ID :Run Order: ICP2-HE_120328B: 39	SampType: Continuing Calibration Verification Standard				Sample ID: CCV				Method: E200.7		
Analysis Date: 03/28/12 12:10	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
Aluminum	2.48	0.10	2.5		99	90	110				
Calcium	25.4	1.0	25		102	90	110				
Magnesium	23.6	1.0	25		94	90	110				
Potassium	24.6	1.0	25		98	90	110				
Sodium	24.8	1.0	25		99	90	110				

Associated samples: H12030340-001B

Run ID :Run Order: ICP2-HE_120328B: 43	SampType: Sample Matrix Spike				Sample ID: H12030340-001BMS2				Method: E200.7		
Analysis Date: 03/28/12 12:25	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
Aluminum	5.06	0.030	5	0.213	97	70	130				
Calcium	64.5	1.0	50	15.81	97	70	130				
Magnesium	51.7	1.0	50	6.105	91	70	130				
Potassium	50.0	1.0	50	1.274	97	70	130				
Sodium	51.1	1.0	50	1.776	99	70	130				

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Run ID :Run Order: ICP2-HE_120328B: 44	SampType: Sample Matrix Spike Duplicate				Sample ID: H12030340-001BMSD2				Method: E200.7		
Analysis Date: 03/28/12 12:29	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
Aluminum	5.17	0.030	5	0.213	99	70	130	5.063	2.1	20	
Calcium	65.9	1.0	50	15.81	100	70	130	64.49	2.1	20	
Magnesium	52.9	1.0	50	6.105	94	70	130	51.67	2.3	20	
Potassium	49.9	1.0	50	1.274	97	70	130	50.01	0.1	20	
Sodium	51.1	1.0	50	1.776	99	70	130	51.12	0.0	20	

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78872

Run ID :Run Order: ICP2-HE_120328B: 45		SampType: Continuing Calibration Verification Standard			Sample ID: CCV			Method: E200.7			
Analysis Date: 03/28/12 12:32		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
Aluminum	2.51	0.10	2.5		100	90	110				
Calcium	25.8	1.0	25		103	90	110				
Magnesium	23.7	1.0	25		95	90	110				
Potassium	24.8	1.0	25		99	90	110				
Sodium	25.1	1.0	25		100	90	110				

Associated samples: **H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B**

Run ID :Run Order: ICP2-HE_120328B: 57		SampType: Continuing Calibration Verification Standard			Sample ID: CCV			Method: E200.7			
Analysis Date: 03/28/12 13:18		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
Aluminum	2.48	0.10	2.5		99	90	110				
Calcium	25.0	1.0	25		100	90	110				
Magnesium	23.8	1.0	25		95	90	110				
Potassium	23.9	1.0	25		95	90	110				
Sodium	24.0	1.0	25		96	90	110				

Associated samples: **H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B**

Run ID :Run Order: ICP2-HE_120328B: 60		SampType: Sample Matrix Spike			Sample ID: H12030340-011BMS2			Method: E200.7			
Analysis Date: 03/28/12 13:29		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
Aluminum	4.87	0.030	5		97	70	130				
Calcium	140	1.0	50	94.69	92	70	130				
Magnesium	72.8	1.0	50	26.94	92	70	130				
Potassium	49.5	1.0	50	1.203	97	70	130				
Sodium	50.5	1.0	50	1.604	98	70	130				

Associated samples: **H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78872

Run ID :Run Order: ICP2-HE_120328B: 61		SampType: Sample Matrix Spike Duplicate			Sample ID: H12030340-011BMSD2				Method: E200.7		
Analysis Date: 03/28/12 13:32		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
Aluminum	4.75	0.030	5		95	70	130	4.868	2.4	20	
Calcium	141	1.0	50	94.69	92	70	130	140.5	0.1	20	
Magnesium	73.8	1.0	50	26.94	94	70	130	72.85	1.3	20	
Potassium	49.9	1.0	50	1.203	97	70	130	49.48	0.8	20	
Sodium	50.8	1.0	50	1.604	98	70	130	50.51	0.7	20	

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Run ID :Run Order: ICP2-HE_120328B: 101		SampType: Serial Dilution			Sample ID: H12030307-001DDIL				Method: E200.7		
Analysis Date: 03/28/12 16:28		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
Calcium	44.3	1.0				0	0	44.45	0.4	10	
Magnesium	12.1	1.0				0	0	12.41	2.2	10	
Potassium	6.69	1.0				0	0	7.384	9.9	10	
Sodium	18.6	1.0				0	0	18.89	1.7	10	

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Run ID :Run Order: ICP2-HE_120328B: 126		SampType: Serial Dilution			Sample ID: H12030308-005CDIL				Method: E200.7		
Analysis Date: 03/28/12 18:02		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
Aluminum	ND	0.040				0	0			10	
Calcium	0.206	1.0				0	0	0.0482		10	N
Magnesium	0.216	1.0				0	0	0.05558		10	N
Potassium	ND	1.0				0	0			10	
Sodium	ND	1.0				0	0			10	

Associated samples: H12030340-001B; H12030340-002B; H12030340-003B; H12030340-004B; H12030340-005B; H12030340-006B; H12030340-007B; H12030340-008B; H12030340-009B; H12030340-010B; H12030340-011B; H12030340-012B; H12030340-013B; H12030340-014B; H12030340-015B; H12030340-016B; H12030340-017B; H12030340-018B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78880

Run ID :Run Order: IC102-H_120328A: 16		SampType: Initial Calibration Verification Standard			Sample ID: ICV032812-12			Method: E300.0			
Analysis Date: 03/28/12 11:27		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	100	1.0	100		103	90	110				
Sulfate	410	1.0	400		102	90	110				

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A**

Run ID :Run Order: IC102-H_120328A: 17		SampType: Method Blank			Sample ID: ICB032812-13			Method: E300.0			
Analysis Date: 03/28/12 11:40		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	0.2	0.02									

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A**

Run ID :Run Order: IC102-H_120328A: 18		SampType: Laboratory Fortified Blank			Sample ID: LFB032812-14			Method: E300.0			
Analysis Date: 03/28/12 11:54		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
Chloride	53	1.0	50		105	90	110				
Sulfate	210	1.1	200	0.161	104	90	110				

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A**

Run ID :Run Order: IC102-H_120328A: 49		SampType: Continuing Calibration Verification Standard			Sample ID: CCV032812-40			Method: E300.0			
Analysis Date: 03/28/12 18:56		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	99	1.0	100		99	90	110				
Sulfate	390	1.0	400		98	90	110				

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A**

Run ID :Run Order: IC102-H_120328A: 53		SampType: Sample Matrix Spike			Sample ID: H12030338-001AMS			Method: E300.0			
Analysis Date: 03/28/12 19:50		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
Chloride	110	1.0	100	6.151	105	90	110				
Sulfate	650	2.3	400	231.2	104	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: IC102-H_120328A: 53	SampType: Sample Matrix Spike	Sample ID: H12030338-001AMS	Method: E300.0								
Analysis Date: 03/28/12 19:50	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

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A**

Run ID :Run Order: IC102-H_120328A: 54	SampType: Sample Matrix Spike Duplicate	Sample ID: H12030338-001AMSD	Method: E300.0								
Analysis Date: 03/28/12 20:04	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	110	1.0	100	6.151	105	90	110	111.3	0.2	20	
Sulfate	630	2.3	400	231.2	100	90	110	646.5	2.3	20	

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A**

Run ID :Run Order: IC102-H_120328A: 66	SampType: Sample Matrix Spike	Sample ID: H12030218-001AMS	Method: E300.0								
Analysis Date: 03/28/12 22:47	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	2300	2.8	500	1875	81	90	110				S
Sulfate	8500	11	2000	6773	86	90	110				S

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A**

Run ID :Run Order: IC102-H_120328A: 67	SampType: Sample Matrix Spike Duplicate	Sample ID: H12030218-001AMSD	Method: E300.0								
Analysis Date: 03/28/12 23:00	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	2300	2.8	500	1875	86	90	110	2282	1.1	20	S
Sulfate	8600	11	2000	6773	90	90	110	8486	1.0	20	

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: MAN-TECH_120329A: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B
Analysis Date: 03/29/12 14:17	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	
Alkalinity, Total as CaCO3	1	1	

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A**

Run ID :Run Order: MAN-TECH_120329A: 10	SampType: Laboratory Control Sample	Sample ID: LCS-03292012	Method: A2320 B
Analysis Date: 03/29/12 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	
Alkalinity, Total as CaCO3	620	4.0	600
		1.39	103
		90	110

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A**

Run ID :Run Order: MAN-TECH_120329A: 22	SampType: Sample Duplicate	Sample ID: H12030333-002ADUP	Method: A2320 B
Analysis Date: 03/29/12 15:22	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	
Alkalinity, Total as CaCO3	1700	4.0	1698
Bicarbonate as HCO3	1900	4.0	1907
Carbonate as CO3	81	4.0	80.66
			0.2
			0.2
			0.0

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A**

Run ID :Run Order: MAN-TECH_120329A: 34	SampType: Sample Matrix Spike	Sample ID: H12030340-005AMS	Method: A2320 B
Analysis Date: 03/29/12 16:01	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	630	4.0	600
		69.42	94
		80	120

Associated samples: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A**

Run ID :Run Order: MAN-TECH_120329A: 46	SampType: Sample Duplicate	Sample ID: H12030340-010ADUP	Method: A2320 B
Analysis Date: 03/29/12 16:36	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	
Alkalinity, Total as CaCO3	95	4.0	94.83
Bicarbonate as HCO3	120	4.0	115.7
Carbonate as CO3	ND	4.0	
			0.2
			0.2

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Date: 17-Apr-12

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Run ID :Run Order: MAN-TECH_120329A: 46	SampType: Sample Duplicate	Sample ID: H12030340-010ADUP	Method: A2320 B								
Analysis Date: 03/29/12 16:36	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: **H12030340-001A; H12030340-002A; H12030340-003A; H12030340-004A; H12030340-005A; H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A**



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78898

Run ID :Run Order: IC102-H_120329A: 16	SampType: Initial Calibration Verification Standard				Sample ID: ICV032912-12	Method: E300.0					
Analysis Date: 03/29/12 14:03	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	100	1.0	100		101	90	110				
Sulfate	400	1.0	400		99	90	110				

Associated samples: H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: IC102-H_120329A: 17	SampType: Method Blank				Sample ID: ICB032912-13	Method: E300.0					
Analysis Date: 03/29/12 14:16	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
Chloride	ND	0.02									
Sulfate	ND	0.02									

Associated samples: H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: IC102-H_120329A: 18	SampType: Laboratory Fortified Blank				Sample ID: LFB032912-14	Method: E300.0					
Analysis Date: 03/29/12 14:30	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
Chloride	52	1.0	50		105	90	110				
Sulfate	200	1.1	200		102	90	110				

Associated samples: H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: IC102-H_120329A: 19	SampType: Continuing Calibration Verification Standard				Sample ID: CCV032912-15	Method: E300.0					
Analysis Date: 03/29/12 14:44	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	100	1.0	100		103	90	110				
Sulfate	410	1.0	400		101	90	110				

Associated samples: H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A

Run ID :Run Order: IC102-H_120329A: 27	SampType: Sample Matrix Spike				Sample ID: H12030340-008AMS	Method: E300.0					
Analysis Date: 03/29/12 16:32	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	52	1.0	50		104	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

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Run ID :Run Order: IC102-H_120329A: 27	SampType: Sample Matrix Spike				Sample ID: H12030340-008AMS				Method: E300.0		
Analysis Date: 03/29/12 16:32	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
Sulfate	200	1.1	200		101	90	110				

Associated samples: H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: IC102-H_120329A: 28	SampType: Sample Matrix Spike Duplicate				Sample ID: H12030340-008AMSD				Method: E300.0		
Analysis Date: 03/29/12 16:46	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	52	1.0	50		105	90	110	51.84	1.2	20	
Sulfate	200	1.1	200		102	90	110	202.2	1.2	20	

Associated samples: H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: IC102-H_120329A: 35	SampType: Continuing Calibration Verification Standard				Sample ID: CCV032912-30				Method: E300.0		
Analysis Date: 03/29/12 18:21	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
Chloride	100	1.0	100		104	90	110				
Sulfate	410	1.0	400		102	90	110				

Associated samples: H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: IC102-H_120329A: 40	SampType: Sample Matrix Spike				Sample ID: H12030340-017AMS				Method: E300.0		
Analysis Date: 03/29/12 19:29	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	52	1.0	50	0.574	104	90	110				
Sulfate	330	1.1	200	122.1	104	90	110				

Associated samples: H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A

Run ID :Run Order: IC102-H_120329A: 41	SampType: Sample Matrix Spike Duplicate				Sample ID: H12030340-017AMSD				Method: E300.0		
Analysis Date: 03/29/12 19:43	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	53	1.0	50	0.574	105	90	110	52.43	1.2	20	
Sulfate	330	1.1	200	122.1	106	90	110	330.9	1.1	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Project: UBMC Surface Water and Sediment

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Run ID :Run Order: IC102-H_120329A: 41	SampType: Sample Matrix Spike Duplicate	Sample ID: H12030340-017AMSD	Method: E300.0								
Analysis Date: 03/29/12 19:43	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

Associated samples: **H12030340-006A; H12030340-007A; H12030340-008A; H12030340-009A; H12030340-010A; H12030340-011A; H12030340-012A; H12030340-013A; H12030340-014A; H12030340-015A; H12030340-016A; H12030340-017A; H12030340-018A**



Client: MT DEQ-Site Response
Work Order: H12030340

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Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78916

Run ID :Run Order: MAN-TECH_120330A: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B								
Analysis Date: 03/30/12 11:39	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
Alkalinity, Total as CaCO3	1	1									

Associated samples: **H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: MAN-TECH_120330A: 10	SampType: Laboratory Control Sample	Sample ID: LCS-03292012	Method: A2320 B								
Analysis Date: 03/30/12 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
Alkalinity, Total as CaCO3	620	4.0	600	1.42	102	90	110				

Associated samples: **H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: MAN-TECH_120330A: 18	SampType: Sample Duplicate	Sample ID: H12030340-018ADUP	Method: A2320 B								
Analysis Date: 03/30/12 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
Alkalinity, Total as CaCO3	110	4.0						109.4	0.6	10	
Bicarbonate as HCO3	130	4.0						133.4	0.6	10	
Carbonate as CO3	ND	4.0								10	

Associated samples: **H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: MAN-TECH_120330A: 32	SampType: Sample Matrix Spike	Sample ID: H12030349-006AMS	Method: A2320 B								
Analysis Date: 03/30/12 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
Alkalinity, Total as CaCO3	1600	4.0	600	1205	73	80	120				S

Associated samples: **H12030340-016A; H12030340-017A; H12030340-018A**

Run ID :Run Order: MAN-TECH_120330A: 40	SampType: Sample Duplicate	Sample ID: H12030371-003ADUP	Method: A2320 B								
Analysis Date: 03/30/12 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
Alkalinity, Total as CaCO3	84	4.0						83.95	0.1	10	
Bicarbonate as HCO3	100	4.0						102.4	0.1	10	
Carbonate as CO3	ND	4.0								10	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78916

Run ID :Run Order: MAN-TECH_120330A: 40	SampType: Sample Duplicate	Sample ID: H12030371-003ADUP	Method: A2320 B								
Analysis Date: 03/30/12 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: **H12030340-016A; H12030340-017A; H12030340-018A**



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 8		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8				
Analysis Date: 04/02/12 13:52		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.0487	0.0050	0.05		97	90	110					
Cadmium	0.0264	0.0010	0.025		106	90	110					
Copper	0.0513	0.010	0.05		103	90	110					
Iron	0.268	0.030	0.25		107	90	110					
Lead	0.0494	0.010	0.05		99	90	110					
Manganese	0.254	0.010	0.25		102	90	110					
Zinc	0.0511	0.010	0.05		102	90	110					

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 9		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8				
Analysis Date: 04/02/12 13:57		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.00219	0.0050										
Cadmium	0.00114	0.0010										
Copper	0.000146	0.010										
Iron	104	0.030	100		104	70	130					
Lead	0.000172	0.010										
Manganese	0.000167	0.010										
Zinc	0.00144	0.010										

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 10		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8				
Analysis Date: 04/02/12 14:02		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.0112	0.0050	0.01		112	70	130					
Cadmium	0.0110	0.0010	0.01		110	70	130					
Copper	0.0205	0.010	0.02		103	70	130					
Iron	103	0.030	100		103	70	130					
Lead	0.000147	0.010				0	0					
Manganese	0.0202	0.010	0.02		101	70	130					

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: ICPMS204-B_120402A: 10	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 04/02/12 14:02	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.0116	0.010	0.01		116	70	130				

Associated samples: **H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C**

Run ID :Run Order: ICPMS204-B_120402A: 21	SampType: Method Blank	Sample ID: ICB	Method: E200.8								
Analysis Date: 04/02/12 16:03	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	7E-05	3E-05									
Cadmium	ND	1E-05									
Copper	ND	3E-05									
Iron	0.0010	0.0002									
Lead	ND	1.0E-05									
Manganese	6E-05	1E-05									
Zinc	0.001	0.0003									

Associated samples: **H12030340-002C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-017C; H12030340-018B**

Run ID :Run Order: ICPMS204-B_120402A: 29	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.8								
Analysis Date: 04/02/12 16:40	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0486	0.0050	0.05	0.0000654	97	85	115				
Cadmium	0.0470	0.0010	0.05		94	85	115				
Copper	0.0460	0.010	0.05		92	85	115				
Iron	4.98	0.030	5	0.0009885	100	85	115				
Lead	0.0477	0.010	0.05		95	85	115				
Manganese	0.0476	0.010	0.05	0.0000605	95	85	115				
Zinc	0.0471	0.010	0.05	0.001083	92	85	115				

Associated samples: **H12030340-002C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-017C; H12030340-018B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: ICPMS204-B_120402A: 67		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 04/02/12 19:39		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0492	0.0050	0.05		98	90	110				
Cadmium	0.0264	0.0010	0.025		106	90	110				
Copper	0.0514	0.010	0.05		103	90	110				
Iron	0.264	0.030	0.25		105	90	110				
Lead	0.0504	0.010	0.05		101	90	110				
Manganese	0.259	0.010	0.25		103	90	110				
Zinc	0.0516	0.010	0.05		103	90	110				

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 68		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 04/02/12 19:44		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.000851	0.0050									
Cadmium	0.00106	0.0010									
Copper	0.000189	0.010									
Iron	96.4	0.030	100		96	70	130				
Lead	0.000152	0.010									
Manganese	0.000189	0.010									
Zinc	0.00127	0.010									

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 69		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 04/02/12 19:48		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0105	0.0010	0.01		105	70	130				
Copper	0.0194	0.010	0.02		97	70	130				
Iron	98.9	0.030	100		99	70	130				
Lead	0.000126	0.010				0	0				
Manganese	0.0196	0.010	0.02		98	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: ICPMS204-B_120402A: 69	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 04/02/12 19:48	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.0107	0.010	0.01		107	70	130				

Associated samples: **H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C**

Run ID :Run Order: ICPMS204-B_120402A: 104	SampType: Sample Matrix Spike	Sample ID: H12030340-002CMS	Method: E200.8								
Analysis Date: 04/02/12 22:32	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0484	0.0010	0.05		97	70	130				
Cadmium	0.0481	0.0010	0.05		96	70	130				
Copper	0.0480	0.0050	0.05		96	70	130				
Iron	4.86	0.030	5	0.001493	97	70	130				
Lead	0.0500	0.0010	0.05	0.0000645	100	70	130				
Manganese	0.0496	0.0010	0.05	0.0004193	98	70	130				
Zinc	0.0496	0.010	0.05	0.001954	95	70	130				

Associated samples: **H12030340-002C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-017C; H12030340-018B**

Run ID :Run Order: ICPMS204-B_120402A: 105	SampType: Sample Matrix Spike Duplicate	Sample ID: H12030340-002CMSD	Method: E200.8								
Analysis Date: 04/02/12 22:36	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0479	0.0010	0.05		96	70	130	0.04837	1.0	20	
Cadmium	0.0481	0.0010	0.05		96	70	130	0.0481	0.0	20	
Copper	0.0472	0.0050	0.05		94	70	130	0.04802	1.7	20	
Iron	4.79	0.030	5	0.001493	96	70	130	4.856	1.4	20	
Lead	0.0503	0.0010	0.05	0.0000645	100	70	130	0.04998	0.6	20	
Manganese	0.0500	0.0010	0.05	0.0004193	99	70	130	0.04965	0.7	20	
Zinc	0.0494	0.010	0.05	0.001954	95	70	130	0.04959	0.3	20	

Associated samples: **H12030340-002C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-017C; H12030340-018B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: ICPMS204-B_120402A: 132		SampType: Sample Matrix Spike			Sample ID: H12030341-001BMS			Method: E200.8			
Analysis Date: 04/03/12 00:42		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0490	0.0010	0.05	0.0007844	96	70	130				
Cadmium	0.0453	0.0010	0.05	0.0000553	91	70	130				
Copper	0.0485	0.0050	0.05	0.001761	93	70	130				
Iron	4.93	0.030	5	0.03316	98	70	130				
Lead	0.0488	0.0010	0.05	0.0001917	97	70	130				
Manganese	0.0607	0.0010	0.05	0.01482	92	70	130				
Zinc	0.0485	0.010	0.05	0.004231	89	70	130				

Associated samples: H12030340-002C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-017C; H12030340-018B

Run ID :Run Order: ICPMS204-B_120402A: 133		SampType: Sample Matrix Spike Duplicate			Sample ID: H12030341-001BMSD			Method: E200.8			
Analysis Date: 04/03/12 00:47		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0496	0.0010	0.05	0.0007844	98	70	130	0.04903	1.1	20	
Cadmium	0.0456	0.0010	0.05	0.0000553	91	70	130	0.04533	0.7	20	
Copper	0.0489	0.0050	0.05	0.001761	94	70	130	0.04849	0.9	20	
Iron	4.96	0.030	5	0.03316	98	70	130	4.926	0.6	20	
Lead	0.0483	0.0010	0.05	0.0001917	96	70	130	0.04875	1.0	20	
Manganese	0.0610	0.0010	0.05	0.01482	92	70	130	0.06067	0.5	20	
Zinc	0.0501	0.010	0.05	0.004231	92	70	130	0.04855	3.1	20	

Associated samples: H12030340-002C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-017C; H12030340-018B

Run ID :Run Order: ICPMS204-B_120402A: 177		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 04/03/12 04:14		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0499	0.0050	0.05		100	90	110				
Cadmium	0.0260	0.0010	0.025		104	90	110				
Copper	0.0520	0.010	0.05		104	90	110				
Iron	0.259	0.030	0.25		104	90	110				
Lead	0.0495	0.010	0.05		99	90	110				
Manganese	0.260	0.010	0.25		104	90	110				
Zinc	0.0526	0.010	0.05		105	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Run ID :Run Order: ICPMS204-B_120402A: 177	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 04/03/12 04:14	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 178	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 04/03/12 04:18	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.000507	0.0050									
Cadmium	0.000989	0.0010									
Copper	0.000184	0.010									
Iron	97.7	0.030	100		98	70	130				
Lead	0.000156	0.010									
Manganese	0.000165	0.010									
Zinc	0.00130	0.010									

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 179	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 04/03/12 04:23	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0103	0.0010	0.01		103	70	130				
Copper	0.0198	0.010	0.02		99	70	130				
Iron	96.8	0.030	100		97	70	130				
Lead	0.000129	0.010				0	0				
Manganese	0.0191	0.010	0.02		96	70	130				
Zinc	0.0112	0.010	0.01		112	70	130				

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

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Project: UBMC Surface Water and Sediment

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Run ID :Run Order: ICPMS204-B_120402A: 281		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 04/03/12 13:55		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0493	0.0050	0.05		99	90	110				
Cadmium	0.0258	0.0010	0.025		103	90	110				
Copper	0.0516	0.010	0.05		103	90	110				
Iron	0.256	0.030	0.25		103	90	110				
Lead	0.0494	0.010	0.05		99	90	110				
Manganese	0.260	0.010	0.25		104	90	110				
Zinc	0.0512	0.010	0.05		102	90	110				

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 282		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 04/03/12 14:00		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.000794	0.0050									
Cadmium	0.00101	0.0010									
Copper	0.000275	0.010									
Iron	98.9	0.030	100		99	70	130				
Lead	0.000218	0.010									
Manganese	0.000376	0.010									
Zinc	0.00124	0.010									

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 283		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 04/03/12 14:04		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0104	0.0010	0.01		104	70	130				
Copper	0.0196	0.010	0.02		98	70	130				
Iron	100	0.030	100		100	70	130				
Lead	0.000141	0.010				0	0				
Manganese	0.0193	0.010	0.02		96	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 283	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 04/03/12 14:04	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.0110	0.010	0.01		110	70	130				

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 295	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 04/03/12 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
Arsenic	0.0504	0.0050	0.05		101	90	110				
Cadmium	0.0260	0.0010	0.025		104	90	110				
Copper	0.0515	0.010	0.05		103	90	110				
Lead	0.0498	0.010	0.05		100	90	110				
Manganese	0.257	0.010	0.25		103	90	110				
Zinc	0.0511	0.010	0.05		102	90	110				

Associated samples: H12030340-001C; H12030340-002C; H12030340-003C; H12030340-004C; H12030340-005C; H12030340-006C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-012C; H12030340-013C; H12030340-014C; H12030340-015C; H12030340-016C; H12030340-017C; H12030340-018B; H12030340-018C

Run ID :Run Order: ICPMS204-B_120402A: 322	SampType: Sample Matrix Spike	Sample ID: H12030310-001BMS	Method: E200.8								
Analysis Date: 04/03/12 17:41	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.110	0.0010	0.05	0.06216	95	70	130				
Cadmium	0.0459	0.0010	0.05		92	70	130				
Copper	0.0453	0.0050	0.05	0.0000358	91	70	130				
Iron	5.93	0.030	5	1.141	96	70	130				
Lead	0.0517	0.0010	0.05	0.0000307	103	70	130				
Manganese	0.0776	0.0010	0.05	0.03153	92	70	130				
Zinc	0.0478	0.010	0.05	0.001936	92	70	130				

Associated samples: H12030340-002C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-017C; H12030340-018B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 323	SampType: Sample Matrix Spike Duplicate				Sample ID: H12030310-001BMSD				Method: E200.8			
Analysis Date: 04/03/12 17:45	Units: mg/L				Prep Info:			Prep Date:			Prep Method:	
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.111	0.0010	0.05	0.06216	97	70	130	0.1095	1.1	20		
Cadmium	0.0451	0.0010	0.05		90	70	130	0.0459	1.8	20		
Copper	0.0458	0.0050	0.05	0.0000358	92	70	130	0.04532	1.1	20		
Iron	5.86	0.030	5	1.141	94	70	130	5.933	1.3	20		
Lead	0.0507	0.0010	0.05	0.0000307	101	70	130	0.05171	2.0	20		
Manganese	0.0765	0.0010	0.05	0.03153	90	70	130	0.07759	1.3	20		
Zinc	0.0479	0.010	0.05	0.001936	92	70	130	0.04782	0.1	20		

Associated samples: H12030340-002C; H12030340-007C; H12030340-008C; H12030340-009C; H12030340-010C; H12030340-011C; H12030340-017C; H12030340-018B



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R79058

Run ID :Run Order: ICP2-HE_120405B: 6	SampType: Initial Calibration Verification Standard				Sample ID: ICV			Method: E200.7			
Analysis Date: 04/05/12 14:15	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	4.06	0.10	4		101	90	110				
Arsenic	0.772	0.0074	0.8		96	90	110				
Cadmium	0.374	0.0010	0.4		94	90	110				
Copper	0.812	0.010	0.8		102	90	110				
Iron	4.00	0.030	4		100	90	110				
Lead	0.765	0.013	0.8		96	90	110				

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A

Run ID :Run Order: ICP2-HE_120405B: 10	SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.7			
Analysis Date: 04/05/12 14:30	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
Aluminum	531	0.10	500		106	80	120				
Arsenic	-0.00664	0.0074				0	0				
Cadmium	0.000470	0.0010				0	0				
Copper	0.00736	0.010				0	0				
Iron	189	0.030	200		94	80	120				
Lead	0.00950	0.013				0	0				

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A

Run ID :Run Order: ICP2-HE_120405B: 11	SampType: Interference Check Sample AB				Sample ID: ICSAB			Method: E200.7			
Analysis Date: 04/05/12 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
Aluminum	521	0.10	500		104	80	120				
Arsenic	1.01	0.0074	1		101	80	120				
Cadmium	0.867	0.0010	1		87	80	120				
Copper	0.509	0.010	0.5		102	80	120				
Iron	186	0.030	200		93	80	120				
Lead	0.916	0.013	1		92	80	120				

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-030A; H12030340-031A; H12030340-032A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R79127

Run ID :Run Order: ICP2-HE_120410C: 6	SampType: Initial Calibration Verification Standard				Sample ID: ICV			Method: E200.7			
Analysis Date: 04/10/12 08:39	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
Arsenic	0.799	0.0074	0.8		100	90	110				
Iron	3.97	0.030	4		99	90	110				
Lead	0.778	0.013	0.8		97	90	110				

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-031A

Run ID :Run Order: ICP2-HE_120410C: 10	SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.7			
Analysis Date: 04/10/12 08:54	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	-0.00224	0.0074				0	0				
Iron	188	0.030	200		94	80	120				
Lead	0.0352	0.013				0	0				

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-031A

Run ID :Run Order: ICP2-HE_120410C: 11	SampType: Interference Check Sample AB				Sample ID: ICSAB			Method: E200.7			
Analysis Date: 04/10/12 08:58	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	1.05	0.0074	1		105	80	120				
Iron	189	0.030	200		95	80	120				
Lead	0.935	0.013	1		94	80	120				

Associated samples: H12030340-019A; H12030340-020A; H12030340-021A; H12030340-022A; H12030340-023A; H12030340-024A; H12030340-025A; H12030340-026A; H12030340-027A; H12030340-028A; H12030340-029A; H12030340-031A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030340

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Project: UBMC Surface Water and Sediment

BatchID: R79165

Run ID :Run Order: ICP2-HE_120411C: 6	SampType: Initial Calibration Verification Standard	Sample ID: ICV	Method: E200.7								
Analysis Date: 04/11/12 10:55	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
Lead	0.788	0.013	0.8		98	90	110				

Associated samples: H12030340-019A

Run ID :Run Order: ICP2-HE_120411C: 10	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.7								
Analysis Date: 04/11/12 11:10	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	0.0254	0.013				0	0				

Associated samples: H12030340-019A

Run ID :Run Order: ICP2-HE_120411C: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 04/11/12 11:14	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
Lead	0.941	0.013	1		94	80	120				

Associated samples: H12030340-019A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount

Workorder Receipt Checklist



H12030340

Login completed by: Wanda Johnson

Date Received: 3/27/2012

Reviewed by: BL2000\sdu11

Received by: TLL

Reviewed Date: 4/2/2012

Carrier Hand Del
name:

- | | | | |
|---|---|--|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Container/Temp Blank temperature: | °C See Comments | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

Cooler #1 received at a temperautre of 2.8C, Cooler #2 1.6C & Cooler #3 3.0C-Soils cooler. All samples received on ice. Call into client regarding sample ID for "UBMCBRSD01" on COC but the jar states "UBMCBRSW01". Also contacted client regarding "Total" metals which is on parameter sheet versus "Total Recoverable " metals on quote & what has historically been done on this site. Wj 3/27/12 ID should be "UBMCBRSD" and water metals should be Total Recoverable per A. Dreesbach. Wj 3/29/12



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **MTDEQ** EPA/State Compliance: Yes No

Report Mail Address: **Quote H-645** Project Name, PWS, Permit, Etc.: **WBMC Surface Water** State: **MT**

Invoice Address: **Quote H-645** Contact Name: **Shellie Hoaland** Phone/Fax: **841-5033** Email: **Shoaland@mt.gov**

Sampler: (Please Print) **Jackie Janesko**

Quote/Bottle Order: **Jackie Janesko**

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: Cooler ID(s):
				Number of Containers	Sample Type: A W S V B O DW			
1 S355SW05	03/24/12	1010	W					Hand del
2 S355SW07		0900						
3 S355SW01		1100						
4 S355SW06		1200						
5 S355SW02		1345						
6 S355SW04		1425						
7 S355SW03		1510						
8 WBMCBRSW25		1515						
9 WBMCBRSW24		1550						
10 WBMCBRSW22								

Special Report/Formats: DW EDD/EDT (Electronic Data) POTW/MWTP State: LEVEL IV Other: NELAC

Comments: Please copy results to adreesbach@portageinc.com 402-490-5155

Cooler # 1 2.8°
Cooler # 2 1.6°

Signature: **Tracy Lovesh** Date/Time: **3/27/12 14:34**

Signature: **Tracy Lovesh** Date/Time: **3/27/12 14:34**

Signature: **Tracy Lovesh** Date/Time: **3/27/12 14:34**

Received by (print): **Tracy Lovesh** Date/Time: **3/27/12 14:34**

Received by (print): **Tracy Lovesh** Date/Time: **3/27/12 14:34**

Received by (print): **Tracy Lovesh** Date/Time: **3/27/12 14:34**

Signature: **Tracy Lovesh** Date/Time: **3/27/12 14:34**

Signature: **Tracy Lovesh** Date/Time: **3/27/12 14:34**

Signature: **Tracy Lovesh** Date/Time: **3/27/12 14:34**

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: M DEQ	Project Name, PWS, Permit, Etc. UBMC Surface Water	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: Quote H-645	Sample Origin State: MT	Sampler: (Please Print) Alan Dreesbach
Invoice Address: Quote H-645	Contact Name: Shellie Harland 841-5033 shahand@mt.gov	Quote/Bottle Order: Jackie Januske
Special Report/Formats: <input type="checkbox"/> DW <input type="checkbox"/> POT/MWWTP <input type="checkbox"/> State: <input type="checkbox"/> Other: <input type="checkbox"/>	Phone/Fax: 841-5033	
<input type="checkbox"/> EDD/EDT (Electronic Data) <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC	Invoice Contact & Phone:	Purchase Order:

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED				Standard Turnaround (TAT)	Shipped by Hand del. Cooler ID(s): Y
				Number of Containers Sample Type: A W S V B O DW Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water	↑	R	U		
1 UBMC BRSWZA	03/26/12	1555	W						
2 UBMC BRSW01	03/26/12	1450							
3 UBMC BRSWZ	03/26/12	1725							
4 UBMC BRSW38	03/27/12	0850							
5 UBMC BRSW48	1005								
6 UBMC BRSW23	1030								
7 UBMC BRSW3A	1055								
8 UBMC BRSW3B	1115								
9									
10									

Comments: Please copy results to addressbook@portageinc.com
406 490.5155
Cooler #1 2.8
Cooler #2 1.6

Receipt Temp: _____ °C
On Ice: Y N
Custody Seal: On Bottle Y N, On Cooler Y N
Intact: Y N
Signature Match: Y N

Relinquished by (print): Alan Dreesbach 3/21/12 1937	Signature: 	Date/Time:
Relinquished by (print):	Signature:	Date/Time:
Relinquished by (print):	Signature:	Date/Time:
Relinquished by (print):	Signature:	Date/Time:

LABORATORY USE ONLY #14030340
Received by (print):
Received by (print):
Received by Laboratory:
Tracy Corak 3/27/12 14:34
Signature:
Signature:
Signature:

Custody Record MUST be Signed
Sample Disposal: _____ Return to Client: _____ Lab Disposal: _____
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 sub-contract data will be clearly noted on your analytical report. Downloadable form for additional information. Downloadable fee schedule, forms, and links.

Chain of Custody and Analytical Request Record



PLEASE PRINT (Provide as much information as possible.)

Project Name, PWS, Permit, Etc. **UBMC Sediment** State: **MT**

Contact Name: **Shellic Hasland 841-5033** Email: **shabund@mt.gov**

Invoice Contact & Phone: **H-645** Phone/Fax: **841-5033**

Company Name: **M DEQ** EPA/State Compliance: Yes No

Report Mail Address: **Quote H-645** Sampler: (Please Print) **Alan Dreesbach**

Quote Address: **Quote H-645** Quote/Bottle Order: **Jackie Janosko**

Special Report/Formats: DW EDD/EDT (Electronic Data) POTW/WWTP State: LEVEL IV Other: NELAC

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED	
				Standard Turnaround (TAT)	Comments:
1 S35SD05	6/3/20/12	1010	Sediment	X	SEE ATTACHED
2 S35SD06		1110			
3 S35SD01		1110			
4 S35SD02		1200			
5 S35SD04		1345			
6 S35SD03		1425			
7 WBMCBRSD22		1550			
8 WBMCBRSD2A		1555			
9 WBMCBRSD01		1650			
10					

Shipped by: **Hand Del**

Cooler ID(s): **Y**

Receipt Temp: **3.0 °C**

On Ice: Y N

Custody Seal: Y N

On Bottle: Y N

On Cooler: Y N

Intact: Y N

Signature Match: Y N

LABORATORY USE ONLY #12030940

Received by (print): **Tracy Corak** Date/Time: **3/27/12 14:34**

Signature: *[Signature]*

Received by (print): **Alan Dreesbach** Date/Time: **3/21/12 1437**

Signature: *[Signature]*

Received by Laboratory: **Tracy Corak** Date/Time: **3/27/12 14:34**

Signature: *[Signature]*

Sample Disposal: **Return to Client** Lab Disposal: **Return to Client**

Custody Record MUST be Signed

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 sub-contract data will be clearly notated on your analytical report.



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

EPA/State Compliance: Yes No

Company Name: **M DEQ**
 Report Mail Address: **Route H-645**
 Invoice Address:
 Project Name, PWS, Permit, Etc.: **WBMC Sediment**
 State: **MT**
 Sample Origin: **MT**
 Sampler: (Please Print) **Alan Dressbach**
Jackie Janoska
 Email: **Shaaland@mt.gov**
 Purchase Order:
 Quoter/Bottle Order:

Special Report/Formats:
 DW
 POTWW/WTWP
 State:
 Other:
 EDD/EDT (Electronic Data)
 Format:
 LEVEL IV
 NELAC

Number of Containers: _____
 Sample Type: **AWS V B DW**
 Air Water Soils/Solids
 Vegetation Bioassay Other
 DW - Drinking Water

Shipped by: **Hand del**
 Cooler ID(s): **Y**
 Receipt Temp: **3.0 °C**
 On Ice: **Y**
 Custody Seal: **Y**
 On Bottle: **Y**
 On Cooler: **Y**
 Intact: **Y**
 Signature Match: **Y**

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Comments: Please copy results to addressbach@portageinc.com	Signature	Date/Time
				SEE ATTACHED	RUSH				
1 WBMC BRSD 38	03/27/12	0950	Sediment		X		406.4905155	Alan Dressbach	3/27/12 14:34
2 WBMC BRSD 43		1005							
3 WBMC BRSD 23		1030							
4 WBMC BRSD 3A		1055							
5 WBMC BRSD 3B		1115							
6									
7									
8									
9									
10									

Relinquished by (print): **Alan Dressbach** Date/Time: **3/27/12 14:34**
 Relinquished by (print): _____ Date/Time: _____
 Received by (print): _____ Date/Time: _____
 Received by (print): _____ Date/Time: _____
 Received by Laboratory: **Tracy Lovel** Date/Time: **3/27/12 14:34**
 Signature: _____
 Signature: _____
 Signature: _____

Custody Record MUST be Signed

Sample Disposal: _____ Return to Client: _____ Lab Disposal: _____

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 sub-contract data will be clearly notated on your analytical report.

Section 35 Quarterly

	Quantity	Analysis		5Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
		1Disolved Metals	2Total Metals										
Surface Water	7												
Groundwater	9	3Dissolved Metals		5Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
Sediment	6		4Total Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

UBMC Quarterly

	Quantity	Analysis		5Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
		1Disolved Metals	2Total Metals										
6Surface Water	11												
Groundwater	10	3Dissolved Metals		5Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
Sediment	9		4Total Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

⁶Additional surface water samples may be collected for seeps.

ANALYTICAL SUMMARY REPORT

April 13, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12030390 Quote ID: H645 - UBMC

Project Name: UBMC Groundwater

Energy Laboratories Inc Helena MT received the following 15 samples for MT DEQ-Site Response on 3/30/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12030390-001	S35MW08	03/28/12 9:40	03/30/12	Groundwater	Metals by ICP/ICPMS, Dissolved Alkalinity, Conductivity, Hardness as CaCO3, Anions by Ion Chromatography, pH, Preparation for TDS, Preparation for TSS, Solids, Total Dissolved Solids, Total Suspended
H12030390-002	S35MW09	03/28/12 9:45	03/30/12	Groundwater	Same As Above
H12030390-003	S35MW06	03/28/12 14:15	03/30/12	Groundwater	Same As Above
H12030390-004	S35MW04	03/28/12 15:10	03/30/12	Groundwater	Same As Above
H12030390-005	S35MW07	03/28/12 15:15	03/30/12	Groundwater	Same As Above
H12030390-006	S35MW03	03/28/12 16:20	03/30/12	Groundwater	Same As Above
H12030390-007	UBMCTDMW07	03/29/12 8:15	03/30/12	Groundwater	Same As Above
H12030390-008	UBMCTDMW08	03/29/12 8:20	03/30/12	Groundwater	Same As Above
H12030390-009	UBMCTDMW05	03/29/12 8:45	03/30/12	Groundwater	Same As Above
H12030390-010	UBMCTDMW4D	03/29/12 11:05	03/30/12	Groundwater	Same As Above
H12030390-011	UBMCTDMW06	03/29/12 11:10	03/30/12	Groundwater	Same As Above
H12030390-012	UBMCTDMW3D	03/29/12 13:30	03/30/12	Groundwater	Same As Above
H12030390-013	UBMCTDMW01	03/29/12 15:15	03/30/12	Groundwater	Same As Above
H12030390-014	UBMCTDMW2D	03/29/12 15:30	03/30/12	Groundwater	Same As Above
H12030390-015	UBMCTDMW2S	03/29/12 15:55	03/30/12	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 reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW08
Lab ID: H12030390-001
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 09:40 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.3	s.u.		0.1		A4500-H B	03/30/12 12:22 / cmm		PHSC_101-H_120330A : 42		R78901
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	03/30/12 12:22 / cmm		PHSC_101-H_120330A : 43		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:08 / cmm	03/30/12 11:09-124 (14410200)_120330A : 13			16096
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/30/12 14:17 / cmm	03/30/12 11:14 J-124 (14410200)_120330B : 9			16097
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	04/02/12 13:07 / cmm		MAN-TECH_120402A : 18		R78946
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	04/02/12 13:07 / cmm		MAN-TECH_120402A : 18		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:07 / cmm		MAN-TECH_120402A : 18		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 15:05 / zeg		IC102-H_120403A : 34		R79043
Sulfate	ND	mg/L		1		E300.0	04/03/12 15:05 / zeg		IC102-H_120403A : 34		R79043
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 6		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Calcium	ND	mg/L		1		E200.7	04/02/12 14:52 / sld		ICP2-HE_120402B : 77		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Magnesium	ND	mg/L		1		E200.7	04/02/12 14:52 / sld		ICP2-HE_120402B : 77		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 14:52 / sld		ICP2-HE_120402B : 77		R78958
Sodium	ND	mg/L		1		E200.7	04/02/12 14:52 / sld		ICP2-HE_120402B : 77		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW09
Lab ID: H12030390-002
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 09:45 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.8	s.u.		0.1		A4500-H B	03/30/12 12:26 / cmm		PHSC_101-H_120330A : 44		R78901
Conductivity @ 25 C	2	umhos/cm		1		A2510 B	03/30/12 12:26 / cmm		PHSC_101-H_120330A : 45		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:09 / cmm	03/30/12 11:09 -124 (14410200)_120330A : 14			16096
Solids, Total Dissolved TDS @ 180 C	10	mg/L		10		A2540 C	03/30/12 14:17 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 10			16097
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	04/02/12 13:12 / cmm		MAN-TECH_120402A : 20		R78946
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	04/02/12 13:12 / cmm		MAN-TECH_120402A : 20		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:12 / cmm		MAN-TECH_120402A : 20		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 15:18 / zeg		IC102-H_120403A : 35		R79043
Sulfate	ND	mg/L		1		E300.0	04/03/12 15:18 / zeg		IC102-H_120403A : 35		R79043
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 7		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Calcium	ND	mg/L		1		E200.7	04/02/12 14:56 / sld		ICP2-HE_120402B : 78		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Magnesium	ND	mg/L		1		E200.7	04/02/12 14:56 / sld		ICP2-HE_120402B : 78		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 14:56 / sld		ICP2-HE_120402B : 78		R78958
Sodium	ND	mg/L		1		E200.7	04/02/12 14:56 / sld		ICP2-HE_120402B : 78		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW06
Lab ID: H12030390-003
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 14:15 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.		0.1		A4500-H B	03/30/12 12:29 / cmm		PHSC_101-H_120330A : 46		R78901
Conductivity @ 25 C	401	umhos/cm		1		A2510 B	03/30/12 12:29 / cmm		PHSC_101-H_120330A : 47		R78901
Solids, Total Suspended TSS @ 105 C	332	mg/L		10		A2540 D	03/30/12 14:09 / cmm	03/30/12 11:09-124 (14410200)_120330A : 15			16096
Solids, Total Dissolved TDS @ 180 C	216	mg/L		10		A2540 C	03/30/12 14:17 / cmm	03/30/12 11:14-124 (14410200)_120330B : 11			16097
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	04/02/12 13:24 / cmm		MAN-TECH_120402A : 24		R78946
Bicarbonate as HCO3	250	mg/L		4		A2320 B	04/02/12 13:24 / cmm		MAN-TECH_120402A : 24		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:24 / cmm		MAN-TECH_120402A : 24		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 15:59 / zeg		IC102-H_120403A : 38		R79043
Sulfate	1	mg/L		1		E300.0	04/03/12 15:59 / zeg		IC102-H_120403A : 38		R79043
Hardness as CaCO3	193	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 8		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Calcium	51	mg/L		1		E200.7	04/02/12 14:59 / sld		ICP2-HE_120402B : 79		R78958
Copper	0.002	mg/L		0.001		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Magnesium	16	mg/L		1		E200.7	04/02/12 14:59 / sld		ICP2-HE_120402B : 79		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Potassium	1	mg/L		1		E200.7	04/02/12 14:59 / sld		ICP2-HE_120402B : 79		R78958
Sodium	5	mg/L		1		E200.7	04/02/12 14:59 / sld		ICP2-HE_120402B : 79		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW04
Lab ID: H12030390-004
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 15:10 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.		0.1		A4500-H B	03/30/12 12:32 / cmm		PHSC_101-H_120330A : 48		R78901
Conductivity @ 25 C	357	umhos/cm		1		A2510 B	03/30/12 12:32 / cmm		PHSC_101-H_120330A : 49		R78901
Solids, Total Suspended TSS @ 105 C	470	mg/L		10		A2540 D	03/30/12 14:09 / cmm	03/30/12 11:09 -124 (14410200)_120330A : 16			16096
Solids, Total Dissolved TDS @ 180 C	198	mg/L		10		A2540 C	03/30/12 14:17 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 12			16097
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	04/02/12 13:31 / cmm		MAN-TECH_120402A : 26		R78946
Bicarbonate as HCO3	220	mg/L		4		A2320 B	04/02/12 13:31 / cmm		MAN-TECH_120402A : 26		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:31 / cmm		MAN-TECH_120402A : 26		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 16:40 / zeg		IC102-H_120403A : 41		R79043
Sulfate	1	mg/L		1		E300.0	04/03/12 16:40 / zeg		IC102-H_120403A : 41		R79043
Hardness as CaCO3	167	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 9		R78988
METALS, DISSOLVED											
Aluminum	0.05	mg/L		0.03		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Calcium	50	mg/L		1		E200.7	04/02/12 15:03 / sld		ICP2-HE_120402B : 80		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Magnesium	10	mg/L		1		E200.7	04/02/12 15:03 / sld		ICP2-HE_120402B : 80		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Potassium	3	mg/L		1		E200.7	04/02/12 15:03 / sld		ICP2-HE_120402B : 80		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:03 / sld		ICP2-HE_120402B : 80		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW07
Lab ID: H12030390-005
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 15:15 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.		0.1		A4500-H B	03/30/12 12:35 / cmm		PHSC_101-H_120330A : 50		R78901
Conductivity @ 25 C	356	umhos/cm		1		A2510 B	03/30/12 12:35 / cmm		PHSC_101-H_120330A : 51		R78901
Solids, Total Suspended TSS @ 105 C	470	mg/L		10		A2540 D	03/30/12 14:09 / cmm	03/30/12 11:09 -124 (14410200)_120330A : 17			16096
Solids, Total Dissolved TDS @ 180 C	194	mg/L		10		A2540 C	03/30/12 14:17 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 13			16097
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	04/02/12 13:38 / cmm		MAN-TECH_120402A : 28		R78946
Bicarbonate as HCO3	220	mg/L		4		A2320 B	04/02/12 13:38 / cmm		MAN-TECH_120402A : 28		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:38 / cmm		MAN-TECH_120402A : 28		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 16:53 / zeg		IC102-H_120403A : 42		R79043
Sulfate	1	mg/L		1		E300.0	04/03/12 16:53 / zeg		IC102-H_120403A : 42		R79043
Hardness as CaCO3	173	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 10		R78988
METALS, DISSOLVED											
Aluminum	0.06	mg/L		0.03		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Calcium	51	mg/L		1		E200.7	04/02/12 15:07 / sld		ICP2-HE_120402B : 81		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Iron	0.05	mg/L		0.05		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Magnesium	11	mg/L		1		E200.7	04/02/12 15:07 / sld		ICP2-HE_120402B : 81		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Potassium	3	mg/L		1		E200.7	04/02/12 15:07 / sld		ICP2-HE_120402B : 81		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:07 / sld		ICP2-HE_120402B : 81		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW03
Lab ID: H12030390-006
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 16:20 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.		0.1		A4500-H B	03/30/12 12:43 / cmm		PHSC_101-H_120330A : 56		R78901
Conductivity @ 25 C	356	umhos/cm		1		A2510 B	03/30/12 12:43 / cmm		PHSC_101-H_120330A : 57		R78901
Solids, Total Suspended TSS @ 105 C	136	mg/L		10		A2540 D	03/30/12 14:10 / cmm	03/30/12 11:09 -124 (14410200)_120330A : 18			16096
Solids, Total Dissolved TDS @ 180 C	208	mg/L		10		A2540 C	03/30/12 14:18 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 14			16097
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	04/02/12 13:45 / cmm		MAN-TECH_120402A : 30		R78946
Bicarbonate as HCO3	220	mg/L		4		A2320 B	04/02/12 13:45 / cmm		MAN-TECH_120402A : 30		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:45 / cmm		MAN-TECH_120402A : 30		R78946
Chloride	1	mg/L		1		E300.0	04/03/12 17:07 / zeg		IC102-H_120403A : 43		R79043
Sulfate	4	mg/L		1		E300.0	04/03/12 17:07 / zeg		IC102-H_120403A : 43		R79043
Hardness as CaCO3	154	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 11		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Calcium	44	mg/L		1		E200.7	04/02/12 15:11 / sld		ICP2-HE_120402B : 82		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Magnesium	10	mg/L		1		E200.7	04/02/12 15:11 / sld		ICP2-HE_120402B : 82		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Potassium	2	mg/L		1		E200.7	04/02/12 15:11 / sld		ICP2-HE_120402B : 82		R78958
Sodium	11	mg/L		1		E200.7	04/02/12 15:11 / sld		ICP2-HE_120402B : 82		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW07
Lab ID: H12030390-007
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 08:15 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.3	s.u.		0.1		A4500-H B	03/30/12 12:46 / cmm		PHSC_101-H_120330A : 58		R78901
Conductivity @ 25 C	2	umhos/cm		1		A2510 B	03/30/12 12:46 / cmm		PHSC_101-H_120330A : 59		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:10 / cmm	03/30/12 11:09-124 (14410200)_120330A : 19			16096
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/30/12 14:18 / cmm	03/30/12 11:14-124 (14410200)_120330B : 15			16097
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	04/02/12 13:58 / cmm		MAN-TECH_120402A : 34		R78946
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	04/02/12 13:58 / cmm		MAN-TECH_120402A : 34		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:58 / cmm		MAN-TECH_120402A : 34		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 17:21 / zeg		IC102-H_120403A : 44		R79043
Sulfate	ND	mg/L		1		E300.0	04/03/12 17:21 / zeg		IC102-H_120403A : 44		R79043
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 12		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Calcium	ND	mg/L		1		E200.7	04/02/12 15:14 / sld		ICP2-HE_120402B : 83		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Magnesium	ND	mg/L		1		E200.7	04/02/12 15:14 / sld		ICP2-HE_120402B : 83		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:14 / sld		ICP2-HE_120402B : 83		R78958
Sodium	ND	mg/L		1		E200.7	04/02/12 15:14 / sld		ICP2-HE_120402B : 83		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW08
Lab ID: H12030390-008
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 08:20 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.4	s.u.		0.1		A4500-H B	03/30/12 12:51 / cmm		PHSC_101-H_120330A : 62		R78901
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	03/30/12 12:51 / cmm		PHSC_101-H_120330A : 63		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:10 / cmm	03/30/12 11:09-124 (14410200)_120330A : 21			16096
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/30/12 14:18 / cmm	03/30/12 11:14-124 (14410200)_120330B : 17			16097
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	04/02/12 14:03 / cmm		MAN-TECH_120402A : 36		R78946
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	04/02/12 14:03 / cmm		MAN-TECH_120402A : 36		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:03 / cmm		MAN-TECH_120402A : 36		R78946
Chloride	ND	mg/L		1		E300.0	04/10/12 13:10 / cmm		IC102-H_120410A : 24		R79125
Sulfate	ND	mg/L		1		E300.0	04/10/12 13:10 / cmm		IC102-H_120410A : 24		R79125
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 13		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Calcium	ND	mg/L		1		E200.7	04/02/12 15:18 / sld		ICP2-HE_120402B : 84		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Magnesium	ND	mg/L		1		E200.7	04/02/12 15:18 / sld		ICP2-HE_120402B : 84		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:18 / sld		ICP2-HE_120402B : 84		R78958
Sodium	ND	mg/L		1		E200.7	04/02/12 15:18 / sld		ICP2-HE_120402B : 84		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW05
Lab ID: H12030390-009
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 08:45 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.0	s.u.		0.1		A4500-H B	03/30/12 12:54 / cmm		PHSC_101-H_120330A : 64		R78901
Conductivity @ 25 C	289	umhos/cm		1		A2510 B	03/30/12 12:54 / cmm		PHSC_101-H_120330A : 65		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:10 / cmm	03/30/12 11:09 -124 (14410200)_120330A : 22			16096
Solids, Total Dissolved TDS @ 180 C	146	mg/L		10		A2540 C	03/30/12 14:18 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 18			16097
INORGANICS											
Alkalinity, Total as CaCO3	90	mg/L		4		A2320 B	04/02/12 14:10 / cmm		MAN-TECH_120402A : 38		R78946
Bicarbonate as HCO3	110	mg/L		4		A2320 B	04/02/12 14:10 / cmm		MAN-TECH_120402A : 38		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:10 / cmm		MAN-TECH_120402A : 38		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 17:48 / zeg		IC102-H_120403A : 46		R79043
Sulfate	33	mg/L		1		E300.0	04/03/12 17:48 / zeg		IC102-H_120403A : 46		R79043
Hardness as CaCO3	137	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 14		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Calcium	29	mg/L		1		E200.7	04/02/12 15:22 / sld		ICP2-HE_120402B : 85		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Magnesium	16	mg/L		1		E200.7	04/02/12 15:22 / sld		ICP2-HE_120402B : 85		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:22 / sld		ICP2-HE_120402B : 85		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:22 / sld		ICP2-HE_120402B : 85		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW4D
Lab ID: H12030390-010
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 11:05 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	03/30/12 12:57 / cmm		PHSC_101-H_120330A : 66		R78901
Conductivity @ 25 C	248	umhos/cm		1		A2510 B	03/30/12 12:57 / cmm		PHSC_101-H_120330A : 67		R78901
Solids, Total Suspended TSS @ 105 C	22	mg/L		10		A2540 D	03/30/12 14:10 / cmm	03/30/12 11:09 -124 (14410200)_120330A : 23			16096
Solids, Total Dissolved TDS @ 180 C	122	mg/L		10		A2540 C	03/30/12 14:18 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 19			16097
INORGANICS											
Alkalinity, Total as CaCO3	97	mg/L		4		A2320 B	04/02/12 14:23 / cmm		MAN-TECH_120402A : 42		R78946
Bicarbonate as HCO3	120	mg/L		4		A2320 B	04/02/12 14:23 / cmm		MAN-TECH_120402A : 42		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:23 / cmm		MAN-TECH_120402A : 42		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 18:29 / zeg		IC102-H_120403A : 49		R79043
Sulfate	15	mg/L		1		E300.0	04/03/12 18:29 / zeg		IC102-H_120403A : 49		R79043
Hardness as CaCO3	116	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 15		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Calcium	25	mg/L		1		E200.7	04/02/12 15:33 / sld		ICP2-HE_120402B : 88		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Magnesium	13	mg/L		1		E200.7	04/02/12 15:33 / sld		ICP2-HE_120402B : 88		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:33 / sld		ICP2-HE_120402B : 88		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:33 / sld		ICP2-HE_120402B : 88		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW06
Lab ID: H12030390-011
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 11:10 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	03/30/12 12:59 / cmm		PHSC_101-H_120330A : 68		R78901
Conductivity @ 25 C	246	umhos/cm		1		A2510 B	03/30/12 12:59 / cmm		PHSC_101-H_120330A : 69		R78901
Solids, Total Suspended TSS @ 105 C	18	mg/L		10		A2540 D	03/30/12 14:11 / cmm	03/30/12 11:09 -124 (14410200)_120330A : 24			16096
Solids, Total Dissolved TDS @ 180 C	130	mg/L		10		A2540 C	03/30/12 14:19 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 20			16097
INORGANICS											
Alkalinity, Total as CaCO3	99	mg/L		4		A2320 B	04/02/12 14:30 / cmm		MAN-TECH_120402A : 44		R78946
Bicarbonate as HCO3	120	mg/L		4		A2320 B	04/02/12 14:30 / cmm		MAN-TECH_120402A : 44		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:30 / cmm		MAN-TECH_120402A : 44		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 18:42 / zeg		IC102-H_120403A : 50		R79043
Sulfate	16	mg/L		1		E300.0	04/03/12 18:42 / zeg		IC102-H_120403A : 50		R79043
Hardness as CaCO3	113	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 16		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Calcium	24	mg/L		1		E200.7	04/02/12 15:48 / sld		ICP2-HE_120402B : 92		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Magnesium	13	mg/L		1		E200.7	04/02/12 15:48 / sld		ICP2-HE_120402B : 92		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:48 / sld		ICP2-HE_120402B : 92		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:48 / sld		ICP2-HE_120402B : 92		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW3D
Lab ID: H12030390-012
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 13:30 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	03/30/12 13:02 / cmm		PHSC_101-H_120330A : 70		R78901
Conductivity @ 25 C	669	umhos/cm		1		A2510 B	03/30/12 13:02 / cmm		PHSC_101-H_120330A : 71		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:11 / cmm	03/30/12 12:43 -124 (14410200)_120330A : 27			16101
Solids, Total Dissolved TDS @ 180 C	430	mg/L		10		A2540 C	03/30/12 14:19 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 21			16097
INORGANICS											
Alkalinity, Total as CaCO3	58	mg/L		4		A2320 B	04/02/12 14:37 / cmm		MAN-TECH_120402A : 46		R78946
Bicarbonate as HCO3	71	mg/L		4		A2320 B	04/02/12 14:37 / cmm		MAN-TECH_120402A : 46		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:37 / cmm		MAN-TECH_120402A : 46		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 18:56 / zeg		IC102-H_120403A : 51		R79043
Sulfate	260	mg/L		1		E300.0	04/03/12 18:56 / zeg		IC102-H_120403A : 51		R79043
Hardness as CaCO3	335	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 17		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Cadmium	0.00011	mg/L		0.00008		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Calcium	80	mg/L		1		E200.7	04/02/12 15:52 / sld		ICP2-HE_120402B : 93		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Magnesium	33	mg/L		1		E200.7	04/02/12 15:52 / sld		ICP2-HE_120402B : 93		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:52 / sld		ICP2-HE_120402B : 93		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:52 / sld		ICP2-HE_120402B : 93		R78958
Zinc	0.02	mg/L		0.01		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW01
Lab ID: H12030390-013
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 15:15 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.5	s.u.		0.1		A4500-H B	03/30/12 13:04 / cmm		PHSC_101-H_120330A : 72		R78901
Conductivity @ 25 C	886	umhos/cm		1		A2510 B	03/30/12 13:04 / cmm		PHSC_101-H_120330A : 73		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:11 / cmm	03/30/12 12:43 -124 (14410200)_120330A : 28			16101
Solids, Total Dissolved TDS @ 180 C	602	mg/L		10		A2540 C	03/30/12 14:19 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 22			16097
INORGANICS											
Alkalinity, Total as CaCO3	67	mg/L		4		A2320 B	04/02/12 14:43 / cmm		MAN-TECH_120402A : 48		R78946
Bicarbonate as HCO3	82	mg/L		4		A2320 B	04/02/12 14:43 / cmm		MAN-TECH_120402A : 48		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:43 / cmm		MAN-TECH_120402A : 48		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 19:09 / zeg		IC102-H_120403A : 52		R79043
Sulfate	380	mg/L		1		E300.0	04/03/12 19:09 / zeg		IC102-H_120403A : 52		R79043
Hardness as CaCO3	453	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 18		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228		R78968
Cadmium	0.00057	mg/L		0.00008		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228		R78968
Calcium	80	mg/L		1		E200.7	04/02/12 15:55 / sld		ICP2-HE_120402B : 94		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228		R78968
Magnesium	62	mg/L		1		E200.7	04/02/12 15:55 / sld		ICP2-HE_120402B : 94		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228		R78968
Potassium	1	mg/L		1		E200.7	04/02/12 15:55 / sld		ICP2-HE_120402B : 94		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:55 / sld		ICP2-HE_120402B : 94		R78958
Zinc	0.29	mg/L		0.01		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW2D
Lab ID: H12030390-014
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 15:30 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.		0.1		A4500-H B	03/30/12 13:07 / cmm		PHSC_101-H_120330A : 74		R78901
Conductivity @ 25 C	261	umhos/cm		1		A2510 B	03/30/12 13:07 / cmm		PHSC_101-H_120330A : 75		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:11 / cmm	03/30/12 12:43 -124 (14410200)_120330A : 29			16101
Solids, Total Dissolved TDS @ 180 C	128	mg/L		10		A2540 C	03/30/12 14:19 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 23			16097
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	04/02/12 14:50 / cmm		MAN-TECH_120402A : 50		R78946
Bicarbonate as HCO3	120	mg/L		4		A2320 B	04/02/12 14:50 / cmm		MAN-TECH_120402A : 50		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:50 / cmm		MAN-TECH_120402A : 50		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 19:50 / zeg		IC102-H_120403A : 55		R79043
Sulfate	22	mg/L		1		E300.0	04/03/12 19:50 / zeg		IC102-H_120403A : 55		R79043
Hardness as CaCO3	126	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 19		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Calcium	26	mg/L		1		E200.7	04/02/12 15:59 / sld		ICP2-HE_120402B : 95		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Magnesium	15	mg/L		1		E200.7	04/02/12 15:59 / sld		ICP2-HE_120402B : 95		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:59 / sld		ICP2-HE_120402B : 95		R78958
Sodium	1	mg/L		1		E200.7	04/02/12 15:59 / sld		ICP2-HE_120402B : 95		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW2S
Lab ID: H12030390-015
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 15:55 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.5	s.u.		0.1		A4500-H B	03/30/12 13:09 / cmm		PHSC_101-H_120330A : 76		R78901
Conductivity @ 25 C	1400	umhos/cm		1		A2510 B	03/30/12 13:09 / cmm		PHSC_101-H_120330A : 77		R78901
Solids, Total Suspended TSS @ 105 C	42	mg/L		10		A2540 D	03/30/12 14:12 / cmm	03/30/12 12:43-124 (14410200)_120330A : 30			16101
Solids, Total Dissolved TDS @ 180 C	1040	mg/L		10		A2540 C	03/30/12 14:21 / cmm	03/30/12 11:14-124 (14410200)_120330B : 24			16097
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	04/02/12 14:57 / cmm		MAN-TECH_120402A : 52		R78946
Bicarbonate as HCO3	150	mg/L		4		A2320 B	04/02/12 14:57 / cmm		MAN-TECH_120402A : 52		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:57 / cmm		MAN-TECH_120402A : 52		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 20:04 / zeg		IC102-H_120403A : 56		R79043
Sulfate	670	mg/L	D	2		E300.0	04/03/12 20:04 / zeg		IC102-H_120403A : 56		R79043
Hardness as CaCO3	732	mg/L		1		A2340 B	04/06/12 08:07 / sld		WATERCALC_120406A : 4		R79039
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Cadmium	0.0135	mg/L		0.00008		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Calcium	128	mg/L		1		E200.8	04/04/12 16:05 / dck		ICPMS204-B_120404A : 65		R79000
Copper	ND	mg/L		0.001		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Magnesium	108	mg/L		1		E200.8	04/04/12 16:05 / dck		ICPMS204-B_120404A : 65		R79000
Manganese	27.7	mg/L		0.005		E200.8	04/04/12 16:05 / dck		ICPMS204-B_120404A : 65		R79000
Potassium	2	mg/L		1		E200.7	04/02/12 16:03 / sld		ICP2-HE_120402B : 96		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 16:03 / sld		ICP2-HE_120402B : 96		R78958
Zinc	9.47	mg/L		0.01		E200.8	04/04/12 16:05 / dck		ICPMS204-B_120404A : 65		R79000

Report Definitions: RL - Analyte reporting limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: 16096

Run ID :Run Order: ACCU-124 (14410200)_120330A: 1	SampType: Method Blank	Sample ID: MB-16096	Method: A2540 D								
Analysis Date: 03/30/12 11:27	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 D								
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	2									

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A**

Run ID :Run Order: ACCU-124 (14410200)_120330A: 2	SampType: Laboratory Control Sample	Sample ID: LCS-16096	Method: A2540 D								
Analysis Date: 03/30/12 11:27	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1940	10	2000		97	70	130				

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A**

Run ID :Run Order: ACCU-124 (14410200)_120330A: 5	SampType: Sample Duplicate	Sample ID: H12030374-002ADUP	Method: A2540 D								
Analysis Date: 03/30/12 11:27	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	14.0	10						14		5	

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A**

Run ID :Run Order: ACCU-124 (14410200)_120330A: 20	SampType: Sample Duplicate	Sample ID: H12030390-007ADUP	Method: A2540 D								
Analysis Date: 03/30/12 14:10	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	2.00	10								5	

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: 16097

Run ID :Run Order: ACCU-124 (14410200)_120330B: 1	SampType: Method Blank	Sample ID: MB-16097	Method: A2540 C								
Analysis Date: 03/30/12 11:20	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	ND	3									

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: ACCU-124 (14410200)_120330B: 2	SampType: Laboratory Control Sample	Sample ID: LCS-16097	Method: A2540 C								
Analysis Date: 03/30/12 11:20	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2000	10	2000		100	90	110				

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: ACCU-124 (14410200)_120330B: 5	SampType: Sample Duplicate	Sample ID: H12030377-002ADUP	Method: A2540 C								
Analysis Date: 03/30/12 11:21	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	926	10						956	3.2	5	

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: ACCU-124 (14410200)_120330B: 8	SampType: Sample Matrix Spike	Sample ID: H12030389-002AMS	Method: A2540 C								
Analysis Date: 03/30/12 11:21	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2240	10	2000	256	99	80	120				

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: ACCU-124 (14410200)_120330B: 16	SampType: Sample Duplicate	Sample ID: H12030390-007ADUP	Method: A2540 C								
Analysis Date: 03/30/12 14:18	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	ND	10						8		5	

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: 16101

Run ID :Run Order: ACCU-124 (14410200)_120330A: 25	SampType: Method Blank	Sample ID: MB-16101	Method: A2540 D								
Analysis Date: 03/30/12 14:11	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 D								
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	2									

Associated samples: **H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: ACCU-124 (14410200)_120330A: 26	SampType: Laboratory Control Sample	Sample ID: LCS-16101	Method: A2540 D								
Analysis Date: 03/30/12 14:11	Units: mg/L	Prep Info: Prep Date: 3/30/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1720	10	2000		86	70	130				

Associated samples: **H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: ACCU-124 (14410200)_120330A: 34	SampType: Sample Duplicate	Sample ID: H12030392-003BDUP	Method: A2540 D								
Analysis Date: 03/30/12 14:12	Units: mg/L	Prep Info: Prep Date: 4/2/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	104	10						96	8.0	5	R

Associated samples: **H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78901

Run ID :Run Order: PHSC_101-H_120330A: 2	SampType: Initial Calibration Verification Standard	Sample ID: SC 150	Method: A2510 B
Analysis Date: 03/30/12 10:03	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	156	1.0	150
			104
			90
			110

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: PHSC_101-H_120330A: 3	SampType: Initial Calibration Verification Standard	Sample ID: SC 5000	Method: A2510 B
Analysis Date: 03/30/12 10:05	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	5330	1.0	5000
			107
			90
			110

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: PHSC_101-H_120330A: 4	SampType: Initial Calibration Verification Standard	Sample ID: SC 20000	Method: A2510 B
Analysis Date: 03/30/12 10:08	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	21100	1.0	20000
			106
			90
			110

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: PHSC_101-H_120330A: 5	SampType: Initial Calibration Verification Standard	Sample ID: SC 2ND 1000	Method: A2510 B
Analysis Date: 03/30/12 10:10	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	1070	1.0	1000
			107
			90
			110

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: PHSC_101-H_120330A: 39	SampType: Sample Duplicate	Sample ID: H12030389-001ADUP	Method: A2510 B
Analysis Date: 03/30/12 11:20	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	450	1.0	
			447
			0.7
			10

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78901

Run ID :Run Order: PHSC_101-H_120330A: 55	SampType: Continuing Calibration Verification Standard	Sample ID: ccv- sc 1413	Method: A2510 B								
Analysis Date: 03/30/12 12:40	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	1530	1.0	1413		108	90	110				

Associated samples:

Run ID :Run Order: PHSC_101-H_120330A: 61	SampType: Sample Duplicate	Sample ID: H12030390-007ADUP	Method: A2510 B								
Analysis Date: 03/30/12 12:49	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	1.00	1.0						2	67	10	R

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78901

Run ID :Run Order: PHSC_101-H_120330A: 1	SampType: Initial Calibration Verification Standard	Sample ID: pH 7	Method: A4500-H B								
Analysis Date: 03/30/12 10:00	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.97	0.10	7		100	98	102				

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: PHSC_101-H_120330A: 38	SampType: Sample Duplicate	Sample ID: H12030389-001ADUP	Method: A4500-H B								
Analysis Date: 03/30/12 11:20	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.46	0.10						7.49	0.4	3	

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: PHSC_101-H_120330A: 60	SampType: Sample Duplicate	Sample ID: H12030390-007ADUP	Method: A4500-H B								
Analysis Date: 03/30/12 12:49	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	5.09	0.10						5.32	4.4	3	R

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78946

Run ID :Run Order: MAN-TECH_120402A: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B
Analysis Date: 04/02/12 12:32	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	2	1	

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: MAN-TECH_120402A: 10	SampType: Laboratory Control Sample	Sample ID: LCS-03012012	Method: A2320 B
Analysis Date: 04/02/12 12:40	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	620	4.0	600

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: MAN-TECH_120402A: 22	SampType: Sample Duplicate	Sample ID: H12030390-002ADUP	Method: A2320 B
Analysis Date: 04/02/12 13:17	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	3.2	4.0	
Bicarbonate as HCO3	3.8	4.0	
Carbonate as CO3	ND	4.0	

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: MAN-TECH_120402A: 32	SampType: Sample Matrix Spike	Sample ID: H12030390-006AMS	Method: A2320 B
Analysis Date: 04/02/12 13:54	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	700	4.0	600

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: MAN-TECH_120402A: 40	SampType: Sample Duplicate	Sample ID: H12030390-009ADUP	Method: A2320 B
Analysis Date: 04/02/12 14:17	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	90	4.0	
Bicarbonate as HCO3	110	4.0	
Carbonate as CO3	ND	4.0	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78946

Run ID :Run Order: MAN-TECH_120402A: 40	SampType: Sample Duplicate	Sample ID: H12030390-009ADUP	Method: A2320 B
Analysis Date: 04/02/12 14:17	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: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: MAN-TECH_120402A: 57	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B
Analysis Date: 04/02/12 15:12	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	1.9	4.0	

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: MAN-TECH_120402A: 59	SampType: Laboratory Control Sample	Sample ID: LCS-03012012	Method: A2320 B
Analysis Date: 04/02/12 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	
Alkalinity, Total as CaCO3	610	4.0	600
		1.93	102
		90	110

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: MAN-TECH_120402A: 63	SampType: Sample Duplicate	Sample ID: H12030392-002BDUP	Method: A2320 B
Analysis Date: 04/02/12 15:35	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	
Alkalinity, Total as CaCO3	260	4.0	
Bicarbonate as HCO3	310	4.0	
Carbonate as CO3	6.8	4.0	
		263.5	0.3
		308	0.5
		6.64	2.7

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: MAN-TECH_120402A: 67	SampType: Sample Matrix Spike	Sample ID: H12030392-003BMS	Method: A2320 B
Analysis Date: 04/02/12 15:51	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	
Alkalinity, Total as CaCO3	960	4.0	600
		330.2	105
		80	120

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-008A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78958

Run ID :Run Order: ICP2-HE_120402B: 6	SampType: Initial Calibration Verification Standard				Sample ID: ICV			Method: E200.7			
Analysis Date: 04/02/12 10:26	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
Calcium	39.7	1.0	40		99	95	105				
Magnesium	39.7	1.0	40		99	95	105				
Potassium	39.2	1.0	40		98	95	105				
Sodium	39.4	1.0	40		99	95	105				

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICP2-HE_120402B: 7	SampType: Continuing Calibration Verification Standard				Sample ID: CCV-1			Method: E200.7			
Analysis Date: 04/02/12 10:30	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
Calcium	24.9	1.0	25		100	95	105				
Magnesium	24.4	1.0	25		98	95	105				
Potassium	24.6	1.0	25		99	95	105				
Sodium	24.7	1.0	25		99	95	105				

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICP2-HE_120402B: 10	SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.7			
Analysis Date: 04/02/12 10:41	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
Calcium	467	1.0	500		93	80	120				
Magnesium	490	1.0	500		98	80	120				
Potassium	-0.0546	1.0				0	0				
Sodium	0.0208	1.0				0	0				

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICP2-HE_120402B: 11	SampType: Interference Check Sample AB				Sample ID: ICSAB			Method: E200.7			
Analysis Date: 04/02/12 10:45	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
Calcium	446	1.0	500		89	80	120				
Magnesium	480	1.0	500		96	80	120				
Potassium	21.0	1.0	20		105	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78958

Run ID :Run Order: ICP2-HE_120402B: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 04/02/12 10:45	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
Sodium	20.9	1.0	20		104	80	120				

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICP2-HE_120402B: 13	SampType: Method Blank	Sample ID: ICB	Method: E200.7								
Analysis Date: 04/02/12 10:53	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
Calcium	0.03	0.008									
Magnesium	ND	0.003									
Potassium	ND	0.04									
Sodium	ND	0.01									

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICP2-HE_120402B: 14	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.7								
Analysis Date: 04/02/12 10:57	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
Calcium	47.4	1.0	50	0.03223	95	85	115				
Magnesium	47.2	1.0	50		94	85	115				
Potassium	48.4	1.0	50		97	85	115				
Sodium	48.7	1.0	50		97	85	115				

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICP2-HE_120402B: 66	SampType: Sample Matrix Spike	Sample ID: H12030387-001AMS2	Method: E200.7								
Analysis Date: 04/02/12 14:11	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
Calcium	129	1.0	50	75.54	106	70	130				
Magnesium	69.2	1.0	50	17.91	102	70	130				
Potassium	61.7	1.0	50	10.67	102	70	130				
Sodium	63.5	1.0	50	12.2	103	70	130				

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78958

Run ID :Run Order: ICP2-HE_120402B: 74	SampType: Continuing Calibration Verification Standard			Sample ID: CCV	Method: E200.7						
Analysis Date: 04/02/12 14:41	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
Calcium	23.9	1.0	25		96	90	110				
Magnesium	23.6	1.0	25		94	90	110				
Potassium	24.7	1.0	25		99	90	110				
Sodium	24.7	1.0	25		99	90	110				

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B

Run ID :Run Order: ICP2-HE_120402B: 76	SampType: Sample Matrix Spike Duplicate			Sample ID: H12030387-001AMSD2	Method: E200.7						
Analysis Date: 04/02/12 14:48	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
Calcium	125	1.0	50	75.54	98	70	130	128.7	3.3	20	
Magnesium	65.7	1.0	50	17.91	96	70	130	69.15	5.2	20	
Potassium	60.6	1.0	50	10.67	100	70	130	61.7	1.8	20	
Sodium	62.4	1.0	50	12.2	100	70	130	63.53	1.7	20	

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICP2-HE_120402B: 86	SampType: Continuing Calibration Verification Standard			Sample ID: CCV	Method: E200.7						
Analysis Date: 04/02/12 15:26	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
Calcium	26.0	1.0	25		104	90	110				
Magnesium	26.0	1.0	25		104	90	110				
Potassium	25.9	1.0	25		103	90	110				
Sodium	25.8	1.0	25		103	90	110				

Associated samples: H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICP2-HE_120402B: 90	SampType: Sample Matrix Spike			Sample ID: H12030390-010BMS2	Method: E200.7						
Analysis Date: 04/02/12 15:41	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
Calcium	71.2	1.0	50	24.73	93	70	130				
Magnesium	60.9	1.0	50	13.14	95	70	130				
Potassium	50.0	1.0	50	0.4273	99	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78958

Run ID :Run Order: ICP2-HE_120402B: 90	SampType: Sample Matrix Spike	Sample ID: H12030390-010BMS2	Method: E200.7								
Analysis Date: 04/02/12 15:41	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	51.4	1.0	50	1.916	99	70	130				

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICP2-HE_120402B: 91	SampType: Sample Matrix Spike Duplicate	Sample ID: H12030390-010BMSD2	Method: E200.7								
Analysis Date: 04/02/12 15:44	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
Calcium	73.0	1.0	50	24.73	97	70	130	71.16	2.6	20	
Magnesium	61.1	1.0	50	13.14	96	70	130	60.88	0.4	20	
Potassium	50.8	1.0	50	0.4273	101	70	130	50	1.6	20	
Sodium	52.7	1.0	50	1.916	101	70	130	51.39	2.5	20	

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICP2-HE_120402B: 167	SampType: Serial Dilution	Sample ID: H12030340-001CDIL	Method: E200.7								
Analysis Date: 04/02/12 20:30	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
Calcium	16.2	1.0				0	0	16.98	5.0	10	
Magnesium	6.68	1.0				0	0	7.031	5.1	10	
Potassium	1.16	1.0				0	0	1.381		10	N
Sodium	1.94	1.0				0	0	1.889		10	N

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICP2-HE_120402B: 174	SampType: Serial Dilution	Sample ID: H12030342-003CDIL	Method: E200.7								
Analysis Date: 04/02/12 20:56	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
Calcium	0.258	1.0				0	0	0.04438		10	N
Magnesium	ND	1.0				0	0			10	
Potassium	ND	1.0				0	0			10	
Sodium	ND	1.0				0	0			10	

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 8		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 04/02/12 13:52		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.264	0.10	0.25		106	90	110				
Arsenic	0.0487	0.0050	0.05		97	90	110				
Cadmium	0.0264	0.0010	0.025		106	90	110				
Copper	0.0513	0.010	0.05		103	90	110				
Iron	0.268	0.030	0.25		107	90	110				
Lead	0.0494	0.010	0.05		99	90	110				
Manganese	0.254	0.010	0.25		102	90	110				
Zinc	0.0511	0.010	0.05		102	90	110				

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICPMS204-B_120402A: 9		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 04/02/12 13:57		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.9	0.10	40		102	70	130				
Arsenic	0.00219	0.0050									
Cadmium	0.00114	0.0010									
Copper	0.000146	0.010									
Iron	104	0.030	100		104	70	130				
Lead	0.000172	0.010									
Manganese	0.000167	0.010									
Zinc	0.00144	0.010									

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICPMS204-B_120402A: 10		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 04/02/12 14:02		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.3	0.10	40		103	70	130				
Arsenic	0.0112	0.0050	0.01		112	70	130				
Cadmium	0.0110	0.0010	0.01		110	70	130				
Copper	0.0205	0.010	0.02		103	70	130				
Iron	103	0.030	100		103	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Prepared by Helena, MT Branch

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 10		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 04/02/12 14:02		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.000147	0.010				0	0				
Manganese	0.0202	0.010	0.02		101	70	130				
Zinc	0.0116	0.010	0.01		116	70	130				

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICPMS204-B_120402A: 21		SampType: Method Blank			Sample ID: ICB			Method: E200.8			
Analysis Date: 04/02/12 16:03		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0003									
Arsenic	7E-05	3E-05									
Cadmium	ND	1E-05									
Copper	ND	3E-05									
Iron	0.0010	0.0002									
Lead	ND	1.0E-05									
Manganese	6E-05	1E-05									
Zinc	0.001	0.0003									

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICPMS204-B_120402A: 29		SampType: Laboratory Fortified Blank			Sample ID: LFB			Method: E200.8			
Analysis Date: 04/02/12 16:40		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0494	0.10	0.05		99	85	115				
Arsenic	0.0486	0.0050	0.05	0.0000654	97	85	115				
Cadmium	0.0470	0.0010	0.05		94	85	115				
Copper	0.0460	0.010	0.05		92	85	115				
Iron	4.98	0.030	5	0.0009885	100	85	115				
Lead	0.0477	0.010	0.05		95	85	115				
Manganese	0.0476	0.010	0.05	0.0000605	95	85	115				
Zinc	0.0471	0.010	0.05	0.001083	92	85	115				

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 67		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 04/02/12 19:39		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.264	0.10	0.25		106	90	110				
Arsenic	0.0492	0.0050	0.05		98	90	110				
Cadmium	0.0264	0.0010	0.025		106	90	110				
Copper	0.0514	0.010	0.05		103	90	110				
Iron	0.264	0.030	0.25		105	90	110				
Lead	0.0504	0.010	0.05		101	90	110				
Manganese	0.259	0.010	0.25		103	90	110				
Zinc	0.0516	0.010	0.05		103	90	110				

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICPMS204-B_120402A: 68		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 04/02/12 19:44		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.9	0.10	40		100	70	130				
Arsenic	0.000851	0.0050									
Cadmium	0.00106	0.0010									
Copper	0.000189	0.010									
Iron	96.4	0.030	100		96	70	130				
Lead	0.000152	0.010									
Manganese	0.000189	0.010									
Zinc	0.00127	0.010									

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICPMS204-B_120402A: 69		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 04/02/12 19:48		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.3	0.10	40		101	70	130				
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0105	0.0010	0.01		105	70	130				
Copper	0.0194	0.010	0.02		97	70	130				
Iron	98.9	0.030	100		99	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Prepared by Helena, MT Branch

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 69	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 04/02/12 19:48	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.000126	0.010				0	0				
Manganese	0.0196	0.010	0.02		98	70	130				
Zinc	0.0107	0.010	0.01		107	70	130				

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICPMS204-B_120402A: 177	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 04/03/12 04:14	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.261	0.10	0.25		104	90	110				
Arsenic	0.0499	0.0050	0.05		100	90	110				
Cadmium	0.0260	0.0010	0.025		104	90	110				
Copper	0.0520	0.010	0.05		104	90	110				
Iron	0.259	0.030	0.25		104	90	110				
Lead	0.0495	0.010	0.05		99	90	110				
Manganese	0.260	0.010	0.25		104	90	110				
Zinc	0.0526	0.010	0.05		105	90	110				

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICPMS204-B_120402A: 178	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 04/03/12 04:18	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.3	0.10	40		98	70	130				
Arsenic	0.000507	0.0050									
Cadmium	0.000989	0.0010									
Copper	0.000184	0.010									
Iron	97.7	0.030	100		98	70	130				
Lead	0.000156	0.010									
Manganese	0.000165	0.010									
Zinc	0.00130	0.010									

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 179		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 04/03/12 04:23		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.2	0.10	40		98	70	130				
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0103	0.0010	0.01		103	70	130				
Copper	0.0198	0.010	0.02		99	70	130				
Iron	96.8	0.030	100		97	70	130				
Lead	0.000129	0.010				0	0				
Manganese	0.0191	0.010	0.02		96	70	130				
Zinc	0.0112	0.010	0.01		112	70	130				

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICPMS204-B_120402A: 204		SampType: Sample Matrix Spike			Sample ID: H12030390-002BMS			Method: E200.8			
Analysis Date: 04/03/12 06:20		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0489	0.030	0.05		98	70	130				
Arsenic	0.0488	0.0010	0.05		98	70	130				
Cadmium	0.0484	0.0010	0.05		97	70	130				
Copper	0.0480	0.0050	0.05	0.0003064	95	70	130				
Iron	4.68	0.030	5	0.002963	93	70	130				
Lead	0.0495	0.0010	0.05	0.0000526	99	70	130				
Manganese	0.0517	0.0010	0.05	0.003742	96	70	130				
Zinc	0.0503	0.010	0.05	0.002457	96	70	130				

Associated samples: H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B

Run ID :Run Order: ICPMS204-B_120402A: 205		SampType: Sample Matrix Spike Duplicate			Sample ID: H12030390-002BMSD			Method: E200.8			
Analysis Date: 04/03/12 06:25		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0487	0.030	0.05		97	70	130	0.04886	0.2	20	
Arsenic	0.0488	0.0010	0.05		98	70	130	0.0488	0.0	20	
Cadmium	0.0483	0.0010	0.05		97	70	130	0.04841	0.1	20	
Copper	0.0478	0.0050	0.05	0.0003064	95	70	130	0.04804	0.6	20	
Iron	4.81	0.030	5	0.002963	96	70	130	4.676	2.8	20	



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Prepared by Helena, MT Branch

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 205		SampType: Sample Matrix Spike Duplicate			Sample ID: H12030390-002BMSD				Method: E200.8		
Analysis Date: 04/03/12 06:25		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0489	0.0010	0.05	0.0000526	98	70	130	0.04951	1.2	20	
Manganese	0.0522	0.0010	0.05	0.003742	97	70	130	0.05173	0.9	20	
Zinc	0.0498	0.010	0.05	0.002457	95	70	130	0.05027	0.9	20	

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICPMS204-B_120402A: 225		SampType: Sample Matrix Spike			Sample ID: H12030390-012BMS				Method: E200.8		
Analysis Date: 04/03/12 07:59		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0479	0.030	0.05	0.001402	93	70	130				
Arsenic	0.0490	0.0010	0.05	0.0002948	97	70	130				
Cadmium	0.0474	0.0010	0.05	0.0001119	94	70	130				
Copper	0.0470	0.0050	0.05	0.0001955	94	70	130				
Iron	4.76	0.030	5	0.007319	95	70	130				
Lead	0.0488	0.0010	0.05	0.0000206	97	70	130				
Manganese	0.0482	0.0010	0.05	0.000711	95	70	130				
Zinc	0.0638	0.010	0.05	0.01788	92	70	130				

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Run ID :Run Order: ICPMS204-B_120402A: 226		SampType: Sample Matrix Spike Duplicate			Sample ID: H12030390-012BMSD				Method: E200.8		
Analysis Date: 04/03/12 08:04		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0468	0.030	0.05	0.001402	91	70	130	0.04787	2.2	20	
Arsenic	0.0492	0.0010	0.05	0.0002948	98	70	130	0.04901	0.4	20	
Cadmium	0.0464	0.0010	0.05	0.0001119	92	70	130	0.04736	2.1	20	
Copper	0.0465	0.0050	0.05	0.0001955	93	70	130	0.047	1.1	20	
Iron	4.73	0.030	5	0.007319	94	70	130	4.763	0.8	20	
Lead	0.0505	0.0010	0.05	0.0000206	101	70	130	0.04875	3.5	20	
Manganese	0.0474	0.0010	0.05	0.000711	93	70	130	0.04819	1.8	20	
Zinc	0.0627	0.010	0.05	0.01788	90	70	130	0.06383	1.8	20	

Associated samples: **H12030390-001B; H12030390-002B; H12030390-003B; H12030390-004B; H12030390-005B; H12030390-006B; H12030390-007B; H12030390-008B; H12030390-009B; H12030390-010B; H12030390-011B; H12030390-012B; H12030390-013B; H12030390-014B; H12030390-015B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R79000

Run ID :Run Order: ICPMS204-B_120404A: 9	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 04/04/12 11:15	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
Calcium	111	0.50	120		92	70	130				
Magnesium	40.3	0.50	40		101	70	130				
Manganese	0.000879	0.010									
Zinc	0.00144	0.010									

Associated samples: **H12030390-015B**

Run ID :Run Order: ICPMS204-B_120404A: 10	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 04/04/12 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
Calcium	111	0.50	120		92	70	130				
Magnesium	40.6	0.50	40		102	70	130				
Manganese	0.0196	0.010	0.02		98	70	130				
Zinc	0.0108	0.010	0.01		108	70	130				

Associated samples: **H12030390-015B**

Run ID :Run Order: ICPMS204-B_120404A: 13	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 04/04/12 11:34	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
Calcium	2.58	0.50	2.5		103	90	110				
Magnesium	2.54	0.50	2.5		102	90	110				
Manganese	0.244	0.010	0.25		98	90	110				
Zinc	0.0508	0.010	0.05		102	90	110				

Associated samples: **H12030390-015B**

Run ID :Run Order: ICPMS204-B_120404A: 34	SampType: Method Blank	Sample ID: ICB	Method: E200.8								
Analysis Date: 04/04/12 13:40	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
Calcium	ND	0.003									
Magnesium	ND	0.0007									
Manganese	0.0002	1E-05									
Zinc	ND	0.0003									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R79000

Run ID :Run Order: **ICPMS204-B_120404A: 34** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**
 Analysis Date: **04/04/12 13:40** 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
 Associated samples: **H12030390-015B**

Run ID :Run Order: **ICPMS204-B_120404A: 35** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**
 Analysis Date: **04/04/12 13:46** 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
 Calcium 48.1 0.50 50 **96** 85 115
 Magnesium 47.3 0.50 50 **95** 85 115
 Manganese 0.0466 0.010 0.05 0.0002144 **93** 85 115
 Zinc 0.0464 0.010 0.05 **93** 85 115
 Associated samples: **H12030390-015B**

Run ID :Run Order: **ICPMS204-B_120404A: 45** SampType: **Sample Matrix Spike** Sample ID: **H12040038-002AMS** Method: **E200.8**
 Analysis Date: **04/04/12 14:32** 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
 Calcium 88.2 1.0 50 48.16 **80** 70 130
 Magnesium 75.4 1.0 50 28.92 **93** 70 130
 Manganese 0.0476 0.0010 0.05 0.001153 **93** 70 130
 Zinc 0.0479 0.010 0.05 0.0025 **91** 70 130
 Associated samples: **H12030390-015B**

Run ID :Run Order: **ICPMS204-B_120404A: 46** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H12040038-002AMSD** Method: **E200.8**
 Analysis Date: **04/04/12 14:36** 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
 Calcium 87.2 1.0 50 48.16 **78** 70 130 88.19 **1.2** 20
 Magnesium 73.8 1.0 50 28.92 **90** 70 130 75.43 **2.2** 20
 Manganese 0.0483 0.0010 0.05 0.001153 **94** 70 130 0.04758 **1.6** 20
 Zinc 0.0472 0.010 0.05 0.0025 **89** 70 130 0.04786 **1.5** 20
 Associated samples: **H12030390-015B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount
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Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R79043

Run ID :Run Order: IC102-H_120403A: 15	SampType: Initial Calibration Verification Standard				Sample ID: ICV040312-12	Method: E300.0					
Analysis Date: 04/03/12 10:46	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		103	90	110				
Sulfate	410	1.0	400		103	90	110				

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: IC102-H_120403A: 16	SampType: Method Blank				Sample ID: ICB040312-13	Method: E300.0					
Analysis Date: 04/03/12 11:00	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	0.02									

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: IC102-H_120403A: 17	SampType: Laboratory Fortified Blank				Sample ID: LFB040312-14	Method: E300.0					
Analysis Date: 04/03/12 11:13	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	53	1.0	50		105	90	110				
Sulfate	210	1.1	200		103	90	110				

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: IC102-H_120403A: 29	SampType: Continuing Calibration Verification Standard				Sample ID: CCV040312-30	Method: E300.0					
Analysis Date: 04/03/12 13:57	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
Chloride	100	1.0	100		104	90	110				
Sulfate	410	1.0	400		102	90	110				

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A**

Run ID :Run Order: IC102-H_120403A: 36	SampType: Sample Matrix Spike				Sample ID: H12030390-002AMS	Method: E300.0					
Analysis Date: 04/03/12 15:32	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	52	1.0	50		104	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Date: 17-Apr-12

Prepared by Helena, MT Branch

BatchID: R79043

Run ID :Run Order: IC102-H_120403A: 36		SampType: Sample Matrix Spike			Sample ID: H12030390-002AMS			Method: E300.0			
Analysis Date: 04/03/12 15:32		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
Sulfate	200	1.1	200		102	90	110				

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: IC102-H_120403A: 37		SampType: Sample Matrix Spike Duplicate			Sample ID: H12030390-002AMSD			Method: E300.0			
Analysis Date: 04/03/12 15:45		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	53	1.0	50		105	90	110	52.22	0.8	20	
Sulfate	210	1.1	200		103	90	110	203.8	0.8	20	

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: IC102-H_120403A: 39		SampType: Continuing Calibration Verification Standard			Sample ID: CCV040312-44			Method: E300.0			
Analysis Date: 04/03/12 16:13		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	100	1.0	100		105	90	110				
Sulfate	410	1.0	400		103	90	110				

Associated samples: **H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A**

Run ID :Run Order: IC102-H_120403A: 47		SampType: Sample Matrix Spike			Sample ID: H12030390-009AMS			Method: E300.0			
Analysis Date: 04/03/12 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	46	1.0	50	0.254	91	90	110				
Sulfate	230	1.1	200	32.52	99	90	110				

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: IC102-H_120403A: 48		SampType: Sample Matrix Spike Duplicate			Sample ID: H12030390-009AMSD			Method: E300.0			
Analysis Date: 04/03/12 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
Chloride	49	1.0	50	0.254	98	90	110	45.9	7.0	20	
Sulfate	240	1.1	200	32.52	104	90	110	230.7	4.5	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R79043

Run ID :Run Order: **IC102-H_120403A: 48** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H12030390-009AMSD** Method: **E300.0**
 Analysis Date: **04/03/12 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

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: **IC102-H_120403A: 53** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV040312-58** Method: **E300.0**
 Analysis Date: **04/03/12 19:23** 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	100	1.0	100		101	90	110				
Sulfate	400	1.0	400		100	90	110				

Associated samples: **H12030390-014A; H12030390-015A**

Run ID :Run Order: **IC102-H_120403A: 63** SampType: **Sample Matrix Spike** Sample ID: **H12030403-001AMS** Method: **E300.0**
 Analysis Date: **04/03/12 21:39** 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	200	1.0	50	121.4	148	90	110				S
Sulfate	210	1.1	200	9.706	100	90	110				

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**

Run ID :Run Order: **IC102-H_120403A: 64** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H12030403-001AMSD** Method: **E300.0**
 Analysis Date: **04/03/12 21:53** 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	200	1.0	50	121.4	149	90	110	195.3	0.4	20	S
Sulfate	210	1.1	200	9.706	100	90	110	209.4	0.5	20	

Associated samples: **H12030390-001A; H12030390-002A; H12030390-003A; H12030390-004A; H12030390-005A; H12030390-006A; H12030390-007A; H12030390-009A; H12030390-010A; H12030390-011A; H12030390-012A; H12030390-013A; H12030390-014A; H12030390-015A**



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R79125

Run ID :Run Order: IC102-H_120410A: 16	SampType: Initial Calibration Verification Standard				Sample ID: ICV041012-12				Method: E300.0		
Analysis Date: 04/10/12 11:22	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	100	1.0	100		102	90	110				
Sulfate	400	1.0	400		101	90	110				

Associated samples: **H12030390-008A**

Run ID :Run Order: IC102-H_120410A: 17	SampType: Method Blank				Sample ID: ICB041012-13				Method: E300.0		
Analysis Date: 04/10/12 11:35	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	0.07	0.02									
Sulfate	0.08	0.02									

Associated samples: **H12030390-008A**

Run ID :Run Order: IC102-H_120410A: 18	SampType: Laboratory Fortified Blank				Sample ID: LFB041012-14				Method: E300.0		
Analysis Date: 04/10/12 11:49	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	45	1.0	50	0.07	90	90	110				
Sulfate	180	1.0	200	0.075	91	90	110				

Associated samples: **H12030390-008A**

Run ID :Run Order: IC102-H_120410A: 19	SampType: Continuing Calibration Verification Standard				Sample ID: CCV041012-15				Method: E300.0		
Analysis Date: 04/10/12 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	100	1.0	100		103	90	110				
Sulfate	410	1.0	400		102	90	110				

Associated samples: **H12030390-008A**

Run ID :Run Order: IC102-H_120410A: 29	SampType: Sample Matrix Spike				Sample ID: H12040020-004AMS				Method: E300.0		
Analysis Date: 04/10/12 14:18	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	68	1.0	50	16.41	104	90	110				
Sulfate	220	1.1	200	12.33	103	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030390
Project: UBMC Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 17-Apr-12

BatchID: R79125

Run ID :Run Order: IC102-H_120410A: 29	SampType: Sample Matrix Spike	Sample ID: H12040020-004AMS	Method: E300.0								
Analysis Date: 04/10/12 14:18	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
Associated samples: H12030390-008A											

Run ID :Run Order: IC102-H_120410A: 30	SampType: Sample Matrix Spike Duplicate	Sample ID: H12040020-004AMSD	Method: E300.0								
Analysis Date: 04/10/12 14:32	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	1.0	50	16.41	104	90	110	68.16	0.6	20	
Sulfate	220	1.1	200	12.33	104	90	110	219	0.7	20	
Associated samples: H12030390-008A											

Workorder Receipt Checklist



H12030390

Login completed by: Tracy L. Lorash

Date Received: 3/30/2012

Reviewed by: BL2000\sdull

Received by: wjj

Reviewed Date: 4/3/2012

Carrier Hand Del
name:

- | | | | |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Container/Temp Blank temperature: | °C See Comments | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

All samples received on ice with Cooler #1 at a temperature of -0.1C and Cooler #2 at a temperature of -0.9C. TI 3/30/12.



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **MDECO**
 Report Mail Address: **Quote H-1045**
 Invoice Address: _____
 Project Name, PWS, Permit, Etc.: _____
 Contact Name: **VBMC Groundwater**
 Phone/Fax: _____
 Email: _____
 Invoice Contact & Phone: _____
 Purchase Order: _____
 Sample Origin: **MT**
 State: **MT**
 EPA/State Compliance: Yes No
 Sampler: (Please Print) **Alan Duckworth**
Tacie Janesko
 Quote/Bottle Order: _____

Special Report/Formats:
 DW
 POTW/MWTP
 State: _____
 Other: _____
 EDD/EDT (Electronic Data)
 Format: _____
 LEVEL IV
 NELAC
 Number of Containers _____
 Sample Type: **A W S V B O DW**
 Air Water Soils/Solids
 Vegetation Bioassay Other
 DW - Drinking Water

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED	Standard Turnaround (TAT)	Comments	Receipt Temp
1 S35 MW08	03/29/12	0940	W	SEE ATTACHED	490-5135	#1-0,1	Intact On Cooler
2 S35 MW09		0945		SEE ATTACHED		#2-0.9	Intact On Cooler
3 S35 MW06		1415		SEE ATTACHED			Intact On Cooler
4 S35 MW04		1510		SEE ATTACHED			Intact On Cooler
5 S35 MW07		1515		SEE ATTACHED			Intact On Cooler
6 S35 MW03		11020		SEE ATTACHED			Intact On Cooler
7 VBMC TDMW07	03/29/12	0815		SEE ATTACHED			Intact On Cooler
8 VBMC TDMW08		0820		SEE ATTACHED			Intact On Cooler
9 VBMC TDMW05		0845		SEE ATTACHED			Intact On Cooler
10 VBMC TDMW04		1105		SEE ATTACHED			Intact On Cooler

Custody Record **MUST be Signed**
 Relinquished by (print): **Alan Duckworth** Date/Time: **3/3-12 0903** Signature: *[Signature]*
 Received by (print): _____ Date/Time: _____ Signature: _____
 Received by (print): **Wanda Dm** Date/Time: **3-30-12 9:03** Signature: *[Signature]*

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 sub-contract data will be clearly noted on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **M DEQ**

Report Mail Address: **Quote H-Lofts**

Invoice Address:

Contact Name: **VBMC Groundwater**

Phone/Fax: **841-5033**

Email: **Shawland@mt.gov**

Project Name, PWS, Permit, Etc.: **Swaland**

Sample Origin: **MT**

State: **MT**

EPA/State Compliance: Yes No

Sampler: (Please Print) **Alex Dressbach**

Quote/Bottle Order: **Iselle Santos**

Invoice Contact & Phone:

Purchase Order:

Special Report/Formats:

DW EDD/EDT (Electronic Data)

POTM/MWTP **Format:** _____

State: _____ LEVEL IV

Other: _____ NELAC

Number of Containers: _____

Sample Type: A W S V B O DW

Air Water Soils/Solids

Vegetation Bioassay Other

DW - Drinking Water

ANALYSIS REQUESTED

SEE ATTACHED

Standard Turnaround (TAT)

H S U R

Contact ELL prior to RUSH sample submittal for charges and scheduling - See Instruction Page

Comments: Please copy results to addressbach@portagen.com 490-5135

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX
1 VBNCIDMWDG	03/24/12	1110	W
2 VBNCIDMWD3D		1330	
3 VBNCIDMWD01		1515	
4 VBNCIDMWD2D		1530	
5 VBNCIDMWD2S		1555	
6			
7			
8			
9			
10			

Signature: *[Signature]*

Date/Time: **3/30/12 0903**

Signature: *[Signature]*

Date/Time: _____

Signature: _____

Date/Time: _____

Signature: *[Signature]*

Date/Time: **3/30-12 903**

Signature: _____

Date/Time: _____

LABORATORY USE ONLY

Shipped by: **hand del**

Cooler ID(s): **V**

Receipt Temp: **see cooler**

On ice: **see cooler**

Custody Seal: **Y**

On Bottle: **Y**

On Cooler: **Y**

Intact: **Y**

Signature Match: **Y**

Signature: **H12030390**

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Section 35 Quarterly

		Section 35 Quarterly													
	Quantity	Analysis													
Surface Water	7	¹ Dissolved Metals	² Total Rec. Metals	⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC		
Groundwater	9	³ Dissolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC		
Sediment	6		⁴ Total Rec. Metals												

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

		UBMC Quarterly													
	Quantity	Analysis													
⁶ Surface Water	11	¹ Dissolved Metals	² Total Rec. Metals	⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC		
Groundwater	10	³ Dissolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC		
Sediment	9		⁴ Total Rec. Metals												

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

⁶Additional surface water samples may be collected for seeps.



ANALYTICAL SUMMARY REPORT

April 06, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12030404 Quote ID: H645 - UBMC

Project Name: Section 35 Groundwater

Energy Laboratories Inc Helena MT received the following 1 sample for MT DEQ-Site Response on 3/30/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12030404-001	S35MW01	03/30/12 11:39	03/30/12	Aqueous	Metals by ICP/ICPMS, Dissolved Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW01
Lab ID: H12030404-001
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 03/30/12 11:39 **Date Received:** 03/30/12
Report Date: 04/06/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Conductivity @ 25 C	296	umhos/cm		1		A2510 B	04/02/12 10:51 / cmm		PHSC_101-H_120402A : 19		R78924
Solids, Total Suspended TSS @ 105 C	64	mg/L		10		A2540 D	04/02/12 15:06 / glj	04/02/12 14:36 J-124 (14410200)_120402A : 6			16118
Solids, Total Dissolved TDS @ 180 C	174	mg/L		10		A2540 C	04/02/12 15:00 / cmm	04/02/12 14:40 J-124 (14410200)_120402B : 5			16119
INORGANICS											
Alkalinity, Total as CaCO3	150	mg/L		4		A2320 B	04/02/12 16:05 / cmm		MAN-TECH_120402A : 71		R78946
Bicarbonate as HCO3	190	mg/L		4		A2320 B	04/02/12 16:05 / cmm		MAN-TECH_120402A : 71		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 16:05 / cmm		MAN-TECH_120402A : 71		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 22:06 / zeg		IC102-H_120403A : 65		R79043
Sulfate	5	mg/L		1		E300.0	04/03/12 22:06 / zeg		IC102-H_120403A : 65		R79043
Hardness as CaCO3	159	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 20		R78988
METALS, DISSOLVED											
Aluminum	0.04	mg/L		0.03		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Calcium	34	mg/L		1		E200.7	04/02/12 16:30 / sld		ICP2-HE_120402B : 103		R78958
Copper	0.002	mg/L		0.001		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Magnesium	18	mg/L		1		E200.7	04/02/12 16:30 / sld		ICP2-HE_120402B : 103		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Potassium	1	mg/L		1		E200.7	04/02/12 16:30 / sld		ICP2-HE_120402B : 103		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 16:30 / sld		ICP2-HE_120402B : 103		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: 16118

Run ID :Run Order: ACCU-124 (14410200)_120402A: 1	SampType: Method Blank	Sample ID: MB-16118	Method: A2540 D								
Analysis Date: 04/02/12 15:05	Units: mg/L	Prep Info: Prep Date: 4/2/2012	Prep Method: A2540 D								
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	2									

Associated samples: **H12030404-001A**

Run ID :Run Order: ACCU-124 (14410200)_120402A: 2	SampType: Laboratory Control Sample	Sample ID: LCS-16118	Method: A2540 D								
Analysis Date: 04/02/12 15:05	Units: mg/L	Prep Info: Prep Date: 4/2/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1970	10	2000	2	98	70	130				

Associated samples: **H12030404-001A**

Run ID :Run Order: ACCU-124 (14410200)_120402A: 13	SampType: Sample Duplicate	Sample ID: H12040004-001ADUP	Method: A2540 D								
Analysis Date: 04/02/12 15:08	Units: mg/L	Prep Info: Prep Date: 4/2/2012	Prep Method: A2540 D								
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	10								5	

Associated samples: **H12030404-001A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: 16119

Run ID :Run Order: ACCU-124 (14410200)_120402B: 1	SampType: Method Blank	Sample ID: MB-16119	Method: A2540 C								
Analysis Date: 04/02/12 14:59	Units: mg/L	Prep Info: Prep Date: 4/2/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	3	3									

Associated samples: **H12030404-001A**

Run ID :Run Order: ACCU-124 (14410200)_120402B: 2	SampType: Laboratory Control Sample	Sample ID: LCS-16119	Method: A2540 C								
Analysis Date: 04/02/12 14:59	Units: mg/L	Prep Info: Prep Date: 4/2/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2000	10	2000	3	100	90	110				

Associated samples: **H12030404-001A**

Run ID :Run Order: ACCU-124 (14410200)_120402B: 4	SampType: Sample Matrix Spike	Sample ID: H12030403-001AMS	Method: A2540 C								
Analysis Date: 04/02/12 14:59	Units: mg/L	Prep Info: Prep Date: 4/2/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2400	10	2000	396	100	80	120				

Associated samples: **H12030404-001A**

Run ID :Run Order: ACCU-124 (14410200)_120402B: 6	SampType: Sample Duplicate	Sample ID: H12030404-001ADUP	Method: A2540 C								
Analysis Date: 04/02/12 15:00	Units: mg/L	Prep Info: Prep Date: 4/2/2012	Prep Method: A2540 C								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	172	10						174	1.2	5	

Associated samples: **H12030404-001A**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R78924

Run ID :Run Order: PHSC_101-H_120402A: 2	SampType: Initial Calibration Verification Standard				Sample ID: SC 150			Method: A2510 B			
Analysis Date: 04/02/12 10:06	Units: umhos/cm				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	146	1.0	150		97	90	110				

Associated samples: **H12030404-001A**

Run ID :Run Order: PHSC_101-H_120402A: 3	SampType: Initial Calibration Verification Standard				Sample ID: SC 5000			Method: A2510 B			
Analysis Date: 04/02/12 10:08	Units: umhos/cm				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	5020	1.0	5000		100	90	110				

Associated samples: **H12030404-001A**

Run ID :Run Order: PHSC_101-H_120402A: 4	SampType: Initial Calibration Verification Standard				Sample ID: SC 20000			Method: A2510 B			
Analysis Date: 04/02/12 10:12	Units: umhos/cm				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	19900	1.0	20000		100	90	110				

Associated samples: **H12030404-001A**

Run ID :Run Order: PHSC_101-H_120402A: 5	SampType: Initial Calibration Verification Standard				Sample ID: SC 2ND 1000			Method: A2510 B			
Analysis Date: 04/02/12 10:14	Units: umhos/cm				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	1000	1.0	1000		100	90	110				

Associated samples: **H12030404-001A**

Run ID :Run Order: PHSC_101-H_120402A: 15	SampType: Sample Duplicate				Sample ID: H12030402-002BDUP			Method: A2510 B			
Analysis Date: 04/02/12 10:45	Units: umhos/cm				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	624	1.0						623	0.2	10	

Associated samples: **H12030404-001A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R78946

Run ID :Run Order: MAN-TECH_120402A: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B
Analysis Date: 04/02/12 12:32	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	2	1	

Associated samples: **H12030404-001A**

Run ID :Run Order: MAN-TECH_120402A: 10	SampType: Laboratory Control Sample	Sample ID: LCS-03012012	Method: A2320 B
Analysis Date: 04/02/12 12:40	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	620	4.0	600

Associated samples: **H12030404-001A**

Run ID :Run Order: MAN-TECH_120402A: 63	SampType: Sample Duplicate	Sample ID: H12030392-002BDUP	Method: A2320 B
Analysis Date: 04/02/12 15:35	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	260	4.0	
Bicarbonate as HCO3	310	4.0	
Carbonate as CO3	6.8	4.0	

Associated samples: **H12030404-001A**

Run ID :Run Order: MAN-TECH_120402A: 67	SampType: Sample Matrix Spike	Sample ID: H12030392-003BMS	Method: A2320 B
Analysis Date: 04/02/12 15:51	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	960	4.0	600

Associated samples: **H12030404-001A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R78958

Run ID :Run Order: ICP2-HE_120402B: 6	SampType: Initial Calibration Verification Standard	Sample ID: ICV	Method: E200.7								
Analysis Date: 04/02/12 10:26	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
Calcium	39.7	1.0	40		99	95	105				
Magnesium	39.7	1.0	40		99	95	105				
Potassium	39.2	1.0	40		98	95	105				
Sodium	39.4	1.0	40		99	95	105				

Associated samples: **H12030404-001B**

Run ID :Run Order: ICP2-HE_120402B: 7	SampType: Continuing Calibration Verification Standard	Sample ID: CCV-1	Method: E200.7								
Analysis Date: 04/02/12 10:30	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
Calcium	24.9	1.0	25		100	95	105				
Magnesium	24.4	1.0	25		98	95	105				
Potassium	24.6	1.0	25		99	95	105				
Sodium	24.7	1.0	25		99	95	105				

Associated samples: **H12030404-001B**

Run ID :Run Order: ICP2-HE_120402B: 10	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.7								
Analysis Date: 04/02/12 10:41	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
Calcium	467	1.0	500		93	80	120				
Magnesium	490	1.0	500		98	80	120				
Potassium	-0.0546	1.0				0	0				
Sodium	0.0208	1.0				0	0				

Associated samples: **H12030404-001B**

Run ID :Run Order: ICP2-HE_120402B: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 04/02/12 10:45	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
Calcium	446	1.0	500		89	80	120				
Magnesium	480	1.0	500		96	80	120				
Potassium	21.0	1.0	20		105	80	120				
Sodium	20.9	1.0	20		104	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404

ANALYTICAL QC SUMMARY REPORT

Date: 09-Apr-12

Project: Section 35 Groundwater

BatchID: R78958

Run ID :Run Order: ICP2-HE_120402B: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 04/02/12 10:45	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

Associated samples: H12030404-001B

Run ID :Run Order: ICP2-HE_120402B: 13	SampType: Method Blank	Sample ID: ICB	Method: E200.7								
Analysis Date: 04/02/12 10:53	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
Calcium	0.03	0.008									
Magnesium	ND	0.003									
Potassium	ND	0.04									
Sodium	ND	0.01									

Associated samples: H12030404-001B

Run ID :Run Order: ICP2-HE_120402B: 14	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.7								
Analysis Date: 04/02/12 10:57	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
Calcium	47.4	1.0	50	0.03223	95	85	115				
Magnesium	47.2	1.0	50		94	85	115				
Potassium	48.4	1.0	50		97	85	115				
Sodium	48.7	1.0	50		97	85	115				

Associated samples: H12030404-001B

Run ID :Run Order: ICP2-HE_120402B: 98	SampType: Continuing Calibration Verification Standard	Sample ID: CCV	Method: E200.7								
Analysis Date: 04/02/12 16:11	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
Calcium	24.6	1.0	25		99	90	110				
Magnesium	24.4	1.0	25		98	90	110				
Potassium	24.8	1.0	25		99	90	110				
Sodium	24.8	1.0	25		99	90	110				

Associated samples: H12030404-001B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R78958

Run ID :Run Order: ICP2-HE_120402B: 105		SampType: Sample Matrix Spike				Sample ID: H12030404-001BMS2				Method: E200.7	
Analysis Date: 04/02/12 16:37		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
Calcium	83.3	1.0	50	33.98	99	70	130				
Magnesium	67.9	1.0	50	18.06	100	70	130				
Potassium	51.6	1.0	50	1.165	101	70	130				
Sodium	53.1	1.0	50	2.436	101	70	130				

Associated samples: **H12030404-001B**

Run ID :Run Order: ICP2-HE_120402B: 106		SampType: Sample Matrix Spike Duplicate				Sample ID: H12030404-001BMSD2				Method: E200.7	
Analysis Date: 04/02/12 16:41		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
Calcium	83.4	1.0	50	33.98	99	70	130	83.31	0.2	20	
Magnesium	68.7	1.0	50	18.06	101	70	130	67.91	1.2	20	
Potassium	52.5	1.0	50	1.165	103	70	130	51.65	1.6	20	
Sodium	53.8	1.0	50	2.436	103	70	130	53.07	1.3	20	

Associated samples: **H12030404-001B**



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 8		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8				
Analysis Date: 04/02/12 13:52		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	0.264	0.10	0.25		106	90	110					
Arsenic	0.0487	0.0050	0.05		97	90	110					
Cadmium	0.0264	0.0010	0.025		106	90	110					
Copper	0.0513	0.010	0.05		103	90	110					
Iron	0.268	0.030	0.25		107	90	110					
Lead	0.0494	0.010	0.05		99	90	110					
Manganese	0.254	0.010	0.25		102	90	110					
Zinc	0.0511	0.010	0.05		102	90	110					

Associated samples: **H12030404-001B**

Run ID :Run Order: ICPMS204-B_120402A: 9		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8				
Analysis Date: 04/02/12 13:57		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	40.9	0.10	40		102	70	130					
Arsenic	0.00219	0.0050										
Cadmium	0.00114	0.0010										
Copper	0.000146	0.010										
Iron	104	0.030	100		104	70	130					
Lead	0.000172	0.010										
Manganese	0.000167	0.010										
Zinc	0.00144	0.010										

Associated samples: **H12030404-001B**

Run ID :Run Order: ICPMS204-B_120402A: 10		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8				
Analysis Date: 04/02/12 14:02		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	41.3	0.10	40		103	70	130					
Arsenic	0.0112	0.0050	0.01		112	70	130					
Cadmium	0.0110	0.0010	0.01		110	70	130					
Copper	0.0205	0.010	0.02		103	70	130					
Iron	103	0.030	100		103	70	130					
Lead	0.000147	0.010				0	0					

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 10	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 04/02/12 14:02	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0202	0.010	0.02		101	70	130				
Zinc	0.0116	0.010	0.01		116	70	130				

Associated samples: H12030404-001B

Run ID :Run Order: ICPMS204-B_120402A: 21	SampType: Method Blank	Sample ID: ICB	Method: E200.8								
Analysis Date: 04/02/12 16:03	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0003									
Arsenic	7E-05	3E-05									
Cadmium	ND	1E-05									
Copper	ND	3E-05									
Iron	0.0010	0.0002									
Lead	ND	1.0E-05									
Manganese	6E-05	1E-05									
Zinc	0.001	0.0003									

Associated samples: H12030404-001B

Run ID :Run Order: ICPMS204-B_120402A: 29	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.8								
Analysis Date: 04/02/12 16:40	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0494	0.10	0.05		99	85	115				
Arsenic	0.0486	0.0050	0.05	0.0000654	97	85	115				
Cadmium	0.0470	0.0010	0.05		94	85	115				
Copper	0.0460	0.010	0.05		92	85	115				
Iron	4.98	0.030	5	0.0009885	100	85	115				
Lead	0.0477	0.010	0.05		95	85	115				
Manganese	0.0476	0.010	0.05	0.0000605	95	85	115				
Zinc	0.0471	0.010	0.05	0.001083	92	85	115				

Associated samples: H12030404-001B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 67		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 04/02/12 19:39		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.264	0.10	0.25		106	90	110				
Arsenic	0.0492	0.0050	0.05		98	90	110				
Cadmium	0.0264	0.0010	0.025		106	90	110				
Copper	0.0514	0.010	0.05		103	90	110				
Iron	0.264	0.030	0.25		105	90	110				
Lead	0.0504	0.010	0.05		101	90	110				
Manganese	0.259	0.010	0.25		103	90	110				
Zinc	0.0516	0.010	0.05		103	90	110				

Associated samples: **H12030404-001B**

Run ID :Run Order: ICPMS204-B_120402A: 68		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 04/02/12 19:44		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.9	0.10	40		100	70	130				
Arsenic	0.000851	0.0050									
Cadmium	0.00106	0.0010									
Copper	0.000189	0.010									
Iron	96.4	0.030	100		96	70	130				
Lead	0.000152	0.010									
Manganese	0.000189	0.010									
Zinc	0.00127	0.010									

Associated samples: **H12030404-001B**

Run ID :Run Order: ICPMS204-B_120402A: 69		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 04/02/12 19:48		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.3	0.10	40		101	70	130				
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0105	0.0010	0.01		105	70	130				
Copper	0.0194	0.010	0.02		97	70	130				
Iron	98.9	0.030	100		99	70	130				
Lead	0.000126	0.010				0	0				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 69	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 04/02/12 19:48	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0196	0.010	0.02		98	70	130				
Zinc	0.0107	0.010	0.01		107	70	130				

Associated samples: **H12030404-001B**

Run ID :Run Order: ICPMS204-B_120402A: 177	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 04/03/12 04:14	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.261	0.10	0.25		104	90	110				
Arsenic	0.0499	0.0050	0.05		100	90	110				
Cadmium	0.0260	0.0010	0.025		104	90	110				
Copper	0.0520	0.010	0.05		104	90	110				
Iron	0.259	0.030	0.25		104	90	110				
Lead	0.0495	0.010	0.05		99	90	110				
Manganese	0.260	0.010	0.25		104	90	110				
Zinc	0.0526	0.010	0.05		105	90	110				

Associated samples: **H12030404-001B**

Run ID :Run Order: ICPMS204-B_120402A: 178	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 04/03/12 04:18	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.3	0.10	40		98	70	130				
Arsenic	0.000507	0.0050									
Cadmium	0.000989	0.0010									
Copper	0.000184	0.010									
Iron	97.7	0.030	100		98	70	130				
Lead	0.000156	0.010									
Manganese	0.000165	0.010									
Zinc	0.00130	0.010									

Associated samples: **H12030404-001B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R78968

Run ID :Run Order: ICPMS204-B_120402A: 179		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 04/03/12 04:23		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.2	0.10	40		98	70	130				
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0103	0.0010	0.01		103	70	130				
Copper	0.0198	0.010	0.02		99	70	130				
Iron	96.8	0.030	100		97	70	130				
Lead	0.000129	0.010				0	0				
Manganese	0.0191	0.010	0.02		96	70	130				
Zinc	0.0112	0.010	0.01		112	70	130				

Associated samples: **H12030404-001B**

Run ID :Run Order: ICPMS204-B_120402A: 225		SampType: Sample Matrix Spike			Sample ID: H12030390-012BMS			Method: E200.8			
Analysis Date: 04/03/12 07:59		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0479	0.030	0.05	0.001402	93	70	130				
Arsenic	0.0490	0.0010	0.05	0.0002948	97	70	130				
Cadmium	0.0474	0.0010	0.05	0.0001119	94	70	130				
Copper	0.0470	0.0050	0.05	0.0001955	94	70	130				
Iron	4.76	0.030	5	0.007319	95	70	130				
Lead	0.0488	0.0010	0.05	0.0000206	97	70	130				
Manganese	0.0482	0.0010	0.05	0.000711	95	70	130				
Zinc	0.0638	0.010	0.05	0.01788	92	70	130				

Associated samples: **H12030404-001B**

Run ID :Run Order: ICPMS204-B_120402A: 226		SampType: Sample Matrix Spike Duplicate			Sample ID: H12030390-012BMSD			Method: E200.8			
Analysis Date: 04/03/12 08:04		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0468	0.030	0.05	0.001402	91	70	130	0.04787	2.2	20	
Arsenic	0.0492	0.0010	0.05	0.0002948	98	70	130	0.04901	0.4	20	
Cadmium	0.0464	0.0010	0.05	0.0001119	92	70	130	0.04736	2.1	20	
Copper	0.0465	0.0050	0.05	0.0001955	93	70	130	0.047	1.1	20	
Iron	4.73	0.030	5	0.007319	94	70	130	4.763	0.8	20	
Lead	0.0505	0.0010	0.05	0.0000206	101	70	130	0.04875	3.5	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R78968

Run ID :Run Order:	ICPMS204-B_120402A: 226	SampType:	Sample Matrix Spike Duplicate	Sample ID:	H12030390-012BMSD	Method:	E200.8					
Analysis Date:	04/03/12 08:04	Units:	mg/L	Prep Info:	Prep Date:	Prep Method:						
Analytes	8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese		0.0474	0.0010	0.05	0.000711	93	70	130	0.04819	1.8	20	
Zinc		0.0627	0.010	0.05	0.01788	90	70	130	0.06383	1.8	20	

Associated samples: **H12030404-001B**



Client: MT DEQ-Site Response
Work Order: H12030404

ANALYTICAL QC SUMMARY REPORT

Date: 09-Apr-12

Project: Section 35 Groundwater

BatchID: R79043

Run ID :Run Order: IC102-H_120403A: 15	SampType: Initial Calibration Verification Standard				Sample ID: ICV040312-12			Method: E300.0			
Analysis Date: 04/03/12 10:46	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		103	90	110				
Sulfate	410	1.0	400		103	90	110				

Associated samples: **H12030404-001A**

Run ID :Run Order: IC102-H_120403A: 16	SampType: Method Blank				Sample ID: ICB040312-13			Method: E300.0			
Analysis Date: 04/03/12 11:00	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	0.02									

Associated samples: **H12030404-001A**

Run ID :Run Order: IC102-H_120403A: 17	SampType: Laboratory Fortified Blank				Sample ID: LFB040312-14			Method: E300.0			
Analysis Date: 04/03/12 11:13	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	53	1.0	50		105	90	110				
Sulfate	210	1.1	200		103	90	110				

Associated samples: **H12030404-001A**

Run ID :Run Order: IC102-H_120403A: 53	SampType: Continuing Calibration Verification Standard				Sample ID: CCV040312-58			Method: E300.0			
Analysis Date: 04/03/12 19:23	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	100	1.0	100		101	90	110				
Sulfate	400	1.0	400		100	90	110				

Associated samples: **H12030404-001A**

Run ID :Run Order: IC102-H_120403A: 63	SampType: Sample Matrix Spike				Sample ID: H12030403-001AMS			Method: E300.0			
Analysis Date: 04/03/12 21:39	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	200	1.0	50	121.4	148	90	110				S
Sulfate	210	1.1	200	9.706	100	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12030404
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Apr-12

BatchID: R79043

Run ID :Run Order: **IC102-H_120403A: 63** SampType: **Sample Matrix Spike** Sample ID: **H12030403-001AMS** Method: **E300.0**
 Analysis Date: **04/03/12 21:39** 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
 Associated samples: **H12030404-001A**

Run ID :Run Order: IC102-H_120403A: 64	SampType: Sample Matrix Spike Duplicate				Sample ID: H12030403-001AMSD	Method: E300.0						
Analysis Date: 04/03/12 21:53	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	200	1.0	50	121.4	149	90	110	195.3	0.4	20	S	
Sulfate	210	1.1	200	9.706	100	90	110	209.4	0.5	20		

Associated samples: **H12030404-001A**

Workorder Receipt Checklist



H12030404

Login completed by: Wanda Johnson

Date Received: 3/30/2012

Reviewed by: BL2000\sdull

Received by: elm

Reviewed Date: 4/4/2012

Carrier Hand Del
name:

- | | | | |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Container/Temp Blank temperature: | 3.7°C On Ice | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

None

Chain of Custody and Analytical Request Record



PLEASE PRINT (Provide as much information as possible.)

Project Name, PWS, Permit, Etc.: Section 35 Groundwater
 State: MT
 Email: Alan@energy.com
 Phone/Fax: 505.335.3535
 Invoice Contact & Phone: Shellic Healand 841-5033
 Purchase Order: ShellicHealand@mt.gov
 Quote/Bottle Order:

EPA/State Compliance:
 Yes No

Sampler: (Please Print)
Alan Healand

Company Name: MDFEQ
 Report Mail Address: Route H-645
 Invoice Address:

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELL prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: Cobler ID(s):
				Number of Containers	Sample Type: A W S V B O DW Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water			
1 <u>535 MW01</u>	<u>3/30/12</u>	<u>1139</u>	<u>W</u>			<u>SEE ATTACHED</u>	<u>RUSH</u>	<u>Heand</u>
2								
3								
4								
5								
6								
7								
8								
9								
10								

Receipt Temp: 3.7 °C
 On Ice: Y N
 Custody Seal: Y N
 On Bottle: Y N
 On Cooler: Y N
 Intact: Y N
 Signature Match: Y N

Comments: Please approve results to address back e portogoinc.com 790-5135

Received by (print): Alan Healand Date/Time: 3/30/12 11:30 AM
 Received by (print): Alan Healand Date/Time: 3/30/12 11:30 AM
 Signature: [Signature] Date/Time: 3/30/12 11:30 AM
 Signature: [Signature] Date/Time: 3/30/12 11:30 AM

Special Report/Formats:
 DW EDD/EDT (Electronic Data)
 POTW/WWTTP Format: _____
 State: _____ LEVEL IV
 Other: _____ NELAC

Custody Record MUST be Signed
 Sample Disposal: _____ Return to Client: _____ Lab Disposal: _____
 Received by Laboratory: Alan Healand Date/Time: 3/30/12 11:30 AM
 Signature: [Signature] Date/Time: 3/30/12 11:30 AM

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 sub-contract data will be clearly notated on your analytical report. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Section 35 Quarterly

Quantity	Analysis	² Total Rec. Metals	⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
7	¹ Disolved Metals											
9	³ Disolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
6		⁴ Total Rec. Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

UBMC Quarterly

Quantity	Analysis	² Total Rec. Metals	⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
11	¹ Disolved Metals											
10	³ Disolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
9		⁴ Total Rec. Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

⁶Additional surface water samples may be collected for seeps.



ANALYTICAL SUMMARY REPORT

May 21, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12050148 Quote ID: H645

Project Name: UBMC

Energy Laboratories Inc Helena MT received the following 7 samples for MT DEQ-Site Response on 5/8/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12050148-001	S35-SW-07	05/08/12 8:51	05/08/12	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H12050148-002	S35-SW-04	05/08/12 9:10	05/08/12	Surface Water	Same As Above
H12050148-003	S35-SW-03	05/08/12 9:53	05/08/12	Surface Water	Same As Above
H12050148-004	S35-SW-01	05/08/12 10:39	05/08/12	Surface Water	Same As Above
H12050148-005	S35-SW-06	05/08/12 10:49	05/08/12	Surface Water	Same As Above
H12050148-006	S35-SW-02	05/08/12 11:21	05/08/12	Surface Water	Same As Above
H12050148-007	S35-SW-05	05/08/12 12:12	05/08/12	Surface Water	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-07
Lab ID: H12050148-001
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 08:51
Date Received: 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	4.6	s.u.		0.1		A4500-H B	05/09/12 10:59 / cmm		PHSC_101-H_120509A : 9		R79840
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	05/09/12 10:59 / cmm		PHSC_101-H_120509A : 10		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:04 / cmm	05/09/12 14:41 J-124 (14410200)_120509A : 3			16567
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	05/09/12 14:50 / cmm		J-124 (14410200)_120509B : 8		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	05/09/12 14:58 / cmm		MAN-TECH_120509B : 12		R79862
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	05/09/12 14:58 / cmm		MAN-TECH_120509B : 12		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 14:58 / cmm		MAN-TECH_120509B : 12		R79862
Chloride	ND	mg/L		1		E300.0	05/10/12 13:13 / cmm		IC102-H_120510A : 22		R79896
Sulfate	ND	mg/L		1		E300.0	05/10/12 13:13 / cmm		IC102-H_120510A : 22		R79896
Hardness as CaCO3	ND	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 1		R79909
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/11/12 00:22 / sld		ICPMS204-B_120510B : 169		R79906
Calcium	ND	mg/L		1		E200.8	05/11/12 00:22 / sld		ICPMS204-B_120510B : 169		R79906
Magnesium	ND	mg/L		1		E200.8	05/11/12 00:22 / sld		ICPMS204-B_120510B : 169		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 00:22 / sld		ICPMS204-B_120510B : 169		R79906
Sodium	ND	mg/L		1		E200.8	05/11/12 00:22 / sld		ICPMS204-B_120510B : 169		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Cadmium	ND	mg/L		0.00008		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Copper	ND	mg/L		0.001		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Iron	ND	mg/L		0.03		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Lead	ND	mg/L		0.0005		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Manganese	ND	mg/L		0.005		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Zinc	ND	mg/L		0.01		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-04
Lab ID: H12050148-002
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 09:10 **Date Received:** 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	05/09/12 11:06 / cmm		PHSC_101-H_120509A : 13		R79840
Conductivity @ 25 C	192	umhos/cm		1		A2510 B	05/09/12 11:06 / cmm		PHSC_101-H_120509A : 14		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:05 / cmm	05/09/12 14:41 J-124 (14410200)_120509A : 5			16567
Solids, Total Dissolved TDS @ 180 C	117	mg/L		10		A2540 C	05/09/12 14:51 / cmm		J-124 (14410200)_120509B : 9		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	64	mg/L		4		A2320 B	05/09/12 15:05 / cmm		MAN-TECH_120509B : 14		R79862
Bicarbonate as HCO3	79	mg/L		4		A2320 B	05/09/12 15:05 / cmm		MAN-TECH_120509B : 14		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:05 / cmm		MAN-TECH_120509B : 14		R79862
Chloride	3	mg/L		1		E300.0	05/10/12 13:26 / cmm		IC102-H_120510A : 23		R79896
Sulfate	26	mg/L		1		E300.0	05/10/12 13:26 / cmm		IC102-H_120510A : 23		R79896
Hardness as CaCO3	86	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 2		R79909
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/11/12 01:03 / sld		ICPMS204-B_120510B : 178		R79906
Calcium	19	mg/L		1		E200.8	05/11/12 01:03 / sld		ICPMS204-B_120510B : 178		R79906
Magnesium	9	mg/L		1		E200.8	05/11/12 01:03 / sld		ICPMS204-B_120510B : 178		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 01:03 / sld		ICPMS204-B_120510B : 178		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 01:03 / sld		ICPMS204-B_120510B : 178		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Cadmium	0.00037	mg/L		0.00008		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Copper	0.002	mg/L		0.001		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Iron	0.08	mg/L		0.03		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Lead	ND	mg/L		0.0005		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Manganese	0.018	mg/L		0.005		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Zinc	0.20	mg/L		0.01		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-03
Lab ID: H12050148-003
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 09:53
Date Received: 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	05/09/12 11:09 / cmm		PHSC_101-H_120509A : 15		R79840
Conductivity @ 25 C	190	umhos/cm		1		A2510 B	05/09/12 11:09 / cmm		PHSC_101-H_120509A : 16		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:05 / cmm	05/09/12 14:41 J-124 (14410200)_120509A : 6			16567
Solids, Total Dissolved TDS @ 180 C	113	mg/L		10		A2540 C	05/09/12 14:51 / cmm		-124 (14410200)_120509B : 10		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	66	mg/L		4		A2320 B	05/09/12 15:19 / cmm		MAN-TECH_120509B : 18		R79862
Bicarbonate as HCO3	80	mg/L		4		A2320 B	05/09/12 15:19 / cmm		MAN-TECH_120509B : 18		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:19 / cmm		MAN-TECH_120509B : 18		R79862
Chloride	3	mg/L		1		E300.0	05/10/12 13:40 / cmm		IC102-H_120510A : 24		R79896
Sulfate	26	mg/L		1		E300.0	05/10/12 13:40 / cmm		IC102-H_120510A : 24		R79896
Hardness as CaCO3	85	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 3		R79909
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/11/12 01:12 / sld		ICPMS204-B_120510B : 180		R79906
Calcium	19	mg/L		1		E200.8	05/11/12 01:12 / sld		ICPMS204-B_120510B : 180		R79906
Magnesium	9	mg/L		1		E200.8	05/11/12 01:12 / sld		ICPMS204-B_120510B : 180		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 01:12 / sld		ICPMS204-B_120510B : 180		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 01:12 / sld		ICPMS204-B_120510B : 180		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Cadmium	0.00039	mg/L		0.00008		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Copper	0.002	mg/L		0.001		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Iron	0.08	mg/L		0.03		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Lead	ND	mg/L		0.0005		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Manganese	0.020	mg/L		0.005		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Zinc	0.20	mg/L		0.01		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-01
Lab ID: H12050148-004
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 10:39
Date Received: 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	05/09/12 11:12 / cmm		PHSC_101-H_120509A : 17		R79840
Conductivity @ 25 C	122	umhos/cm		1		A2510 B	05/09/12 11:12 / cmm		PHSC_101-H_120509A : 18		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:05 / cmm	05/09/12 14:41 J-124 (14410200)_120509A : 7			16567
Solids, Total Dissolved TDS @ 180 C	80	mg/L		10		A2540 C	05/09/12 14:51 / cmm		-124 (14410200)_120509B : 11		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	64	mg/L		4		A2320 B	05/09/12 15:26 / cmm		MAN-TECH_120509B : 20		R79862
Bicarbonate as HCO3	78	mg/L		4		A2320 B	05/09/12 15:26 / cmm		MAN-TECH_120509B : 20		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:26 / cmm		MAN-TECH_120509B : 20		R79862
Chloride	ND	mg/L		1		E300.0	05/10/12 13:54 / cmm		IC102-H_120510A : 25		R79896
Sulfate	3	mg/L		1		E300.0	05/10/12 13:54 / cmm		IC102-H_120510A : 25		R79896
Hardness as CaCO3	58	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 4		R79909
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/11/12 01:21 / sld		ICPMS204-B_120510B : 182		R79906
Calcium	14	mg/L		1		E200.8	05/11/12 01:21 / sld		ICPMS204-B_120510B : 182		R79906
Magnesium	6	mg/L		1		E200.8	05/11/12 01:21 / sld		ICPMS204-B_120510B : 182		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 01:21 / sld		ICPMS204-B_120510B : 182		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 01:21 / sld		ICPMS204-B_120510B : 182		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557
Cadmium	ND	mg/L		0.00008		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557
Copper	0.002	mg/L		0.001		E200.8	05/11/12 18:52 / sld	05/09/12 08:50	ICPMS204-B_120511A : 75		16557
Iron	0.09	mg/L		0.03		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557
Lead	ND	mg/L		0.0005		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557
Manganese	0.008	mg/L		0.005		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557
Zinc	ND	mg/L		0.01		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-06
Lab ID: H12050148-005
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 10:49
Date Received: 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	05/09/12 11:14 / cmm		PHSC_101-H_120509A : 19		R79840
Conductivity @ 25 C	123	umhos/cm		1		A2510 B	05/09/12 11:14 / cmm		PHSC_101-H_120509A : 20		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:05 / cmm	05/09/12 14:41 J-124 (14410200)_120509A : 8			16567
Solids, Total Dissolved TDS @ 180 C	83	mg/L		10		A2540 C	05/09/12 14:53 / cmm		-124 (14410200)_120509B : 12		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	64	mg/L		4		A2320 B	05/09/12 15:32 / cmm		MAN-TECH_120509B : 22		R79862
Bicarbonate as HCO3	78	mg/L		4		A2320 B	05/09/12 15:32 / cmm		MAN-TECH_120509B : 22		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:32 / cmm		MAN-TECH_120509B : 22		R79862
Chloride	ND	mg/L		1		E300.0	05/10/12 14:07 / cmm		IC102-H_120510A : 26		R79896
Sulfate	3	mg/L		1		E300.0	05/10/12 14:07 / cmm		IC102-H_120510A : 26		R79896
Hardness as CaCO3	56	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 5		R79909
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/11/12 01:30 / sld		ICPMS204-B_120510B : 184		R79906
Calcium	13	mg/L		1		E200.8	05/11/12 01:30 / sld		ICPMS204-B_120510B : 184		R79906
Magnesium	6	mg/L		1		E200.8	05/11/12 01:30 / sld		ICPMS204-B_120510B : 184		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 01:30 / sld		ICPMS204-B_120510B : 184		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 01:30 / sld		ICPMS204-B_120510B : 184		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557
Cadmium	ND	mg/L		0.00008		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557
Copper	0.001	mg/L		0.001		E200.8	05/11/12 18:57 / sld	05/09/12 08:50	ICPMS204-B_120511A : 76		16557
Iron	0.09	mg/L		0.03		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557
Lead	ND	mg/L		0.0005		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557
Manganese	0.008	mg/L		0.005		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557
Zinc	ND	mg/L		0.01		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-02
Lab ID: H12050148-006
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 11:21
Date Received: 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.9	s.u.		0.1		A4500-H B	05/09/12 11:17 / cmm		PHSC_101-H_120509A : 21		R79840
Conductivity @ 25 C	122	umhos/cm		1		A2510 B	05/09/12 11:17 / cmm		PHSC_101-H_120509A : 22		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:07 / cmm	05/09/12 14:41 J-124 (14410200)_120509A : 9			16567
Solids, Total Dissolved TDS @ 180 C	81	mg/L		10		A2540 C	05/09/12 14:53 / cmm		-124 (14410200)_120509B : 13		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	62	mg/L		4		A2320 B	05/09/12 15:40 / cmm		MAN-TECH_120509B : 24		R79862
Bicarbonate as HCO3	76	mg/L		4		A2320 B	05/09/12 15:40 / cmm		MAN-TECH_120509B : 24		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:40 / cmm		MAN-TECH_120509B : 24		R79862
Chloride	ND	mg/L		1		E300.0	05/10/12 15:15 / cmm		IC102-H_120510A : 31		R79896
Sulfate	3	mg/L		1		E300.0	05/10/12 15:15 / cmm		IC102-H_120510A : 31		R79896
Hardness as CaCO3	56	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 6		R79909
METALS, DISSOLVED											
Aluminum	0.04	mg/L		0.03		E200.8	05/11/12 01:58 / sld		ICPMS204-B_120510B : 190		R79906
Calcium	13	mg/L		1		E200.8	05/11/12 01:58 / sld		ICPMS204-B_120510B : 190		R79906
Magnesium	6	mg/L		1		E200.8	05/11/12 01:58 / sld		ICPMS204-B_120510B : 190		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 01:58 / sld		ICPMS204-B_120510B : 190		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 01:58 / sld		ICPMS204-B_120510B : 190		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Cadmium	ND	mg/L		0.00008		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Copper	0.002	mg/L		0.001		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Iron	0.06	mg/L		0.03		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Lead	ND	mg/L		0.0005		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Manganese	ND	mg/L		0.005		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Zinc	ND	mg/L		0.01		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-05
Lab ID: H12050148-007
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 12:12 **Date Received:** 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.9	s.u.		0.1		A4500-H B	05/09/12 11:19 / cmm		PHSC_101-H_120509A : 23		R79840
Conductivity @ 25 C	129	umhos/cm		1		A2510 B	05/09/12 11:19 / cmm		PHSC_101-H_120509A : 24		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:07 / cmm	05/09/12 14:41 -124 (14410200)_120509A : 10			16567
Solids, Total Dissolved TDS @ 180 C	76	mg/L		10		A2540 C	05/09/12 14:53 / cmm		-124 (14410200)_120509B : 14		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	64	mg/L		4		A2320 B	05/09/12 15:47 / cmm		MAN-TECH_120509B : 26		R79862
Bicarbonate as HCO3	78	mg/L		4		A2320 B	05/09/12 15:47 / cmm		MAN-TECH_120509B : 26		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:47 / cmm		MAN-TECH_120509B : 26		R79862
Chloride	ND	mg/L		1		E300.0	05/10/12 15:56 / cmm		IC102-H_120510A : 34		R79896
Sulfate	3	mg/L		1		E300.0	05/10/12 15:56 / cmm		IC102-H_120510A : 34		R79896
Hardness as CaCO3	60	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 7		R79909
METALS, DISSOLVED											
Aluminum	0.06	mg/L		0.03		E200.8	05/11/12 02:07 / sld		ICPMS204-B_120510B : 192		R79906
Calcium	14	mg/L		1		E200.8	05/11/12 02:07 / sld		ICPMS204-B_120510B : 192		R79906
Magnesium	6	mg/L		1		E200.8	05/11/12 02:07 / sld		ICPMS204-B_120510B : 192		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 02:07 / sld		ICPMS204-B_120510B : 192		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 02:07 / sld		ICPMS204-B_120510B : 192		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Cadmium	ND	mg/L		0.00008		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Copper	0.002	mg/L		0.001		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Iron	0.14	mg/L		0.03		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Lead	ND	mg/L		0.0005		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Manganese	0.012	mg/L		0.005		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Zinc	ND	mg/L		0.01		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: 16557

Run ID :Run Order: ICPMS204-B_120510B: 151	SampType: Method Blank	Sample ID: MB-16557	Method: E200.8								
Analysis Date: 05/10/12 23:01	Units: mg/L	Prep Info: Prep Date: 5/9/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	5E-05									
Cadmium	ND	2E-05									
Copper	ND	0.0004									
Iron	0.002	0.0006									
Lead	ND	2E-05									
Manganese	ND	6E-05									
Zinc	0.002	0.0003									

Associated samples: **H12050148-004C; H12050148-005C; H12050148-006C; H12050148-007C**

Run ID :Run Order: ICPMS204-B_120510B: 152	SampType: Laboratory Control Sample	Sample ID: LCS-16557	Method: E200.8								
Analysis Date: 05/10/12 23:06	Units: mg/L	Prep Info: Prep Date: 5/9/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.489	0.0010	0.5		98	85	115				
Cadmium	0.255	0.0010	0.25		102	85	115				
Copper	0.489	0.0050	0.5		98	85	115				
Iron	2.45	0.030	2.5	0.001508	98	85	115				
Lead	0.506	0.0010	0.5		101	85	115				
Manganese	2.31	0.0010	2.5		92	85	115				
Zinc	0.502	0.010	0.5	0.001761	100	85	115				

Associated samples: **H12050148-004C; H12050148-005C; H12050148-006C; H12050148-007C**

Run ID :Run Order: ICPMS204-B_120510B: 156	SampType: Sample Matrix Spike	Sample ID: H12050117-001BMS3	Method: E200.8								
Analysis Date: 05/10/12 23:24	Units: mg/L	Prep Info: Prep Date: 5/9/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.502	0.0010	0.5	0.01012	98	70	130				
Cadmium	0.256	0.0010	0.25	0.0000508	102	70	130				
Copper	0.486	0.0050	0.5	0.001466	97	70	130				
Iron	2.71	0.030	2.5	0.2452	99	70	130				
Lead	0.512	0.0010	0.5	0.00107	102	70	130				
Manganese	2.41	0.0010	2.5	0.01983	96	70	130				
Zinc	0.493	0.010	0.5	0.004403	98	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Date: 25-May-12

Prepared by Helena, MT Branch

BatchID: 16557

Run ID :Run Order: ICPMS204-B_120510B: 156	SampType: Sample Matrix Spike	Sample ID: H12050117-001BMS3	Method: E200.8								
Analysis Date: 05/10/12 23:24	Units: mg/L	Prep Info: Prep Date: 5/9/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H12050148-004C; H12050148-005C; H12050148-006C; H12050148-007C**

Run ID :Run Order: ICPMS204-B_120510B: 157	SampType: Sample Matrix Spike Duplicate	Sample ID: H12050117-001BMSD3	Method: E200.8								
Analysis Date: 05/10/12 23:28	Units: mg/L	Prep Info: Prep Date: 5/9/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.502	0.0010	0.5	0.01012	98	70	130	0.5024	0.2	20	
Cadmium	0.255	0.0010	0.25	0.0000508	102	70	130	0.2561	0.4	20	
Copper	0.487	0.0050	0.5	0.001466	97	70	130	0.4862	0.1	20	
Iron	2.62	0.030	2.5	0.2452	95	70	130	2.71	3.3	20	
Lead	0.515	0.0010	0.5	0.00107	103	70	130	0.5115	0.6	20	
Manganese	2.37	0.0010	2.5	0.01983	94	70	130	2.412	1.6	20	
Zinc	0.490	0.010	0.5	0.004403	97	70	130	0.4929	0.5	20	

Associated samples: **H12050148-004C; H12050148-005C; H12050148-006C; H12050148-007C**

Run ID :Run Order: ICPMS204-B_120511A: 74	SampType: Method Blank	Sample ID: MB-16557	Method: E200.8								
Analysis Date: 05/11/12 18:48	Units: mg/L	Prep Info: Prep Date: 5/9/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	5E-05	5E-05									
Cadmium	ND	2E-05									
Copper	ND	0.0004									
Iron	ND	0.0006									
Lead	2E-05	2E-05									
Manganese	0.0001	6E-05									
Zinc	0.002	0.0003									

Associated samples: **H12050148-004C; H12050148-005C; H12050148-006C; H12050148-007C**

Qualifiers: ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: 16567

Run ID :Run Order: ACCU-124 (14410200)_120509A: 1	SampType: Method Blank	Sample ID: MB-16567	Method: A2540 D								
Analysis Date: 05/09/12 15:04	Units: mg/L	Prep Info: Prep Date: 5/9/2012	Prep Method: A2540 D								
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	2									

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: ACCU-124 (14410200)_120509A: 2	SampType: Laboratory Control Sample	Sample ID: LCS-16567	Method: A2540 D								
Analysis Date: 05/09/12 15:04	Units: mg/L	Prep Info: Prep Date: 5/9/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1840	10	2000		92	70	130				

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: ACCU-124 (14410200)_120509A: 4	SampType: Sample Duplicate	Sample ID: H12050148-001ADUP	Method: A2540 D								
Analysis Date: 05/09/12 15:04	Units: mg/L	Prep Info: Prep Date: 5/9/2012	Prep Method: A2540 D								
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	10									5

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: ACCU-124 (14410200)_120509A: 15	SampType: Sample Duplicate	Sample ID: H12050152-004ADUP	Method: A2540 D								
Analysis Date: 05/09/12 15:09	Units: mg/L	Prep Info: Prep Date: 5/9/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	12.0	10						12			5

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79840

Run ID :Run Order: PHSC_101-H_120509A: 2	SampType: Initial Calibration Verification Standard	Sample ID: SC 150	Method: A2510 B
Analysis Date: 05/09/12 09:44	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	147	1.0	150
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: PHSC_101-H_120509A: 3	SampType: Initial Calibration Verification Standard	Sample ID: SC 5000	Method: A2510 B
Analysis Date: 05/09/12 09:47	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	5090	1.0	5000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: PHSC_101-H_120509A: 4	SampType: Initial Calibration Verification Standard	Sample ID: SC 20000	Method: A2510 B
Analysis Date: 05/09/12 09:50	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	20300	1.0	20000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: PHSC_101-H_120509A: 5	SampType: Initial Calibration Verification Standard	Sample ID: SC 2ND 1000	Method: A2510 B
Analysis Date: 05/09/12 09:53	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	1010	1.0	1000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: PHSC_101-H_120509A: 12	SampType: Sample Duplicate	Sample ID: H12050148-001ADUP	Method: A2510 B
Analysis Date: 05/09/12 11:02	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	1.00	1.0	
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79840

Run ID :Run Order: PHSC_101-H_120509A: 48	SampType: Sample Duplicate	Sample ID: H12050152-011ADUP	Method: A2510 B								
Analysis Date: 05/09/12 11:53	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	177	1.0						177	0.0	10	

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79840

Run ID :Run Order: PHSC_101-H_120509A: 7	SampType: Initial Calibration Verification Standard				Sample ID: pH 7			Method: A4500-H B			
Analysis Date: 05/09/12 10:32	Units: s.u.				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.00	0.10	7		100	98	102				

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: PHSC_101-H_120509A: 11	SampType: Sample Duplicate				Sample ID: H12050148-001ADUP			Method: A4500-H B			
Analysis Date: 05/09/12 11:02	Units: s.u.				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	4.47	0.10						4.6	2.9	3	

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: PHSC_101-H_120509A: 47	SampType: Sample Duplicate				Sample ID: H12050152-011ADUP			Method: A4500-H B			
Analysis Date: 05/09/12 11:53	Units: s.u.				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.73	0.10						7.74	0.1	3	

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79862

Run ID :Run Order: MAN-TECH_120509B: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B								
Analysis Date: 05/09/12 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
Alkalinity, Total as CaCO3	ND	1									

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: MAN-TECH_120509B: 10	SampType: Laboratory Control Sample	Sample ID: LCS-05022012	Method: A2320 B								
Analysis Date: 05/09/12 14:54	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
Alkalinity, Total as CaCO3	620	4.0	600		104	90	110				

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: MAN-TECH_120509B: 16	SampType: Sample Duplicate	Sample ID: H12050148-002ADUP	Method: A2320 B								
Analysis Date: 05/09/12 15:12	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
Alkalinity, Total as CaCO3	65	4.0						64.42	0.9	10	
Bicarbonate as HCO3	79	4.0						78.59	0.9	10	
Carbonate as CO3	ND	4.0								10	

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: MAN-TECH_120509B: 30	SampType: Sample Matrix Spike	Sample ID: H12050152-001AMS	Method: A2320 B								
Analysis Date: 05/09/12 15:58	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
Alkalinity, Total as CaCO3	630	4.0	600		104	80	120				

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: MAN-TECH_120509B: 46	SampType: Sample Duplicate	Sample ID: H12050152-008ADUP	Method: A2320 B								
Analysis Date: 05/09/12 16:50	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
Alkalinity, Total as CaCO3	42	4.0						42.21	0.4	10	
Bicarbonate as HCO3	51	4.0						51.5	0.4	10	
Carbonate as CO3	ND	4.0								10	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79862

Run ID :Run Order: MAN-TECH_120509B: 46	SampType: Sample Duplicate	Sample ID: H12050152-008ADUP	Method: A2320 B								
Analysis Date: 05/09/12 16:50	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

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79896

Run ID :Run Order: IC102-H_120510A: 13	SampType: Initial Calibration Verification Standard				Sample ID: ICV051012-12	Method: E300.0					
Analysis Date: 05/10/12 11:10	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	100	1.0	100		102	90	110				
Sulfate	400	1.0	400		100	90	110				

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: IC102-H_120510A: 14	SampType: Method Blank				Sample ID: ICB051012-13	Method: E300.0					
Analysis Date: 05/10/12 11:24	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
Chloride	0.06	0.03									
Sulfate	0.1	0.1									

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: IC102-H_120510A: 15	SampType: Laboratory Fortified Blank				Sample ID: LFB051012-14	Method: E300.0					
Analysis Date: 05/10/12 11:38	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	51	1.0	50	0.063	102	90	110				
Sulfate	200	1.1	200	0.11	102	90	110				

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: IC102-H_120510A: 17	SampType: Continuing Calibration Verification Standard				Sample ID: CCV051012-15	Method: E300.0					
Analysis Date: 05/10/12 12:05	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	100	1.0	100		100	90	110				
Sulfate	400	1.0	400		99	90	110				

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A**

Run ID :Run Order: IC102-H_120510A: 27	SampType: Sample Matrix Spike				Sample ID: H12050148-005AMS	Method: E300.0					
Analysis Date: 05/10/12 14:21	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
Chloride	52	1.0	50	0.338	103	90	110				
Sulfate	210	1.1	200	2.512	103	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79896

Run ID :Run Order: IC102-H_120510A: 27	SampType: Sample Matrix Spike	Sample ID: H12050148-005AMS	Method: E300.0								
Analysis Date: 05/10/12 14:21	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

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: IC102-H_120510A: 28	SampType: Sample Matrix Spike Duplicate	Sample ID: H12050148-005AMSD	Method: E300.0								
Analysis Date: 05/10/12 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	52	1.0	50	0.338	103	90	110	51.65	0.7	20	
Sulfate	210	1.1	200	2.512	104	90	110	208.6	0.5	20	

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: IC102-H_120510A: 29	SampType: Continuing Calibration Verification Standard	Sample ID: CCV051012-28	Method: E300.0								
Analysis Date: 05/10/12 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	100	1.0	100		100	90	110				
Sulfate	400	1.0	400		99	90	110				

Associated samples: **H12050148-006A; H12050148-007A**

Run ID :Run Order: IC102-H_120510A: 32	SampType: Sample Matrix Spike	Sample ID: H12050148-006AMS	Method: E300.0								
Analysis Date: 05/10/12 15:29	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	53	1.0	50	0.271	105	90	110				
Sulfate	210	1.1	200	2.943	105	90	110				

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: IC102-H_120510A: 33	SampType: Sample Matrix Spike Duplicate	Sample ID: H12050148-006AMSD	Method: E300.0								
Analysis Date: 05/10/12 15:42	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
Chloride	53	1.0	50	0.271	105	90	110	52.69	0.1	20	
Sulfate	210	1.1	200	2.943	105	90	110	212.1	0.7	20	

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79906

Run ID :Run Order: ICPMS204-B_120510B: 8		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 05/10/12 12:13		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes <u>12</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.255	0.10	0.25		102	90	110				
Arsenic	0.0505	0.0050	0.05		101	90	110				
Cadmium	0.0268	0.0010	0.025		107	90	110				
Calcium	2.71	0.50	2.5		109	90	110				
Copper	0.0525	0.010	0.05		105	90	110				
Iron	0.259	0.030	0.25		104	90	110				
Lead	0.0504	0.010	0.05		101	90	110				
Magnesium	2.56	0.50	2.5		102	90	110				
Manganese	0.258	0.010	0.25		103	90	110				
Potassium	2.61	0.50	2.5		104	90	110				
Sodium	2.65	0.50	2.5		106	90	110				
Zinc	0.0530	0.010	0.05		106	90	110				

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-004C; H12050148-005B; H12050148-005C; H12050148-006B; H12050148-006C; H12050148-007B; H12050148-007C

Run ID :Run Order: ICPMS204-B_120510B: 9		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 05/10/12 12:18		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes <u>12</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	38.1	0.10	40		95	70	130				
Arsenic	7.00E-05	0.0050									
Cadmium	0.000970	0.0010									
Calcium	117	0.50	120		98	70	130				
Copper	3.80E-05	0.010									
Iron	96.3	0.030	100		96	70	130				
Lead	0.000142	0.010									
Magnesium	40.6	0.50	40		101	70	130				
Manganese	0.000204	0.010									
Potassium	40.6	0.50	40		101	70	130				
Sodium	98.3	0.50	100		98	70	130				
Zinc	0.00108	0.010									

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-004C; H12050148-005B; H12050148-005C; H12050148-006B; H12050148-006C; H12050148-007B; H12050148-007C

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Date: 25-May-12

Prepared by Helena, MT Branch

BatchID: R79906

Run ID :Run Order: ICPMS204-B_120510B: 10		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 05/10/12 12:22		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.0	0.10	40		97	70	130				
Arsenic	0.0108	0.0050	0.01		108	70	130				
Cadmium	0.0105	0.0010	0.01		105	70	130				
Calcium	119	0.50	120		99	70	130				
Copper	0.0207	0.010	0.02		103	70	130				
Iron	99.0	0.030	100		99	70	130				
Lead	0.000129	0.010				0	0				
Magnesium	40.9	0.50	40		102	70	130				
Manganese	0.0197	0.010	0.02		98	70	130				
Potassium	40.8	0.50	40		102	70	130				
Sodium	100	0.50	100		100	70	130				
Zinc	0.0116	0.010	0.01		116	70	130				

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-004C; H12050148-005B; H12050148-005C; H12050148-006B; H12050148-006C; H12050148-007B; H12050148-007C

Run ID :Run Order: ICPMS204-B_120510B: 17		SampType: Method Blank			Sample ID: ICB			Method: E200.8			
Analysis Date: 05/10/12 12:54		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0003									
Arsenic	ND	3E-05									
Cadmium	ND	1E-05									
Calcium	ND	0.003									
Copper	ND	3E-05									
Iron	ND	0.0002									
Lead	ND	1.0E-05									
Magnesium	ND	0.0007									
Manganese	2E-05	1E-05									
Potassium	ND	0.010									
Sodium	ND	0.003									
Zinc	ND	0.0003									

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-005B; H12050148-006B; H12050148-007B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Date: 25-May-12

Prepared by Helena, MT Branch

BatchID: R79906

Run ID :Run Order: ICPMS204-B_120510B: 18		SampType: Laboratory Fortified Blank			Sample ID: LFB			Method: E200.8			
Analysis Date: 05/10/12 12:59		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0472	0.10	0.05		94	85	115				
Arsenic	0.0513	0.0050	0.05		103	85	115				
Cadmium	0.0478	0.0010	0.05		96	85	115				
Calcium	48.6	0.50	50		97	85	115				
Copper	0.0489	0.010	0.05		98	85	115				
Iron	4.83	0.030	5		97	85	115				
Lead	0.0488	0.010	0.05		98	85	115				
Magnesium	48.5	0.50	50		97	85	115				
Manganese	0.0477	0.010	0.05	0.0000152	95	85	115				
Potassium	49.3	0.50	50		99	85	115				
Sodium	48.3	0.50	50		97	85	115				
Zinc	0.0516	0.010	0.05		103	85	115				

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-005B; H12050148-006B; H12050148-007B

Run ID :Run Order: ICPMS204-B_120510B: 46		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 05/10/12 15:06		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.252	0.10	0.25		101	90	110				
Arsenic	0.0501	0.0050	0.05		100	90	110				
Cadmium	0.0258	0.0010	0.025		103	90	110				
Calcium	2.64	0.50	2.5		106	90	110				
Copper	0.0516	0.010	0.05		103	90	110				
Iron	0.252	0.030	0.25		101	90	110				
Lead	0.0477	0.010	0.05		95	90	110				
Magnesium	2.49	0.50	2.5		100	90	110				
Manganese	0.252	0.010	0.25		101	90	110				
Potassium	2.55	0.50	2.5		102	90	110				
Sodium	2.60	0.50	2.5		104	90	110				
Zinc	0.0516	0.010	0.05		103	90	110				

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-004C; H12050148-005B; H12050148-005C; H12050148-006B; H12050148-006C; H12050148-007B; H12050148-007C

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79906

Run ID :Run Order: ICPMS204-B_120510B: 47		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 05/10/12 15:10		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	38.4	0.10	40		96	70	130				
Arsenic	0.000111	0.0050									
Cadmium	0.000860	0.0010									
Calcium	115	0.50	120		96	70	130				
Copper	5.40E-05	0.010									
Iron	97.8	0.030	100		98	70	130				
Lead	0.000129	0.010									
Magnesium	39.8	0.50	40		100	70	130				
Manganese	0.000195	0.010									
Potassium	39.7	0.50	40		99	70	130				
Sodium	97.3	0.50	100		97	70	130				
Zinc	0.00113	0.010									

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-004C; H12050148-005B; H12050148-005C; H12050148-006B; H12050148-006C; H12050148-007B; H12050148-007C

Run ID :Run Order: ICPMS204-B_120510B: 48		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 05/10/12 15:15		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.2	0.10	40		98	70	130				
Arsenic	0.0103	0.0050	0.01		103	70	130				
Cadmium	0.0105	0.0010	0.01		105	70	130				
Calcium	114	0.50	120		95	70	130				
Copper	0.0201	0.010	0.02		101	70	130				
Iron	97.9	0.030	100		98	70	130				
Lead	0.000114	0.010				0	0				
Magnesium	40.1	0.50	40		100	70	130				
Manganese	0.0195	0.010	0.02		98	70	130				
Potassium	39.5	0.50	40		99	70	130				
Sodium	97.2	0.50	100		97	70	130				
Zinc	0.0106	0.010	0.01		106	70	130				

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-004C; H12050148-005B; H12050148-005C; H12050148-006B; H12050148-006C; H12050148-007B; H12050148-007C

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79906

Run ID :Run Order: ICPMS204-B_120510B: 142		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 05/10/12 22:20		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.263	0.10	0.25		105	90	110				
Arsenic	0.0520	0.0050	0.05		104	90	110				
Cadmium	0.0266	0.0010	0.025		106	90	110				
Calcium	2.75	0.50	2.5		110	90	110				
Copper	0.0538	0.010	0.05		108	90	110				
Iron	0.256	0.030	0.25		102	90	110				
Lead	0.0499	0.010	0.05		100	90	110				
Magnesium	2.60	0.50	2.5		104	90	110				
Manganese	0.262	0.010	0.25		105	90	110				
Potassium	2.61	0.50	2.5		105	90	110				
Sodium	2.72	0.50	2.5		109	90	110				
Zinc	0.0550	0.010	0.05		110	90	110				

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-004C; H12050148-005B; H12050148-005C; H12050148-006B; H12050148-006C; H12050148-007B; H12050148-007C

Run ID :Run Order: ICPMS204-B_120510B: 143		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 05/10/12 22:25		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.8	0.10	40		95	70	130				
Arsenic	0.000101	0.0050									
Cadmium	0.000824	0.0010									
Calcium	116	0.50	120		97	70	130				
Copper	6.90E-05	0.010									
Iron	97.3	0.030	100		97	70	130				
Lead	0.000137	0.010									
Magnesium	39.6	0.50	40		99	70	130				
Manganese	0.000160	0.010									
Potassium	39.3	0.50	40		98	70	130				
Sodium	96.5	0.50	100		97	70	130				
Zinc	0.00103	0.010									

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-004C; H12050148-005B; H12050148-005C; H12050148-006B; H12050148-006C; H12050148-007B; H12050148-007C

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79906

Run ID :Run Order: ICPMS204-B_120510B: 144		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 05/10/12 22:29		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes <u>12</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.6	0.10	40		94	70	130				
Arsenic	0.0105	0.0050	0.01		105	70	130				
Cadmium	0.0105	0.0010	0.01		105	70	130				
Calcium	117	0.50	120		97	70	130				
Copper	0.0201	0.010	0.02		101	70	130				
Iron	96.6	0.030	100		97	70	130				
Lead	0.000115	0.010				0	0				
Magnesium	40.2	0.50	40		101	70	130				
Manganese	0.0196	0.010	0.02		98	70	130				
Potassium	39.8	0.50	40		99	70	130				
Sodium	98.1	0.50	100		98	70	130				
Zinc	0.0116	0.010	0.01		116	70	130				

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-004C; H12050148-005B; H12050148-005C; H12050148-006B; H12050148-006C; H12050148-007B; H12050148-007C

Run ID :Run Order: ICPMS204-B_120510B: 170		SampType: Sample Matrix Spike			Sample ID: H12050148-001BMS			Method: E200.8			
Analysis Date: 05/11/12 00:27		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes <u>12</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0466	0.030	0.05		93	70	130				
Arsenic	0.0492	0.0010	0.05		98	70	130				
Cadmium	0.0466	0.0010	0.05		93	70	130				
Calcium	47.4	1.0	50	0.01802	95	70	130				
Copper	0.0473	0.0050	0.05		95	70	130				
Iron	4.65	0.030	5	0.000481	93	70	130				
Lead	0.0473	0.0010	0.05	0.0000154	95	70	130				
Magnesium	47.1	1.0	50	0.004571	94	70	130				
Manganese	0.0474	0.0010	0.05	0.0000331	95	70	130				
Potassium	47.7	1.0	50		95	70	130				
Sodium	47.0	1.0	50		94	70	130				
Zinc	0.0517	0.010	0.05	0.001163	101	70	130				

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-005B; H12050148-006B; H12050148-007B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Date: 25-May-12

Prepared by Helena, MT Branch

BatchID: R79906

Run ID :Run Order: ICPMS204-B_120510B: 171		SampType: Sample Matrix Spike Duplicate			Sample ID: H12050148-001BMSD				Method: E200.8		
Analysis Date: 05/11/12 00:31		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0476	0.030	0.05		95	70	130	0.04663	2.0	20	
Arsenic	0.0491	0.0010	0.05		98	70	130	0.04919	0.1	20	
Cadmium	0.0475	0.0010	0.05		95	70	130	0.04664	1.8	20	
Calcium	46.7	1.0	50	0.01802	93	70	130	47.43	1.5	20	
Copper	0.0472	0.0050	0.05		94	70	130	0.04734	0.2	20	
Iron	4.66	0.030	5	0.000481	93	70	130	4.649	0.3	20	
Lead	0.0472	0.0010	0.05	0.0000154	94	70	130	0.04732	0.2	20	
Magnesium	46.1	1.0	50	0.004571	92	70	130	47.13	2.2	20	
Manganese	0.0477	0.0010	0.05	0.0000331	95	70	130	0.04745	0.6	20	
Potassium	47.4	1.0	50		95	70	130	47.69	0.6	20	
Sodium	46.1	1.0	50		92	70	130	47.04	2.1	20	
Zinc	0.0491	0.010	0.05	0.001163	96	70	130	0.05173	5.2	20	

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-005B; H12050148-006B; H12050148-007B

Run ID :Run Order: ICPMS204-B_120510B: 205		SampType: Sample Matrix Spike			Sample ID: H12050152-004BMS				Method: E200.8		
Analysis Date: 05/11/12 03:06		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0976	0.030	0.05	0.05325	89	70	130				
Arsenic	0.0499	0.0010	0.05	0.0006953	98	70	130				
Cadmium	0.0502	0.0010	0.05	0.00342	94	70	130				
Calcium	66.4	1.0	50	20.61	92	70	130				
Copper	0.0604	0.0050	0.05	0.01415	93	70	130				
Iron	4.88	0.030	5	0.1953	94	70	130				
Lead	0.0530	0.0010	0.05	0.006046	94	70	130				
Magnesium	58.8	1.0	50	12.69	92	70	130				
Manganese	0.559	0.0010	0.05	0.5304		70	130				A
Potassium	46.8	1.0	50	0.3509	93	70	130				
Sodium	47.9	1.0	50	0.8998	94	70	130				
Zinc	0.714	0.010	0.05	0.7156		70	130				A

Associated samples: H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-005B; H12050148-006B; H12050148-007B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Date: 25-May-12

Prepared by Helena, MT Branch

BatchID: R79906

Run ID :Run Order: ICPMS204-B_120510B: 206	SampType: Sample Matrix Spike Duplicate				Sample ID: H12050152-004BMSD				Method: E200.8		
Analysis Date: 05/11/12 03:11	Units: mg/L				Prep Info:		Prep Date:		Prep Method:		
Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.101	0.030	0.05	0.05325	96	70	130	0.0976	3.4	20	
Arsenic	0.0512	0.0010	0.05	0.0006953	101	70	130	0.04992	2.5	20	
Cadmium	0.0504	0.0010	0.05	0.00342	94	70	130	0.05019	0.3	20	
Calcium	67.8	1.0	50	20.61	94	70	130	66.36	2.2	20	
Copper	0.0616	0.0050	0.05	0.01415	95	70	130	0.06041	1.9	20	
Iron	4.91	0.030	5	0.1953	94	70	130	4.883	0.5	20	
Lead	0.0533	0.0010	0.05	0.006046	95	70	130	0.05303	0.5	20	
Magnesium	59.3	1.0	50	12.69	93	70	130	58.78	0.9	20	
Manganese	0.570	0.0010	0.05	0.5304		70	130	0.5589	1.9	20	A
Potassium	47.9	1.0	50	0.3509	95	70	130	46.85	2.2	20	
Sodium	48.5	1.0	50	0.8998	95	70	130	47.89	1.3	20	
Zinc	0.711	0.010	0.05	0.7156		70	130	0.7137	0.4	20	A

Associated samples: **H12050148-001B; H12050148-001C; H12050148-002B; H12050148-002C; H12050148-003B; H12050148-003C; H12050148-004B; H12050148-005B; H12050148-006B; H12050148-007B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79929

Run ID :Run Order: ICPMS204-B_120511A: 8	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 05/11/12 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
Copper	0.0510	0.010	0.05		102	90	110				

Associated samples: **H12050148-004C; H12050148-005C**

Run ID :Run Order: ICPMS204-B_120511A: 9	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 05/11/12 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
Copper	0.000174	0.010									

Associated samples: **H12050148-004C; H12050148-005C**

Run ID :Run Order: ICPMS204-B_120511A: 10	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 05/11/12 13:56	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
Copper	0.0202	0.010	0.02		101	70	130				

Associated samples: **H12050148-004C; H12050148-005C**

Run ID :Run Order: ICPMS204-B_120511A: 121	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 05/12/12 08:10	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
Copper	0.0518	0.010	0.05		104	90	110				

Associated samples: **H12050148-004C; H12050148-005C**

Run ID :Run Order: ICPMS204-B_120511A: 122	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 05/12/12 08:15	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	0.000131	0.010									

Associated samples: **H12050148-004C; H12050148-005C**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79929

Run ID :Run Order: ICPMS204-B_120511A: 123	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 05/12/12 08:19	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	0.0204	0.010	0.02		102	70	130				

Associated samples: **H12050148-004C; H12050148-005C**



Client: MT DEQ-Site Response
Work Order: H12050148
Project: UBMC

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: TDS120509A

Run ID :Run Order: ACCU-124 (14410200)_120509B: 1	SampType: Method Blank	Sample ID: MB-1_120509A	Method: A2540 C
Analysis Date: 05/09/12 14:49	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	
Solids, Total Dissolved TDS @ 180 C	ND	3	

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: ACCU-124 (14410200)_120509B: 2	SampType: Laboratory Control Sample	Sample ID: LCS-2_120509A	Method: A2540 C
Analysis Date: 05/09/12 14:49	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	
Solids, Total Dissolved TDS @ 180 C	2050	10	2000
		103	90
		110	

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: ACCU-124 (14410200)_120509B: 4	SampType: Sample Duplicate	Sample ID: H12050095-031A DUP	Method: A2540 C
Analysis Date: 05/09/12 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	
Solids, Total Dissolved TDS @ 180 C	ND	10	
			5

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: ACCU-124 (14410200)_120509B: 6	SampType: Sample Matrix Spike	Sample ID: H12050095-032A MS	Method: A2540 C
Analysis Date: 05/09/12 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	
Solids, Total Dissolved TDS @ 180 C	2050	10	2000
		102	80
		120	

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Run ID :Run Order: ACCU-124 (14410200)_120509B: 16	SampType: Sample Duplicate	Sample ID: H12050152-001A DUP	Method: A2540 C
Analysis Date: 05/09/12 14:54	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 Dissolved TDS @ 180 C	ND	10	
			5

Associated samples: **H12050148-001A; H12050148-002A; H12050148-003A; H12050148-004A; H12050148-005A; H12050148-006A; H12050148-007A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount

Workorder Receipt Checklist



H12050148

Login completed by: Tracy L. Lorash

Date Received: 5/8/2012

Reviewed by: BL2000\sdull

Received by: elm

Reviewed Date: 5/9/2012

Carrier Hand Del
name:

- | | | | |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Container/Temp Blank temperature: | 3.3°C On Ice | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

Temperature taken from temperature blank. TI 5/8/12.



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

EPA/State Compliance:

Yes No

Company Name:

MDEQ

Report Mail Address:

Quote H-645

Project Name, PWS, Permit, Etc.
BMC Section 35 Surface Water

Contact Name:

Shellie Hoaland 841-5033

Phone/Fax:

shaland@mt.gov

Email:

MT

Invoice Address:

Invoice Contact & Phone:

Purchase Order:

Sampler: (Please Print)
Alan Dreesbach

Quote/Bottle Order:

Special Report/Formats:

- DW
- POTWW/WTP
- State: _____
- Other: _____
- EDD/EDT (Electronic Data)
- Format: _____
- LEVEL IV
- NELAC

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

ANALYSIS REQUESTED

Bottle Order #9716
SEE ATTACHED

Standard Turnaround (TAT)

↓
R
U
S
H

Contact ELL prior to RUSH sample submittal for charges and scheduling - See Instruction Page

Comments: Please copy results to address@bmc.mt.gov
406-490-5135

Shipped by: [Signature]

Receipt Temp: 3.3 °C

On Ice: N

Custody Seal: N

On Bottle: N

On Cooler: N

Intact: N

Signature Match: N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED	Standard Turnaround (TAT)	Comments	Shipped by	Receipt Temp	On Ice	Custody Seal	On Bottle	On Cooler	Intact	Signature Match
1 S35-SW-07	5/8/12	0051	W		X			3.3 °C	<input checked="" type="checkbox"/> N					
2 S35-SW-04		0910							<input checked="" type="checkbox"/> N					
3 S35-SW-03		0953							<input checked="" type="checkbox"/> N					
4 S35-SW-01		1039							<input checked="" type="checkbox"/> N					
5 S35-SW-04		1049							<input checked="" type="checkbox"/> N					
6 S35-SW-02		1121							<input checked="" type="checkbox"/> N					
7 S35-SW-05		1212							<input checked="" type="checkbox"/> N					
8									<input checked="" type="checkbox"/> N					
9									<input checked="" type="checkbox"/> N					
10									<input checked="" type="checkbox"/> N					

Relinquished by (print): BYM Date/Time: 5/8/12 14:15 Signature: [Signature]

Relinquished by (print): Brienne Meyer Date/Time: 5/8/12 14:15 Signature: [Signature]

Sample Disposal: Return to Client Lab Disposal: _____

Received by (print): _____ Date/Time: _____ Signature: _____

Received by (print): [Signature] Date/Time: 5/8/12 14:15 Signature: [Signature]

LABORATORY USE ONLY

Signature: [Signature]

Date/Time: 5/8/12 14:15

Signature: [Signature]

Date/Time: 5/8/12 14:15

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Section 35 Quarterly

Quantity	Analysis	Total Rec. Metals	Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
7	¹ Disolved Metals											
9	³ Disolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
6		⁴ Total Rec. Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

UBMC Quarterly

Quantity	Analysis	Total Rec. Metals	Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
11	¹ Disolved Metals											
10	³ Disolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
9		⁴ Total Rec. Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

⁶Additional surface water samples may be collected for seeps.



ANALYTICAL SUMMARY REPORT

May 25, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12050151 Quote ID: H645 - UBMC

Project Name: UBMC Sediment

Energy Laboratories Inc Helena MT received the following 6 samples for MT DEQ-Site Response on 5/8/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12050151-001	S35-SD-04	05/08/12 9:10	05/08/12	Sediment	Metals by ICP/ICPMS, Total Digestion, Total Metals
H12050151-002	S35-SD-03	05/08/12 10:14	05/08/12	Sediment	Same As Above
H12050151-003	S35-SD-06	05/08/12 10:50	05/08/12	Sediment	Same As Above
H12050151-004	S35-SD-01	05/08/12 11:00	05/08/12	Sediment	Same As Above
H12050151-005	S35-SD-02	05/08/12 11:27	05/08/12	Sediment	Same As Above
H12050151-006	S35-SD-05	05/08/12 12:18	05/08/12	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 reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-04
Lab ID: H12050151-001
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 09:10 **DateReceived:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6080	mg/kg		5		SW6010B	05/16/12 23:40 / stp	05/09/12 08:45	ICP2-HE_120516B : 140		16555
Arsenic	ND	mg/kg		5		SW6010B	05/18/12 19:39 / sld	05/09/12 08:45	ICP2-HE_120518B : 146		16555
Cadmium	2	mg/kg		1		SW6010B	05/14/12 18:15 / sld	05/09/12 08:45	ICP2-HE_120514B : 73		16555
Copper	24	mg/kg		5		SW6010B	05/24/12 00:35 / sld	05/21/12 10:32	ICP2-HE_120523B : 183		16675
Iron	11200	mg/kg		5		SW6010B	05/14/12 18:15 / sld	05/09/12 08:45	ICP2-HE_120514B : 73		16555
Lead	21	mg/kg		5		SW6010B	05/14/12 18:15 / sld	05/09/12 08:45	ICP2-HE_120514B : 73		16555
Manganese	936	mg/kg		5		SW6010B	05/24/12 00:35 / sld	05/21/12 10:32	ICP2-HE_120523B : 183		16675
Zinc	793	mg/kg		5		SW6010B	05/14/12 18:15 / sld	05/09/12 08:45	ICP2-HE_120514B : 73		16555

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-03
Lab ID: H12050151-002
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 10:14 **DateReceived:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	7350	mg/kg		5		SW6010B	05/16/12 23:44 / stp	05/09/12 08:45	ICP2-HE_120516B : 141		16555
Arsenic	ND	mg/kg		5		SW6010B	05/18/12 19:43 / sld	05/09/12 08:45	ICP2-HE_120518B : 147		16555
Cadmium	2	mg/kg		1		SW6010B	05/14/12 18:18 / sld	05/09/12 08:45	ICP2-HE_120514B : 74		16555
Copper	30	mg/kg		5		SW6010B	05/24/12 00:39 / sld	05/21/12 10:32	ICP2-HE_120523B : 184		16675
Iron	13800	mg/kg		5		SW6010B	05/16/12 23:44 / stp	05/09/12 08:45	ICP2-HE_120516B : 141		16555
Lead	35	mg/kg		5		SW6010B	05/14/12 18:18 / sld	05/09/12 08:45	ICP2-HE_120514B : 74		16555
Manganese	1110	mg/kg		5		SW6010B	05/24/12 00:39 / sld	05/21/12 10:32	ICP2-HE_120523B : 184		16675
Zinc	719	mg/kg		5		SW6010B	05/14/12 18:18 / sld	05/09/12 08:45	ICP2-HE_120514B : 74		16555

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-06
Lab ID: H12050151-003
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 10:50 **DateReceived:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6200	mg/kg		5		SW6010B	05/16/12 23:48 / stp	05/09/12 08:45	ICP2-HE_120516B : 142		16555
Arsenic	6	mg/kg		5		SW6010B	05/16/12 23:48 / stp	05/09/12 08:45	ICP2-HE_120516B : 142		16555
Cadmium	ND	mg/kg		1		SW6010B	05/14/12 18:56 / sld	05/09/12 08:45	ICP2-HE_120514B : 84		16555
Copper	36	mg/kg		5		SW6010B	05/24/12 00:43 / sld	05/21/12 10:32	ICP2-HE_120523B : 185		16675
Iron	17000	mg/kg		5		SW6010B	05/16/12 23:48 / stp	05/09/12 08:45	ICP2-HE_120516B : 142		16555
Lead	9	mg/kg		5		SW6010B	05/14/12 18:56 / sld	05/09/12 08:45	ICP2-HE_120514B : 84		16555
Manganese	1300	mg/kg		5		SW6010B	05/24/12 00:43 / sld	05/21/12 10:32	ICP2-HE_120523B : 185		16675
Zinc	48	mg/kg		5		SW6010B	05/14/12 18:56 / sld	05/09/12 08:45	ICP2-HE_120514B : 84		16555

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-01
Lab ID: H12050151-004
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 11:00 **DateReceived:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6970	mg/kg		5		SW6010B	05/16/12 23:51 / stp	05/09/12 08:45	ICP2-HE_120516B : 143		16555
Arsenic	10	mg/kg		5		SW6010B	05/16/12 23:51 / stp	05/09/12 08:45	ICP2-HE_120516B : 143		16555
Cadmium	ND	mg/kg		1		SW6010B	05/14/12 18:59 / sld	05/09/12 08:45	ICP2-HE_120514B : 85		16555
Copper	27	mg/kg		5		SW6010B	05/24/12 00:54 / sld	05/21/12 10:32	ICP2-HE_120523B : 188		16675
Iron	18500	mg/kg		5		SW6010B	05/16/12 23:51 / stp	05/09/12 08:45	ICP2-HE_120516B : 143		16555
Lead	13	mg/kg		5		SW6010B	05/14/12 18:59 / sld	05/09/12 08:45	ICP2-HE_120514B : 85		16555
Manganese	811	mg/kg		5		SW6010B	05/24/12 00:54 / sld	05/21/12 10:32	ICP2-HE_120523B : 188		16675
Zinc	59	mg/kg		5		SW6010B	05/14/12 18:59 / sld	05/09/12 08:45	ICP2-HE_120514B : 85		16555

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-02
Lab ID: H12050151-005
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 11:27 **DateReceived:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	3740	mg/kg		5		SW6010B	05/17/12 00:29 / stp	05/09/12 08:45	ICP2-HE_120516B : 153		16555
Arsenic	ND	mg/kg		5		SW6010B	05/17/12 00:29 / stp	05/09/12 08:45	ICP2-HE_120516B : 153		16555
Cadmium	ND	mg/kg		1		SW6010B	05/14/12 19:03 / sld	05/09/12 08:45	ICP2-HE_120514B : 86		16555
Copper	39	mg/kg		5		SW6010B	05/24/12 00:57 / sld	05/21/12 10:32	ICP2-HE_120523B : 189		16675
Iron	1780	mg/kg		5		SW6010B	05/14/12 19:03 / sld	05/09/12 08:45	ICP2-HE_120514B : 86		16555
Lead	5	mg/kg		5		SW6010B	05/14/12 19:03 / sld	05/09/12 08:45	ICP2-HE_120514B : 86		16555
Manganese	13	mg/kg		5		SW6010B	05/24/12 00:57 / sld	05/21/12 10:32	ICP2-HE_120523B : 189		16675
Zinc	14	mg/kg		5		SW6010B	05/14/12 19:03 / sld	05/09/12 08:45	ICP2-HE_120514B : 86		16555

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-05
Lab ID: H12050151-006
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 12:18 **DateReceived:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	7650	mg/kg	D	7		SW6010B	05/17/12 00:32 / stp	05/09/12 08:45	ICP2-HE_120516B : 154		16555
Arsenic	9	mg/kg		5		SW6010B	05/18/12 19:54 / sld	05/09/12 08:45	ICP2-HE_120518B : 150		16555
Cadmium	ND	mg/kg		1		SW6010B	05/14/12 19:07 / sld	05/09/12 08:45	ICP2-HE_120514B : 87		16555
Copper	29	mg/kg		5		SW6010B	05/24/12 01:01 / sld	05/21/12 10:32	ICP2-HE_120523B : 190		16675
Iron	28700	mg/kg		5		SW6010B	05/17/12 00:32 / stp	05/09/12 08:45	ICP2-HE_120516B : 154		16555
Lead	10	mg/kg		5		SW6010B	05/14/12 19:07 / sld	05/09/12 08:45	ICP2-HE_120514B : 87		16555
Manganese	462	mg/kg		5		SW6010B	05/24/12 01:01 / sld	05/21/12 10:32	ICP2-HE_120523B : 190		16675
Zinc	44	mg/kg		5		SW6010B	05/14/12 19:07 / sld	05/09/12 08:45	ICP2-HE_120514B : 87		16555

Report Definitions: RL - Analyte reporting limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



Client: MT DEQ-Site Response
Work Order: H12050151

ANALYTICAL QC SUMMARY REPORT

Date: 25-May-12

Project: UBMC Sediment

BatchID: 16555

Run ID :Run Order: ICP2-HE_120514B: 55		SampType: Method Blank			Sample ID: MB-16555				Method: SW6010B		
Analysis Date: 05/14/12 17:09		Units: mg/kg			Prep Info: Prep Date: 5/9/2012				Prep Method: SW3050 B		
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.7	0.3									
Arsenic	ND	0.3									
Cadmium	ND	0.02									
Iron	1	0.3									
Lead	ND	0.6									
Zinc	0.3	0.07									

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120514B: 56		SampType: Laboratory Fortified Blank			Sample ID: LFB-16555				Method: SW6010B		
Analysis Date: 05/14/12 17:12		Units: mg/kg			Prep Info: Prep Date: 5/9/2012				Prep Method: SW3050 B		
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	304	5.0	250	0.7045	121	80	120				S
Arsenic	56.2	1.0	50		112	80	120				
Cadmium	27.2	1.0	25		109	80	120				
Iron	297	5.0	250	1.244	118	80	120				
Lead	54.4	1.0	50		109	80	120				
Zinc	57.2	1.0	50	0.274	114	80	120				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120514B: 57		SampType: Laboratory Control Sample			Sample ID: LCS-16555				Method: SW6010B		
Analysis Date: 05/14/12 17:16		Units: mg/kg			Prep Info: Prep Date: 5/9/2012				Prep Method: SW3050 B		
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	14100	5.0	14550	0.7045	97	50.7	131.3				
Arsenic	294	1.5	339.6		87	72.3	106.4				
Cadmium	124	1.0	135.6		92	73	105.1				
Iron	20700	5.0	22770	1.244	91	39.6	138.3				
Lead	183	3.1	185.1		99	75.9	108.6				
Zinc	201	1.0	210.9	0.274	95	74.2	109.9				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050151
Project: UBMC Sediment

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: 16555

Run ID :Run Order: ICP2-HE_120514B: 61		SampType: Sample Matrix Spike			Sample ID: H12050142-001AMS				Method: SW6010B		
Analysis Date: 05/14/12 17:31		Units: mg/kg			Prep Info: Prep Date: 5/9/2012		Prep Method: SW3050 B				
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	13300	5.0	245.1	12450		75	125				A
Arsenic	56.2	1.5	49.02	6.346	102	75	125				
Cadmium	23.6	1.0	24.51		96	75	125				
Iron	8270	5.0	245.1	7391		75	125				A
Lead	72.1	3.0	49.02	20.66	105	75	125				
Zinc	105	1.0	49.02	47.87	116	75	125				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120514B: 62		SampType: Sample Matrix Spike Duplicate			Sample ID: H12050142-001AMSD				Method: SW6010B		
Analysis Date: 05/14/12 17:34		Units: mg/kg			Prep Info: Prep Date: 5/9/2012		Prep Method: SW3050 B				
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	13700	5.0	245.1	12450		75	125	13320	2.6	20	A
Arsenic	55.9	1.5	49.02	6.346	101	75	125	56.22	0.5	20	
Cadmium	24.4	1.0	24.51		99	75	125	23.59	3.2	20	
Iron	8360	5.0	245.1	7391		75	125	8272	1.0	20	A
Lead	73.7	3.0	49.02	20.66	108	75	125	72.1	2.3	20	
Zinc	117	1.0	49.02	47.87	140	75	125	104.7	11	20	S

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120514B: 90		SampType: Sample Matrix Spike			Sample ID: H12050151-006AMS				Method: SW6010B		
Analysis Date: 05/14/12 19:18		Units: mg/kg			Prep Info: Prep Date: 5/9/2012		Prep Method: SW3050 B				
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	28.1	1.0	24.75	8.467	79	75	125				
Cadmium	11.0	1.0	12.38		89	75	125				
Iron	16600	5.0	123.8	21630		75	125				A
Lead	33.0	1.5	24.75	9.8	94	75	125				
Zinc	64.1	1.0	24.75	43.5	83	75	125				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050151
Project: UBMC Sediment

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: 16555

Run ID :Run Order: ICP2-HE_120514B: 91		SampType: Sample Matrix Spike Duplicate			Sample ID: H12050151-006AMSD				Method: SW6010B			
Analysis Date: 05/14/12 19:21		Units: mg/kg			Prep Info: Prep Date: 5/9/2012				Prep Method: SW3050 B			
Analytes	5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		27.7	1.0	24.75	8.467	78	75	125	28.14	1.6	20	
Cadmium		10.9	1.0	12.38		88	75	125	10.99	1.2	20	
Iron		17600	5.0	123.8	21630		75	125	16630	5.9	20	A
Lead		30.4	1.5	24.75	9.8	83	75	125	33.01	8.3	20	
Zinc		70.9	1.0	24.75	43.5	111	75	125	64.14	10.0	20	

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120516B: 122		SampType: Method Blank			Sample ID: MB-16555				Method: SW6010B			
Analysis Date: 05/16/12 22:33		Units: mg/kg			Prep Info: Prep Date: 5/9/2012				Prep Method: SW3050 B			
Analytes	6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		ND	0.7									
Arsenic		ND	0.3									
Cadmium		ND	0.02									
Iron		1	0.3									
Lead		ND	0.6									
Zinc		0.2	0.07									

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120516B: 123		SampType: Laboratory Fortified Blank			Sample ID: LFB-16555				Method: SW6010B			
Analysis Date: 05/16/12 22:37		Units: mg/kg			Prep Info: Prep Date: 5/9/2012				Prep Method: SW3050 B			
Analytes	6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		235	5.0	250		94	80	120				
Arsenic		46.0	1.0	50		92	80	120				
Cadmium		22.1	1.0	25		88	80	120				
Iron		238	5.0	250	1.019	95	80	120				
Lead		46.3	1.0	50		93	80	120				
Zinc		46.1	1.0	50	0.231	92	80	120				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050151
Project: UBMC Sediment

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: 16555

Run ID :Run Order: ICP2-HE_120516B: 124		SampType: Laboratory Control Sample			Sample ID: LCS-16555			Method: SW6010B			
Analysis Date: 05/16/12 22:41		Units: mg/kg			Prep Info: Prep Date: 5/9/2012			Prep Method: SW3050 B			
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	14600	5.0	14550		100	50.7	131.3				
Arsenic	250	1.5	339.6		74	72.3	106.4				
Cadmium	106	1.0	135.6		78	73	105.1				
Iron	21900	5.0	22770	1.019	96	39.6	138.3				
Lead	164	3.1	185.1		89	75.9	108.6				
Zinc	170	1.0	210.9	0.231	80	74.2	109.9				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120516B: 128		SampType: Sample Matrix Spike			Sample ID: H12050142-001AMS			Method: SW6010B			
Analysis Date: 05/16/12 22:56		Units: mg/kg			Prep Info: Prep Date: 5/9/2012			Prep Method: SW3050 B			
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	13600	5.0	245.1	13340		75	125				A
Arsenic	47.8	1.5	49.02	6.558	84	75	125				
Cadmium	19.6	1.0	24.51	0.1382	79	75	125				
Iron	8640	5.0	245.1	8064		75	125				A
Lead	61.1	3.0	49.02	22.37	79	75	125				
Zinc	85.9	1.0	49.02	41.67	90	75	125				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120516B: 129		SampType: Sample Matrix Spike Duplicate			Sample ID: H12050142-001AMSD			Method: SW6010B			
Analysis Date: 05/16/12 23:00		Units: mg/kg			Prep Info: Prep Date: 5/9/2012			Prep Method: SW3050 B			
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	13200	5.0	245.1	13340		75	125	13560	2.3	20	A
Arsenic	47.4	1.5	49.02	6.558	83	75	125	47.8	0.9	20	
Cadmium	19.1	1.0	24.51	0.1382	77	75	125	19.56	2.6	20	
Iron	8350	5.0	245.1	8064		75	125	8644	3.4	20	A
Lead	66.5	3.0	49.02	22.37	90	75	125	61.14	8.4	20	
Zinc	89.9	1.0	49.02	41.67	98	75	125	85.88	4.6	20	

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050151
Project: UBMC Sediment

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: 16555

Run ID :Run Order: ICP2-HE_120516B: 157		SampType: Sample Matrix Spike			Sample ID: H12050151-006AMS				Method: SW6010B		
Analysis Date: 05/17/12 00:43		Units: mg/kg			Prep Info: Prep Date: 5/9/2012		Prep Method: SW3050 B				
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	7430	7.2	123.8	7647		75	125				A
Arsenic	27.1	3.0	24.75	3.433	96	75	125				
Cadmium	11.7	1.0	12.38		95	75	125				
Iron	18800	5.0	123.8	28660		75	125				A
Lead	35.9	6.1	24.75	8.9	109	75	125				
Zinc	68.4	1.0	24.75	42.74	104	75	125				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120516B: 158		SampType: Sample Matrix Spike Duplicate			Sample ID: H12050151-006AMSD				Method: SW6010B		
Analysis Date: 05/17/12 00:47		Units: mg/kg			Prep Info: Prep Date: 5/9/2012		Prep Method: SW3050 B				
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8490	7.2	123.8	7647		75	125	7430	13	20	A
Arsenic	21.9	3.0	24.75	3.433	75	75	125	27.09	21	20	R
Cadmium	11.2	1.0	12.38		90	75	125	11.75	4.9	20	
Iron	20400	5.0	123.8	28660		75	125	18790	8.1	20	A
Lead	35.2	6.1	24.75	8.9	106	75	125	35.86	1.9	20	
Zinc	73.0	1.0	24.75	42.74	122	75	125	68.44	6.4	20	

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120518B: 144		SampType: Method Blank			Sample ID: MB-16555				Method: SW6010B		
Analysis Date: 05/18/12 19:32		Units: mg/kg			Prep Info: Prep Date: 5/9/2012		Prep Method: SW3050 B				
Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.6	0.5									
Arsenic	ND	0.6									
Cadmium	ND	0.04									
Iron	0.9	0.6									
Lead	ND	1									
Zinc	0.4	0.1									

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050151

ANALYTICAL QC SUMMARY REPORT

Date: 25-May-12

Project: UBMC Sediment

BatchID: 16675

Run ID :Run Order: ICP2-HE_120523B: 158	SampType: Method Blank	Sample ID: MB-16675	Method: SW6010B								
Analysis Date: 05/23/12 23:03	Units: mg/kg	Prep Info: Prep Date: 5/21/2012	Prep Method: SW3050 B								
Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.1									
Manganese	ND	0.03									

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120523B: 159	SampType: Laboratory Fortified Blank	Sample ID: LFB-16675	Method: SW6010B								
Analysis Date: 05/23/12 23:07	Units: mg/kg	Prep Info: Prep Date: 5/21/2012	Prep Method: SW3050 B								
Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	52.2	1.0	50		104	80	120				
Manganese	257	1.0	250		103	80	120				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120523B: 160	SampType: Laboratory Control Sample	Sample ID: LCS-16675	Method: SW6010B								
Analysis Date: 05/23/12 23:10	Units: mg/kg	Prep Info: Prep Date: 5/21/2012	Prep Method: SW3050 B								
Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	251	1.0	277.2		90	77.5	109.6				
Manganese	356	1.0	365.3		97	80.8	115.7				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120523B: 193	SampType: Sample Matrix Spike	Sample ID: H12050151-006AMS	Method: SW6010B								
Analysis Date: 05/24/12 01:12	Units: mg/kg	Prep Info: Prep Date: 5/21/2012	Prep Method: SW3050 B								
Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	58.5	1.0	24.63	29	120	75	125				
Manganese	611	1.0	123.2	461.7	122	75	125				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120523B: 194	SampType: Sample Matrix Spike Duplicate	Sample ID: H12050151-006AMSD	Method: SW6010B								
Analysis Date: 05/24/12 01:16	Units: mg/kg	Prep Info: Prep Date: 5/9/2012	Prep Method: SW3050 B								
Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	58.0	1.0	24.75	29	117	75	125	58.51	0.9	20	
Manganese	599	1.0	123.8	461.7	111	75	125	611.5	2.1	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050151
Project: UBMC Sediment

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: 16675

Run ID :Run Order: ICP2-HE_120523B: 194	SampType: Sample Matrix Spike Duplicate	Sample ID: H12050151-006AMSD	Method: SW6010B								
Analysis Date: 05/24/12 01:16	Units: mg/kg	Prep Info: Prep Date: 5/9/2012	Prep Method: SW3050 B								
Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A**



Client: MT DEQ-Site Response
Work Order: H12050151
Project: UBMC Sediment

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R79959

Run ID :Run Order:	ICP2-HE_120514B: 6	SampType:	Initial Calibration Verification Standard	Sample ID:	ICV	Method:	E200.7					
Analysis Date:	05/14/12 10:20	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
Cadmium	0.383	0.0010	0.4			96	90	110				
Iron	3.98	0.030	4			100	90	110				
Lead	0.800	0.013	0.8			100	90	110				
Zinc	0.792	0.010	0.8			99	90	110				

Associated samples: **H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A**

Run ID :Run Order:	ICP2-HE_120514B: 10	SampType:	Interference Check Sample A	Sample ID:	ICSA	Method:	E200.7					
Analysis Date:	05/14/12 10:35	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
Cadmium	-0.000190	0.0010					0	0				
Iron	191	0.030	200			95	80	120				
Lead	0.0393	0.013					0	0				
Zinc	0.00436	0.010					0	0				

Associated samples: **H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A**

Run ID :Run Order:	ICP2-HE_120514B: 11	SampType:	Interference Check Sample AB	Sample ID:	ICSAB	Method:	E200.7					
Analysis Date:	05/14/12 10:39	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
Cadmium	0.886	0.0010	1			89	80	120				
Iron	190	0.030	200			95	80	120				
Lead	0.958	0.013	1			96	80	120				
Zinc	0.979	0.010	1			98	80	120				

Associated samples: **H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050151
Project: UBMC Sediment

ANALYTICAL QC SUMMARY REPORT

Date: 25-May-12

Prepared by Helena, MT Branch

BatchID: R80049

Run ID :Run Order:	ICP2-HE_120516B: 8	SampType:	Initial Calibration Verification Standard	Sample ID:	ICV	Method:	E200.7					
Analysis Date:	05/16/12 11:37	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
Aluminum		4.08	0.10	4		102	90	110				
Arsenic		0.776	0.0074	0.8		97	90	110				
Iron		3.97	0.030	4		99	90	110				

Associated samples: **H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A**

Run ID :Run Order:	ICP2-HE_120516B: 12	SampType:	Interference Check Sample A	Sample ID:	ICSA	Method:	E200.7					
Analysis Date:	05/16/12 11:52	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
Aluminum		524	0.10	500		105	80	120				
Arsenic		-0.0133	0.0074				0	0				
Iron		182	0.030	200		91	80	120				

Associated samples: **H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A**

Run ID :Run Order:	ICP2-HE_120516B: 13	SampType:	Interference Check Sample AB	Sample ID:	ICSAB	Method:	E200.7					
Analysis Date:	05/16/12 11:56	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		526	0.10	500		105	80	120				
Arsenic		1.03	0.0074	1		103	80	120				
Iron		183	0.030	200		92	80	120				

Associated samples: **H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050151
Project: UBMC Sediment

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 25-May-12

BatchID: R80082

Run ID :Run Order: ICP2-HE_120518B: 6	SampType: Initial Calibration Verification Standard	Sample ID: ICV	Method: E200.7								
Analysis Date: 05/18/12 10:31	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.790	0.0074	0.8		99	90	110				

Associated samples: H12050151-001A; H12050151-002A; H12050151-006A

Run ID :Run Order: ICP2-HE_120518B: 10	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.7								
Analysis Date: 05/18/12 10:45	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.00326	0.0074				0	0				

Associated samples: H12050151-001A; H12050151-002A; H12050151-006A

Run ID :Run Order: ICP2-HE_120518B: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 05/18/12 10:50	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.09	0.0074	1		109	80	120				

Associated samples: H12050151-001A; H12050151-002A; H12050151-006A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050151

ANALYTICAL QC SUMMARY REPORT

Date: 25-May-12

Project: UBMC Sediment

BatchID: R80172

Run ID :Run Order: ICP2-HE_120523B: 6	SampType: Initial Calibration Verification Standard				Sample ID: ICV			Method: E200.7			
Analysis Date: 05/23/12 11:13	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
Copper	0.815	0.010	0.8		102	90	110				
Manganese	4.07	0.010	4		102	90	110				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120523B: 10	SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.7			
Analysis Date: 05/23/12 11:28	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	0.00389	0.010				0	0				
Manganese	-0.00725	0.010				0	0				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Run ID :Run Order: ICP2-HE_120523B: 11	SampType: Interference Check Sample AB				Sample ID: ICSAB			Method: E200.7			
Analysis Date: 05/23/12 11:32	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
Copper	0.523	0.010	0.5		105	80	120				
Manganese	0.486	0.010	0.5		97	80	120				

Associated samples: H12050151-001A; H12050151-002A; H12050151-003A; H12050151-004A; H12050151-005A; H12050151-006A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount

Workorder Receipt Checklist



H12050151

Login completed by: Tracy L. Lorash

Date Received: 5/8/2012

Reviewed by: BL2000\sdull

Received by: elm

Reviewed Date: 5/9/2012

Carrier Hand Del
name:

- | | | | |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Container/Temp Blank temperature: | 3.3°C On Ice | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input checked="" type="checkbox"/> |

Contact and Corrective Action Comments:

Temperature taken from temperature blank. TI 5/8/12.



Chain of Custody and Analytical Request Record

Company Name:

MDEQ

PLEASE PRINT (Provide as much information as possible.)
Project Name: PWS, Permit, Etc.

Sample Origin

EP/State Compliance: Yes No

Report Mail Address:

Quote

VBMC Section 35 Sediment

State: MT

Sampler: (Please Print)
Alan Dressbach

Invoice Address:

Shellic Haaland 841-5033

Shaaland@mt.gov

Brenne Meyer

Special Report/Formats:

- DW
- POTW/WWTP
- State: _____
- Other: _____
- EDD/EDT (Electronic Data)
- Format: _____
- LEVEL IV
- NELAC

Number of Containers
 Sample Type: A W S V B O DW
 Air Water Soils/Solids
 Vegetation Bioassay Other
 DW - Drinking Water

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED	Standard Turnaround (TAT)	Comments	Signature
1 S35-SD-04	5/8/12	0910	S	X	Bottle Order #9717 SEE ATTACHED	406-490-5335	H1205015
2 S35-SD-03		1014					
3 S35-SD-06		1050					
4 S35-SD-01		1100					
5 S35-SD-02		1127					
6 S35-SD-05		1218					
7							
8 S35-SD-01							
9 S35-SD-02							
10							

Relinquished by (print): Brenne Meyer Date/Time: 5/8/12 14:15 Signature: *Brenne Meyer*

Relinquished by (print): _____ Date/Time: _____ Signature: _____

Custody Record MUST be Signed

Sample Disposal: Return to Client: _____ Lab Disposal: _____

Received by (print): _____ Date/Time: _____ Signature: _____

Received by (print): _____ Date/Time: _____ Signature: _____

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Section 35 Quarterly

Section 35 Quarterly												
Quantity	Analysis	² Total Rec. Metals	³ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
7	¹ Disolved Metals											
9	³ Disolved Metals		³ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
6		⁴ Total Rec. Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

UBMC Quarterly

UBMC Quarterly													
Quantity	Analysis	¹ Disolved Metals	² Total Rec. Metals	³ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
11	¹ Disolved Metals												
10	³ Disolved Metals			³ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
9			⁴ Total Rec. Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

⁶Additional surface water samples may be collected for seeps.



ANALYTICAL SUMMARY REPORT

May 30, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12050224 Quote ID: H645 - UBMC

Project Name: Section 35 Groundwater

Energy Laboratories Inc Helena MT received the following 8 samples for MT DEQ-Site Response on 5/11/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12050224-001	S35-MW-08	05/10/12 9:25	05/11/12	Aqueous	Metals by ICP/ICPMS, Dissolved Alkalinity, Conductivity, Hardness as CaCO3, Anions by Ion Chromatography, pH, Preparation for TSS, Solids, Total Dissolved, Solids, Total Suspended
H12050224-002	S35-MW-09	05/10/12 9:28	05/11/12	Aqueous	Same As Above
H12050224-003	S35-MW-01	05/10/12 10:02	05/11/12	Aqueous	Same As Above
H12050224-004	S35-MW-06	05/10/12 11:59	05/11/12	Aqueous	Same As Above
H12050224-005	S35-MW-04	05/10/12 12:46	05/11/12	Aqueous	Same As Above
H12050224-006	S35-MW-07	05/10/12 12:56	05/11/12	Aqueous	Same As Above
H12050224-007	S35-MW-03	05/10/12 13:30	05/11/12	Aqueous	Same As Above
H12050224-008	S35-MW-02	05/10/12 16:15	05/11/12	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 reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-08
Lab ID: H12050224-001
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 09:25 **DateReceived:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	4.6	s.u.		0.1		A4500-H B	05/14/12 11:20 / cmm		PHSC_101-H_120514A : 8		R79940
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	05/14/12 11:20 / cmm		PHSC_101-H_120514A : 9		R79940
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/14/12 15:13 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 13			16614
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	05/14/12 14:55 / cmm		-124 (14410200)_120514B : 15		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	05/14/12 18:52 / cmm		MAN-TECH_120514A : 35		R79960
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	05/14/12 18:52 / cmm		MAN-TECH_120514A : 35		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 18:52 / cmm		MAN-TECH_120514A : 35		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 18:09 / cmm		IC102-H_120514A : 37		R79964
Sulfate	ND	mg/L		1		E300.0	05/14/12 18:09 / cmm		IC102-H_120514A : 37		R79964
Hardness as CaCO3	ND	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 8		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Arsenic	ND	mg/L		0.003		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Cadmium	ND	mg/L		0.00008		E200.8	05/22/12 19:07 / dck		ICPMS204-B_120522A : 95		R80136
Calcium	ND	mg/L		1		E200.7	05/14/12 13:08 / sld		ICP2-HE_120514A : 50		R79951
Copper	ND	mg/L		0.001		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Iron	ND	mg/L		0.05		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Lead	ND	mg/L		0.0005		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Magnesium	ND	mg/L		1		E200.7	05/14/12 13:08 / sld		ICP2-HE_120514A : 50		R79951
Manganese	ND	mg/L		0.005		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Potassium	ND	mg/L		1		E200.7	05/14/12 13:08 / sld		ICP2-HE_120514A : 50		R79951
Sodium	ND	mg/L		1		E200.7	05/14/12 13:08 / sld		ICP2-HE_120514A : 50		R79951
Zinc	ND	mg/L		0.01		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-09
Lab ID: H12050224-002
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 09:28 **DateReceived:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	4.6	s.u.		0.1		A4500-H B	05/14/12 11:23 / cmm		PHSC_101-H_120514A : 10		R79940
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	05/14/12 11:23 / cmm		PHSC_101-H_120514A : 11		R79940
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/14/12 15:13 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 14			16614
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	05/14/12 14:55 / cmm		-124 (14410200)_120514B : 16		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	05/14/12 19:01 / cmm		MAN-TECH_120514A : 39		R79960
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	05/14/12 19:01 / cmm		MAN-TECH_120514A : 39		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:01 / cmm		MAN-TECH_120514A : 39		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 18:23 / cmm		IC102-H_120514A : 38		R79964
Sulfate	ND	mg/L		1		E300.0	05/14/12 18:23 / cmm		IC102-H_120514A : 38		R79964
Hardness as CaCO3	ND	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 9		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Arsenic	ND	mg/L		0.003		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Cadmium	ND	mg/L		0.00008		E200.8	05/22/12 19:11 / dck		ICPMS204-B_120522A : 96		R80136
Calcium	ND	mg/L		1		E200.7	05/14/12 13:12 / sld		ICP2-HE_120514A : 51		R79951
Copper	ND	mg/L		0.001		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Iron	ND	mg/L		0.05		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Lead	ND	mg/L		0.0005		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Magnesium	ND	mg/L		1		E200.7	05/14/12 13:12 / sld		ICP2-HE_120514A : 51		R79951
Manganese	ND	mg/L		0.005		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Potassium	ND	mg/L		1		E200.7	05/14/12 13:12 / sld		ICP2-HE_120514A : 51		R79951
Sodium	ND	mg/L		1		E200.7	05/14/12 13:12 / sld		ICP2-HE_120514A : 51		R79951
Zinc	ND	mg/L		0.01		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-01
Lab ID: H12050224-003
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 10:02 **DateReceived:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.		0.1		A4500-H B	05/14/12 11:27 / cmm		PHSC_101-H_120514A : 12		R79940
Conductivity @ 25 C	302	umhos/cm		1		A2510 B	05/14/12 11:27 / cmm		PHSC_101-H_120514A : 13		R79940
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/14/12 15:13 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 15			16614
Solids, Total Dissolved TDS @ 180 C	168	mg/L		10		A2540 C	05/14/12 14:55 / cmm		-124 (14410200)_120514B : 17		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	05/14/12 19:08 / cmm		MAN-TECH_120514A : 41		R79960
Bicarbonate as HCO3	200	mg/L		4		A2320 B	05/14/12 19:08 / cmm		MAN-TECH_120514A : 41		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:08 / cmm		MAN-TECH_120514A : 41		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 18:36 / cmm		IC102-H_120514A : 39		R79964
Sulfate	7	mg/L		1		E300.0	05/14/12 18:36 / cmm		IC102-H_120514A : 39		R79964
Hardness as CaCO3	148	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 10		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Arsenic	ND	mg/L		0.003		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Cadmium	ND	mg/L		0.00008		E200.8	05/22/12 19:16 / dck		ICPMS204-B_120522A : 97		R80136
Calcium	33	mg/L		1		E200.7	05/14/12 13:15 / sld		ICP2-HE_120514A : 52		R79951
Copper	ND	mg/L		0.001		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Iron	ND	mg/L		0.05		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Lead	ND	mg/L		0.0005		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Magnesium	18	mg/L		1		E200.8	05/22/12 19:16 / dck		ICPMS204-B_120522A : 97		R80136
Manganese	ND	mg/L		0.005		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Potassium	1	mg/L		1		E200.7	05/14/12 13:15 / sld		ICP2-HE_120514A : 52		R79951
Sodium	2	mg/L		1		E200.7	05/14/12 13:15 / sld		ICP2-HE_120514A : 52		R79951
Zinc	ND	mg/L		0.01		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-06
Lab ID: H12050224-004
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 11:59 **DateReceived:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.1	s.u.		0.1		A4500-H B	05/14/12 11:30 / cmm		PHSC_101-H_120514A : 14		R79940
Conductivity @ 25 C	354	umhos/cm		1		A2510 B	05/14/12 11:30 / cmm		PHSC_101-H_120514A : 15		R79940
Solids, Total Suspended TSS @ 105 C	202	mg/L		10		A2540 D	05/14/12 15:14 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 16			16614
Solids, Total Dissolved TDS @ 180 C	212	mg/L		10		A2540 C	05/14/12 14:56 / cmm		-124 (14410200)_120514B : 18		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	05/14/12 19:15 / cmm		MAN-TECH_120514A : 43		R79960
Bicarbonate as HCO3	240	mg/L		4		A2320 B	05/14/12 19:15 / cmm		MAN-TECH_120514A : 43		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:15 / cmm		MAN-TECH_120514A : 43		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 18:50 / cmm		IC102-H_120514A : 40		R79964
Sulfate	1	mg/L		1		E300.0	05/14/12 18:50 / cmm		IC102-H_120514A : 40		R79964
Hardness as CaCO3	170	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 11		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Arsenic	ND	mg/L		0.003		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Cadmium	ND	mg/L		0.00008		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Calcium	49	mg/L		1		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Copper	ND	mg/L		0.001		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Iron	ND	mg/L		0.05		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Lead	ND	mg/L		0.0005		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Magnesium	14	mg/L		1		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Manganese	ND	mg/L		0.005		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Potassium	ND	mg/L		1		E200.7	05/14/12 13:37 / sld		ICP2-HE_120514A : 58		R79951
Sodium	5	mg/L		1		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Zinc	ND	mg/L		0.01		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-04
Lab ID: H12050224-005
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 12:46 **DateReceived:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	05/14/12 11:35 / cmm		PHSC_101-H_120514A : 18		R79940
Conductivity @ 25 C	328	umhos/cm		1		A2510 B	05/14/12 11:35 / cmm		PHSC_101-H_120514A : 19		R79940
Solids, Total Suspended TSS @ 105 C	138	mg/L		10		A2540 D	05/14/12 15:14 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 17			16614
Solids, Total Dissolved TDS @ 180 C	200	mg/L		10		A2540 C	05/14/12 14:56 / cmm		-124 (14410200)_120514B : 19		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	190	mg/L		4		A2320 B	05/14/12 19:22 / cmm		MAN-TECH_120514A : 45		R79960
Bicarbonate as HCO3	230	mg/L		4		A2320 B	05/14/12 19:22 / cmm		MAN-TECH_120514A : 45		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:22 / cmm		MAN-TECH_120514A : 45		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 19:04 / cmm		IC102-H_120514A : 41		R79964
Sulfate	2	mg/L		1		E300.0	05/14/12 19:04 / cmm		IC102-H_120514A : 41		R79964
Hardness as CaCO3	159	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 12		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Arsenic	ND	mg/L		0.003		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Cadmium	ND	mg/L		0.00008		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Calcium	49	mg/L		1		E200.7	05/14/12 13:41 / sld		ICP2-HE_120514A : 59		R79951
Copper	0.002	mg/L		0.001		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Iron	ND	mg/L		0.05		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Lead	ND	mg/L		0.0005		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Magnesium	11	mg/L		1		E200.8	05/22/12 19:43 / dck		ICPMS204-B_120522A : 103		R80136
Manganese	ND	mg/L		0.005		E200.8	05/22/12 19:43 / dck		ICPMS204-B_120522A : 103		R80136
Potassium	2	mg/L		1		E200.7	05/14/12 13:41 / sld		ICP2-HE_120514A : 59		R79951
Sodium	2	mg/L		1		E200.7	05/14/12 13:41 / sld		ICP2-HE_120514A : 59		R79951
Zinc	ND	mg/L		0.01		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-07
Lab ID: H12050224-006
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 12:56 **DateReceived:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	05/14/12 11:37 / cmm		PHSC_101-H_120514A : 20		R79940
Conductivity @ 25 C	326	umhos/cm		1		A2510 B	05/14/12 11:37 / cmm		PHSC_101-H_120514A : 21		R79940
Solids, Total Suspended TSS @ 105 C	136	mg/L		10		A2540 D	05/14/12 15:14 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 18			16614
Solids, Total Dissolved TDS @ 180 C	201	mg/L		10		A2540 C	05/14/12 14:56 / cmm		-124 (14410200)_120514B : 20		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	190	mg/L		4		A2320 B	05/14/12 19:30 / cmm		MAN-TECH_120514A : 47		R79960
Bicarbonate as HCO3	230	mg/L		4		A2320 B	05/14/12 19:30 / cmm		MAN-TECH_120514A : 47		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:30 / cmm		MAN-TECH_120514A : 47		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 19:17 / cmm		IC102-H_120514A : 42		R79964
Sulfate	2	mg/L		1		E300.0	05/14/12 19:17 / cmm		IC102-H_120514A : 42		R79964
Hardness as CaCO3	161	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 13		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Arsenic	ND	mg/L		0.003		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Cadmium	ND	mg/L		0.00008		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Calcium	50	mg/L		1		E200.7	05/14/12 13:45 / sld		ICP2-HE_120514A : 60		R79951
Copper	ND	mg/L		0.001		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Iron	ND	mg/L		0.05		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Lead	ND	mg/L		0.0005		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Magnesium	10	mg/L		1		E200.8	05/22/12 19:48 / dck		ICPMS204-B_120522A : 104		R80136
Manganese	ND	mg/L		0.005		E200.8	05/22/12 19:48 / dck		ICPMS204-B_120522A : 104		R80136
Potassium	2	mg/L		1		E200.7	05/14/12 13:45 / sld		ICP2-HE_120514A : 60		R79951
Sodium	3	mg/L		1		E200.8	05/22/12 19:48 / dck		ICPMS204-B_120522A : 104		R80136
Zinc	ND	mg/L		0.01		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-03
Lab ID: H12050224-007
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 13:30 **DateReceived:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.		0.1		A4500-H B	05/14/12 11:40 / cmm		PHSC_101-H_120514A : 22		R79940
Conductivity @ 25 C	336	umhos/cm		1		A2510 B	05/14/12 11:40 / cmm		PHSC_101-H_120514A : 23		R79940
Solids, Total Suspended TSS @ 105 C	86	mg/L		10		A2540 D	05/14/12 15:18 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 19			16614
Solids, Total Dissolved TDS @ 180 C	208	mg/L		10		A2540 C	05/14/12 14:56 / cmm		-124 (14410200)_120514B : 21		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	190	mg/L		4		A2320 B	05/16/12 18:34 / cmm		MAN-TECH_120516B : 34		R80023
Bicarbonate as HCO3	230	mg/L		4		A2320 B	05/16/12 18:34 / cmm		MAN-TECH_120516B : 34		R80023
Carbonate as CO3	ND	mg/L		4		A2320 B	05/16/12 18:34 / cmm		MAN-TECH_120516B : 34		R80023
Chloride	ND	mg/L		1		E300.0	05/14/12 19:31 / cmm		IC102-H_120514A : 43		R79964
Sulfate	5	mg/L		1		E300.0	05/14/12 19:31 / cmm		IC102-H_120514A : 43		R79964
Hardness as CaCO3	150	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 14		R80170
METALS, DISSOLVED											
Aluminum	0.10	mg/L		0.03		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Arsenic	ND	mg/L		0.003		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Cadmium	ND	mg/L		0.00008		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Calcium	45	mg/L		1		E200.7	05/14/12 13:49 / sld		ICP2-HE_120514A : 61		R79951
Copper	ND	mg/L		0.001		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Iron	ND	mg/L		0.05		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Lead	ND	mg/L		0.0005		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Magnesium	11	mg/L		1		E200.8	05/22/12 20:06 / dck		ICPMS204-B_120522A : 108		R80136
Manganese	ND	mg/L		0.005		E200.8	05/22/12 20:06 / dck		ICPMS204-B_120522A : 108		R80136
Potassium	2	mg/L		1		E200.7	05/14/12 13:49 / sld		ICP2-HE_120514A : 61		R79951
Sodium	11	mg/L		1		E200.8	05/22/12 20:06 / dck		ICPMS204-B_120522A : 108		R80136
Zinc	ND	mg/L		0.01		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-02
Lab ID: H12050224-008
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 16:15 **DateReceived:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.		0.1		A4500-H B	05/14/12 11:43 / cmm		PHSC_101-H_120514A : 24		R79940
Conductivity @ 25 C	439	umhos/cm		1		A2510 B	05/14/12 11:43 / cmm		PHSC_101-H_120514A : 25		R79940
Solids, Total Suspended TSS @ 105 C	22	mg/L		10		A2540 D	05/14/12 15:18 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 20			16614
Solids, Total Dissolved TDS @ 180 C	264	mg/L		10		A2540 C	05/14/12 14:56 / cmm		-124 (14410200)_120514B : 22		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	250	mg/L		4		A2320 B	05/14/12 19:44 / cmm		MAN-TECH_120514A : 51		R79960
Bicarbonate as HCO3	300	mg/L		4		A2320 B	05/14/12 19:44 / cmm		MAN-TECH_120514A : 51		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:44 / cmm		MAN-TECH_120514A : 51		R79960
Chloride	2	mg/L		1		E300.0	05/14/12 19:44 / cmm		IC102-H_120514A : 44		R79964
Sulfate	7	mg/L		1		E300.0	05/14/12 19:44 / cmm		IC102-H_120514A : 44		R79964
Hardness as CaCO3	224	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 15		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Arsenic	ND	mg/L		0.003		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Cadmium	0.00046	mg/L		0.00008		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Calcium	69	mg/L		1		E200.7	05/14/12 13:52 / sld		ICP2-HE_120514A : 62		R79951
Copper	0.001	mg/L		0.001		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Iron	ND	mg/L		0.05		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Lead	ND	mg/L		0.0005		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Magnesium	15	mg/L		1		E200.8	05/22/12 20:11 / dck		ICPMS204-B_120522A : 109		R80136
Manganese	ND	mg/L		0.005		E200.8	05/22/12 20:11 / dck		ICPMS204-B_120522A : 109		R80136
Potassium	1	mg/L		1		E200.7	05/14/12 13:52 / sld		ICP2-HE_120514A : 62		R79951
Sodium	4	mg/L		1		E200.8	05/22/12 20:11 / dck		ICPMS204-B_120522A : 109		R80136
Zinc	ND	mg/L		0.01		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



Client: MT DEQ-Site Response
Work Order: H12050224

ANALYTICAL QC SUMMARY REPORT

Date: 30-May-12

Project: Section 35 Groundwater

BatchID: 16614

Run ID :Run Order: ACCU-124 (14410200)_120514A: 1	SampType: Method Blank	Sample ID: MB-16614	Method: A2540 D								
Analysis Date: 05/14/12 15:10	Units: mg/L	Prep Info: Prep Date: 5/14/2012	Prep Method: A2540 D								
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	2									

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514A: 2	SampType: Laboratory Control Sample	Sample ID: LCS-16614	Method: A2540 D								
Analysis Date: 05/14/12 15:10	Units: mg/L	Prep Info: Prep Date: 5/14/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1870	10	2000		93	70	130				

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514A: 4	SampType: Sample Duplicate	Sample ID: H12050222-001ADUP	Method: A2540 D								
Analysis Date: 05/14/12 15:11	Units: mg/L	Prep Info: Prep Date: 5/14/2012	Prep Method: A2540 D								
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	10									5

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514A: 23	SampType: Sample Duplicate	Sample ID: H12050230-002ADUP	Method: A2540 D								
Analysis Date: 05/14/12 15:19	Units: mg/L	Prep Info: Prep Date: 5/14/2012	Prep Method: A2540 D								
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	10									5

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R79940

Run ID :Run Order: PHSC_101-H_120514A: 2	SampType: Initial Calibration Verification Standard	Sample ID: SC 150	Method: A2510 B
Analysis Date: 05/14/12 10:27	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	149	1.0	150
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: PHSC_101-H_120514A: 3	SampType: Initial Calibration Verification Standard	Sample ID: SC 5000	Method: A2510 B
Analysis Date: 05/14/12 10:30	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	5050	1.0	5000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: PHSC_101-H_120514A: 4	SampType: Initial Calibration Verification Standard	Sample ID: SC 20000	Method: A2510 B
Analysis Date: 05/14/12 10:32	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	20000	1.0	20000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: PHSC_101-H_120514A: 5	SampType: Initial Calibration Verification Standard	Sample ID: SC 2ND 1000	Method: A2510 B
Analysis Date: 05/14/12 10:34	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	1000	1.0	1000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: PHSC_101-H_120514A: 17	SampType: Sample Duplicate	Sample ID: H12050224-004ADUP	Method: A2510 B
Analysis Date: 05/14/12 11:32	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	353	1.0	
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R79940

Run ID :Run Order: PHSC_101-H_120514A: 45	SampType: Sample Duplicate	Sample ID: H12050230-009ADUP	Method: A2510 B								
Analysis Date: 05/14/12 12:09	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	407	1.0						407	0.0	10	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R79940

Run ID :Run Order: PHSC_101-H_120514A: 1	SampType: Initial Calibration Verification Standard				Sample ID: pH 7			Method: A4500-H B			
Analysis Date: 05/14/12 10:25	Units: s.u.				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.99	0.10	7		100	98	102				

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: PHSC_101-H_120514A: 16	SampType: Sample Duplicate				Sample ID: H12050224-004ADUP			Method: A4500-H B			
Analysis Date: 05/14/12 11:32	Units: s.u.				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.11	0.10						7.13	0.3	3	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: PHSC_101-H_120514A: 44	SampType: Sample Duplicate				Sample ID: H12050230-009ADUP			Method: A4500-H B			
Analysis Date: 05/14/12 12:09	Units: s.u.				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.10	0.10						8.13	0.4	3	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224

ANALYTICAL QC SUMMARY REPORT

Date: 30-May-12

Project: Section 35 Groundwater

BatchID: R79951

Run ID :Run Order: ICP2-HE_120514A: 6	SampType: Initial Calibration Verification Standard				Sample ID: ICV			Method: E200.7			
Analysis Date: 05/14/12 10:20	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
Calcium	40.0	1.0	40		100	95	105				
Magnesium	39.1	1.0	40		98	95	105				
Potassium	39.4	1.0	40		99	95	105				
Sodium	39.9	1.0	40		100	95	105				

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICP2-HE_120514A: 7	SampType: Continuing Calibration Verification Standard				Sample ID: CCV-1			Method: E200.7			
Analysis Date: 05/14/12 10:24	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
Calcium	25.4	1.0	25		102	95	105				
Magnesium	24.3	1.0	25		97	95	105				
Potassium	24.8	1.0	25		99	95	105				
Sodium	25.0	1.0	25		100	95	105				

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICP2-HE_120514A: 10	SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.7			
Analysis Date: 05/14/12 10:35	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
Calcium	493	1.0	500		99	80	120				
Magnesium	502	1.0	500		100	80	120				
Potassium	-0.0560	1.0				0	0				
Sodium	0.0364	1.0				0	0				

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICP2-HE_120514A: 11	SampType: Interference Check Sample AB				Sample ID: IC SAB			Method: E200.7			
Analysis Date: 05/14/12 10:39	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
Calcium	500	1.0	500		100	80	120				
Magnesium	501	1.0	500		100	80	120				
Potassium	21.4	1.0	20		107	80	120				
Sodium	21.6	1.0	20		108	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224

ANALYTICAL QC SUMMARY REPORT

Date: 30-May-12

Project: Section 35 Groundwater

BatchID: R79951

Run ID :Run Order: ICP2-HE_120514A: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 05/14/12 10:39	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

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Run ID :Run Order: ICP2-HE_120514A: 13	SampType: Method Blank	Sample ID: ICB	Method: E200.7								
Analysis Date: 05/14/12 10:47	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
Calcium	0.03	0.008									
Magnesium	ND	0.003									
Potassium	ND	0.04									
Sodium	ND	0.01									

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Run ID :Run Order: ICP2-HE_120514A: 14	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.7								
Analysis Date: 05/14/12 10:51	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
Calcium	50.0	1.0	50	0.03297	100	85	115				
Magnesium	47.6	1.0	50		95	85	115				
Potassium	46.4	1.0	50		93	85	115				
Sodium	47.4	1.0	50		95	85	115				

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Run ID :Run Order: ICP2-HE_120514A: 43	SampType: Continuing Calibration Verification Standard	Sample ID: CCV	Method: E200.7								
Analysis Date: 05/14/12 12:41	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
Calcium	26.1	1.0	25		104	90	110				
Magnesium	23.1	1.0	25		93	90	110				
Potassium	23.7	1.0	25		95	90	110				
Sodium	24.4	1.0	25		97	90	110				

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224

ANALYTICAL QC SUMMARY REPORT

Date: 30-May-12

Project: Section 35 Groundwater

BatchID: R79951

Run ID :Run Order: ICP2-HE_120514A: 54		SampType: Sample Matrix Spike			Sample ID: H12050224-003BMS2			Method: E200.7			
Analysis Date: 05/14/12 13:23		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
Calcium	82.6	1.0	50	33.34	99	70	130				
Magnesium	60.2	1.0	50	15.64	89	70	130				
Potassium	48.2	1.0	50	1.1	94	70	130				
Sodium	50.8	1.0	50	2.287	97	70	130				

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICP2-HE_120514A: 55		SampType: Continuing Calibration Verification Standard			Sample ID: CCV			Method: E200.7			
Analysis Date: 05/14/12 13:27		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
Calcium	26.3	1.0	25		105	90	110				
Magnesium	23.1	1.0	25		93	90	110				
Potassium	23.8	1.0	25		95	90	110				
Sodium	24.5	1.0	25		98	90	110				

Associated samples: H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICP2-HE_120514A: 57		SampType: Sample Matrix Spike Duplicate			Sample ID: H12050224-003BMSD2			Method: E200.7			
Analysis Date: 05/14/12 13:34		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
Calcium	81.2	1.0	50	33.34	96	70	130	82.59	1.7	20	
Magnesium	59.0	1.0	50	15.64	87	70	130	60.19	2.1	20	
Potassium	45.8	1.0	50	1.1	89	70	130	48.15	5.0	20	
Sodium	48.4	1.0	50	2.287	92	70	130	50.83	4.9	20	

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R79960

Run ID :Run Order: MAN-TECH_120514A: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B
Analysis Date: 05/14/12 17:21	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	2	1	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-008A**

Run ID :Run Order: MAN-TECH_120514A: 10	SampType: Laboratory Control Sample	Sample ID: LCS-05022012	Method: A2320 B
Analysis Date: 05/14/12 17:29	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	640	4.0	600

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-008A**

Run ID :Run Order: MAN-TECH_120514A: 18	SampType: Sample Duplicate	Sample ID: H12050222-003ADUP	Method: A2320 B
Analysis Date: 05/14/12 17:51	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	40	4.0	
Bicarbonate as HCO3	49	4.0	
Carbonate as CO3	ND	4.0	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-008A**

Run ID :Run Order: MAN-TECH_120514A: 33	SampType: Sample Matrix Spike	Sample ID: H12050223-001AMS	Method: A2320 B
Analysis Date: 05/14/12 18:48	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	860	4.0	600

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-008A**

Run ID :Run Order: MAN-TECH_120514A: 37	SampType: Sample Duplicate	Sample ID: H12050224-001ADUP	Method: A2320 B
Analysis Date: 05/14/12 18:56	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	ND	4.0	
Bicarbonate as HCO3	ND	4.0	
Carbonate as CO3	ND	4.0	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R79960

Run ID :Run Order: MAN-TECH_120514A: 37	SampType: Sample Duplicate	Sample ID: H12050224-001ADUP	Method: A2320 B								
Analysis Date: 05/14/12 18:56	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: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-008A**



Client: MT DEQ-Site Response
Work Order: H12050224

ANALYTICAL QC SUMMARY REPORT

Date: 30-May-12

Project: Section 35 Groundwater

BatchID: R79964

Run ID :Run Order: IC102-H_120514A: 13		SampType: Initial Calibration Verification Standard			Sample ID: ICV051412-12			Method: E300.0			
Analysis Date: 05/14/12 12:43		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	1.0	100		100	90	110				
Sulfate	400	1.0	400		101	90	110				

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: IC102-H_120514A: 14		SampType: Method Blank			Sample ID: ICB051412-13			Method: E300.0			
Analysis Date: 05/14/12 12:56		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.03									
Sulfate	ND	0.1									

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: IC102-H_120514A: 15		SampType: Laboratory Fortified Blank			Sample ID: LFB051412-14			Method: E300.0			
Analysis Date: 05/14/12 13:10		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51	1.0	50		102	90	110				
Sulfate	210	1.1	200		103	90	110				

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: IC102-H_120514A: 31		SampType: Continuing Calibration Verification Standard			Sample ID: CCV051412-30			Method: E300.0			
Analysis Date: 05/14/12 16:48		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98	1.0	100		98	90	110				
Sulfate	390	1.0	400		99	90	110				

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: IC102-H_120514A: 34		SampType: Sample Matrix Spike			Sample ID: H12050222-009AMS			Method: E300.0			
Analysis Date: 05/14/12 17:28		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	50	1.0	50	0.373	99	90	110				
Sulfate	240	1.1	200	35.91	102	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R79964

Run ID :Run Order: IC102-H_120514A: 34	SampType: Sample Matrix Spike	Sample ID: H12050222-009AMS	Method: E300.0								
Analysis Date: 05/14/12 17:28	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: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: IC102-H_120514A: 35	SampType: Sample Matrix Spike Duplicate	Sample ID: H12050222-009AMSD	Method: E300.0								
Analysis Date: 05/14/12 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
Chloride	50	1.0	50	0.373	99	90	110	50.01	0.5	20	
Sulfate	240	1.1	200	35.91	101	90	110	239.1	0.6	20	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: IC102-H_120514A: 48	SampType: Sample Matrix Spike	Sample ID: H12050230-001AMS	Method: E300.0								
Analysis Date: 05/14/12 20:39	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	59	1.0	50	9.21	100	90	110				
Sulfate	230	1.1	200	23.91	102	90	110				

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: IC102-H_120514A: 49	SampType: Sample Matrix Spike Duplicate	Sample ID: H12050230-001AMSD	Method: E300.0								
Analysis Date: 05/14/12 20:52	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	59	1.0	50	9.21	100	90	110	59.24	0.1	20	
Sulfate	230	1.1	200	23.91	101	90	110	227.6	0.9	20	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80023

Run ID :Run Order: MAN-TECH_120516B: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B
Analysis Date: 05/16/12 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	
Alkalinity, Total as CaCO3	2	1	
Associated samples: H12050224-007A			

Run ID :Run Order: MAN-TECH_120516B: 10	SampType: Laboratory Control Sample	Sample ID: LCS-05152012	Method: A2320 B
Analysis Date: 05/16/12 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	
Alkalinity, Total as CaCO3	630	4.0	600
	1.95	105	90
		110	
Associated samples: H12050224-007A			

Run ID :Run Order: MAN-TECH_120516B: 14	SampType: Sample Duplicate	Sample ID: H12040492-001ADUP	Method: A2320 B
Analysis Date: 05/16/12 17:21	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	
Alkalinity, Total as CaCO3	540	4.0	
Bicarbonate as HCO3	590	4.0	550.8
Carbonate as CO3	35	4.0	606.2
			32.34
			1.7
			2.8
			8.5
Associated samples: H12050224-007A			

Run ID :Run Order: MAN-TECH_120516B: 26	SampType: Sample Matrix Spike	Sample ID: H12050224-003AMS	Method: A2320 B
Analysis Date: 05/16/12 18:04	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	
Alkalinity, Total as CaCO3	790	4.0	600
	168.6	104	80
		120	
Associated samples: H12050224-007A			

Run ID :Run Order: MAN-TECH_120516B: 38	SampType: Sample Duplicate	Sample ID: H12050224-008ADUP	Method: A2320 B
Analysis Date: 05/16/12 18:48	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	
Alkalinity, Total as CaCO3	250	4.0	
Bicarbonate as HCO3	300	4.0	247.2
Carbonate as CO3	ND	4.0	301.5
			0.1
			0.1
Associated samples: H12050224-007A			



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80023

Run ID :Run Order: MAN-TECH_120516B: 38	SampType: Sample Duplicate	Sample ID: H12050224-008ADUP	Method: A2320 B								
Analysis Date: 05/16/12 18:48	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: **H12050224-007A**



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80038

Run ID :Run Order: ICPMS204-B_120516B: 8		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 05/16/12 14:08		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.260	0.10	0.25		104	90	110				
Arsenic	0.0511	0.0050	0.05		102	90	110				
Copper	0.0529	0.010	0.05		106	90	110				
Iron	0.265	0.030	0.25		106	90	110				
Lead	0.0498	0.010	0.05		100	90	110				
Manganese	0.252	0.010	0.25		101	90	110				
Zinc	0.0532	0.010	0.05		106	90	110				

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B**

Run ID :Run Order: ICPMS204-B_120516B: 9		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 05/16/12 14:13		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	38.4	0.10	40		96	70	130				
Arsenic	0.000272	0.0050									
Copper	0.000376	0.010									
Iron	95.4	0.030	100		95	70	130				
Lead	0.000144	0.010									
Manganese	0.000204	0.010									
Zinc	0.000975	0.010									

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B**

Run ID :Run Order: ICPMS204-B_120516B: 10		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 05/16/12 14:17		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.0	0.10	40		98	70	130				
Arsenic	0.0102	0.0050	0.01		102	70	130				
Copper	0.0200	0.010	0.02		100	70	130				
Iron	95.9	0.030	100		96	70	130				
Lead	0.000125	0.010				0	0				
Manganese	0.0194	0.010	0.02		97	70	130				
Zinc	0.0107	0.010	0.01		107	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224

ANALYTICAL QC SUMMARY REPORT

Date: 30-May-12

Project: Section 35 Groundwater

BatchID: R80038

Run ID :Run Order: ICPMS204-B_120516B: 10	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 05/16/12 14:17	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B

Run ID :Run Order: ICPMS204-B_120516B: 23	SampType: Method Blank	Sample ID: ICB	Method: E200.8								
Analysis Date: 05/16/12 15:17	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0003									
Arsenic	ND	3E-05									
Copper	ND	3E-05									
Iron	ND	0.0002									
Lead	ND	1.0E-05									
Manganese	7E-05	1E-05									
Zinc	0.0003	0.0003									

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B

Run ID :Run Order: ICPMS204-B_120516B: 24	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.8								
Analysis Date: 05/16/12 15:21	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0478	0.10	0.05		96	85	115				
Arsenic	0.0478	0.0050	0.05		96	85	115				
Copper	0.0474	0.010	0.05		95	85	115				
Iron	4.77	0.030	5		95	85	115				
Lead	0.0480	0.010	0.05		96	85	115				
Manganese	0.0489	0.010	0.05	0.0000657	98	85	115				
Zinc	0.0501	0.010	0.05	0.0003007	100	85	115				

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B

Run ID :Run Order: ICPMS204-B_120516B: 152	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 05/17/12 01:00	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.261	0.10	0.25		104	90	110				
Arsenic	0.0506	0.0050	0.05		101	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80038

Run ID :Run Order: ICPMS204-B_120516B: 152	SampType: Initial Calibration Verification Standard				Sample ID: ICV STD	Method: E200.8					
Analysis Date: 05/17/12 01:00	Units: mg/L				Prep Info:	Prep Date:			Prep Method:		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0523	0.010	0.05		105	90	110				
Iron	0.263	0.030	0.25		105	90	110				
Lead	0.0508	0.010	0.05		102	90	110				
Manganese	0.263	0.010	0.25		105	90	110				
Zinc	0.0524	0.010	0.05		105	90	110				

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B**

Run ID :Run Order: ICPMS204-B_120516B: 153	SampType: Interference Check Sample A				Sample ID: ICSA	Method: E200.8					
Analysis Date: 05/17/12 01:05	Units: mg/L				Prep Info:	Prep Date:			Prep Method:		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.5	0.10	40		94	70	130				
Arsenic	0.000330	0.0050									
Copper	0.000115	0.010									
Iron	94.8	0.030	100		95	70	130				
Lead	0.000133	0.010									
Manganese	0.000158	0.010									
Zinc	0.00117	0.010									

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B**

Run ID :Run Order: ICPMS204-B_120516B: 154	SampType: Interference Check Sample AB				Sample ID: ICSAB	Method: E200.8					
Analysis Date: 05/17/12 01:09	Units: mg/L				Prep Info:	Prep Date:			Prep Method:		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.8	0.10	40		95	70	130				
Arsenic	0.0102	0.0050	0.01		102	70	130				
Copper	0.0195	0.010	0.02		98	70	130				
Iron	93.8	0.030	100		94	70	130				
Lead	0.000112	0.010				0	0				
Manganese	0.0191	0.010	0.02		96	70	130				
Zinc	0.0109	0.010	0.01		109	70	130				

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80038

Run ID :Run Order: ICPMS204-B_120516B: 190		SampType: Sample Matrix Spike			Sample ID: H12050224-001BMS				Method: E200.8		
Analysis Date: 05/17/12 03:54		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0456	0.030	0.05		91	70	130				
Arsenic	0.0454	0.0010	0.05		91	70	130				
Copper	0.0463	0.0050	0.05		93	70	130				
Iron	4.46	0.030	5	0.008713	89	70	130				
Lead	0.0478	0.0010	0.05	0.0000123	96	70	130				
Manganese	0.0466	0.0010	0.05	0.0002243	93	70	130				
Zinc	0.0480	0.010	0.05	0.001073	94	70	130				

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B

Run ID :Run Order: ICPMS204-B_120516B: 191		SampType: Sample Matrix Spike Duplicate			Sample ID: H12050224-001BMSD				Method: E200.8		
Analysis Date: 05/17/12 03:59		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0461	0.030	0.05		92	70	130	0.04561	1.2	20	
Arsenic	0.0461	0.0010	0.05		92	70	130	0.0454	1.6	20	
Copper	0.0465	0.0050	0.05		93	70	130	0.04628	0.5	20	
Iron	4.46	0.030	5	0.008713	89	70	130	4.456	0.2	20	
Lead	0.0481	0.0010	0.05	0.0000123	96	70	130	0.04784	0.6	20	
Manganese	0.0475	0.0010	0.05	0.0002243	95	70	130	0.04659	2.0	20	
Zinc	0.0479	0.010	0.05	0.001073	94	70	130	0.04804	0.3	20	

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80091

Run ID :Run Order: ICPMS204-B_120518A: 8		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8				
Analysis Date: 05/18/12 10:31		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	0.245	0.10	0.25		98	90	110					
Arsenic	0.0505	0.0050	0.05		101	90	110					
Cadmium	0.0266	0.0010	0.025		107	90	110					
Copper	0.0520	0.010	0.05		104	90	110					
Iron	0.255	0.030	0.25		102	90	110					
Lead	0.0500	0.010	0.05		100	90	110					
Zinc	0.0524	0.010	0.05		105	90	110					

Associated samples: H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICPMS204-B_120518A: 9		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8				
Analysis Date: 05/18/12 10:35		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	37.5	0.10	40		94	70	130					
Arsenic	0.000239	0.0050										
Cadmium	0.00124	0.0010										
Copper	0.000311	0.010										
Iron	98.0	0.030	100		98	70	130					
Lead	0.000153	0.010										
Zinc	0.00116	0.010										

Associated samples: H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICPMS204-B_120518A: 10		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8				
Analysis Date: 05/18/12 10:40		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	36.9	0.10	40		92	70	130					
Arsenic	0.0101	0.0050	0.01		101	70	130					
Cadmium	0.0107	0.0010	0.01		107	70	130					
Copper	0.0200	0.010	0.02		100	70	130					
Iron	96.4	0.030	100		96	70	130					
Lead	0.000133	0.010				0	0					
Zinc	0.0107	0.010	0.01		107	70	130					

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224

ANALYTICAL QC SUMMARY REPORT

Date: 30-May-12

Project: Section 35 Groundwater

BatchID: R80091

Run ID :Run Order: ICPMS204-B_120518A: 10	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 05/18/12 10:40	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICPMS204-B_120518A: 22	SampType: Method Blank	Sample ID: ICB	Method: E200.8								
Analysis Date: 05/18/12 11:34	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0003									
Arsenic	ND	3E-05									
Cadmium	ND	1E-05									
Copper	ND	3E-05									
Iron	0.0009	0.0002									
Lead	ND	1.0E-05									
Zinc	0.0003	0.0003									

Associated samples: H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICPMS204-B_120518A: 23	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.8								
Analysis Date: 05/18/12 11:39	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0473	0.10	0.05		95	85	115				
Arsenic	0.0481	0.0050	0.05		96	85	115				
Cadmium	0.0473	0.0010	0.05		95	85	115				
Copper	0.0469	0.010	0.05		94	85	115				
Iron	4.68	0.030	5	0.0009028	93	85	115				
Lead	0.0476	0.010	0.05		95	85	115				
Zinc	0.0489	0.010	0.05	0.00028	97	85	115				

Associated samples: H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICPMS204-B_120518A: 77	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 05/18/12 15:45	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.256	0.10	0.25		102	90	110				
Arsenic	0.0513	0.0050	0.05		103	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80091

Run ID :Run Order: ICPMS204-B_120518A: 77	SampType: Initial Calibration Verification Standard				Sample ID: ICV STD	Method: E200.8					
Analysis Date: 05/18/12 15:45	Units: mg/L				Prep Info:	Prep Date:		Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0266	0.0010	0.025		106	90	110				
Copper	0.0522	0.010	0.05		104	90	110				
Iron	0.257	0.030	0.25		103	90	110				
Lead	0.0499	0.010	0.05		100	90	110				
Zinc	0.0526	0.010	0.05		105	90	110				

Associated samples: **H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Run ID :Run Order: ICPMS204-B_120518A: 78	SampType: Interference Check Sample A				Sample ID: ICSA	Method: E200.8					
Analysis Date: 05/18/12 15:49	Units: mg/L				Prep Info:	Prep Date:		Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.7	0.10	40		94	70	130				
Arsenic	0.000183	0.0050									
Cadmium	0.000958	0.0010									
Copper	0.000211	0.010									
Iron	94.5	0.030	100		95	70	130				
Lead	0.000127	0.010									
Zinc	0.000962	0.010									

Associated samples: **H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Run ID :Run Order: ICPMS204-B_120518A: 79	SampType: Interference Check Sample AB				Sample ID: ICSAB	Method: E200.8					
Analysis Date: 05/18/12 15:54	Units: mg/L				Prep Info:	Prep Date:		Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.6	0.10	40		94	70	130				
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0103	0.0010	0.01		103	70	130				
Copper	0.0199	0.010	0.02		99	70	130				
Iron	95.3	0.030	100		95	70	130				
Lead	0.000130	0.010				0	0				
Zinc	0.0110	0.010	0.01		110	70	130				

Associated samples: **H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80091

Run ID :Run Order: ICPMS204-B_120518A: 124		SampType: Sample Matrix Spike			Sample ID: H12050224-004BMS				Method: E200.8		
Analysis Date: 05/18/12 19:18		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0538	0.030	0.05	0.006671	94	70	130				
Arsenic	0.0513	0.0010	0.05	0.0008638	101	70	130				
Cadmium	0.0483	0.0010	0.05		97	70	130				
Copper	0.0482	0.0050	0.05	0.0007882	95	70	130				
Iron	4.76	0.030	5	0.01101	95	70	130				
Lead	0.0498	0.0010	0.05		100	70	130				
Zinc	0.0506	0.010	0.05	0.002597	96	70	130				

Associated samples: H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICPMS204-B_120518A: 125		SampType: Sample Matrix Spike Duplicate			Sample ID: H12050224-004BMSD				Method: E200.8		
Analysis Date: 05/18/12 19:23		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0549	0.030	0.05	0.006671	96	70	130	0.05384	1.9	20	
Arsenic	0.0512	0.0010	0.05	0.0008638	101	70	130	0.05131	0.2	20	
Cadmium	0.0481	0.0010	0.05		96	70	130	0.04827	0.3	20	
Copper	0.0485	0.0050	0.05	0.0007882	95	70	130	0.04819	0.7	20	
Iron	4.81	0.030	5	0.01101	96	70	130	4.763	0.9	20	
Lead	0.0496	0.0010	0.05		99	70	130	0.04977	0.4	20	
Zinc	0.0489	0.010	0.05	0.002597	93	70	130	0.05064	3.5	20	

Associated samples: H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICPMS204-B_120518A: 191		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD				Method: E200.8		
Analysis Date: 05/19/12 00:22		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.257	0.10	0.25		103	90	110				
Arsenic	0.0506	0.0050	0.05		101	90	110				
Cadmium	0.0270	0.0010	0.025		108	90	110				
Copper	0.0528	0.010	0.05		106	90	110				
Iron	0.260	0.030	0.25		104	90	110				
Lead	0.0511	0.010	0.05		102	90	110				
Zinc	0.0533	0.010	0.05		107	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80091

Run ID :Run Order: **ICPMS204-B_120518A: 191** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
 Analysis Date: **05/19/12 00:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:
 Analytes **Z** Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Associated samples: **H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Run ID :Run Order: **ICPMS204-B_120518A: 192** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
 Analysis Date: **05/19/12 00:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:
 Analytes **Z** Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum	37.9	0.10	40		95	70	130				
Arsenic	0.000245	0.0050									
Cadmium	0.000902	0.0010									
Copper	0.000200	0.010									
Iron	99.0	0.030	100		99	70	130				
Lead	0.000151	0.010									
Zinc	0.000994	0.010									

Associated samples: **H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Run ID :Run Order: **ICPMS204-B_120518A: 193** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
 Analysis Date: **05/19/12 00:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:
 Analytes **Z** Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum	37.0	0.10	40		92	70	130				
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0105	0.0010	0.01		105	70	130				
Copper	0.0204	0.010	0.02		102	70	130				
Iron	97.6	0.030	100		98	70	130				
Lead	0.000124	0.010				0	0				
Zinc	0.0114	0.010	0.01		114	70	130				

Associated samples: **H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80136

Run ID :Run Order: ICPMS204-B_120522A: 8	SampType: Initial Calibration Verification Standard				Sample ID: ICV STD			Method: E200.8			
Analysis Date: 05/22/12 12:20	Units: mg/L				Prep Info: Prep Date:			Prep Method:			
Analytes 11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.261	0.10	0.25		104	90	110				
Arsenic	0.0496	0.0050	0.05		99	90	110				
Cadmium	0.0268	0.0010	0.025		107	90	110				
Calcium	2.65	0.50	2.5		106	90	110				
Copper	0.0514	0.010	0.05		103	90	110				
Iron	0.253	0.030	0.25		101	90	110				
Lead	0.0517	0.010	0.05		103	90	110				
Magnesium	2.50	0.50	2.5		100	90	110				
Manganese	0.262	0.010	0.25		105	90	110				
Sodium	2.65	0.50	2.5		106	90	110				
Zinc	0.0525	0.010	0.05		105	90	110				

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Run ID :Run Order: ICPMS204-B_120522A: 9	SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.8			
Analysis Date: 05/22/12 12:25	Units: mg/L				Prep Info: Prep Date:			Prep Method:			
Analytes 11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.7	0.10	40		99	70	130				
Arsenic	0.000117	0.0050									
Cadmium	0.000792	0.0010									
Calcium	125	0.50	120		104	70	130				
Copper	-0.000187	0.010									
Iron	102	0.030	100		102	70	130				
Lead	0.000165	0.010									
Magnesium	41.4	0.50	40		103	70	130				
Manganese	0.000123	0.010									
Sodium	102	0.50	100		102	70	130				
Zinc	0.00113	0.010									

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80136

Run ID :Run Order: ICPMS204-B_120522A: 10		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 05/22/12 12:29		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.5	0.10	40		99	70	130				
Arsenic	0.0112	0.0050	0.01		112	70	130				
Cadmium	0.0107	0.0010	0.01		107	70	130				
Calcium	122	0.50	120		102	70	130				
Copper	0.0206	0.010	0.02		103	70	130				
Iron	100	0.030	100		100	70	130				
Lead	0.000147	0.010				0	0				
Magnesium	41.3	0.50	40		103	70	130				
Manganese	0.0209	0.010	0.02		104	70	130				
Sodium	102	0.50	100		102	70	130				
Zinc	0.0115	0.010	0.01		115	70	130				

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Run ID :Run Order: ICPMS204-B_120522A: 18		SampType: Method Blank			Sample ID: ICB			Method: E200.8			
Analysis Date: 05/22/12 13:07		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0003									
Arsenic	3E-05	3E-05									
Cadmium	ND	1E-05									
Calcium	ND	0.003									
Copper	ND	3E-05									
Iron	0.0009	0.0002									
Lead	ND	1.0E-05									
Magnesium	ND	0.0007									
Manganese	ND	1E-05									
Sodium	ND	0.003									
Zinc	0.0007	0.0003									

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80136

Run ID :Run Order: ICPMS204-B_120522A: 29		SampType: Laboratory Fortified Blank			Sample ID: LFB			Method: E200.8				
Analysis Date: 05/22/12 13:59		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes 11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	0.0486	0.10	0.05		97	85	115					
Arsenic	0.0488	0.0050	0.05	0.0000313	98	85	115					
Cadmium	0.0485	0.0010	0.05		97	85	115					
Calcium	48.2	0.50	50		96	85	115					
Copper	0.0458	0.010	0.05		92	85	115					
Iron	4.86	0.030	5	0.0008943	97	85	115					
Lead	0.0503	0.010	0.05		101	85	115					
Magnesium	47.7	0.50	50		95	85	115					
Manganese	0.0496	0.010	0.05		99	85	115					
Sodium	48.3	0.50	50		97	85	115					
Zinc	0.0484	0.010	0.05	0.0007222	95	85	115					

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Run ID :Run Order: ICPMS204-B_120522A: 56		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8				
Analysis Date: 05/22/12 16:04		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes 11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	0.255	0.10	0.25		102	90	110					
Arsenic	0.0502	0.0050	0.05		100	90	110					
Cadmium	0.0261	0.0010	0.025		104	90	110					
Calcium	2.66	0.50	2.5		106	90	110					
Copper	0.0518	0.010	0.05		104	90	110					
Iron	0.256	0.030	0.25		103	90	110					
Lead	0.0498	0.010	0.05		100	90	110					
Magnesium	2.51	0.50	2.5		100	90	110					
Manganese	0.253	0.010	0.25		101	90	110					
Sodium	2.61	0.50	2.5		104	90	110					
Zinc	0.0521	0.010	0.05		104	90	110					

Associated samples: **H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80136

Run ID :Run Order: ICPMS204-B_120522A: 57		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 05/22/12 16:08		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.6	0.10	40		99	70	130				
Arsenic	0.000141	0.0050									
Cadmium	0.000820	0.0010									
Calcium	118	0.50	120		98	70	130				
Copper	0.000129	0.010									
Iron	101	0.030	100		101	70	130				
Lead	0.000152	0.010									
Magnesium	41.2	0.50	40		103	70	130				
Manganese	0.000150	0.010									
Sodium	101	0.50	100		101	70	130				
Zinc	0.00100	0.010									

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICPMS204-B_120522A: 58		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 05/22/12 16:13		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.5	0.10	40		99	70	130				
Arsenic	0.0108	0.0050	0.01		108	70	130				
Cadmium	0.0108	0.0010	0.01		108	70	130				
Calcium	121	0.50	120		101	70	130				
Copper	0.0211	0.010	0.02		106	70	130				
Iron	101	0.030	100		101	70	130				
Lead	0.000125	0.010				0	0				
Magnesium	40.7	0.50	40		102	70	130				
Manganese	0.0205	0.010	0.02		102	70	130				
Sodium	101	0.50	100		101	70	130				
Zinc	0.0117	0.010	0.01		117	70	130				

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80136

Run ID :Run Order: ICPMS204-B_120522A: 105		SampType: Sample Matrix Spike			Sample ID: H12050224-006BMS				Method: E200.8		
Analysis Date: 05/22/12 19:52		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0684	0.030	0.05	0.01917	98	70	130				
Arsenic	0.0510	0.0010	0.05	0.000753	100	70	130				
Cadmium	0.0491	0.0010	0.05		98	70	130				
Calcium	96.6	1.0	50	47.99	97	70	130				
Copper	0.0496	0.0050	0.05	0.0001132	99	70	130				
Iron	4.94	0.030	5	0.01903	99	70	130				
Lead	0.0500	0.0010	0.05	0.0000367	100	70	130				
Magnesium	59.9	1.0	50	10.45	99	70	130				
Manganese	0.0497	0.0010	0.05	0.004022	91	70	130				
Sodium	53.5	1.0	50	2.649	102	70	130				
Zinc	0.0514	0.010	0.05	0.001487	100	70	130				

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order: ICPMS204-B_120522A: 106		SampType: Sample Matrix Spike Duplicate			Sample ID: H12050224-006BMSD				Method: E200.8		
Analysis Date: 05/22/12 19:57		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0627	0.030	0.05	0.01917	87	70	130	0.0684	8.6	20	
Arsenic	0.0510	0.0010	0.05	0.000753	101	70	130	0.05098	0.1	20	
Cadmium	0.0479	0.0010	0.05		96	70	130	0.04914	2.6	20	
Calcium	95.8	1.0	50	47.99	96	70	130	96.65	0.9	20	
Copper	0.0491	0.0050	0.05	0.0001132	98	70	130	0.0496	1.1	20	
Iron	5.11	0.030	5	0.01903	102	70	130	4.945	3.2	20	
Lead	0.0487	0.0010	0.05	0.0000367	97	70	130	0.04995	2.5	20	
Magnesium	59.5	1.0	50	10.45	98	70	130	59.89	0.7	20	
Manganese	0.0481	0.0010	0.05	0.004022	88	70	130	0.04972	3.2	20	
Sodium	53.1	1.0	50	2.649	101	70	130	53.52	0.7	20	
Zinc	0.0506	0.010	0.05	0.001487	98	70	130	0.05136	1.6	20	

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80136

Run ID :Run Order:	ICPMS204-B_120522A: 216	SampType:	Initial Calibration Verification Standard	Sample ID:	ICV STD	Method:	E200.8					
Analysis Date:	05/23/12 04:29	Units:	mg/L	Prep Info:	Prep Date:	Prep Method:						
Analytes	11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.262	0.10	0.25	105	90	110						
Arsenic	0.0507	0.0050	0.05	101	90	110						
Cadmium	0.0266	0.0010	0.025	106	90	110						
Calcium	2.69	0.50	2.5	108	90	110						
Copper	0.0526	0.010	0.05	105	90	110						
Iron	0.258	0.030	0.25	103	90	110						
Lead	0.0502	0.010	0.05	100	90	110						
Magnesium	2.54	0.50	2.5	102	90	110						
Manganese	0.260	0.010	0.25	104	90	110						
Sodium	2.66	0.50	2.5	106	90	110						
Zinc	0.0525	0.010	0.05	105	90	110						

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Run ID :Run Order:	ICPMS204-B_120522A: 217	SampType:	Interference Check Sample A	Sample ID:	ICSA	Method:	E200.8					
Analysis Date:	05/23/12 04:34	Units:	mg/L	Prep Info:	Prep Date:	Prep Method:						
Analytes	11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.2	0.10	40	101	70	130						
Arsenic	8.30E-05	0.0050										
Cadmium	0.000701	0.0010										
Calcium	123	0.50	120	102	70	130						
Copper	0.000120	0.010										
Iron	100	0.030	100	100	70	130						
Lead	0.000157	0.010										
Magnesium	41.2	0.50	40	103	70	130						
Manganese	0.000100	0.010										
Sodium	101	0.50	100	101	70	130						
Zinc	0.00122	0.010										

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 30-May-12

BatchID: R80136

Run ID :Run Order:	ICPMS204-B_120522A: 218	SampType:	Interference Check Sample AB	Sample ID:	ICSAB	Method:	E200.8					
Analysis Date:	05/23/12 04:38	Units:	mg/L	Prep Info:	Prep Date:	Prep Method:						
Analytes	11	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.4	0.10	40	101	70	130						
Arsenic	0.0108	0.0050	0.01	107	70	130						
Cadmium	0.0107	0.0010	0.01	107	70	130						
Calcium	123	0.50	120	102	70	130						
Copper	0.0211	0.010	0.02	105	70	130						
Iron	101	0.030	100	101	70	130						
Lead	0.000132	0.010			0	0						
Magnesium	40.9	0.50	40	102	70	130						
Manganese	0.0209	0.010	0.02	105	70	130						
Sodium	100	0.50	100	100	70	130						
Zinc	0.0117	0.010	0.01	117	70	130						

Associated samples: H12050224-001B; H12050224-002B; H12050224-003B; H12050224-004B; H12050224-005B; H12050224-006B; H12050224-007B; H12050224-008B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224

ANALYTICAL QC SUMMARY REPORT

Date: 30-May-12

Project: Section 35 Groundwater

BatchID: TDS120514A

Run ID :Run Order: ACCU-124 (14410200)_120514B: 1	SampType: Method Blank	Sample ID: MB-1_120514A	Method: A2540 C
Analysis Date: 05/14/12 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 Dissolved TDS @ 180 C	8	3	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514B: 2	SampType: Laboratory Control Sample	Sample ID: LCS-2_120514A	Method: A2540 C
Analysis Date: 05/14/12 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 Dissolved TDS @ 180 C	1900	10	2000
	8	95	90
	110		

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514B: 5	SampType: Sample Duplicate	Sample ID: H12050222-001A DUP	Method: A2540 C
Analysis Date: 05/14/12 14:49	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	
Solids, Total Dissolved TDS @ 180 C	12.0	10	
			8
			5

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514B: 7	SampType: Sample Matrix Spike	Sample ID: H12050222-002A MS	Method: A2540 C
Analysis Date: 05/14/12 14:49	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	
Solids, Total Dissolved TDS @ 180 C	2010	10	2000
	10	100	80
			120

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514B: 14	SampType: Sample Duplicate	Sample ID: H12050223-001A DUP	Method: A2540 C
Analysis Date: 05/14/12 14:55	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	
Solids, Total Dissolved TDS @ 180 C	436	10	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12050224

ANALYTICAL QC SUMMARY REPORT

Date: 30-May-12

Project: Section 35 Groundwater

BatchID: TDS120514A

Run ID :Run Order: ACCU-124 (14410200)_120514B: 24	SampType: Method Blank	Sample ID: MB-26_120514A	Method: A2540 C
Analysis Date: 05/14/12 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	
Solids, Total Dissolved TDS @ 180 C	10	3	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514B: 25	SampType: Laboratory Control Sample	Sample ID: LCS-27_120514A	Method: A2540 C
Analysis Date: 05/14/12 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	
Solids, Total Dissolved TDS @ 180 C	2140	10	2000
	10	106	90
		110	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514B: 27	SampType: Sample Duplicate	Sample ID: H12050230-002A DUP	Method: A2540 C
Analysis Date: 05/14/12 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	
Solids, Total Dissolved TDS @ 180 C	290	10	
		299	3.1
			5

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514B: 29	SampType: Sample Matrix Spike	Sample ID: H12050230-003A MS	Method: A2540 C
Analysis Date: 05/14/12 15:00	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 Dissolved TDS @ 180 C	2310	10	2000
	397	96	80
		120	

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Run ID :Run Order: ACCU-124 (14410200)_120514B: 39	SampType: Sample Duplicate	Sample ID: H12050230-012A DUP	Method: A2540 C
Analysis Date: 05/14/12 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	
Solids, Total Dissolved TDS @ 180 C	235	10	
		239	1.7
			5

Associated samples: **H12050224-001A; H12050224-002A; H12050224-003A; H12050224-004A; H12050224-005A; H12050224-006A; H12050224-007A; H12050224-008A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount

Workorder Receipt Checklist



H12050224

Login completed by: Wanda Johnson

Date Received: 5/11/2012

Reviewed by: BL2000\sdull

Received by: TLL

Reviewed Date: 5/16/2012

Carrier Hand Del
name:

- | | | | |
|---|---|--|---|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |

Container/Temp Blank temperature: 3.0°C On Ice/Temperature Blank

- | | | | |
|--|---|-----------------------------|--|
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

Metals containers for samples S35-MW-04 & S35-MW-07 do not have a collection time on them. Used time from COC. Wj 5/11/12. Wj



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **MDEA**

Report Mail Address: **See Quote H-645**

Invoice Address: **See Quote H-645**

Project Name, PWS, Permit, Etc.: **Section 35 Groundwater**

Contact Name: **Shelli Handland** Phone/Fax: **841-5033** Email: **shhandland@ent.gov**

Sample Origin: **M4** State: **M4**

EPA/State Compliance: Yes No

Sampler: (Please Print) **A. Grossbach**

Quote/Bottle Order: **As Messrs**

Special Report/Formats:

DW EDD/EDT (Electronic Data)

POTW/MWWT Format: _____

State: _____ LEVEL IV

Other: _____ NELAC

Number of Containers: _____
 Sample Type: A W S V B O DW
 Air Water Soils/Solids
 Vegetation Bioassay Other
 DW - Drinking Water

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED	Standard Turnaround (TAT)	Comments:	Shipped by: Cooler ID(s):	Receipt Temp	Custody Seal	Intact	Signature Match
1 S35-MW-08	5/10/12	0925	W		SEE ATTACHED		Hand del.	3.0 °C	Y	Y	Y
2 S35-MW-09		0928									
3 S35-MW-01		1002									
4 S35-MW-06		1159									
5 S35-MW-04		1246									
6 S35-MW-07		1256									
7 S35-MW-03		1330									
8 S35-MW-02		1615	W								
9											
10											

Relinquished by (print): **William Dreesbach** Date/Time: **5/10/12 9:36** Signature: *[Signature]*

Relinquished by (print): _____ Date/Time: _____ Signature: _____

Received by (print): **Tracey Lomel** Date/Time: **5/11/12 9:36** Signature: *[Signature]*

Received by (print): _____ Date/Time: _____ Signature: _____

Sample Disposal: _____ Return to Client: _____ Lab Disposal: _____

LABORATORY USE ONLY

Shipped by: **Hand del.**

Cooler ID(s): **Y**

Receipt Temp: **3.0 °C**

On Ice: **(Y) N**

Custody Seal: **(N) N**

Intact: **Y N**

Signature Match: **Y N**

Signature: *[Signature]*

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Section 35 Quarterly

Quantity	Analysis	1 ^{Disolved Metals}	2 ^{Total Rec. Metals}	3 ^{Cations}	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
7	Surface Water	1 ^{Disolved Metals}	2 ^{Total Rec. Metals}	3 ^{Cations}	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
9	Groundwater	1 ^{Disolved Metals}		3 ^{Cations}	Chloride ✓	Sulfate ✓	Alkalinity ✓	Hardness	Acidity	TDS ✓	TSS ✓	pH ✓	EC ✓
6	Sediment		4 ^{Total Rec. Metals}										

1 Aluminum

2 Arsenic, cadmium, copper, iron, lead, manganese, and zinc

3 Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc ✓

4 Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

5 Calcium, magnesium, potassium, sodium ✓

UBMC Quarterly

Quantity	Analysis	1 ^{Disolved Metals}	2 ^{Total Rec. Metals}	3 ^{Cations}	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
11	Surface Water	1 ^{Disolved Metals}	2 ^{Total Rec. Metals}	3 ^{Cations}	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
10	Groundwater	1 ^{Disolved Metals}		3 ^{Cations}	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
9	Sediment		4 ^{Total Rec. Metals}										

1 Aluminum

2 Arsenic, cadmium, copper, iron, lead, manganese, and zinc

3 Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

4 Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

5 Calcium, magnesium, potassium, sodium

6 Additional surface water samples may be collected for seeps.



ANALYTICAL SUMMARY REPORT

October 25, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12100097 Quote ID: H645 - UBMC

Project Name: Section 35 Surface Water/Sediment

Energy Laboratories Inc Helena MT received the following 13 samples for MT DEQ-Site Response on 10/3/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12100097-001	S35-SW-07	10/03/12 7:45	10/03/12	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Anion - Cation Balance Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H12100097-002	S35-SW-04	10/03/12 8:21	10/03/12	Aqueous	Same As Above
H12100097-003	S35-SW-03	10/03/12 9:03	10/03/12	Aqueous	Same As Above
H12100097-004	S35-SW-01	10/03/12 10:02	10/03/12	Aqueous	Same As Above
H12100097-005	S35-SW-02	10/03/12 11:20	10/03/12	Aqueous	Same As Above
H12100097-006	S35-SW-05	10/03/12 12:35	10/03/12	Aqueous	Same As Above
H12100097-007	S35-SD-04	10/03/12 8:21	10/03/12	Sediment	Metals by ICP/ICPMS, Total Digestion, Total Metals Soil Preparation
H12100097-008	S35-SD-03	10/03/12 9:03	10/03/12	Sediment	Same As Above
H12100097-009	S35-SD-01	10/03/12 10:02	10/03/12	Sediment	Same As Above
H12100097-010	S35-SD-02	10/03/12 11:20	10/03/12	Sediment	Same As Above
H12100097-011	S35-SD-05	10/03/12 12:35	10/03/12	Sediment	Same As Above
H12100097-012	S35-SW-06	10/03/12 10:18	10/03/12	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Anion - Cation Balance Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H12100097-013	S35-SD-06	10/03/12 10:18	10/03/12	Sediment	Metals by ICP/ICPMS, Total Digestion, Total Metals Soil Preparation

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 Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-07
Lab ID: H12100097-001
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 07:45 **DateReceived:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.3	s.u.	H	0.1		A4500-H B	10/04/12 10:37 / cmm		PHSC_101-H_121004A : 23		R83422
Conductivity @ 25 C	8	umhos/cm		1		A2510 B	10/04/12 10:37 / cmm		PHSC_101-H_121004A : 24		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:46 / cmm	10/04/12 14:25 -124 (14410200)_121004A : 10			18263
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	10/04/12 15:57 / cmm		J-124 (14410200)_121004B : 3		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	10/04/12 17:56 / cmm		MAN-TECH_121004B : 34		R83460
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	10/04/12 17:56 / cmm		MAN-TECH_121004B : 34		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 17:56 / cmm		MAN-TECH_121004B : 34		R83460
Chloride	ND	mg/L		1		E300.0	10/04/12 23:27 / cmm		IC102-H_121004A : 40		R83467
Sulfate	ND	mg/L		1		E300.0	10/04/12 23:27 / cmm		IC102-H_121004A : 40		R83467
Hardness as CaCO3	ND	mg/L		1		A2340 B	10/08/12 07:58 / sld		WATERCALC_121008A : 4		R83484
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/05/12 16:45 / sld		ICP2-HE_121005A : 102		R83483
Calcium	ND	mg/L		1		E200.7	10/04/12 11:02 / sld		ICP2-HE_121004A : 22		R83458
Magnesium	ND	mg/L		1		E200.7	10/04/12 11:02 / sld		ICP2-HE_121004A : 22		R83458
Potassium	ND	mg/L		1		E200.7	10/04/12 11:02 / sld		ICP2-HE_121004A : 22		R83458
Sodium	ND	mg/L		1		E200.7	10/04/12 11:02 / sld		ICP2-HE_121004A : 22		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Cadmium	ND	mg/L		0.00008		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Copper	ND	mg/L		0.001		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Iron	ND	mg/L		0.03		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Manganese	ND	mg/L		0.005		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Zinc	ND	mg/L		0.01		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-04
Lab ID: H12100097-002
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 08:21 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	H	0.1		A4500-H B	10/04/12 10:40 / cmm		PHSC_101-H_121004A : 25		R83422
Conductivity @ 25 C	228	umhos/cm		1		A2510 B	10/04/12 10:40 / cmm		PHSC_101-H_121004A : 26		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:47 / cmm	10/04/12 14:25 -124 (14410200)_121004A : 12			18263
Solids, Total Dissolved TDS @ 180 C	125	mg/L		10		A2540 C	10/04/12 15:58 / cmm		J-124 (14410200)_121004B : 5		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	86	mg/L		4		A2320 B	10/04/12 18:03 / cmm		MAN-TECH_121004B : 36		R83460
Bicarbonate as HCO3	110	mg/L		4		A2320 B	10/04/12 18:03 / cmm		MAN-TECH_121004B : 36		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:03 / cmm		MAN-TECH_121004B : 36		R83460
Chloride	2	mg/L		1		E300.0	10/04/12 23:40 / cmm		IC102-H_121004A : 41		R83467
Sulfate	23	mg/L		1		E300.0	10/04/12 23:40 / cmm		IC102-H_121004A : 41		R83467
Hardness as CaCO3	110	mg/L		1		A2340 B	10/04/12 11:05 / abb		CALC_121005A : 147		R83473
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/05/12 16:49 / sld		ICP2-HE_121005A : 103		R83483
Calcium	25	mg/L		1		E200.7	10/04/12 11:05 / sld		ICP2-HE_121004A : 23		R83458
Magnesium	12	mg/L		1		E200.7	10/04/12 11:05 / sld		ICP2-HE_121004A : 23		R83458
Potassium	ND	mg/L		1		E200.7	10/04/12 11:05 / sld		ICP2-HE_121004A : 23		R83458
Sodium	3	mg/L		1		E200.7	10/04/12 11:05 / sld		ICP2-HE_121004A : 23		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Cadmium	0.00012	mg/L		0.00008		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Copper	0.001	mg/L		0.001		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Iron	0.05	mg/L		0.03		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Manganese	ND	mg/L		0.005		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Zinc	0.05	mg/L		0.01		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-03
Lab ID: H12100097-003
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 09:03 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	H	0.1		A4500-H B	10/04/12 10:43 / cmm		PHSC_101-H_121004A : 27		R83422
Conductivity @ 25 C	227	umhos/cm		1		A2510 B	10/04/12 10:43 / cmm		PHSC_101-H_121004A : 28		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:47 / cmm	10/04/12 14:25-124 (14410200)_121004A : 13			18263
Solids, Total Dissolved TDS @ 180 C	129	mg/L		10		A2540 C	10/04/12 15:58 / cmm		J-124 (14410200)_121004B : 7		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	86	mg/L		4		A2320 B	10/04/12 18:11 / cmm		MAN-TECH_121004B : 38		R83460
Bicarbonate as HCO3	100	mg/L		4		A2320 B	10/04/12 18:11 / cmm		MAN-TECH_121004B : 38		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:11 / cmm		MAN-TECH_121004B : 38		R83460
Chloride	2	mg/L		1		E300.0	10/04/12 23:53 / cmm		IC102-H_121004A : 42		R83467
Sulfate	23	mg/L		1		E300.0	10/04/12 23:53 / cmm		IC102-H_121004A : 42		R83467
Hardness as CaCO3	109	mg/L		1		A2340 B	10/04/12 11:09 / abb		CALC_121005A : 159		R83473
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/05/12 16:53 / sld		ICP2-HE_121005A : 104		R83483
Calcium	24	mg/L		1		E200.7	10/04/12 11:09 / sld		ICP2-HE_121004A : 24		R83458
Magnesium	12	mg/L		1		E200.7	10/04/12 11:09 / sld		ICP2-HE_121004A : 24		R83458
Potassium	ND	mg/L		1		E200.7	10/04/12 11:09 / sld		ICP2-HE_121004A : 24		R83458
Sodium	3	mg/L		1		E200.7	10/04/12 11:09 / sld		ICP2-HE_121004A : 24		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Cadmium	0.00011	mg/L		0.00008		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Copper	0.001	mg/L		0.001		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Iron	0.05	mg/L		0.03		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Manganese	ND	mg/L		0.005		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Zinc	0.05	mg/L		0.01		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-01
Lab ID: H12100097-004
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 10:02 **DateReceived:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.8	s.u.	H	0.1		A4500-H B	10/04/12 10:45 / cmm		PHSC_101-H_121004A : 29		R83422
Conductivity @ 25 C	255	umhos/cm		1		A2510 B	10/04/12 10:45 / cmm		PHSC_101-H_121004A : 30		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:47 / cmm	10/04/12 14:25 -124 (14410200)_121004A : 14			18263
Solids, Total Dissolved TDS @ 180 C	157	mg/L		10		A2540 C	10/04/12 15:59 / cmm		J-124 (14410200)_121004B : 8		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	10/04/12 18:19 / cmm		MAN-TECH_121004B : 40		R83460
Bicarbonate as HCO3	150	mg/L		4		A2320 B	10/04/12 18:19 / cmm		MAN-TECH_121004B : 40		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:19 / cmm		MAN-TECH_121004B : 40		R83460
Chloride	5	mg/L		1		E300.0	10/05/12 00:56 / cmm		IC102-H_121004A : 47		R83467
Sulfate	2	mg/L		1		E300.0	10/05/12 00:56 / cmm		IC102-H_121004A : 47		R83467
Hardness as CaCO3	120	mg/L		1		A2340 B	10/04/12 11:13 / abb		CALC_121005A : 171		R83473
METALS, DISSOLVED											
Aluminum	0.07	mg/L		0.03		E200.7	10/05/12 16:57 / sld		ICP2-HE_121005A : 105		R83483
Calcium	32	mg/L		1		E200.7	10/04/12 11:13 / sld		ICP2-HE_121004A : 25		R83458
Magnesium	10	mg/L		1		E200.7	10/04/12 11:13 / sld		ICP2-HE_121004A : 25		R83458
Potassium	7	mg/L		1		E200.7	10/04/12 11:13 / sld		ICP2-HE_121004A : 25		R83458
Sodium	2	mg/L		1		E200.7	10/04/12 11:13 / sld		ICP2-HE_121004A : 25		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Cadmium	ND	mg/L		0.00008		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Copper	0.002	mg/L		0.001		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Iron	0.15	mg/L		0.03		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Manganese	0.013	mg/L		0.005		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Zinc	ND	mg/L		0.01		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-02
Lab ID: H12100097-005
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 11:20 **DateReceived:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.8	s.u.	H	0.1		A4500-H B	10/04/12 10:48 / cmm		PHSC_101-H_121004A : 31		R83422
Conductivity @ 25 C	150	umhos/cm		1		A2510 B	10/04/12 10:48 / cmm		PHSC_101-H_121004A : 32		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:47 / cmm	10/04/12 14:25-124 (14410200)_121004A : 15			18263
Solids, Total Dissolved TDS @ 180 C	89	mg/L		10		A2540 C	10/04/12 15:59 / cmm		J-124 (14410200)_121004B : 9		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	74	mg/L		4		A2320 B	10/04/12 18:26 / cmm		MAN-TECH_121004B : 42		R83460
Bicarbonate as HCO3	90	mg/L		4		A2320 B	10/04/12 18:26 / cmm		MAN-TECH_121004B : 42		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:26 / cmm		MAN-TECH_121004B : 42		R83460
Chloride	ND	mg/L		1		E300.0	10/05/12 01:08 / cmm		IC102-H_121004A : 48		R83467
Sulfate	2	mg/L		1		E300.0	10/05/12 01:08 / cmm		IC102-H_121004A : 48		R83467
Hardness as CaCO3	70	mg/L		1		A2340 B	10/04/12 11:17 / abb		CALC_121005A : 183		R83473
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/05/12 17:00 / sld		ICP2-HE_121005A : 106		R83483
Calcium	17	mg/L		1		E200.7	10/04/12 11:17 / sld		ICP2-HE_121004A : 26		R83458
Magnesium	7	mg/L		1		E200.7	10/04/12 11:17 / sld		ICP2-HE_121004A : 26		R83458
Potassium	ND	mg/L		1		E200.7	10/04/12 11:17 / sld		ICP2-HE_121004A : 26		R83458
Sodium	2	mg/L		1		E200.7	10/04/12 11:17 / sld		ICP2-HE_121004A : 26		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Cadmium	ND	mg/L		0.00008		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Copper	0.002	mg/L		0.001		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Iron	0.09	mg/L		0.03		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Manganese	0.011	mg/L		0.005		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Zinc	ND	mg/L		0.01		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-05
Lab ID: H12100097-006
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 12:35 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.8	s.u.	H	0.1		A4500-H B	10/04/12 10:50 / cmm		PHSC_101-H_121004A : 33		R83422
Conductivity @ 25 C	212	umhos/cm		1		A2510 B	10/04/12 10:50 / cmm		PHSC_101-H_121004A : 34		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:48 / cmm	10/04/12 14:25 -124 (14410200)_121004A : 16			18263
Solids, Total Dissolved TDS @ 180 C	124	mg/L		10		A2540 C	10/04/12 15:59 / cmm		-124 (14410200)_121004B : 10		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	10/04/12 18:33 / cmm		MAN-TECH_121004B : 44		R83460
Bicarbonate as HCO3	130	mg/L		4		A2320 B	10/04/12 18:33 / cmm		MAN-TECH_121004B : 44		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:33 / cmm		MAN-TECH_121004B : 44		R83460
Chloride	1	mg/L		1		E300.0	10/05/12 01:21 / cmm		IC102-H_121004A : 49		R83467
Sulfate	3	mg/L		1		E300.0	10/05/12 01:21 / cmm		IC102-H_121004A : 49		R83467
Hardness as CaCO3	106	mg/L		1		A2340 B	10/04/12 11:21 / abb		CALC_121005A : 195		R83473
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/05/12 17:04 / sld		ICP2-HE_121005A : 107		R83483
Calcium	24	mg/L		1		E200.7	10/04/12 11:21 / sld		ICP2-HE_121004A : 27		R83458
Magnesium	11	mg/L		1		E200.7	10/04/12 11:21 / sld		ICP2-HE_121004A : 27		R83458
Potassium	2	mg/L		1		E200.7	10/04/12 11:21 / sld		ICP2-HE_121004A : 27		R83458
Sodium	2	mg/L		1		E200.7	10/04/12 11:21 / sld		ICP2-HE_121004A : 27		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Cadmium	ND	mg/L		0.00008		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Copper	ND	mg/L		0.001		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Iron	0.06	mg/L		0.03		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Manganese	0.008	mg/L		0.005		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Zinc	ND	mg/L		0.01		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-04
Lab ID: H12100097-007
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 08:21 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	4970	mg/kg		5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Arsenic	5	mg/kg		5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Cadmium	2	mg/kg		1		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Copper	32	mg/kg		5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Iron	13000	mg/kg		5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Lead	19	mg/kg		5		SW6010B	10/17/12 14:41 / sld	10/10/12 14:57	ICP2-HE_121017B : 22		18328
Manganese	909	mg/kg		5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Zinc	609	mg/kg		5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-03
Lab ID: H12100097-008
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 09:03 **DateReceived:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	5440	mg/kg		5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Arsenic	7	mg/kg		5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Cadmium	1	mg/kg		1		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Copper	27	mg/kg		5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Iron	12400	mg/kg		5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Lead	21	mg/kg		5		SW6010B	10/17/12 14:45 / sld	10/10/12 14:57	ICP2-HE_121017B : 23		18328
Manganese	822	mg/kg		5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Zinc	401	mg/kg		5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-01
Lab ID: H12100097-009
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 10:02 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	13900	mg/kg		5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Arsenic	8	mg/kg		5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Cadmium	ND	mg/kg		1		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Copper	51	mg/kg		5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Iron	14400	mg/kg		5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Lead	15	mg/kg		5		SW6010B	10/17/12 14:48 / sld	10/10/12 14:57	ICP2-HE_121017B : 24		18328
Manganese	788	mg/kg		5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Zinc	61	mg/kg		5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-02
Lab ID: H12100097-010
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 11:20 **DateReceived:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	2610	mg/kg		5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Arsenic	ND	mg/kg		5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Cadmium	ND	mg/kg		1		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Copper	27	mg/kg		5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Iron	1800	mg/kg		5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Lead	ND	mg/kg		5		SW6010B	10/17/12 14:52 / sld	10/10/12 14:57	ICP2-HE_121017B : 25		18328
Manganese	14	mg/kg		5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Zinc	11	mg/kg		5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-05
Lab ID: H12100097-011
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 12:35 **DateReceived:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6030	mg/kg		5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Arsenic	6	mg/kg		5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Cadmium	ND	mg/kg		1		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Copper	29	mg/kg		5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Iron	16600	mg/kg		5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Lead	7	mg/kg		5		SW6010B	10/17/12 14:56 / sld	10/10/12 14:57	ICP2-HE_121017B : 26		18328
Manganese	266	mg/kg		5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Zinc	39	mg/kg		5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-06
Lab ID: H12100097-012
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 10:18 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.	H	0.1		A4500-H B	10/04/12 10:52 / cmm		PHSC_101-H_121004A : 35		R83422
Conductivity @ 25 C	257	umhos/cm		1		A2510 B	10/04/12 10:52 / cmm		PHSC_101-H_121004A : 36		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:48 / cmm	10/04/12 14:25 -124 (14410200)_121004A : 17			18263
Solids, Total Dissolved TDS @ 180 C	138	mg/L		10		A2540 C	10/04/12 15:59 / cmm		-124 (14410200)_121004B : 11		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	10/04/12 18:40 / cmm		MAN-TECH_121004B : 46		R83460
Bicarbonate as HCO3	140	mg/L		4		A2320 B	10/04/12 18:40 / cmm		MAN-TECH_121004B : 46		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:40 / cmm		MAN-TECH_121004B : 46		R83460
Chloride	5	mg/L		1		E300.0	10/05/12 01:33 / cmm		IC102-H_121004A : 50		R83467
Sulfate	2	mg/L		1		E300.0	10/05/12 01:33 / cmm		IC102-H_121004A : 50		R83467
Hardness as CaCO3	120	mg/L		1		A2340 B	10/04/12 11:24 / abb		CALC_121005A : 207		R83473
METALS, DISSOLVED											
Aluminum	0.06	mg/L		0.03		E200.7	10/05/12 17:08 / sld		ICP2-HE_121005A : 108		R83483
Calcium	32	mg/L		1		E200.7	10/04/12 11:24 / sld		ICP2-HE_121004A : 28		R83458
Magnesium	10	mg/L		1		E200.7	10/04/12 11:24 / sld		ICP2-HE_121004A : 28		R83458
Potassium	7	mg/L		1		E200.7	10/04/12 11:24 / sld		ICP2-HE_121004A : 28		R83458
Sodium	2	mg/L		1		E200.7	10/04/12 11:24 / sld		ICP2-HE_121004A : 28		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Cadmium	ND	mg/L		0.00008		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Copper	0.002	mg/L		0.001		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Iron	0.16	mg/L		0.03		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Manganese	0.013	mg/L		0.005		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Zinc	ND	mg/L		0.01		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-06
Lab ID: H12100097-013
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 10:18 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	13300	mg/kg		5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Arsenic	9	mg/kg		5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Cadmium	ND	mg/kg		1		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Copper	54	mg/kg		5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Iron	14700	mg/kg		5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Lead	15	mg/kg		5		SW6010B	10/17/12 14:59 / sld	10/10/12 14:57	ICP2-HE_121017B : 27		18328
Manganese	882	mg/kg		5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Zinc	62	mg/kg		5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: 18256

Run ID :Run Order: ICPMS204-B_121010C: 447		SampType: Method Blank			Sample ID: MB-18256				Method: E200.8		
Analysis Date: 10/11/12 01:30		Units: mg/L			Prep Info: Prep Date: 10/4/2012				Prep Method: E200.2		
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0001	3E-05									
Cadmium	ND	2E-05									
Copper	ND	0.0003									
Iron	ND	0.0007									
Lead	ND	2E-05									
Manganese	ND	5E-05									
Zinc	0.002	0.0007									

Associated samples: **H12100097-001C; H12100097-002C; H12100097-003C; H12100097-004C; H12100097-005C; H12100097-006C; H12100097-012C**

Run ID :Run Order: ICPMS204-B_121010C: 448		SampType: Laboratory Control Sample			Sample ID: LCS-18256				Method: E200.8		
Analysis Date: 10/11/12 01:35		Units: mg/L			Prep Info: Prep Date: 10/4/2012				Prep Method: E200.2		
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.556	0.0010	0.5	0.0001081	111	85	115				
Cadmium	0.282	0.0010	0.25		113	85	115				
Copper	0.517	0.0050	0.5		103	85	115				
Iron	2.50	0.030	2.5		100	85	115				
Lead	0.573	0.0010	0.5		115	85	115				
Manganese	2.69	0.0010	2.5		108	85	115				
Zinc	0.534	0.010	0.5	0.002367	106	85	115				

Associated samples: **H12100097-001C; H12100097-002C; H12100097-003C; H12100097-004C; H12100097-005C; H12100097-006C; H12100097-012C**

Run ID :Run Order: ICPMS204-B_121010C: 355		SampType: Sample Matrix Spike			Sample ID: H12100097-003CMS3				Method: E200.8		
Analysis Date: 10/11/12 18:41		Units: mg/L			Prep Info: Prep Date: 10/4/2012				Prep Method: E200.2		
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.535	0.0010	0.5	0.0002919	107	70	130				
Cadmium	0.276	0.0010	0.25	0.0001103	110	70	130				
Copper	0.520	0.0050	0.5	0.001125	104	70	130				
Iron	2.66	0.030	2.5	0.05012	104	70	130				
Lead	0.574	0.0010	0.5	0.0001232	115	70	130				
Manganese	2.57	0.0010	2.5	0.003305	103	70	130				
Zinc	0.578	0.010	0.5	0.05036	106	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: 18256

Run ID :Run Order: ICPMS204-B_121010C: 356	SampType: Sample Matrix Spike	Sample ID: H12100097-003CMS3	Method: E200.8								
Analysis Date: 10/11/12 18:41	Units: mg/L	Prep Info: Prep Date: 10/4/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: H12100097-001C; H12100097-002C; H12100097-003C; H12100097-004C; H12100097-005C; H12100097-006C; H12100097-012C

Run ID :Run Order: ICPMS204-B_121010C: 356	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100097-003CMSD3	Method: E200.8								
Analysis Date: 10/11/12 18:45	Units: mg/L	Prep Info: Prep Date: 10/4/2012	Prep Method: E200.2								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.544	0.0010	0.5	0.0002919	109	70	130	0.5348	1.7	20	
Cadmium	0.278	0.0010	0.25	0.0001103	111	70	130	0.2758	0.9	20	
Copper	0.534	0.0050	0.5	0.001125	107	70	130	0.5202	2.6	20	
Iron	2.61	0.030	2.5	0.05012	102	70	130	2.656	1.7	20	
Lead	0.583	0.0010	0.5	0.0001232	117	70	130	0.5736	1.6	20	
Manganese	2.61	0.0010	2.5	0.003305	104	70	130	2.568	1.7	20	
Zinc	0.586	0.010	0.5	0.05036	107	70	130	0.5784	1.4	20	

Associated samples: H12100097-001C; H12100097-002C; H12100097-003C; H12100097-004C; H12100097-005C; H12100097-006C; H12100097-012C

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: 18263

Run ID :Run Order: ACCU-124 (14410200)_121004A: 1	SampType: Method Blank	Sample ID: MB-18263	Method: A2540 D								
Analysis Date: 10/04/12 15:44	Units: mg/L	Prep Info: Prep Date: 10/4/2012	Prep Method: A2540 D								
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	2									

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: ACCU-124 (14410200)_121004A: 2	SampType: Laboratory Control Sample	Sample ID: LCS-18263	Method: A2540 D								
Analysis Date: 10/04/12 15:45	Units: mg/L	Prep Info: Prep Date: 10/4/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	2080	10	2000		104	70	130				

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: ACCU-124 (14410200)_121004A: 11	SampType: Sample Duplicate	Sample ID: H12100097-001ADUP	Method: A2540 D								
Analysis Date: 10/04/12 15:46	Units: mg/L	Prep Info: Prep Date: 10/4/2012	Prep Method: A2540 D								
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	10									5

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: ACCU-124 (14410200)_121004A: 22	SampType: Sample Duplicate	Sample ID: H12100099-004ADUP	Method: A2540 D								
Analysis Date: 10/04/12 15:49	Units: mg/L	Prep Info: Prep Date: 10/4/2012	Prep Method: A2540 D								
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	10						4			5

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: 18328

Run ID :Run Order: ICP2-HE_121016D: 67		SampType: Method Blank			Sample ID: MB-18328				Method: SW6010B		
Analysis Date: 10/16/12 19:13		Units: mg/kg			Prep Info: Prep Date: 10/10/2012				Prep Method: SW3050 B		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.3	0.3									
Arsenic	ND	0.4									
Cadmium	0.02	0.01									
Copper	ND	0.2									
Iron	10	0.7									
Manganese	0.1	0.04									
Zinc	0.2	0.1									

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121016D: 68		SampType: Laboratory Fortified Blank			Sample ID: LFB-18328				Method: SW6010B		
Analysis Date: 10/16/12 19:17		Units: mg/kg			Prep Info: Prep Date: 10/10/2012				Prep Method: SW3050 B		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	243	5.0	250	0.3225	97	80	120				
Arsenic	46.8	1.0	50		94	80	120				
Cadmium	22.2	1.0	25	0.0195	89	80	120				
Copper	48.1	1.0	50		96	80	120				
Iron	241	5.0	250	10.39	92	80	120				
Manganese	237	1.0	250	0.1075	95	80	120				
Zinc	47.2	1.0	50	0.1805	94	80	120				

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121016D: 69		SampType: Laboratory Control Sample			Sample ID: LCS-18328				Method: SW6010B		
Analysis Date: 10/16/12 19:21		Units: mg/kg			Prep Info: Prep Date: 10/10/2012				Prep Method: SW3050 B		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	12700	5.0	14550	0.3225	87	50.7	131.3				
Arsenic	263	1.5	339.6		77	72.3	106.4				
Cadmium	111	1.0	135.6	0.0195	82	73	105.1				
Copper	247	1.0	277.2		89	77.5	109.6				
Iron	18800	5.0	22770	10.39	82	39.6	138.3				
Manganese	357	1.0	365.3	0.1075	98	80.8	115.7				
Zinc	181	1.0	210.9	0.1805	86	74.2	109.9				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: 18328

Run ID :Run Order: ICP2-HE_121016D: 69	SampType: Laboratory Control Sample	Sample ID: LCS-18328	Method: SW6010B
Analysis Date: 10/16/12 19:21	Units: mg/kg	Prep Info: Prep Date: 10/10/2012	Prep Method: SW3050 B
Analytes 7	Result PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121016D: 97	SampType: Sample Matrix Spike	Sample ID: H12100099-019AMS	Method: SW6010B
Analysis Date: 10/16/12 21:04	Units: mg/kg	Prep Info: Prep Date: 10/11/2012	Prep Method: SW3050 B
Analytes 7	Result PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	9090 5.0 125 6117	75 125	A
Arsenic	31.2 1.0 25 16.11	60 75 125	S
Cadmium	11.9 1.0 12.5 0.07975	94 75 125	
Copper	36.3 1.0 25 14.54	87 75 125	
Iron	12400 5.0 125 12830	75 125	A
Manganese	433 1.0 125 309.4	99 75 125	
Zinc	108 1.0 25 97.17	43 75 125	S

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121016D: 98	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100099-019AMSD	Method: SW6010B
Analysis Date: 10/16/12 21:08	Units: mg/kg	Prep Info: Prep Date: 10/11/2012	Prep Method: SW3050 B
Analytes 7	Result PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	8470 5.0 125 6117	75 125 9088	7.0 20 A
Arsenic	30.7 1.0 25 16.11	58 75 125 31.22	1.7 20 S
Cadmium	12.4 1.0 12.5 0.07975	99 75 125 11.88	4.7 20
Copper	41.1 1.0 25 14.54	106 75 125 36.28	13 20
Iron	12100 5.0 125 12830	75 125 12430	2.8 20 A
Manganese	362 1.0 125 309.4	42 75 125 433.3	18 20 S
Zinc	114 1.0 25 97.17	67 75 125 107.8	5.6 20 S

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121017B: 17	SampType: Method Blank	Sample ID: MB-18328	Method: SW6010B
Analysis Date: 10/17/12 14:23	Units: mg/kg	Prep Info: Prep Date: 10/10/2012	Prep Method: SW3050 B
Analytes 8	Result PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Aluminum	ND 0.8		
Arsenic	0.6 0.4		

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: 18328

Run ID :Run Order: ICP2-HE_121017B: 17	SampType: Method Blank	Sample ID: MB-18328	Method: SW6010B								
Analysis Date: 10/17/12 14:23	Units: mg/kg	Prep Info: Prep Date: 10/10/2012	Prep Method: SW3050 B								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.01									
Copper	ND	0.2									
Iron	10	0.7									
Lead	ND	1									
Manganese	0.06	0.04									
Zinc	0.3	0.1									

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121017B: 18	SampType: Laboratory Fortified Blank	Sample ID: LFB-18328	Method: SW6010B								
Analysis Date: 10/17/12 14:26	Units: mg/kg	Prep Info: Prep Date: 10/10/2012	Prep Method: SW3050 B								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	251	5.0	250		100	80	120				
Arsenic	49.1	1.0	50	0.5505	97	80	120				
Cadmium	23.5	1.0	25		94	80	120				
Copper	49.2	1.0	50		98	80	120				
Iron	255	5.0	250	10.99	98	80	120				
Lead	48.6	1.0	50		97	80	120				
Manganese	250	1.0	250	0.0555	100	80	120				
Zinc	49.1	1.0	50	0.3315	98	80	120				

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121017B: 19	SampType: Laboratory Control Sample	Sample ID: LCS-18328	Method: SW6010B								
Analysis Date: 10/17/12 14:30	Units: mg/kg	Prep Info: Prep Date: 10/10/2012	Prep Method: SW3050 B								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	12800	5.0	14550		88	50.7	131.3				
Arsenic	284	1.5	339.6	0.5505	84	72.3	106.4				
Cadmium	118	1.0	135.6		87	73	105.1				
Copper	247	1.0	277.2		89	77.5	109.6				
Iron	19500	5.0	22770	10.99	86	39.6	138.3				
Lead	179	3.1	185.1		97	75.9	108.6				
Manganese	366	1.0	365.3	0.0555	100	80.8	115.7				
Zinc	191	1.0	210.9	0.3315	91	74.2	109.9				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: 18328

Run ID :Run Order: ICP2-HE_121017B: 19	SampType: Laboratory Control Sample	Sample ID: LCS-18328	Method: SW6010B								
Analysis Date: 10/17/12 14:30	Units: mg/kg	Prep Info: Prep Date: 10/10/2012	Prep Method: SW3050 B								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121017B: 40	SampType: Sample Matrix Spike	Sample ID: H12100099-019AMS	Method: SW6010B								
Analysis Date: 10/17/12 15:47	Units: mg/kg	Prep Info: Prep Date: 10/11/2012	Prep Method: SW3050 B								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8990	5.0	125	6110		75	125				A
Arsenic	32.7	1.0	25	16.23	66	75	125				S
Cadmium	11.4	1.0	12.5		91	75	125				
Copper	36.1	1.0	25	14.48	86	75	125				
Iron	12400	5.0	125	12920		75	125				A
Lead	45.3	1.5	25	28.69	67	75	125				S
Manganese	418	1.0	125	302.9	92	75	125				
Zinc	105	1.0	25	92.22	53	75	125				S

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121017B: 41	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100099-019AMSD	Method: SW6010B								
Analysis Date: 10/17/12 15:51	Units: mg/kg	Prep Info: Prep Date: 10/11/2012	Prep Method: SW3050 B								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8470	5.0	125	6110		75	125	8985	5.9	20	A
Arsenic	31.8	1.0	25	16.23	62	75	125	32.66	2.8	20	S
Cadmium	11.5	1.0	12.5		92	75	125	11.41	1.1	20	
Copper	40.1	1.0	25	14.48	102	75	125	36.08	11	20	
Iron	12100	5.0	125	12920		75	125	12360	1.8	20	A
Lead	41.3	1.5	25	28.69	50	75	125	45.34	9.3	20	S
Manganese	352	1.0	125	302.9	39	75	125	417.6	17	20	S
Zinc	128	1.0	25	92.22	145	75	125	105.4	20	20	S

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83422

Run ID :Run Order: PHSC_101-H_121004A: 10	SampType: Sample Duplicate	Sample ID: H12090326-008ADUP	Method: A2510 B								
Analysis Date: 10/04/12 10:20	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	3300	1.0						3330	0.8	10	

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: PHSC_101-H_121004A: 50	SampType: Sample Duplicate	Sample ID: H12100099-006ADUP	Method: A2510 B								
Analysis Date: 10/04/12 11:11	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	259	1.0						271	4.5	10	

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83422

Run ID :Run Order: PHSC_101-H_121004A: 1	SampType: Initial Calibration Verification Standard	Sample ID: pH 7	Method: A4500-H B								
Analysis Date: 10/04/12 10:00	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.0	0.1	7		100	98	102				

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Run ID :Run Order: PHSC_101-H_121004A: 9	SampType: Sample Duplicate	Sample ID: H12090326-008ADUP	Method: A4500-H B								
Analysis Date: 10/04/12 10:20	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	5.97	0.10						5.93	0.7	3	

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Run ID :Run Order: PHSC_101-H_121004A: 49	SampType: Sample Duplicate	Sample ID: H12100099-006ADUP	Method: A4500-H B								
Analysis Date: 10/04/12 11:11	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.52	0.10						7.55	0.4	3	

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount

Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83458

Run ID :Run Order: ICP2-HE_121004A: 6		SampType: Initial Calibration Verification Standard				Sample ID: ICV			Method: E200.7		
Analysis Date: 10/04/12 10:01		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
Calcium	40.1	1.0	40		100	95	105				
Magnesium	39.6	1.0	40		99	95	105				
Potassium	40.0	1.0	40		100	95	105				
Sodium	40.7	1.0	40		102	95	105				

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Run ID :Run Order: ICP2-HE_121004A: 7		SampType: Continuing Calibration Verification Standard				Sample ID: CCV-1			Method: E200.7		
Analysis Date: 10/04/12 10:05		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
Calcium	25.2	1.0	25		101	95	105				
Magnesium	24.6	1.0	25		98	95	105				
Potassium	24.5	1.0	25		98	95	105				
Sodium	24.3	1.0	25		97	95	105				

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Run ID :Run Order: ICP2-HE_121004A: 10		SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.7		
Analysis Date: 10/04/12 10:16		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
Calcium	479	1.0	500		96	80	120				
Magnesium	505	1.0	500		101	80	120				
Potassium	-0.0155	1.0				0	0				
Sodium	0.0454	1.0				0	0				

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Run ID :Run Order: ICP2-HE_121004A: 11		SampType: Interference Check Sample AB				Sample ID: IC SAB			Method: E200.7		
Analysis Date: 10/04/12 10:20		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
Calcium	479	1.0	500		96	80	120				
Magnesium	504	1.0	500		101	80	120				
Potassium	21.6	1.0	20		108	80	120				
Sodium	21.7	1.0	20		109	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83458

Run ID :Run Order: ICP2-HE_121004A: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 10/04/12 10:20	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

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Run ID :Run Order: ICP2-HE_121004A: 13	SampType: Method Blank	Sample ID: ICB	Method: E200.7								
Analysis Date: 10/04/12 10:28	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
Calcium	0.05	0.02									
Magnesium	ND	0.007									
Potassium	ND	0.02									
Sodium	ND	0.02									

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Run ID :Run Order: ICP2-HE_121004A: 14	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.7								
Analysis Date: 10/04/12 10:32	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
Calcium	48.5	1.0	50	0.05378	97	85	115				
Magnesium	48.1	1.0	50		96	85	115				
Potassium	49.0	1.0	50		98	85	115				
Sodium	49.8	1.0	50		100	85	115				

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Run ID :Run Order: ICP2-HE_121004A: 17	SampType: Sample Matrix Spike	Sample ID: H12100052-001DMS2	Method: E200.7								
Analysis Date: 10/04/12 10:43	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
Calcium	112	1.0	100	12.23	100	70	130				
Magnesium	102	1.0	100	1.682	100	70	130				
Potassium	103	1.0	100	0.4457	102	70	130				
Sodium	107	1.0	100	2.948	104	70	130				

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83458

Run ID :Run Order: ICP2-HE_121004A: 18		SampType: Sample Matrix Spike Duplicate				Sample ID: H12100052-001DMSD2				Method: E200.7	
Analysis Date: 10/04/12 10:47		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
Calcium	112	1.0	100	12.23	100	70	130	112.3	0.1	20	
Magnesium	102	1.0	100	1.682	100	70	130	101.6	0.2	20	
Potassium	102	1.0	100	0.4457	102	70	130	102.9	0.4	20	
Sodium	107	1.0	100	2.948	104	70	130	107.3	0.7	20	

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Run ID :Run Order: ICP2-HE_121004A: 19		SampType: Continuing Calibration Verification Standard				Sample ID: CCV				Method: E200.7	
Analysis Date: 10/04/12 10:50		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
Calcium	25.3	1.0	25		101	90	110				
Magnesium	25.0	1.0	25		100	90	110				
Potassium	24.9	1.0	25		100	90	110				
Sodium	24.8	1.0	25		99	90	110				

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Run ID :Run Order: ICP2-HE_121004A: 34		SampType: Sample Matrix Spike				Sample ID: H12100099-002BMS2				Method: E200.7	
Analysis Date: 10/04/12 11:47		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
Calcium	50.5	1.0	50	0.06987	101	70	130				
Magnesium	50.3	1.0	50		101	70	130				
Potassium	50.7	1.0	50		101	70	130				
Sodium	51.5	1.0	50		103	70	130				

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Run ID :Run Order: ICP2-HE_121004A: 35		SampType: Sample Matrix Spike Duplicate				Sample ID: H12100099-002BMSD2				Method: E200.7	
Analysis Date: 10/04/12 11:51		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
Calcium	50.4	1.0	50	0.06987	101	70	130	50.5	0.2	20	
Magnesium	50.5	1.0	50		101	70	130	50.29	0.3	20	
Potassium	49.9	1.0	50		100	70	130	50.73	1.7	20	
Sodium	50.7	1.0	50		101	70	130	51.52	1.5	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83458

Run ID :Run Order: ICP2-HE_121004A: 35	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100099-002BMSD2	Method: E200.7								
Analysis Date: 10/04/12 11:51	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: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83460

Run ID :Run Order: MAN-TECH_121004B: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B
Analysis Date: 10/04/12 16:18	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	ND	1	

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: MAN-TECH_121004B: 10	SampType: Laboratory Control Sample	Sample ID: LCS-10032012	Method: A2320 B
Analysis Date: 10/04/12 16:26	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	640	4.0	600

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: MAN-TECH_121004B: 29	SampType: Sample Duplicate	Sample ID: H12100096-001ADUP	Method: A2320 B
Analysis Date: 10/04/12 17:36	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	23	4.0	
Bicarbonate as HCO3	28	4.0	
Carbonate as CO3	ND	4.0	

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: MAN-TECH_121004B: 32	SampType: Sample Matrix Spike	Sample ID: H12100096-003AMS	Method: A2320 B
Analysis Date: 10/04/12 17:52	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	680	4.0	600

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: MAN-TECH_121004B: 54	SampType: Sample Duplicate	Sample ID: H12100099-003ADUP	Method: A2320 B
Analysis Date: 10/04/12 19:03	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	93	4.0	
Bicarbonate as HCO3	110	4.0	
Carbonate as CO3	ND	4.0	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83460

Run ID :Run Order: MAN-TECH_121004B: 54	SampType: Sample Duplicate	Sample ID: H12100099-003ADUP	Method: A2320 B								
Analysis Date: 10/04/12 19:03	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

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83467

Run ID :Run Order: IC102-H_121004A: 13	SampType: Initial Calibration Verification Standard	Sample ID: ICV100412-12	Method: E300.0								
Analysis Date: 10/04/12 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	100	1.0	100		104	90	110				
Sulfate	410	1.0	400		103	90	110				

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Run ID :Run Order: IC102-H_121004A: 14	SampType: Method Blank	Sample ID: ICB100412-13	Method: E300.0								
Analysis Date: 10/04/12 18:00	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	0.03									
Sulfate	ND	0.1									

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Run ID :Run Order: IC102-H_121004A: 15	SampType: Laboratory Fortified Blank	Sample ID: LFB100412-14	Method: E300.0								
Analysis Date: 10/04/12 18:13	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	49	1.0	50		98	90	110				
Sulfate	200	1.0	200		99	90	110				

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Run ID :Run Order: IC102-H_121004A: 31	SampType: Continuing Calibration Verification Standard	Sample ID: CCV100412-30	Method: E300.0								
Analysis Date: 10/04/12 21:34	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		104	90	110				
Sulfate	420	1.0	400		104	90	110				

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A

Run ID :Run Order: IC102-H_121004A: 43	SampType: Sample Matrix Spike	Sample ID: H12100097-003AMS	Method: E300.0								
Analysis Date: 10/05/12 00:05	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	53	1.0	50	1.894	103	90	110				
Sulfate	240	1.0	200	23.07	107	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83467

Run ID :Run Order: IC102-H_121004A: 43	SampType: Sample Matrix Spike	Sample ID: H12100097-003AMS	Method: E300.0								
Analysis Date: 10/05/12 00:05	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

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Run ID :Run Order: IC102-H_121004A: 44	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100097-003AMSD	Method: E300.0								
Analysis Date: 10/05/12 00:18	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	53	1.0	50	1.894	102	90	110	53.35	0.8	20	
Sulfate	240	1.0	200	23.07	107	90	110	238	0.4	20	

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Run ID :Run Order: IC102-H_121004A: 45	SampType: Continuing Calibration Verification Standard	Sample ID: CCV100412-44	Method: E300.0								
Analysis Date: 10/05/12 00:30	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
Chloride	110	1.0	100		105	90	110				
Sulfate	420	1.0	400		105	90	110				

Associated samples: H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Run ID :Run Order: IC102-H_121004A: 57	SampType: Sample Matrix Spike	Sample ID: H12100099-006AMS	Method: E300.0								
Analysis Date: 10/05/12 03:02	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	51	1.0	50	0.179	102	90	110				
Sulfate	240	1.0	200	21.31	109	90	110				

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Run ID :Run Order: IC102-H_121004A: 58	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100099-006AMSD	Method: E300.0								
Analysis Date: 10/05/12 03:14	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	51	1.0	50	0.179	102	90	110	51.39	0.7	20	
Sulfate	240	1.0	200	21.31	108	90	110	239.7	0.6	20	

Associated samples: H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Prepared by Helena, MT Branch

Project: Section 35 Surface Water/Sediment

BatchID: R83483

Run ID :Run Order: ICP2-HE_121005A: 6	SampType: Initial Calibration Verification Standard	Sample ID: ICV	Method: E200.7								
Analysis Date: 10/05/12 10:44	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
Aluminum	3.94	0.10	4		99	95	105				

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Run ID :Run Order: ICP2-HE_121005A: 7	SampType: Continuing Calibration Verification Standard	Sample ID: CCV-1	Method: E200.7								
Analysis Date: 10/05/12 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
Aluminum	2.48	0.10	2.5		99	95	105				

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Run ID :Run Order: ICP2-HE_121005A: 10	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.7								
Analysis Date: 10/05/12 10:59	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
Aluminum	504	0.10	500		101	80	120				

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Run ID :Run Order: ICP2-HE_121005A: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 10/05/12 11:03	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
Aluminum	516	0.10	500		103	80	120				

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Run ID :Run Order: ICP2-HE_121005A: 13	SampType: Method Blank	Sample ID: ICB	Method: E200.7								
Analysis Date: 10/05/12 11:11	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
Aluminum	ND	0.002									

Associated samples: **H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83483

Run ID :Run Order: ICP2-HE_121005A: 14	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.7								
Analysis Date: 10/05/12 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
Aluminum	4.76	0.10	5		95	85	115				

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Run ID :Run Order: ICP2-HE_121005A: 95	SampType: Sample Matrix Spike	Sample ID: H12100014-021CMS2	Method: E200.7								
Analysis Date: 10/05/12 16:19	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
Aluminum	4.97	0.030	5		99	70	130				

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Run ID :Run Order: ICP2-HE_121005A: 96	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100014-021CMSD2	Method: E200.7								
Analysis Date: 10/05/12 16:23	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
Aluminum	4.96	0.030	5		99	70	130	4.973	0.2	20	

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Run ID :Run Order: ICP2-HE_121005A: 98	SampType: Continuing Calibration Verification Standard	Sample ID: CCV	Method: E200.7								
Analysis Date: 10/05/12 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
Aluminum	2.48	0.10	2.5		99	90	110				

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Run ID :Run Order: ICP2-HE_121005A: 112	SampType: Sample Matrix Spike	Sample ID: H12100097-012BMS2	Method: E200.7								
Analysis Date: 10/05/12 17:23	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
Aluminum	5.03	0.030	5	0.06036	99	70	130				

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83483

Run ID :Run Order: ICP2-HE_121005A: 113	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100097-012BMSD2	Method: E200.7								
Analysis Date: 10/05/12 17:26	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
Aluminum	5.10	0.030	5	0.06036	101	70	130	5.03	1.5	20	

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Run ID :Run Order: ICP2-HE_121005A: 169	SampType: Sample Matrix Spike	Sample ID: H12100110-003CMS2	Method: E200.7								
Analysis Date: 10/05/12 20:58	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
Aluminum	4.89	0.030	5		98	70	130				

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Run ID :Run Order: ICP2-HE_121005A: 170	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100110-003CMSD2	Method: E200.7								
Analysis Date: 10/05/12 21:01	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
Aluminum	4.93	0.030	5		99	70	130	4.892	0.8	20	

Associated samples: H12100097-001B; H12100097-002B; H12100097-003B; H12100097-004B; H12100097-005B; H12100097-006B; H12100097-012B

Run ID :Run Order: ICP2-HE_121005A: 177	SampType: Continuing Calibration Verification Standard	Sample ID: CCV	Method: E200.7								
Analysis Date: 10/05/12 21:28	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
Aluminum	2.51	0.10	2.5		100	90	110				

Associated samples:

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83638

Run ID :Run Order: ICPMS204-B_121010C: 354		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8				
Analysis Date: 10/11/12 18:36		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.0515	0.0050	0.05		103	90	110					
Cadmium	0.0266	0.0010	0.025		106	90	110					
Copper	0.0534	0.010	0.05		107	90	110					
Iron	0.263	0.030	0.25		105	90	110					
Lead	0.0509	0.010	0.05		102	90	110					
Manganese	0.258	0.010	0.25		103	90	110					
Zinc	0.0535	0.010	0.05		107	90	110					

Associated samples: H12100097-001C; H12100097-002C; H12100097-003C; H12100097-004C; H12100097-005C; H12100097-006C; H12100097-012C

Run ID :Run Order: ICPMS204-B_121010C: 357		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8				
Analysis Date: 10/11/12 18:50		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.000767	0.0050										
Cadmium	0.000921	0.0010										
Copper	0.000822	0.010										
Iron	97.8	0.030	100		98	70	130					
Lead	0.000439	0.010										
Manganese	0.00120	0.010										
Zinc	0.00220	0.010										

Associated samples: H12100097-001C; H12100097-002C; H12100097-003C; H12100097-004C; H12100097-005C; H12100097-006C; H12100097-012C

Run ID :Run Order: ICPMS204-B_121010C: 358		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8				
Analysis Date: 10/11/12 18:54		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.0105	0.0050	0.01		105	70	130					
Cadmium	0.0106	0.0010	0.01		106	70	130					
Copper	0.0207	0.010	0.02		104	70	130					
Iron	97.8	0.030	100		98	70	130					
Lead	0.000236	0.010				0	0					
Manganese	0.0197	0.010	0.02		99	70	130					
Zinc	0.0120	0.010	0.01		120	70	130					

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83638

Run ID :Run Order: ICPMS204-B_121010C: 358	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 10/11/12 18:54	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H12100097-001C; H12100097-002C; H12100097-003C; H12100097-004C; H12100097-005C; H12100097-006C; H12100097-012C**



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83743

Run ID :Run Order: ICP2-HE_121016D: 6		SampType: Initial Calibration Verification Standard			Sample ID: ICV			Method: E200.7			
Analysis Date: 10/16/12 12:09		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4.03	0.10	4		101	90	110				
Arsenic	0.792	0.0092	0.8		99	90	110				
Cadmium	0.384	0.0010	0.4		96	90	110				
Copper	0.801	0.010	0.8		100	90	110				
Iron	4.01	0.030	4		100	90	110				
Manganese	4.05	0.010	4		101	90	110				
Zinc	0.789	0.010	0.8		99	90	110				

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121016D: 10		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.7			
Analysis Date: 10/16/12 12:24		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	518	0.10	500		104	80	120				
Arsenic	0.00754	0.0092				0	0				
Cadmium	0.000200	0.0010				0	0				
Copper	0.00565	0.010				0	0				
Iron	189	0.030	200		94	80	120				
Manganese	-0.00781	0.010				0	0				
Zinc	0.00343	0.010				0	0				

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121016D: 11		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.7			
Analysis Date: 10/16/12 12:28		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	518	0.10	500		104	80	120				
Arsenic	1.07	0.0092	1		107	80	120				
Cadmium	0.899	0.0010	1		90	80	120				
Copper	0.505	0.010	0.5		101	80	120				
Iron	188	0.030	200		94	80	120				
Manganese	0.471	0.010	0.5		94	80	120				
Zinc	0.989	0.010	1		99	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83743

Run ID :Run Order: ICP2-HE_121016D: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 10/16/12 12:28	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A**



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Project: Section 35 Surface Water/Sediment

BatchID: R83778

Run ID :Run Order: ICP2-HE_121017B: 6	SampType: Initial Calibration Verification Standard	Sample ID: ICV	Method: E200.7								
Analysis Date: 10/17/12 13:00	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.795	0.013	0.8		99	90	110				

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121017B: 10	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.7								
Analysis Date: 10/17/12 13:14	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0654	0.013				0	0				

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Run ID :Run Order: ICP2-HE_121017B: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 10/17/12 13:18	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.954	0.013	1		95	80	120				

Associated samples: H12100097-007A; H12100097-008A; H12100097-009A; H12100097-010A; H12100097-011A; H12100097-013A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100097

ANALYTICAL QC SUMMARY REPORT

Date: 25-Oct-12

Prepared by Helena, MT Branch

Project: Section 35 Surface Water/Sediment

BatchID: TDS121004A

Run ID :Run Order: ACCU-124 (14410200)_121004B: 1	SampType: Method Blank	Sample ID: MB-1_121004A	Method: A2540 C
Analysis Date: 10/04/12 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 Dissolved TDS @ 180 C	ND	3	

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: ACCU-124 (14410200)_121004B: 2	SampType: Laboratory Control Sample	Sample ID: LCS-2_121004A	Method: A2540 C
Analysis Date: 10/04/12 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 Dissolved TDS @ 180 C	2080	10	2000
		104	90
		110	

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: ACCU-124 (14410200)_121004B: 4	SampType: Sample Duplicate	Sample ID: H12100097-001A DUP	Method: A2540 C
Analysis Date: 10/04/12 15:58	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 Dissolved TDS @ 180 C	ND	10	
			5

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: ACCU-124 (14410200)_121004B: 6	SampType: Sample Matrix Spike	Sample ID: H12100097-002A MS	Method: A2540 C
Analysis Date: 10/04/12 15:58	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 Dissolved TDS @ 180 C	2180	10	2000
		125	103
		80	120

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Run ID :Run Order: ACCU-124 (14410200)_121004B: 16	SampType: Sample Duplicate	Sample ID: H12100099-004A DUP	Method: A2540 C
Analysis Date: 10/04/12 16:01	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	
Solids, Total Dissolved TDS @ 180 C	163	10	
			164
			0.6
			5

Associated samples: **H12100097-001A; H12100097-002A; H12100097-003A; H12100097-004A; H12100097-005A; H12100097-006A; H12100097-012A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount

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.

Workorder Receipt Checklist

MT DEQ-Site Response

H12100097

Login completed by: Wanda Johnson

Date Received: 10/3/2012

Reviewed by: BL2000\sdull

Received by: TLL

Reviewed Date: 10/12/2012

Carrier Hand Del
name:

- | | | | |
|---|---|--|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Temp Blank received? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | Not Applicable <input type="checkbox"/> |
| Container/Temp Blank temperature: | 2.4°C On Ice - From Field | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

None



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **MWEA**
 Report Mail Address: **See Route H-645**
 Invoice Address: **See Route H-645**

Project Name: PWS, Permit, Etc.
 Section: **35 Surface Water/Signet**

Contact Name: **Shelley Harland**
 Phone/Fax: **941-5033**
 Invoice Contact & Phone: **Shelley Harland, 941-5033, shelley@ent.gov**

Sample Origin: **NYT**
 State: **NY**
 Email: **M.Towler**

EPA/State Compliance: Yes No
 Sampler: (Please Print) **M. Towler**

Purchase Order: **10761**
 Quote/Bottle Order: **10761**

Special Report/Formats:

DW
 POTW/WWTP
 State: _____
 Other: _____

EDD/EDT (Electronic Data)
 Format: _____
 LEVEL IV
 NELAC

Number of Containers: _____
 Sample Type: AWS V B O DW
 Air Water Soils/Solids
 Vegetation Bioassay Other
 DW - Drinking Water

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELL prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Comments:	LABORATORY USE ONLY			
				SEE ATTACHED	SEE ATTACHED				Receipt Temp	Custody Seal		
1 S35-SW-02	10/3/12	0745	W						Hand	24 °C	Y	Y
2 S35-SW-04		0821									Y	N
3 S35-SW-03		0903									Y	N
4 S35-SW-01		1002									Y	N
5 S35-SW-02		1122									Y	N
6 S35-SW-05		1235	W								Y	N
7 S35-SW-04		0821	S								Y	N
8 S35-SW-03		0903									Y	N
9 S35-SW-01		1002									Y	N
10 S35-SW-02	10/3/12	1122	S								Y	N

Retrieved by (print): **Shelley Harland** Date/Time: **10/3/12 06:13** Signature: *[Signature]*

Retrieved by (print): **Tracy Ward** Date/Time: **10/3/12 16:13** Signature: *[Signature]*

Signature: _____

Sample Disposal: _____ Return to Client: _____ Lab Disposal: _____

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 sub-contract data will be clearly noted on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **MOEA**
 Report Mail Address: **See Qu. to H-645**
 Invoice Address: **See Qu. to H-645**

Project Name, PWS, Permit, Etc.: **Section 35 Surface Water/Drinking Water**
 Contact Name: **Shelia Howard, 841-5033, shahlandert you**
 Invoice Contact & Phone: **Shelia Howard, 841-5033, shahlandert you**

Sample Origin: **MT**
 State: **MT**
 EPA/State Compliance: Yes No

Sampler: (Please Print) **M. Brown**
 Signature: **M. Brown**

Shipped by: **Hand**
 Cooler ID(s): **Y**
 Receipt Temp: **2.4 °C**
 On Ice: **Y**
 Custody Seal: **Y**
 On Bottle: **Y**
 On Cooler: **N**
 Intact: **Y**
 Signature: **Y**
 Match: **N**

Special Report/Formats: DW EDD/EDT (Electronic Data)
 POTW/WWTP Format: LEVEL IV
 State: NELAC
 Other:

Number of Containers: **5**
 Sample Type: **A W S V B O DW**
 Air Water Soils/Solids
 Vegetation Bioassay Other
 DW - Drinking Water

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED				Standard Turnaround (TAT)	Contact EJI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Comments:
				SEE ATTACHED	R	U	S			
1 S35-SO-05	10/3/12	1205	S							
2 S35-SW-06	10/3/12	1018	W							
3 S35-SO-06	10/3/12	1018	S							
4										
5										
6										
7										
8										
9										
10										

Requisition # (print): **10/31/12/613** Date/Time: **10/31/12 16:15** Signature: **[Signature]**

Relinquished by (print): **[Signature]** Date/Time: **10/31/12 16:15** Signature: **[Signature]**

Sample Disposal: **Return to Client** Lab Disposal: **10/31/12 16:15** Signature: **[Signature]**

Received by (print): **[Signature]** Date/Time: **10/31/12 16:15** Signature: **[Signature]**

Received by (print): **[Signature]** Date/Time: **10/31/12 16:15** Signature: **[Signature]**

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Section 35 Quarterly

Quantity	Analysis		Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
	¹ Dissolved Metals	² Total Rec. Metals										
Surface Water	7											
Groundwater	9											
Sediment	6											

¹ Aluminum

² Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³ Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴ Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵ Calcium, magnesium, potassium, sodium

UBMC Quarterly

Quantity	Analysis		Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
	¹ Dissolved Metals	² Total Rec. Metals										
Surface Water	11											
Groundwater	10											
Sediment	9											

¹ Aluminum

² Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³ Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴ Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵ Calcium, magnesium, potassium, sodium

⁶ Additional surface water samples may be collected for seeps.



ANALYTICAL SUMMARY REPORT

October 24, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12100142 Quote ID: H645 - UBMC

Project Name: Section 35 Groundwater

Energy Laboratories Inc Helena MT received the following 8 samples for MT DEQ-Site Response on 10/8/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12100142-001	S35-MW-08	10/05/12 8:52	10/08/12	Aqueous	Metals by ICP/ICPMS, Dissolved Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H12100142-002	S35-MW-09	10/05/12 9:03	10/08/12	Aqueous	Same As Above
H12100142-003	S35-MW-01	10/05/12 10:38	10/08/12	Aqueous	Same As Above
H12100142-004	S35-MW-03	10/05/12 11:25	10/08/12	Aqueous	Same As Above
H12100142-005	S35-MW-04	10/05/12 12:18	10/08/12	Aqueous	Same As Above
H12100142-006	S35-MW-07	10/05/12 11:41	10/08/12	Aqueous	Same As Above
H12100142-007	S35-MW-02	10/05/12 14:30	10/08/12	Aqueous	Same As Above
H12100142-008	S35-MW-06	10/05/12 16:34	10/08/12	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 Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-08
Lab ID: H12100142-001
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 08:52 **DateReceived:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.6	s.u.	H	0.1		A4500-H B	10/08/12 13:57 / cmm		PHSC_101-H_121008A : 29		R83496
Conductivity @ 25 C	2	umhos/cm		1		A2510 B	10/08/12 13:57 / cmm		PHSC_101-H_121008A : 30		R83496
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/08/12 14:36 / cmm	10/08/12 14:26 J-124 (14410200)_121008A : 9			18299
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	10/08/12 14:43 / cmm		J-124 (14410200)_121008B : 3		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	10/09/12 14:58 / cmm		MAN-TECH_121009B : 18		R83569
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	10/09/12 14:58 / cmm		MAN-TECH_121009B : 18		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 14:58 / cmm		MAN-TECH_121009B : 18		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 21:00 / cmm		IC102-H_121011B : 41		R83652
Sulfate	ND	mg/L		1		E300.0	10/11/12 21:00 / cmm		IC102-H_121011B : 41		R83652
Hardness as CaCO3	ND	mg/L		1		A2340 B	10/16/12 12:42 / sld		WATERCALC_121016B : 1		R83713
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/09/12 16:43 / sld		ICP2-HE_121009B : 25		R83570
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Calcium	ND	mg/L		1		E200.7	10/09/12 16:43 / sld		ICP2-HE_121009B : 25		R83570
Copper	ND	mg/L		0.001		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Magnesium	ND	mg/L		1		E200.7	10/09/12 16:43 / sld		ICP2-HE_121009B : 25		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Potassium	ND	mg/L		1		E200.7	10/09/12 16:43 / sld		ICP2-HE_121009B : 25		R83570
Sodium	ND	mg/L		1		E200.7	10/09/12 16:43 / sld		ICP2-HE_121009B : 25		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-09
Lab ID: H12100142-002
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 09:03 **Date Received:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.9	s.u.	H	0.1		A4500-H B	10/08/12 13:59 / cmm		PHSC_101-H_121008A : 31		R83496
Conductivity @ 25 C	4	umhos/cm		1		A2510 B	10/08/12 13:59 / cmm		PHSC_101-H_121008A : 32		R83496
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/08/12 14:36 / cmm	10/08/12 14:26-124 (14410200)_121008A : 11			18299
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	10/08/12 14:44 / cmm		J-124 (14410200)_121008B : 5		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	10/09/12 15:02 / cmm		MAN-TECH_121009B : 20		R83569
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	10/09/12 15:02 / cmm		MAN-TECH_121009B : 20		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:02 / cmm		MAN-TECH_121009B : 20		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 21:13 / cmm		IC102-H_121011B : 42		R83652
Sulfate	ND	mg/L		1		E300.0	10/11/12 21:13 / cmm		IC102-H_121011B : 42		R83652
Hardness as CaCO3	ND	mg/L		1		A2340 B	10/16/12 12:42 / sld		WATERCALC_121016B : 2		R83713
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/09/12 16:58 / sld		ICP2-HE_121009B : 29		R83570
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638
Cadmium	0.00008	mg/L		0.00008		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638
Calcium	ND	mg/L		1		E200.7	10/09/12 16:58 / sld		ICP2-HE_121009B : 29		R83570
Copper	0.015	mg/L		0.001		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638
Magnesium	ND	mg/L		1		E200.7	10/09/12 16:58 / sld		ICP2-HE_121009B : 29		R83570
Manganese	0.007	mg/L		0.005		E200.8	10/15/12 23:15 / dck		ICPMS204-B_121015A : 111		R83694
Potassium	ND	mg/L		1		E200.7	10/09/12 16:58 / sld		ICP2-HE_121009B : 29		R83570
Sodium	ND	mg/L		1		E200.7	10/09/12 16:58 / sld		ICP2-HE_121009B : 29		R83570
Zinc	0.03	mg/L		0.01		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-01
Lab ID: H12100142-003
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 10:38 **DateReceived:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	H	0.1		A4500-H B	10/08/12 14:02 / cmm		PHSC_101-H_121008A : 33		R83496
Conductivity @ 25 C	294	umhos/cm		1		A2510 B	10/08/12 14:02 / cmm		PHSC_101-H_121008A : 34		R83496
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/08/12 14:36 / cmm	10/08/12 14:26-124 (14410200)_121008A : 12			18299
Solids, Total Dissolved TDS @ 180 C	157	mg/L		10		A2540 C	10/08/12 14:44 / cmm		J-124 (14410200)_121008B : 7		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	10/09/12 15:09 / cmm		MAN-TECH_121009B : 22		R83569
Bicarbonate as HCO3	190	mg/L		4		A2320 B	10/09/12 15:09 / cmm		MAN-TECH_121009B : 22		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:09 / cmm		MAN-TECH_121009B : 22		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 21:26 / cmm		IC102-H_121011B : 43		R83652
Sulfate	6	mg/L		1		E300.0	10/11/12 21:26 / cmm		IC102-H_121011B : 43		R83652
Hardness as CaCO3	153	mg/L		1		A2340 B	10/09/12 17:02 / abb		CALC_121013A : 63		R83661
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/09/12 17:02 / sld		ICP2-HE_121009B : 30		R83570
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Calcium	32	mg/L		1		E200.7	10/09/12 17:02 / sld		ICP2-HE_121009B : 30		R83570
Copper	ND	mg/L		0.001		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Magnesium	18	mg/L		1		E200.7	10/09/12 17:02 / sld		ICP2-HE_121009B : 30		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Potassium	1	mg/L		1		E200.7	10/09/12 17:02 / sld		ICP2-HE_121009B : 30		R83570
Sodium	2	mg/L		1		E200.7	10/09/12 17:02 / sld		ICP2-HE_121009B : 30		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-03
Lab ID: H12100142-004
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 11:25 **DateReceived:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	H	0.1		A4500-H B	10/08/12 14:05 / cmm		PHSC_101-H_121008A : 35		R83496
Conductivity @ 25 C	324	umhos/cm		1		A2510 B	10/08/12 14:05 / cmm		PHSC_101-H_121008A : 36		R83496
Solids, Total Suspended TSS @ 105 C	89	mg/L		10		A2540 D	10/08/12 14:37 / cmm	10/08/12 14:26-124 (14410200)_121008A : 13			18299
Solids, Total Dissolved TDS @ 180 C	187	mg/L		10		A2540 C	10/08/12 14:44 / cmm		J-124 (14410200)_121008B : 8		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	170	mg/L		4		A2320 B	10/09/12 15:16 / cmm		MAN-TECH_121009B : 24		R83569
Bicarbonate as HCO3	210	mg/L		4		A2320 B	10/09/12 15:16 / cmm		MAN-TECH_121009B : 24		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:16 / cmm		MAN-TECH_121009B : 24		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 21:38 / cmm		IC102-H_121011B : 44		R83652
Sulfate	4	mg/L		1		E300.0	10/11/12 21:38 / cmm		IC102-H_121011B : 44		R83652
Hardness as CaCO3	151	mg/L		1		A2340 B	10/09/12 17:13 / abb		CALC_121013A : 75		R83661
METALS, DISSOLVED											
Aluminum	0.06	mg/L		0.03		E200.8	10/16/12 16:12 / dck		ICPMS204-B_121016A : 63		R83744
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Calcium	43	mg/L		1		E200.7	10/09/12 17:13 / sld		ICP2-HE_121009B : 33		R83570
Copper	ND	mg/L		0.001		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Magnesium	10	mg/L		1		E200.7	10/09/12 17:13 / sld		ICP2-HE_121009B : 33		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Potassium	2	mg/L		1		E200.7	10/09/12 17:13 / sld		ICP2-HE_121009B : 33		R83570
Sodium	11	mg/L		1		E200.7	10/09/12 17:13 / sld		ICP2-HE_121009B : 33		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-04
Lab ID: H12100142-005
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 12:18 **DateReceived:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	H	0.1		A4500-H B	10/08/12 14:07 / cmm		PHSC_101-H_121008A : 37		R83496
Conductivity @ 25 C	333	umhos/cm		1		A2510 B	10/08/12 14:07 / cmm		PHSC_101-H_121008A : 38		R83496
Solids, Total Suspended TSS @ 105 C	30	mg/L		10		A2540 D	10/08/12 14:37 / cmm	10/08/12 14:26-124 (14410200)_121008A : 14			18299
Solids, Total Dissolved TDS @ 180 C	192	mg/L		10		A2540 C	10/08/12 14:44 / cmm		J-124 (14410200)_121008B : 9		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	10/09/12 15:24 / cmm		MAN-TECH_121009B : 26		R83569
Bicarbonate as HCO3	220	mg/L		4		A2320 B	10/09/12 15:24 / cmm		MAN-TECH_121009B : 26		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:24 / cmm		MAN-TECH_121009B : 26		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 22:16 / cmm		IC102-H_121011B : 47		R83652
Sulfate	2	mg/L		1		E300.0	10/11/12 22:16 / cmm		IC102-H_121011B : 47		R83652
Hardness as CaCO3	171	mg/L		1		A2340 B	10/09/12 17:17 / abb		CALC_121013A : 87		R83661
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/09/12 17:17 / sld		ICP2-HE_121009B : 34		R83570
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Calcium	51	mg/L		1		E200.7	10/09/12 17:17 / sld		ICP2-HE_121009B : 34		R83570
Copper	ND	mg/L		0.001		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Magnesium	11	mg/L		1		E200.7	10/09/12 17:17 / sld		ICP2-HE_121009B : 34		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Potassium	3	mg/L		1		E200.7	10/09/12 17:17 / sld		ICP2-HE_121009B : 34		R83570
Sodium	2	mg/L		1		E200.7	10/09/12 17:17 / sld		ICP2-HE_121009B : 34		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-07
Lab ID: H12100142-006
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 11:41 **DateReceived:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	H	0.1		A4500-H B	10/08/12 14:10 / cmm		PHSC_101-H_121008A : 39		R83496
Conductivity @ 25 C	326	umhos/cm		1		A2510 B	10/08/12 14:10 / cmm		PHSC_101-H_121008A : 40		R83496
Solids, Total Suspended TSS @ 105 C	84	mg/L		10		A2540 D	10/08/12 14:37 / cmm	10/08/12 14:26-124 (14410200)_121008A : 15			18299
Solids, Total Dissolved TDS @ 180 C	180	mg/L		10		A2540 C	10/08/12 14:45 / cmm		-124 (14410200)_121008B : 10		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	170	mg/L		4		A2320 B	10/09/12 15:31 / cmm		MAN-TECH_121009B : 28		R83569
Bicarbonate as HCO3	210	mg/L		4		A2320 B	10/09/12 15:31 / cmm		MAN-TECH_121009B : 28		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:31 / cmm		MAN-TECH_121009B : 28		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 22:54 / cmm		IC102-H_121011B : 50		R83652
Sulfate	4	mg/L		1		E300.0	10/11/12 22:54 / cmm		IC102-H_121011B : 50		R83652
Hardness as CaCO3	151	mg/L		1		A2340 B	10/09/12 17:20 / abb		CALC_121013A : 99		R83661
METALS, DISSOLVED											
Aluminum	0.06	mg/L		0.03		E200.8	10/16/12 16:47 / dck		ICPMS204-B_121016A : 71		R83744
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Calcium	44	mg/L		1		E200.7	10/09/12 17:20 / sld		ICP2-HE_121009B : 35		R83570
Copper	ND	mg/L		0.001		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Magnesium	10	mg/L		1		E200.7	10/09/12 17:20 / sld		ICP2-HE_121009B : 35		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Potassium	2	mg/L		1		E200.7	10/09/12 17:20 / sld		ICP2-HE_121009B : 35		R83570
Sodium	11	mg/L		1		E200.7	10/09/12 17:20 / sld		ICP2-HE_121009B : 35		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-02
Lab ID: H12100142-007
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 14:30 **DateReceived:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	H	0.1		A4500-H B	10/08/12 14:12 / cmm		PHSC_101-H_121008A : 41		R83496
Conductivity @ 25 C	369	umhos/cm		1		A2510 B	10/08/12 14:12 / cmm		PHSC_101-H_121008A : 42		R83496
Solids, Total Suspended TSS @ 105 C	64	mg/L		10		A2540 D	10/08/12 14:37 / cmm	10/08/12 14:26-124 (14410200)_121008A : 16			18299
Solids, Total Dissolved TDS @ 180 C	208	mg/L		10		A2540 C	10/08/12 14:45 / cmm		-124 (14410200)_121008B : 11		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	10/09/12 15:38 / cmm		MAN-TECH_121009B : 30		R83569
Bicarbonate as HCO3	240	mg/L		4		A2320 B	10/09/12 15:38 / cmm		MAN-TECH_121009B : 30		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:38 / cmm		MAN-TECH_121009B : 30		R83569
Chloride	1	mg/L		1		E300.0	10/11/12 23:06 / cmm		IC102-H_121011B : 51		R83652
Sulfate	7	mg/L		1		E300.0	10/11/12 23:06 / cmm		IC102-H_121011B : 51		R83652
Hardness as CaCO3	190	mg/L		1		A2340 B	10/09/12 17:24 / abb		CALC_121013A : 111		R83661
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	10/16/12 16:51 / dck		ICPMS204-B_121016A : 72		R83744
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Cadmium	0.00015	mg/L		0.00008		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Calcium	53	mg/L		1		E200.7	10/09/12 17:24 / sld		ICP2-HE_121009B : 36		R83570
Copper	0.001	mg/L		0.001		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Magnesium	14	mg/L		1		E200.7	10/09/12 17:24 / sld		ICP2-HE_121009B : 36		R83570
Manganese	0.009	mg/L		0.005		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Potassium	1	mg/L		1		E200.7	10/09/12 17:24 / sld		ICP2-HE_121009B : 36		R83570
Sodium	4	mg/L		1		E200.7	10/09/12 17:24 / sld		ICP2-HE_121009B : 36		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-06
Lab ID: H12100142-008
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 16:34 **DateReceived:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	H	0.1		A4500-H B	10/08/12 14:15 / cmm		PHSC_101-H_121008A : 43		R83496
Conductivity @ 25 C	368	umhos/cm		1		A2510 B	10/08/12 14:15 / cmm		PHSC_101-H_121008A : 44		R83496
Solids, Total Suspended TSS @ 105 C	422	mg/L		10		A2540 D	10/08/12 14:38 / cmm	10/08/12 14:26-124 (14410200)_121008A : 17			18299
Solids, Total Dissolved TDS @ 180 C	189	mg/L		10		A2540 C	10/08/12 14:45 / cmm		-124 (14410200)_121008B : 12		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	10/09/12 15:53 / cmm		MAN-TECH_121009B : 34		R83569
Bicarbonate as HCO3	250	mg/L		4		A2320 B	10/09/12 15:53 / cmm		MAN-TECH_121009B : 34		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:53 / cmm		MAN-TECH_121009B : 34		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 23:19 / cmm		IC102-H_121011B : 52		R83652
Sulfate	ND	mg/L		1		E300.0	10/11/12 23:19 / cmm		IC102-H_121011B : 52		R83652
Hardness as CaCO3	186	mg/L		1		A2340 B	10/09/12 17:28 / abb		CALC_121013A : 123		R83661
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	10/16/12 16:56 / dck		ICPMS204-B_121016A : 73		R83744
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638
Calcium	49	mg/L		1		E200.7	10/09/12 17:28 / sld		ICP2-HE_121009B : 37		R83570
Copper	ND	mg/L		0.001		E200.8	10/16/12 00:01 / dck		ICPMS204-B_121015A : 121		R83694
Iron	ND	mg/L		0.05		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638
Magnesium	16	mg/L		1		E200.7	10/09/12 17:28 / sld		ICP2-HE_121009B : 37		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638
Potassium	2	mg/L		1		E200.7	10/09/12 17:28 / sld		ICP2-HE_121009B : 37		R83570
Sodium	5	mg/L		1		E200.7	10/09/12 17:28 / sld		ICP2-HE_121009B : 37		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: 18299

Run ID :Run Order: ACCU-124 (14410200)_121008A: 1	SampType: Method Blank	Sample ID: MB-18299	Method: A2540 D								
Analysis Date: 10/08/12 14:34	Units: mg/L	Prep Info: Prep Date: 10/8/2012	Prep Method: A2540 D								
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	2									

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: ACCU-124 (14410200)_121008A: 2	SampType: Laboratory Control Sample	Sample ID: LCS-18299	Method: A2540 D								
Analysis Date: 10/08/12 14:34	Units: mg/L	Prep Info: Prep Date: 10/8/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1830	10	2000		91	70	130				

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: ACCU-124 (14410200)_121008A: 10	SampType: Sample Duplicate	Sample ID: H12100142-001ADUP	Method: A2540 D								
Analysis Date: 10/08/12 14:36	Units: mg/L	Prep Info: Prep Date: 10/8/2012	Prep Method: A2540 D								
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	10									5

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: ACCU-124 (14410200)_121008A: 21	SampType: Sample Duplicate	Sample ID: H12100143-003ADUP	Method: A2540 D								
Analysis Date: 10/08/12 14:39	Units: mg/L	Prep Info: Prep Date: 10/8/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	19.0	10						18	5.4	5	R

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: R83496

Run ID :Run Order: PHSC_101-H_121008A: 2	SampType: Initial Calibration Verification Standard	Sample ID: SC 150	Method: A2510 B
Analysis Date: 10/08/12 09:37	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	143	1.0	150
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: PHSC_101-H_121008A: 3	SampType: Initial Calibration Verification Standard	Sample ID: SC 5000	Method: A2510 B
Analysis Date: 10/08/12 09:40	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	5020	1.0	5000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: PHSC_101-H_121008A: 4	SampType: Initial Calibration Verification Standard	Sample ID: SC 20000	Method: A2510 B
Analysis Date: 10/08/12 09:42	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	20000	1.0	20000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: PHSC_101-H_121008A: 5	SampType: Initial Calibration Verification Standard	Sample ID: SC 2ND 1000	Method: A2510 B
Analysis Date: 10/08/12 09:44	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	1010	1.0	1000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: PHSC_101-H_121008A: 20	SampType: Sample Duplicate	Sample ID: H12100138-005ADUP	Method: A2510 B
Analysis Date: 10/08/12 10:07	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	60300	1.0	
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
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Run ID :Run Order: PHSC_101-H_121008A: 52	SampType: Sample Duplicate	Sample ID: H12100143-003ADUP	Method: A2510 B								
Analysis Date: 10/08/12 14:25	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	306	1.0						307	0.3	10	

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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BatchID: R83496

Run ID :Run Order: PHSC_101-H_121008A: 1	SampType: Initial Calibration Verification Standard	Sample ID: pH 7	Method: A4500-H B								
Analysis Date: 10/08/12 09:34	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.0	0.1	7		100	98	102				

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: PHSC_101-H_121008A: 19	SampType: Sample Duplicate	Sample ID: H12100138-005ADUP	Method: A4500-H B								
Analysis Date: 10/08/12 10:07	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.82	0.10						7.82	0.0	3	

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: PHSC_101-H_121008A: 51	SampType: Sample Duplicate	Sample ID: H12100143-003ADUP	Method: A4500-H B								
Analysis Date: 10/08/12 14:25	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.70	0.10						7.68	0.3	3	

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Date: 24-Oct-12

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Run ID :Run Order: MAN-TECH_121009B: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B
Analysis Date: 10/09/12 14:25	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	1	1	

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: MAN-TECH_121009B: 10	SampType: Laboratory Control Sample	Sample ID: LCS-10032012	Method: A2320 B
Analysis Date: 10/09/12 14:33	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	630	4.0	600

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: MAN-TECH_121009B: 32	SampType: Sample Duplicate	Sample ID: H12100142-007ADUP	Method: A2320 B
Analysis Date: 10/09/12 15:46	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	200	4.0	
Bicarbonate as HCO3	240	4.0	
Carbonate as CO3	ND	4.0	

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: MAN-TECH_121009B: 37	SampType: Sample Duplicate	Sample ID: H12100143-001ADUP	Method: A2320 B
Analysis Date: 10/09/12 16:01	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	ND	4.0	
Bicarbonate as HCO3	ND	4.0	
Carbonate as CO3	ND	4.0	

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: MAN-TECH_121009B: 40	SampType: Sample Matrix Spike	Sample ID: H12100143-002AMS	Method: A2320 B
Analysis Date: 10/09/12 16:13	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	580	4.0	600

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
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Run ID :Run Order: MAN-TECH_121009B: 40	SampType: Sample Matrix Spike	Sample ID: H12100143-002AMS	Method: A2320 B								
Analysis Date: 10/09/12 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

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**



Client: MT DEQ-Site Response
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ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: R83570

Run ID :Run Order: ICP2-HE_121009B: 6	SampType: Initial Calibration Verification Standard				Sample ID: ICV			Method: E200.7			
Analysis Date: 10/09/12 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
Aluminum	3.95	0.10	4		99	95	105				
Calcium	39.3	1.0	40		98	95	105				
Magnesium	39.6	1.0	40		99	95	105				
Potassium	38.8	1.0	40		97	95	105				
Sodium	39.8	1.0	40		99	95	105				

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICP2-HE_121009B: 7	SampType: Continuing Calibration Verification Standard				Sample ID: CCV-1			Method: E200.7			
Analysis Date: 10/09/12 15:35	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
Aluminum	2.50	0.10	2.5		100	95	105				
Calcium	25.0	1.0	25		100	95	105				
Magnesium	24.9	1.0	25		100	95	105				
Potassium	24.6	1.0	25		98	95	105				
Sodium	24.6	1.0	25		99	95	105				

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICP2-HE_121009B: 10	SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.7			
Analysis Date: 10/09/12 15:46	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
Aluminum	518	0.10	500		104	80	120				
Calcium	481	1.0	500		96	80	120				
Magnesium	519	1.0	500		104	80	120				
Potassium	0.00443	1.0				0	0				
Sodium	0.0237	1.0				0	0				

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICP2-HE_121009B: 11	SampType: Interference Check Sample AB				Sample ID: ICSAB			Method: E200.7			
Analysis Date: 10/09/12 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
Aluminum	524	0.10	500		105	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142

ANALYTICAL QC SUMMARY REPORT

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Run ID :Run Order: ICP2-HE_121009B: 11		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.7			
Analysis Date: 10/09/12 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
Calcium	476	1.0	500		95	80	120				
Magnesium	514	1.0	500		103	80	120				
Potassium	21.0	1.0	20		105	80	120				
Sodium	21.3	1.0	20		106	80	120				

Associated samples: H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICP2-HE_121009B: 13		SampType: Method Blank			Sample ID: ICB			Method: E200.7			
Analysis Date: 10/09/12 15:58		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
Aluminum	ND	0.002									
Calcium	0.06	0.02									
Magnesium	ND	0.007									
Potassium	ND	0.02									
Sodium	ND	0.02									

Associated samples: H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICP2-HE_121009B: 14		SampType: Laboratory Fortified Blank			Sample ID: LFB			Method: E200.7			
Analysis Date: 10/09/12 16:01		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
Aluminum	4.80	0.10	5		96	85	115				
Calcium	47.0	1.0	50	0.0615	94	85	115				
Magnesium	47.3	1.0	50		95	85	115				
Potassium	47.5	1.0	50		95	85	115				
Sodium	48.8	1.0	50		98	85	115				

Associated samples: H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICP2-HE_121009B: 19		SampType: Continuing Calibration Verification Standard			Sample ID: CCV			Method: E200.7			
Analysis Date: 10/09/12 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
Aluminum	2.52	0.10	2.5		101	90	110				
Calcium	25.2	1.0	25		101	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
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ANALYTICAL QC SUMMARY REPORT

Date: 24-Oct-12

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BatchID: R83570

Run ID :Run Order: ICP2-HE_121009B: 19		SampType: Continuing Calibration Verification Standard			Sample ID: CCV			Method: E200.7			
Analysis Date: 10/09/12 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
Magnesium	25.2	1.0	25		101	90	110				
Potassium	24.4	1.0	25		98	90	110				
Sodium	24.4	1.0	25		98	90	110				

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B**

Run ID :Run Order: ICP2-HE_121009B: 27		SampType: Sample Matrix Spike			Sample ID: H12100142-001BMS2			Method: E200.7			
Analysis Date: 10/09/12 16:51		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
Aluminum	4.95	0.030	5		99	70	130				
Calcium	48.8	1.0	50	0.04205	98	70	130				
Magnesium	50.0	1.0	50		100	70	130				
Potassium	49.7	1.0	50		99	70	130				
Sodium	51.0	1.0	50		102	70	130				

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICP2-HE_121009B: 28		SampType: Sample Matrix Spike Duplicate			Sample ID: H12100142-001BMSD2			Method: E200.7			
Analysis Date: 10/09/12 16:54		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
Aluminum	5.01	0.030	5		100	70	130	4.949	1.3	20	
Calcium	49.6	1.0	50	0.04205	99	70	130	48.84	1.5	20	
Magnesium	50.6	1.0	50		101	70	130	49.98	1.2	20	
Potassium	49.2	1.0	50		98	70	130	49.67	1.0	20	
Sodium	50.5	1.0	50		101	70	130	51.03	1.1	20	

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICP2-HE_121009B: 31		SampType: Continuing Calibration Verification Standard			Sample ID: CCV			Method: E200.7			
Analysis Date: 10/09/12 17:05		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
Aluminum	2.51	0.10	2.5		100	90	110				
Calcium	24.8	1.0	25		99	90	110				
Magnesium	25.0	1.0	25		100	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
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Date: 24-Oct-12

BatchID: R83570

Run ID :Run Order: ICP2-HE_121009B: 31	SampType: Continuing Calibration Verification Standard	Sample ID: CCV	Method: E200.7								
Analysis Date: 10/09/12 17:05	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
Potassium	24.3	1.0	25		97	90	110				
Sodium	24.5	1.0	25		98	90	110				

Associated samples: **H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICP2-HE_121009B: 42	SampType: Sample Matrix Spike	Sample ID: H12100143-003BMS2	Method: E200.7								
Analysis Date: 10/09/12 17:47	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
Aluminum	5.04	0.030	5	0.00865	101	70	130				
Calcium	83.0	1.0	50	35.24	95	70	130				
Magnesium	66.0	1.0	50	15.99	100	70	130				
Potassium	49.6	1.0	50	0.7264	98	70	130				
Sodium	52.6	1.0	50	2.159	101	70	130				

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICP2-HE_121009B: 45	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100143-003BMSD2	Method: E200.7								
Analysis Date: 10/09/12 17:58	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
Aluminum	5.08	0.030	5	0.00865	101	70	130	5.042	0.7	20	
Calcium	81.4	1.0	50	35.24	92	70	130	82.97	1.9	20	
Magnesium	64.4	1.0	50	15.99	97	70	130	66.03	2.6	20	
Potassium	51.7	1.0	50	0.7264	102	70	130	49.63	4.1	20	
Sodium	55.0	1.0	50	2.159	106	70	130	52.59	4.5	20	

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: R83638

Run ID :Run Order: ICPMS204-B_121010C: 320		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8				
Analysis Date: 10/10/12 13:39		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes 7	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.0499	0.0050	0.05		100	90	110					
Cadmium	0.0258	0.0010	0.025		103	90	110					
Copper	0.0516	0.010	0.05		103	90	110					
Iron	0.261	0.030	0.25		104	90	110					
Lead	0.0507	0.010	0.05		101	90	110					
Manganese	0.254	0.010	0.25		102	90	110					
Zinc	0.0519	0.010	0.05		104	90	110					

Associated samples: H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICPMS204-B_121010C: 321		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8				
Analysis Date: 10/10/12 13:44		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes 7	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.000146	0.0050										
Cadmium	0.000982	0.0010										
Copper	6.60E-05	0.010										
Iron	99.7	0.030	100		100	70	130					
Lead	0.000216	0.010										
Manganese	0.000200	0.010										
Zinc	0.00144	0.010										

Associated samples: H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICPMS204-B_121010C: 322		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8				
Analysis Date: 10/10/12 13:48		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	
Arsenic	0.0108	0.0050	0.01		108	70	130					
Cadmium	0.0106	0.0010	0.01		106	70	130					
Iron	99.4	0.030	100		99	70	130					
Lead	0.000223	0.010				0	0					
Manganese	0.0206	0.010	0.02		103	70	130					
Zinc	0.0115	0.010	0.01		115	70	130					

Associated samples: H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: R83638

Run ID :Run Order: ICPMS204-B_121010C: 331		SampType: Method Blank			Sample ID: ICB			Method: E200.8			
Analysis Date: 10/10/12 14:28		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	7E-05	5E-05									
Cadmium	1.0E-05	5E-06									
Copper	ND	2E-05									
Iron	0.003	0.0002									
Lead	3E-05	1E-05									
Manganese	ND	5E-05									
Zinc	0.0009	0.0004									

Associated samples: H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICPMS204-B_121010C: 332		SampType: Laboratory Fortified Blank			Sample ID: LFB			Method: E200.8			
Analysis Date: 10/10/12 14:33		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0499	0.0050	0.05	0.0000714	100	85	115				
Cadmium	0.0455	0.0010	0.05	0.0000096	91	85	115				
Copper	0.0474	0.010	0.05		95	85	115				
Iron	4.85	0.030	5	0.003395	97	85	115				
Lead	0.0495	0.010	0.05	0.0000323	99	85	115				
Manganese	0.0498	0.010	0.05		100	85	115				
Zinc	0.0485	0.010	0.05	0.0008917	95	85	115				

Associated samples: H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICPMS204-B_121010C: 362		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 10/10/12 18:53		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0503	0.0050	0.05		101	90	110				
Cadmium	0.0265	0.0010	0.025		106	90	110				
Copper	0.0518	0.010	0.05		104	90	110				
Iron	0.256	0.030	0.25		102	90	110				
Lead	0.0511	0.010	0.05		102	90	110				
Manganese	0.263	0.010	0.25		105	90	110				
Zinc	0.0524	0.010	0.05		105	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: R83638

Run ID :Run Order: **ICPMS204-B_121010C: 362** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
 Analysis Date: **10/10/12 18:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:
 Analytes **Z** Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: **ICPMS204-B_121010C: 363** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
 Analysis Date: **10/10/12 18:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:
 Analytes **Z** Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic	7.10E-05	0.0050									
Cadmium	0.000915	0.0010									
Copper	0.000219	0.010									
Iron	97.2	0.030	100		97	70	130				
Lead	0.000159	0.010									
Manganese	0.000187	0.010									
Zinc	0.00147	0.010									

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: **ICPMS204-B_121010C: 367** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
 Analysis Date: **10/10/12 19:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:
 Analytes **Z** Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic	0.0101	0.0050	0.01		101	70	130				
Cadmium	0.0106	0.0010	0.01		105	70	130				
Copper	0.0202	0.010	0.02		101	70	130				
Iron	94.5	0.030	100		95	70	130				
Lead	0.000156	0.010				0	0				
Manganese	0.0201	0.010	0.02		101	70	130				
Zinc	0.0114	0.010	0.01		114	70	130				

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: **ICPMS204-B_121010C: 604** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
 Analysis Date: **10/11/12 13:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:
 Analytes **Z** Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic	0.000103	0.0050									
Cadmium	0.000925	0.0010									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: R83638

Run ID :Run Order: ICPMS204-B_121010C: 604		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 10/11/12 13:55		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.50E-05	0.010									
Iron	94.7	0.030	100		95	70	130				
Lead	0.000140	0.010									
Manganese	0.000167	0.010									
Zinc	0.00158	0.010									

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121010C: 605		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 10/11/12 14:00		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0107	0.0010	0.01		107	70	130				
Copper	0.0198	0.010	0.02		99	70	130				
Iron	92.6	0.030	100		93	70	130				
Lead	0.000151	0.010				0	0				
Manganese	0.0200	0.010	0.02		100	70	130				
Zinc	0.0112	0.010	0.01		112	70	130				

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121010C: 354		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 10/11/12 18:36		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0515	0.0050	0.05		103	90	110				
Cadmium	0.0266	0.0010	0.025		106	90	110				
Copper	0.0534	0.010	0.05		107	90	110				
Iron	0.263	0.030	0.25		105	90	110				
Lead	0.0509	0.010	0.05		102	90	110				
Manganese	0.258	0.010	0.25		103	90	110				
Zinc	0.0535	0.010	0.05		107	90	110				

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: R83638

Run ID :Run Order: ICPMS204-B_121010C: 357		SampType: Interference Check Sample A			Sample ID: ICESA			Method: E200.8			
Analysis Date: 10/11/12 18:50		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.000767	0.0050									
Cadmium	0.000921	0.0010									
Copper	0.000822	0.010									
Iron	97.8	0.030	100		98	70	130				
Lead	0.000439	0.010									
Manganese	0.00120	0.010									
Zinc	0.00220	0.010									

Associated samples: H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICPMS204-B_121010C: 358		SampType: Interference Check Sample AB			Sample ID: ICESAB			Method: E200.8			
Analysis Date: 10/11/12 18:54		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0105	0.0050	0.01		105	70	130				
Cadmium	0.0106	0.0010	0.01		106	70	130				
Copper	0.0207	0.010	0.02		104	70	130				
Iron	97.8	0.030	100		98	70	130				
Lead	0.000236	0.010				0	0				
Manganese	0.0197	0.010	0.02		99	70	130				
Zinc	0.0120	0.010	0.01		120	70	130				

Associated samples: H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICPMS204-B_121010C: 499		SampType: Sample Matrix Spike			Sample ID: H12100142-004BMS			Method: E200.8			
Analysis Date: 10/12/12 05:29		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0549	0.0010	0.05	0.00197	106	70	130				
Cadmium	0.0512	0.0010	0.05	0.0000664	102	70	130				
Copper	0.0472	0.0050	0.05	0.0002474	94	70	130				
Iron	4.78	0.030	5	0.02097	95	70	130				
Lead	0.0505	0.0010	0.05	0.0001049	101	70	130				
Manganese	0.0519	0.0010	0.05	0.003378	97	70	130				
Zinc	0.0551	0.010	0.05	0.004416	101	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: R83638

Run ID :Run Order: ICPMS204-B_121010C: 499	SampType: Sample Matrix Spike	Sample ID: H12100142-004BMS	Method: E200.8								
Analysis Date: 10/12/12 05:29	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121010C: 500	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100142-004BMSD	Method: E200.8								
Analysis Date: 10/12/12 05:34	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0556	0.0010	0.05	0.00197	107	70	130	0.05488	1.2	20	
Cadmium	0.0521	0.0010	0.05	0.0000664	104	70	130	0.05116	1.7	20	
Copper	0.0471	0.0050	0.05	0.0002474	94	70	130	0.04722	0.2	20	
Iron	4.87	0.030	5	0.02097	97	70	130	4.785	1.7	20	
Lead	0.0508	0.0010	0.05	0.0001049	101	70	130	0.05051	0.6	20	
Manganese	0.0532	0.0010	0.05	0.003378	100	70	130	0.05192	2.5	20	
Zinc	0.0547	0.010	0.05	0.004416	101	70	130	0.05511	0.7	20	

Associated samples: **H12100142-001B; H12100142-002B; H12100142-003B; H12100142-004B; H12100142-005B; H12100142-006B; H12100142-007B; H12100142-008B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142

ANALYTICAL QC SUMMARY REPORT

Date: 24-Oct-12

Project: Section 35 Groundwater

BatchID: R83652

Run ID :Run Order: IC102-H_121011B: 15	SampType: Initial Calibration Verification Standard				Sample ID: ICV101112-12	Method: E300.0					
Analysis Date: 10/11/12 15:33	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	100	1.0	100		103	90	110				
Sulfate	410	1.0	400		103	90	110				

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: IC102-H_121011B: 16	SampType: Method Blank				Sample ID: ICB101112-13	Method: E300.0					
Analysis Date: 10/11/12 15:45	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	ND	0.03									
Sulfate	ND	0.1									

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: IC102-H_121011B: 17	SampType: Laboratory Fortified Blank				Sample ID: LFB101112-14	Method: E300.0					
Analysis Date: 10/11/12 15:58	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	47	1.0	50		95	90	110				
Sulfate	200	1.0	200		100	90	110				

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: IC102-H_121011B: 34	SampType: Continuing Calibration Verification Standard				Sample ID: CCV101112-30	Method: E300.0					
Analysis Date: 10/11/12 19:32	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	100	1.0	100		103	90	110				
Sulfate	420	1.0	400		106	90	110				

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A**

Run ID :Run Order: IC102-H_121011B: 45	SampType: Sample Matrix Spike				Sample ID: H12100142-004AMS	Method: E300.0					
Analysis Date: 10/11/12 21:51	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	50	1.0	50	0.684	100	90	110				
Sulfate	210	1.0	200	4.29	105	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142

ANALYTICAL QC SUMMARY REPORT

Date: 24-Oct-12

Project: Section 35 Groundwater

BatchID: R83652

Run ID :Run Order: IC102-H_121011B: 45	SampType: Sample Matrix Spike	Sample ID: H12100142-004AMS	Method: E300.0								
Analysis Date: 10/11/12 21:51	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

Associated samples: H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A

Run ID :Run Order: IC102-H_121011B: 46	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100142-004AMSD	Method: E300.0								
Analysis Date: 10/11/12 22:03	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	51	1.0	50	0.684	101	90	110	50.49	1.5	20	
Sulfate	220	1.0	200	4.29	106	90	110	214.2	0.8	20	

Associated samples: H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A

Run ID :Run Order: IC102-H_121011B: 48	SampType: Continuing Calibration Verification Standard	Sample ID: CCV101112-44	Method: E300.0								
Analysis Date: 10/11/12 22:29	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	110	1.0	100		107	90	110				
Sulfate	420	1.0	400		104	90	110				

Associated samples: H12100142-006A; H12100142-007A; H12100142-008A

Run ID :Run Order: IC102-H_121011B: 59	SampType: Sample Matrix Spike	Sample ID: H12100143-006AMS	Method: E300.0								
Analysis Date: 10/12/12 00:47	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	51	1.0	50	0.267	102	90	110				
Sulfate	470	1.0	200	250.1	111	90	110				S

Associated samples: H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A

Run ID :Run Order: IC102-H_121011B: 60	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100143-006AMSD	Method: E300.0								
Analysis Date: 10/12/12 01:00	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	51	1.0	50	0.267	101	90	110	51.12	0.9	20	
Sulfate	470	1.0	200	250.1	111	90	110	472.3	0.1	20	S

Associated samples: H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142

ANALYTICAL QC SUMMARY REPORT

Date: 24-Oct-12

Project: Section 35 Groundwater

BatchID: R83694

Run ID :Run Order: ICPMS204-B_121015A: 8		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 10/15/12 15:00		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0530	0.010	0.05		106	90	110				
Manganese	0.253	0.010	0.25		101	90	110				

Associated samples: **H12100142-002B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121015A: 9		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 10/15/12 15:04		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.000182	0.010									
Manganese	0.000317	0.010									

Associated samples: **H12100142-002B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121015A: 10		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 10/15/12 15:09		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0209	0.010	0.02		104	70	130				
Manganese	0.0210	0.010	0.02		105	70	130				

Associated samples: **H12100142-002B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121015A: 16		SampType: Method Blank			Sample ID: ICB			Method: E200.8			
Analysis Date: 10/15/12 15:49		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	2E-05									
Manganese	ND	5E-05									

Associated samples: **H12100142-002B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121015A: 17		SampType: Laboratory Fortified Blank			Sample ID: LFB			Method: E200.8			
Analysis Date: 10/15/12 15:54		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0486	0.010	0.05		97	85	115				
Manganese	0.0502	0.010	0.05		100	85	115				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: R83694

Run ID :Run Order: ICPMS204-B_121015A: 17	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.8
Analysis Date: 10/15/12 15:54	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes <u>2</u>	Result	PQL	SPK value
	SPK Ref Val	%REC	LowLimit
		HighLimit	RPD Ref Val
		%RPD	RPDLimit
			Qual

Associated samples: **H12100142-002B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121015A: 122	SampType: Sample Matrix Spike	Sample ID: H12100142-008BMS	Method: E200.8
Analysis Date: 10/16/12 00:06	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes <u>2</u>	Result	PQL	SPK value
	SPK Ref Val	%REC	LowLimit
		HighLimit	RPD Ref Val
		%RPD	RPDLimit
			Qual
Copper	0.0483	0.0050	0.05
			0.0009482
			95
			70
			130
Manganese	0.0538	0.0010	0.05
			0.003901
			100
			70
			130

Associated samples: **H12100142-002B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121015A: 123	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100142-008BMSD	Method: E200.8
Analysis Date: 10/16/12 00:10	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes <u>2</u>	Result	PQL	SPK value
	SPK Ref Val	%REC	LowLimit
		HighLimit	RPD Ref Val
		%RPD	RPDLimit
			Qual
Copper	0.0474	0.0050	0.05
			0.0009482
			93
			70
			130
			0.04834
			2.0
			20
Manganese	0.0532	0.0010	0.05
			0.003901
			99
			70
			130
			0.05381
			1.1
			20

Associated samples: **H12100142-002B; H12100142-008B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142

ANALYTICAL QC SUMMARY REPORT

Date: 24-Oct-12

Project: Section 35 Groundwater

BatchID: R83744

Run ID :Run Order: ICPMS204-B_121016A: 9	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 10/16/12 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
Aluminum	36.4	0.10	40		91	70	130				

Associated samples: H12100142-004B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICPMS204-B_121016A: 10	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 10/16/12 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
Aluminum	36.4	0.10	40		91	70	130				

Associated samples: H12100142-004B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICPMS204-B_121016A: 16	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 10/16/12 12:45	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
Aluminum	0.255	0.10	0.25		102	90	110				

Associated samples: H12100142-004B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICPMS204-B_121016A: 19	SampType: Method Blank	Sample ID: ICB	Method: E200.8								
Analysis Date: 10/16/12 12:58	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
Aluminum	0.003	0.0001									

Associated samples: H12100142-004B; H12100142-006B; H12100142-007B; H12100142-008B

Run ID :Run Order: ICPMS204-B_121016A: 20	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.8								
Analysis Date: 10/16/12 13:03	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
Aluminum	0.0503	0.10	0.05	0.003259	94	85	115				

Associated samples: H12100142-004B; H12100142-006B; H12100142-007B; H12100142-008B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 24-Oct-12

BatchID: R83744

Run ID :Run Order: ICPMS204-B_121016A: 68	SampType: Sample Matrix Spike	Sample ID: H12100142-004BMS	Method: E200.8								
Analysis Date: 10/16/12 16:34	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
Aluminum	0.105	0.030	0.05	0.0612	87	70	130				

Associated samples: **H12100142-004B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121016A: 69	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100142-004BMSD	Method: E200.8								
Analysis Date: 10/16/12 16:38	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
Aluminum	0.108	0.030	0.05	0.0612	93	70	130	0.1049	2.5	20	

Associated samples: **H12100142-004B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121016A: 75	SampType: Sample Matrix Spike	Sample ID: H12100143-006BMS	Method: E200.8								
Analysis Date: 10/16/12 17:04	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
Aluminum	0.0472	0.030	0.05	0.001622	91	70	130				

Associated samples: **H12100142-004B; H12100142-006B; H12100142-007B; H12100142-008B**

Run ID :Run Order: ICPMS204-B_121016A: 76	SampType: Sample Matrix Spike Duplicate	Sample ID: H12100143-006BMSD	Method: E200.8								
Analysis Date: 10/16/12 17:09	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
Aluminum	0.0474	0.030	0.05	0.001622	92	70	130	0.04719	0.5	20	

Associated samples: **H12100142-004B; H12100142-006B; H12100142-007B; H12100142-008B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12100142

ANALYTICAL QC SUMMARY REPORT

Date: 24-Oct-12

Project: Section 35 Groundwater

BatchID: TDS121008A

Run ID :Run Order: ACCU-124 (14410200)_121008B: 1	SampType: Method Blank	Sample ID: MB-1_121008A	Method: A2540 C
Analysis Date: 10/08/12 14:43	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 Dissolved TDS @ 180 C	8	3	

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: ACCU-124 (14410200)_121008B: 2	SampType: Laboratory Control Sample	Sample ID: LCS-2_121008A	Method: A2540 C
Analysis Date: 10/08/12 14:43	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 Dissolved TDS @ 180 C	2010	10	2000
		8	100
		90	110

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: ACCU-124 (14410200)_121008B: 4	SampType: Sample Duplicate	Sample ID: H12100142-001A DUP	Method: A2540 C
Analysis Date: 10/08/12 14:43	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 Dissolved TDS @ 180 C	ND	10	
			5

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: ACCU-124 (14410200)_121008B: 6	SampType: Sample Matrix Spike	Sample ID: H12100142-002A MS	Method: A2540 C
Analysis Date: 10/08/12 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	
Solids, Total Dissolved TDS @ 180 C	2010	10	2000
			100
			80
			120

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Run ID :Run Order: ACCU-124 (14410200)_121008B: 16	SampType: Sample Duplicate	Sample ID: H12100143-003A DUP	Method: A2540 C
Analysis Date: 10/08/12 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 Dissolved TDS @ 180 C	173	10	
			168
			2.9
			5

Associated samples: **H12100142-001A; H12100142-002A; H12100142-003A; H12100142-004A; H12100142-005A; H12100142-006A; H12100142-007A; H12100142-008A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount

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.

Workorder Receipt Checklist

MT DEQ-Site Response

H12100142

Login completed by: Wanda Johnson

Date Received: 10/8/2012

Reviewed by: BL2000\sdull

Received by: wjj

Reviewed Date: 10/15/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	0.2°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Contact and Corrective Action Comments:

None



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **MDFEQ**
 Report Mail Address: **Joe Quate H-645**
 Invoice Address: **Joe Quate H-645**

Project Name, PWS, Permit, Etc.: **Section 35 Groundwater**
 Contact Name: **Shellicie Haeckel 841-5033 shaeckel@mt.gov**
 Phone/Fax: _____
 Email: _____
 Purchase Order: **10761**

EPA/State Compliance: Yes No
 Sampler: (Please Print) **A. Presbuck**
 Quote/Bottle Order: _____

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Comments:	Shipped by: Cooler ID(s):	Receipt Temp: °C	On Ice:	Custody Seal On Bottle On Cooler	Intact	Signature Match
				Number of Containers	Sample Type: AW S V B O DW Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water									
1 535-MW-08	10/5/12	0952	W			SEE ATTACHED	↑							
2 535-MW-09		0903												
3 535-MW-01		1038												
4 535-MW-03		1125												
5 535-MW-04		1218												
6 535-MW-07		1141												
7 535-MW-02		1430												
8 535-MW-06	10/5/12	1634	W											
9														
10														

Received by (print): **Alan Presbuck** Date/Time: **10/8/12 10:31**
 Signature: *[Signature]*
 Received by (print): _____ Date/Time: _____
 Signature: _____
 Received by Laboratory: **Wanderson** Date/Time: **10-8-12 10:34**
 Signature: *[Signature]*

Sample Disposal: _____ Return to Client: _____ Lab Disposal: _____

Custody Record MUST be Signed

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Section 35 Quarterly

	Quantity	Analysis													
Surface Water	7	¹ Dissolved Metals	² Total Metals	⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC		
Groundwater	9	³ Dissolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC		
Sediment	6		⁴ Total Metals												

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

UBMC Quarterly

	Quantity	Analysis													
⁶ Surface Water	11	¹ Dissolved Metals	² Total Metals	⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC		
Groundwater	10	³ Dissolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC		
Sediment	9		⁴ Total Metals												

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

⁶Additional surface water samples may be collected for seeps.



ANALYTICAL SUMMARY REPORT

December 21, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12120182 Quote ID: H645 - UBMC

Project Name: Section 35 Sediment

Energy Laboratories Inc Helena MT received the following 6 samples for MT DEQ-Site Response on 12/11/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12120182-001	S35-SD-04	12/11/12 9:39	12/11/12	Sediment	Metals by ICP/ICPMS, Total Digestion, Total Metals Soil Preparation
H12120182-002	S35-SD-03	12/11/12 10:29	12/11/12	Sediment	Same As Above
H12120182-003	S35-SD-01	12/11/12 11:29	12/11/12	Sediment	Same As Above
H12120182-004	S35-SD-06	12/11/12 11:41	12/11/12	Sediment	Same As Above
H12120182-005	S35-SD-02	12/11/12 12:45	12/11/12	Sediment	Same As Above
H12120182-006	S35-SD-05	12/11/12 13:49	12/11/12	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 Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-04
Lab ID: H12120182-001
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 09:39 **DateReceived:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	5600	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Arsenic	9	mg/kg		5		SW6010B	12/18/12 18:38 / sld	12/12/12 14:26	ICP2-HE_121218B : 71		18996
Cadmium	2	mg/kg		1		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Copper	44	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Iron	15700	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Lead	26	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Manganese	1720	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Zinc	766	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-03
Lab ID: H12120182-002
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 10:29 **DateReceived:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	5430	mg/kg		5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Arsenic	5	mg/kg		5		SW6010B	12/18/12 18:42 / sld	12/12/12 14:26	ICP2-HE_121218B : 72		18996
Cadmium	ND	mg/kg		1		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Copper	26	mg/kg		5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Iron	11300	mg/kg		5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Lead	20	mg/kg		5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Manganese	686	mg/kg		5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Zinc	263	mg/kg		5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-01
Lab ID: H12120182-003
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 11:29 **DateReceived:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	13900	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Arsenic	9	mg/kg		5		SW6010B	12/18/12 18:45 / sld	12/12/12 14:26	ICP2-HE_121218B : 73		18996
Cadmium	ND	mg/kg		1		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Copper	55	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Iron	15600	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Lead	13	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Manganese	1450	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Zinc	67	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-06
Lab ID: H12120182-004
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 11:41 **DateReceived:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	12700	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Arsenic	7	mg/kg		5		SW6010B	12/18/12 18:49 / sld	12/12/12 14:26	ICP2-HE_121218B : 74		18996
Cadmium	ND	mg/kg		1		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Copper	48	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Iron	14800	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Lead	12	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Manganese	1130	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Zinc	62	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-02
Lab ID: H12120182-005
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 12:45 **DateReceived:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	3640	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Arsenic	ND	mg/kg		5		SW6010B	12/18/12 18:53 / sld	12/12/12 14:26	ICP2-HE_121218B : 75		18996
Cadmium	ND	mg/kg		1		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Copper	36	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Iron	2370	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Lead	ND	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Manganese	21	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Zinc	17	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-05
Lab ID: H12120182-006
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 13:49 **Date Received:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6230	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Arsenic	6	mg/kg		5		SW6010B	12/18/12 18:56 / sld	12/12/12 14:26	ICP2-HE_121218B : 76		18996
Cadmium	ND	mg/kg		1		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Copper	24	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Iron	13100	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Lead	9	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Manganese	202	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Zinc	38	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



Client: MT DEQ-Site Response
Work Order: H12120182

ANALYTICAL QC SUMMARY REPORT

Date: 21-Dec-12

Project: Section 35 Sediment

BatchID: 18996

Run ID :Run Order: ICP2-HE_121217C: 67		SampType: Method Blank			Sample ID: MB-18996				Method: SW6010B		
Analysis Date: 12/17/12 19:59		Units: mg/kg			Prep Info: Prep Date: 12/12/2012				Prep Method: SW3050 B		
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.4	0.3									
Arsenic	0.8	0.4									
Cadmium	0.03	0.01									
Copper	ND	0.2									
Iron	2	0.7									
Lead	ND	1									
Manganese	0.1	0.04									
Zinc	0.2	0.1									

Associated samples: H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A

Run ID :Run Order: ICP2-HE_121217C: 68		SampType: Laboratory Fortified Blank			Sample ID: LFB-18996				Method: SW6010B		
Analysis Date: 12/17/12 20:03		Units: mg/kg			Prep Info: Prep Date: 12/12/2012				Prep Method: SW3050 B		
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	252	5.0	250	0.3685	101	80	120				
Arsenic	49.1	1.0	50	0.7675	97	80	120				
Cadmium	23.8	1.0	25	0.028	95	80	120				
Copper	49.4	1.0	50		99	80	120				
Iron	242	5.0	250	2.416	96	80	120				
Lead	47.0	1.0	50		94	80	120				
Manganese	247	1.0	250	0.1495	99	80	120				
Zinc	49.4	1.0	50	0.205	98	80	120				

Associated samples: H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A

Run ID :Run Order: ICP2-HE_121217C: 71		SampType: Laboratory Control Sample			Sample ID: LCS-18996				Method: SW6010B		
Analysis Date: 12/17/12 20:14		Units: mg/kg			Prep Info: Prep Date: 12/12/2012				Prep Method: SW3050 B		
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	12400	5.0	14410	0.3685	86	50.7	131.3				
Arsenic	276	1.5	336.3	0.7675	82	72.3	106.4				
Cadmium	119	1.0	134.3	0.028	89	73	105.1				
Copper	247	1.0	274.5		90	77.5	109.6				
Iron	18500	5.0	22550	2.416	82	39.6	138.3				
Lead	175	3.0	183.3		95	75.9	108.6				

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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120182

ANALYTICAL QC SUMMARY REPORT

Date: 21-Dec-12

Project: Section 35 Sediment

BatchID: 18996

Run ID :Run Order: ICP2-HE_121217C: 71	SampType: Laboratory Control Sample	Sample ID: LCS-18996	Method: SW6010B								
Analysis Date: 12/17/12 20:14	Units: mg/kg	Prep Info: Prep Date: 12/12/2012	Prep Method: SW3050 B								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	350	1.0	361.8	0.1495	97	80.8	115.7				
Zinc	192	1.0	208.8	0.205	92	74.2	109.9				

Associated samples: H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A

Run ID :Run Order: ICP2-HE_121217C: 80	SampType: Sample Matrix Spike	Sample ID: H12120182-006AMS	Method: SW6010B								
Analysis Date: 12/17/12 20:48	Units: mg/kg	Prep Info: Prep Date: 12/12/2012	Prep Method: SW3050 B								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8110	5.0	124.4	6229		75	125				A
Arsenic	29.1	1.0	24.88	6.1	92	75	125				
Cadmium	11.3	1.0	12.44		91	75	125				
Copper	46.0	1.0	24.88	24.15	88	75	125				
Iron	14000	5.0	124.4	13110		75	125				A
Lead	29.6	1.5	24.88	9.478	81	75	125				
Manganese	401	1.0	124.4	201.8	160	75	125				S
Zinc	70.1	1.0	24.88	38.18	128	75	125				S

Associated samples: H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A

Run ID :Run Order: ICP2-HE_121217C: 83	SampType: Sample Matrix Spike Duplicate	Sample ID: H12120182-006AMSD	Method: SW6010B								
Analysis Date: 12/17/12 20:59	Units: mg/kg	Prep Info: Prep Date: 12/12/2012	Prep Method: SW3050 B								
Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	7430	5.0	124.4	6229		75	125	8109	8.7	20	A
Copper	46.9	1.0	24.88	24.15	91	75	125	45.99	1.9	20	
Zinc	58.4	1.0	24.88	38.18	81	75	125	70.12	18	20	

Associated samples: H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A

Run ID :Run Order: ICP2-HE_121218B: 66	SampType: Method Blank	Sample ID: MB-18996	Method: SW6010B								
Analysis Date: 12/18/12 18:19	Units: mg/kg	Prep Info: Prep Date: 12/12/2012	Prep Method: SW3050 B								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.8									
Arsenic	ND	0.4									
Cadmium	ND	0.01									

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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120182
Project: Section 35 Sediment

ANALYTICAL QC SUMMARY REPORT

Date: 21-Dec-12

Prepared by Helena, MT Branch

BatchID: 18996

Run ID :Run Order: ICP2-HE_121218B: 66	SampType: Method Blank				Sample ID: MB-18996				Method: SW6010B		
Analysis Date: 12/18/12 18:19	Units: mg/kg				Prep Info: Prep Date: 12/12/2012				Prep Method: SW3050 B		
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.2									
Iron	3	0.7									
Lead	2	1									
Manganese	0.1	0.04									
Zinc	0.3	0.1									

Associated samples: **H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A**

Run ID :Run Order: ICP2-HE_121218B: 69	SampType: Laboratory Fortified Blank				Sample ID: LFB-18996				Method: SW6010B		
Analysis Date: 12/18/12 18:31	Units: mg/kg				Prep Info: Prep Date: 12/12/2012				Prep Method: SW3050 B		
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	253	5.0	250		101	80	120				
Arsenic	47.3	1.0	50		95	80	120				
Cadmium	23.6	1.0	25		94	80	120				
Copper	50.2	1.0	50		100	80	120				
Iron	254	5.0	250	2.624	101	80	120				
Lead	48.4	1.0	50	1.792	93	80	120				
Manganese	251	1.0	250	0.1135	101	80	120				
Zinc	48.7	1.0	50	0.2995	97	80	120				

Associated samples: **H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A**

Run ID :Run Order: ICP2-HE_121218B: 70	SampType: Laboratory Control Sample				Sample ID: LCS-18996				Method: SW6010B		
Analysis Date: 12/18/12 18:34	Units: mg/kg				Prep Info: Prep Date: 12/12/2012				Prep Method: SW3050 B		
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	13000	5.0	14410		90	50.7	131.3				
Arsenic	283	1.5	336.3		84	72.3	106.4				
Cadmium	123	1.0	134.3		92	73	105.1				
Copper	258	1.0	274.5		94	77.5	109.6				
Iron	19900	5.0	22550	2.624	88	39.6	138.3				
Lead	190	3.0	183.3	1.792	103	75.9	108.6				
Manganese	369	1.0	361.8	0.1135	102	80.8	115.7				
Zinc	199	1.0	208.8	0.2995	95	74.2	109.9				

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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120182
Project: Section 35 Sediment

ANALYTICAL QC SUMMARY REPORT

Date: 21-Dec-12

Prepared by Helena, MT Branch

BatchID: 18996

Run ID :Run Order: **ICP2-HE_121218B: 70** SampType: **Laboratory Control Sample** Sample ID: **LCS-18996** Method: **SW6010B**
 Analysis Date: **12/18/12 18:34** Units: **mg/kg** Prep Info: Prep Date: **12/12/2012** Prep Method: **SW3050 B**
 Analytes **g** Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Associated samples: **H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A**

Run ID :Run Order: **ICP2-HE_121218B: 81** SampType: **Sample Matrix Spike** Sample ID: **H12120182-006AMS** Method: **SW6010B**
 Analysis Date: **12/18/12 19:15** Units: **mg/kg** Prep Info: Prep Date: **12/12/2012** Prep Method: **SW3050 B**
 Analytes **g** Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum	8490	5.0	124.4	6506		75	125				A
Arsenic	26.5	1.0	24.88	6.271	81	75	125				
Cadmium	11.2	1.0	12.44		90	75	125				
Copper	48.9	1.0	24.88	25.22	95	75	125				
Iron	15100	5.0	124.4	14170		75	125				A
Lead	36.2	1.5	24.88	10.98	101	75	125				
Manganese	419	1.0	124.4	211.2	167	75	125				S
Zinc	69.9	1.0	24.88	39.12	124	75	125				

Associated samples: **H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A**

Run ID :Run Order: **ICP2-HE_121218B: 82** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H12120182-006AMSD** Method: **SW6010B**
 Analysis Date: **12/18/12 19:19** Units: **mg/kg** Prep Info: Prep Date: **12/12/2012** Prep Method: **SW3050 B**
 Analytes **g** Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aluminum	7810	5.0	124.4	6506		75	125	8491	8.4	20	A
Arsenic	29.2	1.0	24.88	6.271	92	75	125	26.46	10.0	20	
Cadmium	11.2	1.0	12.44		90	75	125	11.21	0.1	20	
Copper	49.0	1.0	24.88	25.22	96	75	125	48.94	0.2	20	
Iron	15200	5.0	124.4	14170		75	125	15120	0.5	20	A
Lead	36.3	1.5	24.88	10.98	102	75	125	36.22	0.1	20	
Manganese	275	1.0	124.4	211.2	51	75	125	419.4	42	20	SR
Zinc	59.8	1.0	24.88	39.12	83	75	125	69.89	15	20	

Associated samples: **H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A**

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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120182
Project: Section 35 Sediment

ANALYTICAL QC SUMMARY REPORT

Date: 21-Dec-12

Prepared by Helena, MT Branch

BatchID: R85191

Run ID :Run Order:	ICP2-HE_121217C: 6	SampType:	Initial Calibration Verification Standard	Sample ID:	ICV	Method:	E200.7					
Analysis Date:	12/17/12 14:19	Units:	mg/L	Prep Info:	Prep Date:	Prep Method:						
Analytes	Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		4.09	0.10	4		102	90	110				
Cadmium		0.398	0.0010	0.4		99	90	110				
Copper		0.810	0.010	0.8		101	90	110				
Iron		4.00	0.030	4		100	90	110				
Lead		0.796	0.013	0.8		100	90	110				
Manganese		4.07	0.010	4		102	90	110				
Zinc		0.810	0.010	0.8		101	90	110				

Associated samples: H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A

Run ID :Run Order:	ICP2-HE_121217C: 10	SampType:	Interference Check Sample A	Sample ID:	ICSA	Method:	E200.7					
Analysis Date:	12/17/12 14:34	Units:	mg/L	Prep Info:	Prep Date:	Prep Method:						
Analytes	Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		531	0.10	500		106	80	120				
Cadmium		-0.00150	0.0010				0	0				
Copper		0.00133	0.010				0	0				
Iron		192	0.030	200		96	80	120				
Lead		0.0187	0.013				0	0				
Manganese		-0.00499	0.010				0	0				
Zinc		0.00957	0.010				0	0				

Associated samples: H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A

Run ID :Run Order:	ICP2-HE_121217C: 11	SampType:	Interference Check Sample AB	Sample ID:	ICSAB	Method:	E200.7					
Analysis Date:	12/17/12 14:38	Units:	mg/L	Prep Info:	Prep Date:	Prep Method:						
Analytes	Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		533	0.10	500		107	80	120				
Cadmium		0.908	0.0010	1		91	80	120				
Copper		0.510	0.010	0.5		102	80	120				
Iron		192	0.030	200		96	80	120				
Lead		0.975	0.013	1		98	80	120				
Manganese		0.486	0.010	0.5		97	80	120				
Zinc		0.994	0.010	1		99	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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120182
Project: Section 35 Sediment

ANALYTICAL QC SUMMARY REPORT

Date: 21-Dec-12

Prepared by Helena, MT Branch

BatchID: R85191

Run ID :Run Order: ICP2-HE_121217C: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 12/17/12 14:38	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A**

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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120182

ANALYTICAL QC SUMMARY REPORT

Date: 21-Dec-12

Project: Section 35 Sediment

BatchID: R85224

Run ID :Run Order: ICP2-HE_121218B: 6	SampType: Initial Calibration Verification Standard	Sample ID: ICV	Method: E200.7								
Analysis Date: 12/18/12 13:22	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.852	0.0092	0.8		107	90	110				

Associated samples: H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A

Run ID :Run Order: ICP2-HE_121218B: 10	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.7								
Analysis Date: 12/18/12 13:37	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.00444	0.0092				0	0				

Associated samples: H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A

Run ID :Run Order: ICP2-HE_121218B: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.7								
Analysis Date: 12/18/12 13:41	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.13	0.0092	1		113	80	120				

Associated samples: H12120182-001A; H12120182-002A; H12120182-003A; H12120182-004A; H12120182-005A; H12120182-006A

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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120182
Project: Section 35 Sediment

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R85224

Date: 21-Dec-12

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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.

Workorder Receipt Checklist

MT DEQ-Site Response

H12120182

Login completed by: Wanda Johnson

Date Received: 12/11/2012

Reviewed by: BL2000\jweidemoyer

Received by: elm

Reviewed Date: 12/14/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	0.4°C From Field/On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Contact and Corrective Action Comments:

None

PLEASE PRINT (Provide as much information as possible.)

Company Name: **MDEA**
 Report Mail Address: **See Quota # 11-645**
 Invoice Address: **Shellie Healand, 841-5033, Shalheale Ave**
 Project Name, PWS, Permit, Etc: **SOCT-35 SOA Mat**
 Contact Name: **Shellie Healand**
 Phone/Fax: **841-5033**
 Invoice Contact & Phone: **841-5033, Shalheale Ave**
 Sample Origin: **MI**
 State: **MI**
 EPA/State Compliance: Yes No
 Sampler: (Please Print) **M. Toupin**
 Quote/Bottle Order: **11149**
 Purchase Order: **11149**

Special Report/Formats:
 DW EDD/EDT (Electronic Data)
 POTW/WWTP Format: _____
 State: _____ LEVEL IV
 Other: _____ NELAC

Number of Containers
 Sample Type: A W S V B O DW
 Air Water Soils/Solids
 Vegetation Bioassay Other
 DW - Drinking Water

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED					Standard Turnaround (TAT)	RUSH	Comments:	LABORATORY USE ONLY					
				1	2	3	4	5				Received by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
1 535-50-04	2/11/12	0939	S														
2 535-50-03		1029	S														
3 535-50-01		1129	S														
4 535-50-02		1141	S														
5 535-50-02		1245	S														
6 535-50-05	12/11/10	1349	S														
7																	
8																	
9																	
10																	

Custody Record MUST be Signed
 Relinquished by (print): **Alan Bassack** Date/Time: **12/11/2010** Signature: **[Signature]**
 Received by (print): **[Signature]** Date/Time: _____ Signature: _____
 Relinquished by (print): _____ Date/Time: _____ Signature: _____
 Received by (print): **[Signature]** Date/Time: _____ Signature: _____
 Relinquished by (print): _____ Date/Time: _____ Signature: _____

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Section 35 Quarterly

Quantity	Analysis	² Total Rec. Metals	³ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
7	¹ Disolved Metals											
9	³ Disolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
6		⁴ Total Rec. Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

UBMC Quarterly

Quantity	Analysis	² Total Rec. Metals	³ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
11	¹ Disolved Metals											
10	³ Disolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
9		⁴ Total Rec. Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

⁶Additional surface water samples may be collected for seeps.



ANALYTICAL SUMMARY REPORT

January 08, 2013

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12120202 Quote ID: H645 - UBMC

Project Name: Section 35 Surface Water

Energy Laboratories Inc Helena MT received the following 7 samples for MT DEQ-Site Response on 12/11/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12120202-001	S35-SW-07	12/11/12 9:15	12/11/12	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H12120202-002	S35-SW-04	12/11/12 9:39	12/11/12	Aqueous	Same As Above
H12120202-003	S35-SW-03	12/11/12 10:29	12/11/12	Aqueous	Same As Above
H12120202-004	S35-SW-01	12/11/12 11:29	12/11/12	Aqueous	Same As Above
H12120202-005	S35-SW-06	12/11/12 11:41	12/11/12	Aqueous	Same As Above
H12120202-006	S35-SW-05	12/11/12 13:49	12/11/12	Aqueous	Same As Above
H12120202-007	S35-SW-02	12/11/12 12:45	12/11/12	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 Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-07
Lab ID: H12120202-001
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 09:15 **DateReceived:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.3	s.u.	H	0.1		A4500-H B	12/12/12 16:10 / cm		PHSC_101-H_121212A : 69		R85072
Conductivity @ 25 C	18	umhos/cm		1		A2510 B	12/12/12 16:10 / cm		PHSC_101-H_121212A : 70		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:17 / cm	12/13/12 11:01	I24 (14410200)_121213A : 21		19013
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	12/13/12 13:32 / cm		I24 (14410200)_121213B : 22		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	12/17/12 17:17 / cm		MAN-TECH_121217A : 19		R85169
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	12/17/12 17:17 / cm		MAN-TECH_121217A : 19		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 17:17 / cm		MAN-TECH_121217A : 19		R85169
Chloride	ND	mg/L		1		E300.0	12/13/12 19:22 / cm		IC102-H_121213A : 43		R85125
Sulfate	ND	mg/L		1		E300.0	12/13/12 19:22 / cm		IC102-H_121213A : 43		R85125
Hardness as CaCO3	ND	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 11		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:26 / sld		ICP2-HE_121213A : 39		R85116
Calcium	ND	mg/L		1		E200.7	12/13/12 12:26 / sld		ICP2-HE_121213A : 39		R85116
Magnesium	ND	mg/L		1		E200.7	12/13/12 12:26 / sld		ICP2-HE_121213A : 39		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:26 / sld		ICP2-HE_121213A : 39		R85116
Sodium	ND	mg/L		1		E200.7	12/13/12 12:26 / sld		ICP2-HE_121213A : 39		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Cadmium	ND	mg/L		0.00008		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Copper	0.004	mg/L		0.001		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Iron	ND	mg/L		0.03		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Manganese	ND	mg/L		0.005		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Zinc	ND	mg/L		0.01		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-04
Lab ID: H12120202-002
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 09:39 **Date Received:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	H	0.1		A4500-H B	12/12/12 16:12 / cm		PHSC_101-H_121212A : 71		R85072
Conductivity @ 25 C	242	umhos/cm		1		A2510 B	12/12/12 16:12 / cm		PHSC_101-H_121212A : 72		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:17 / cm	12/13/12 11:01	I24 (14410200)_121213A : 22		19013
Solids, Total Dissolved TDS @ 180 C	141	mg/L		10		A2540 C	12/13/12 13:32 / cm		I24 (14410200)_121213B : 23		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	70	mg/L		4		A2320 B	12/17/12 17:24 / cm		MAN-TECH_121217A : 21		R85169
Bicarbonate as HCO3	86	mg/L		4		A2320 B	12/17/12 17:24 / cm		MAN-TECH_121217A : 21		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 17:24 / cm		MAN-TECH_121217A : 21		R85169
Chloride	2	mg/L		1		E300.0	12/13/12 19:34 / cm		IC102-H_121213A : 44		R85125
Sulfate	37	mg/L		1		E300.0	12/13/12 19:34 / cm		IC102-H_121213A : 44		R85125
Hardness as CaCO3	114	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 12		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:30 / sld		ICP2-HE_121213A : 40		R85116
Calcium	25	mg/L		1		E200.7	12/13/12 12:30 / sld		ICP2-HE_121213A : 40		R85116
Magnesium	12	mg/L		1		E200.7	12/13/12 12:30 / sld		ICP2-HE_121213A : 40		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:30 / sld		ICP2-HE_121213A : 40		R85116
Sodium	3	mg/L		1		E200.7	12/13/12 12:30 / sld		ICP2-HE_121213A : 40		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Cadmium	0.00029	mg/L		0.00008		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Copper	0.001	mg/L		0.001		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Iron	0.07	mg/L		0.03		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Manganese	0.028	mg/L		0.005		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Zinc	0.20	mg/L		0.01		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-03
Lab ID: H12120202-003
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 10:29 **DateReceived:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	H	0.1		A4500-H B	12/12/12 16:15 / cm		PHSC_101-H_121212A : 73		R85072
Conductivity @ 25 C	246	umhos/cm		1		A2510 B	12/12/12 16:15 / cm		PHSC_101-H_121212A : 74		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:18 / cm	12/13/12 11:01	I24 (14410200)_121213A : 23		19013
Solids, Total Dissolved TDS @ 180 C	146	mg/L		10		A2540 C	12/13/12 13:32 / cm		I24 (14410200)_121213B : 24		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	70	mg/L		4		A2320 B	12/17/12 17:31 / cm		MAN-TECH_121217A : 23		R85169
Bicarbonate as HCO3	86	mg/L		4		A2320 B	12/17/12 17:31 / cm		MAN-TECH_121217A : 23		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 17:31 / cm		MAN-TECH_121217A : 23		R85169
Chloride	2	mg/L		1		E300.0	12/13/12 20:37 / cm		IC102-H_121213A : 49		R85125
Sulfate	37	mg/L		1		E300.0	12/13/12 20:37 / cm		IC102-H_121213A : 49		R85125
Hardness as CaCO3	114	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 13		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:34 / sld		ICP2-HE_121213A : 41		R85116
Calcium	25	mg/L		1		E200.7	12/13/12 12:34 / sld		ICP2-HE_121213A : 41		R85116
Magnesium	12	mg/L		1		E200.7	12/13/12 12:34 / sld		ICP2-HE_121213A : 41		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:34 / sld		ICP2-HE_121213A : 41		R85116
Sodium	3	mg/L		1		E200.7	12/13/12 12:34 / sld		ICP2-HE_121213A : 41		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Cadmium	0.00029	mg/L		0.00008		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Copper	ND	mg/L		0.001		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Iron	0.08	mg/L		0.03		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Manganese	0.034	mg/L		0.005		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Zinc	0.21	mg/L		0.01		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-01
Lab ID: H12120202-004
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 11:29 **DateReceived:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	H	0.1		A4500-H B	12/12/12 16:18 / cm		PHSC_101-H_121212A : 75		R85072
Conductivity @ 25 C	168	umhos/cm		1		A2510 B	12/12/12 16:18 / cm		PHSC_101-H_121212A : 76		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:18 / cm	12/13/12 11:01	I24 (14410200)_121213A : 24		19013
Solids, Total Dissolved TDS @ 180 C	100	mg/L		10		A2540 C	12/13/12 13:33 / cm		I24 (14410200)_121213B : 25		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	91	mg/L		4		A2320 B	12/17/12 17:39 / cm		MAN-TECH_121217A : 25		R85169
Bicarbonate as HCO3	110	mg/L		4		A2320 B	12/17/12 17:39 / cm		MAN-TECH_121217A : 25		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 17:39 / cm		MAN-TECH_121217A : 25		R85169
Chloride	ND	mg/L		1		E300.0	12/13/12 20:50 / cm		IC102-H_121213A : 50		R85125
Sulfate	2	mg/L		1		E300.0	12/13/12 20:50 / cm		IC102-H_121213A : 50		R85125
Hardness as CaCO3	85	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 14		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:38 / sld		ICP2-HE_121213A : 42		R85116
Calcium	22	mg/L		1		E200.7	12/13/12 12:38 / sld		ICP2-HE_121213A : 42		R85116
Magnesium	8	mg/L		1		E200.7	12/13/12 12:38 / sld		ICP2-HE_121213A : 42		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:38 / sld		ICP2-HE_121213A : 42		R85116
Sodium	2	mg/L		1		E200.7	12/13/12 12:38 / sld		ICP2-HE_121213A : 42		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Cadmium	ND	mg/L		0.00008		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Copper	ND	mg/L		0.001		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Iron	0.15	mg/L		0.03		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Manganese	ND	mg/L		0.005		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Zinc	ND	mg/L		0.01		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-06
Lab ID: H12120202-005
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 11:41 **DateReceived:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.	H	0.1		A4500-H B	12/12/12 16:20 / cm		PHSC_101-H_121212A : 77		R85072
Conductivity @ 25 C	168	umhos/cm		1		A2510 B	12/12/12 16:20 / cm		PHSC_101-H_121212A : 78		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:18 / cm	12/13/12 11:02	124 (14410200)_121213A : 27		19014
Solids, Total Dissolved TDS @ 180 C	99	mg/L		10		A2540 C	12/13/12 13:33 / cm		124 (14410200)_121213B : 28		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	89	mg/L		4		A2320 B	12/17/12 17:53 / cm		MAN-TECH_121217A : 29		R85169
Bicarbonate as HCO3	110	mg/L		4		A2320 B	12/17/12 17:53 / cm		MAN-TECH_121217A : 29		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 17:53 / cm		MAN-TECH_121217A : 29		R85169
Chloride	ND	mg/L		1		E300.0	12/13/12 21:03 / cm		IC102-H_121213A : 51		R85125
Sulfate	2	mg/L		1		E300.0	12/13/12 21:03 / cm		IC102-H_121213A : 51		R85125
Hardness as CaCO3	86	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 15		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:49 / sld		ICP2-HE_121213A : 45		R85116
Calcium	22	mg/L		1		E200.7	12/13/12 12:49 / sld		ICP2-HE_121213A : 45		R85116
Magnesium	8	mg/L		1		E200.7	12/13/12 12:49 / sld		ICP2-HE_121213A : 45		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:49 / sld		ICP2-HE_121213A : 45		R85116
Sodium	2	mg/L		1		E200.7	12/13/12 12:49 / sld		ICP2-HE_121213A : 45		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Cadmium	ND	mg/L		0.00008		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Copper	ND	mg/L		0.001		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Iron	0.15	mg/L		0.03		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Manganese	ND	mg/L		0.005		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Zinc	ND	mg/L		0.01		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-05
Lab ID: H12120202-006
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 13:49 **DateReceived:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.	H	0.1		A4500-H B	12/12/12 16:25 / cm		PHSC_101-H_121212A : 81		R85072
Conductivity @ 25 C	171	umhos/cm		1		A2510 B	12/12/12 16:25 / cm		PHSC_101-H_121212A : 82		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:19 / cm	12/13/12 11:02	124 (14410200)_121213A : 29		19014
Solids, Total Dissolved TDS @ 180 C	99	mg/L		10		A2540 C	12/13/12 13:33 / cm		124 (14410200)_121213B : 30		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	85	mg/L		4		A2320 B	12/17/12 18:09 / cm		MAN-TECH_121217A : 33		R85169
Bicarbonate as HCO3	100	mg/L		4		A2320 B	12/17/12 18:09 / cm		MAN-TECH_121217A : 33		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 18:09 / cm		MAN-TECH_121217A : 33		R85169
Chloride	ND	mg/L		1		E300.0	12/13/12 21:15 / cm		IC102-H_121213A : 52		R85125
Sulfate	5	mg/L		1		E300.0	12/13/12 21:15 / cm		IC102-H_121213A : 52		R85125
Hardness as CaCO3	87	mg/L		1		A2340 B	12/17/12 13:50 / sld		WATERCALC_121217B : 1		R85164
METALS, DISSOLVED											
Aluminum	0.04	mg/L		0.03		E200.8	12/14/12 20:03 / dck		ICPMS204-B_121210B : 694		R85054
Calcium	20	mg/L		1		E200.7	12/13/12 12:53 / sld		ICP2-HE_121213A : 46		R85116
Magnesium	9	mg/L		1		E200.7	12/13/12 12:53 / sld		ICP2-HE_121213A : 46		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:53 / sld		ICP2-HE_121213A : 46		R85116
Sodium	2	mg/L		1		E200.7	12/13/12 12:53 / sld		ICP2-HE_121213A : 46		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Cadmium	ND	mg/L		0.00008		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Copper	ND	mg/L		0.001		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Iron	0.07	mg/L		0.03		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Manganese	ND	mg/L		0.005		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Zinc	ND	mg/L		0.01		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-02
Lab ID: H12120202-007
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 12:45 **Date Received:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.7	s.u.	H	0.1		A4500-H B	12/12/12 16:28 / cm		PHSC_101-H_121212A : 83		R85072
Conductivity @ 25 C	134	umhos/cm		1		A2510 B	12/12/12 16:28 / cm		PHSC_101-H_121212A : 84		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:19 / cm	12/13/12 11:02	124 (14410200)_121213A : 30		19014
Solids, Total Dissolved TDS @ 180 C	86	mg/L		10		A2540 C	12/13/12 13:34 / cm		124 (14410200)_121213B : 32		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	69	mg/L		4		A2320 B	12/17/12 18:16 / cm		MAN-TECH_121217A : 35		R85169
Bicarbonate as HCO3	84	mg/L		4		A2320 B	12/17/12 18:16 / cm		MAN-TECH_121217A : 35		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 18:16 / cm		MAN-TECH_121217A : 35		R85169
Chloride	ND	mg/L		1		E300.0	12/13/12 21:28 / cm		IC102-H_121213A : 53		R85125
Sulfate	3	mg/L		1		E300.0	12/13/12 21:28 / cm		IC102-H_121213A : 53		R85125
Hardness as CaCO3	68	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 17		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:57 / sld		ICP2-HE_121213A : 47		R85116
Calcium	16	mg/L		1		E200.7	12/13/12 12:57 / sld		ICP2-HE_121213A : 47		R85116
Magnesium	7	mg/L		1		E200.7	12/13/12 12:57 / sld		ICP2-HE_121213A : 47		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:57 / sld		ICP2-HE_121213A : 47		R85116
Sodium	2	mg/L		1		E200.7	12/13/12 12:57 / sld		ICP2-HE_121213A : 47		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Cadmium	ND	mg/L		0.00008		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Copper	0.001	mg/L		0.001		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Iron	0.07	mg/L		0.03		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Manganese	ND	mg/L		0.005		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Zinc	ND	mg/L		0.01		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



Client: MT DEQ-Site Response
Work Order: H12120202

ANALYTICAL QC SUMMARY REPORT

Date: 10-Jan-13

Project: Section 35 Surface Water

BatchID: 19011

Run ID :Run Order: ICPMS204-B_121210B: 601		SampType: Method Blank			Sample ID: MB-19011				Method: E200.8		
Analysis Date: 12/14/12 12:38		Units: mg/L			Prep Info: Prep Date: 12/13/2012				Prep Method: E200.2		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	3E-05									
Cadmium	ND	2E-05									
Copper	ND	0.0003									
Iron	ND	0.0007									
Lead	ND	2E-05									
Manganese	ND	5E-05									
Zinc	0.0008	0.0007									

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 602		SampType: Laboratory Control Sample			Sample ID: LCS-19011				Method: E200.8		
Analysis Date: 12/14/12 12:42		Units: mg/L			Prep Info: Prep Date: 12/13/2012				Prep Method: E200.2		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.520	0.0010	0.5		104	85	115				
Cadmium	0.277	0.0010	0.25		111	85	115				
Copper	0.515	0.0050	0.5		103	85	115				
Iron	2.69	0.030	2.5		108	85	115				
Lead	0.538	0.0010	0.5		108	85	115				
Manganese	2.66	0.0010	2.5		106	85	115				
Zinc	0.531	0.010	0.5	0.0008227	106	85	115				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 652		SampType: Sample Matrix Spike			Sample ID: H12120202-001CMS3				Method: E200.8		
Analysis Date: 12/14/12 16:32		Units: mg/L			Prep Info: Prep Date: 12/14/2012				Prep Method:		
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.509	0.0010	0.5	0.0000368	102	70	130				
Cadmium	0.272	0.0010	0.25		109	70	130				
Copper	0.512	0.0050	0.5	0.004182	102	70	130				
Iron	2.62	0.030	2.5	0.001239	105	70	130				
Lead	0.537	0.0010	0.5	0.0000366	107	70	130				
Manganese	2.66	0.0010	2.5	0.0005461	107	70	130				
Zinc	0.532	0.010	0.5	0.007772	105	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ICPMS204-B_121210B: 652	SampType: Sample Matrix Spike	Sample ID: H12120202-001CMS3	Method: E200.8								
Analysis Date: 12/14/12 16:32	Units: mg/L	Prep Info: Prep Date: 12/14/2012	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006C; H12120202-007C**

Run ID :Run Order: ICPMS204-B_121210B: 653	SampType: Sample Matrix Spike Duplicate	Sample ID: H12120202-001CMSD3	Method: E200.8								
Analysis Date: 12/14/12 16:36	Units: mg/L	Prep Info: Prep Date: 12/14/2012	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.500	0.0010	0.5	0.0000368	100	70	130	0.5093	1.7	20	
Cadmium	0.274	0.0010	0.25		109	70	130	0.272	0.5	20	
Copper	0.507	0.0050	0.5	0.004182	101	70	130	0.5117	0.9	20	
Iron	2.58	0.030	2.5	0.001239	103	70	130	2.624	1.6	20	
Lead	0.534	0.0010	0.5	0.0000366	107	70	130	0.5368	0.5	20	
Manganese	2.64	0.0010	2.5	0.0005461	106	70	130	2.665	0.8	20	
Zinc	0.521	0.010	0.5	0.007772	103	70	130	0.5319	2.1	20	

Associated samples: **H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006C; H12120202-007C**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ACCU-124 (14410200)_121213A: 1	SampType: Method Blank	Sample ID: MB-19013	Method: A2540 D								
Analysis Date: 12/13/12 13:04	Units: mg/L	Prep Info: Prep Date: 12/13/2012	Prep Method: A2540 D								
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	2									

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A**

Run ID :Run Order: ACCU-124 (14410200)_121213A: 2	SampType: Laboratory Control Sample	Sample ID: LCS-19013	Method: A2540 D								
Analysis Date: 12/13/12 13:04	Units: mg/L	Prep Info: Prep Date: 12/13/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	2020	10	2000		101	70	130				

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A**

Run ID :Run Order: ACCU-124 (14410200)_121213A: 4	SampType: Sample Duplicate	Sample ID: H12120185-001ADUP	Method: A2540 D								
Analysis Date: 12/13/12 13:05	Units: mg/L	Prep Info: Prep Date: 12/13/2012	Prep Method: A2540 D								
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	10									5

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A**

Run ID :Run Order: ACCU-124 (14410200)_121213A: 16	SampType: Sample Duplicate	Sample ID: H12120190-002BDUP	Method: A2540 D								
Analysis Date: 12/13/12 13:14	Units: mg/L	Prep Info: Prep Date: 12/13/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	8.00	10						11			5

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ACCU-124 (14410200)_121213A: 25	SampType: Method Blank	Sample ID: MB-19014	Method: A2540 D								
Analysis Date: 12/13/12 13:18	Units: mg/L	Prep Info: Prep Date: 12/13/2012	Prep Method: A2540 D								
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	2								

Associated samples: **H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: ACCU-124 (14410200)_121213A: 26	SampType: Laboratory Control Sample	Sample ID: LCS-19014	Method: A2540 D								
Analysis Date: 12/13/12 13:18	Units: mg/L	Prep Info: Prep Date: 12/13/2012	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C		1890	10	2000	95	70	130				

Associated samples: **H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: ACCU-124 (14410200)_121213A: 28	SampType: Sample Duplicate	Sample ID: H12120202-005ADUP	Method: A2540 D								
Analysis Date: 12/13/12 13:19	Units: mg/L	Prep Info: Prep Date: 12/13/2012	Prep Method: A2540 D								
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	10								5

Associated samples: **H12120202-005A; H12120202-006A; H12120202-007A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ICPMS204-B_121210B: 9		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8				
Analysis Date: 12/10/12 12:34		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	0.254	0.10	0.25		102	90	110					
Arsenic	0.0504	0.0050	0.05		101	90	110					
Cadmium	0.0262	0.0010	0.025		105	90	110					
Copper	0.0515	0.010	0.05		103	90	110					
Iron	0.268	0.030	0.25		107	90	110					
Lead	0.0495	0.010	0.05		99	90	110					
Manganese	0.254	0.010	0.25		102	90	110					
Zinc	0.0542	0.010	0.05		108	90	110					

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 10		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8				
Analysis Date: 12/10/12 12:39		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	42.8	0.10	40		107	70	130					
Arsenic	0.000142	0.0050										
Cadmium	0.00107	0.0010										
Copper	0.000254	0.010										
Iron	100	0.030	100		100	70	130					
Lead	0.000160	0.010										
Manganese	0.000559	0.010										
Zinc	0.00108	0.010										

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 11		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8				
Analysis Date: 12/10/12 12:44		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	44.4	0.10	40		111	70	130					
Arsenic	0.0110	0.0050	0.01		110	70	130					
Cadmium	0.0111	0.0010	0.01		111	70	130					
Copper	0.0212	0.010	0.02		106	70	130					
Iron	106	0.030	100		106	70	130					
Lead	0.000260	0.010				0	0					

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ICPMS204-B_121210B: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 12/10/12 12:44	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0218	0.010	0.02		109	70	130				
Zinc	0.0115	0.010	0.01		115	70	130				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 55	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 12/11/12 11:44	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.241	0.10	0.25		97	90	110				
Arsenic	0.0499	0.0050	0.05		100	90	110				
Cadmium	0.0252	0.0010	0.025		101	90	110				
Copper	0.0516	0.010	0.05		103	90	110				
Iron	0.258	0.030	0.25		103	90	110				
Lead	0.0484	0.010	0.05		97	90	110				
Manganese	0.246	0.010	0.25		98	90	110				
Zinc	0.0532	0.010	0.05		106	90	110				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 56	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 12/11/12 11:49	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.5	0.10	40		99	70	130				
Arsenic	0.000160	0.0050									
Cadmium	0.000874	0.0010									
Copper	0.000218	0.010									
Iron	100	0.030	100		100	70	130				
Lead	0.000159	0.010									
Manganese	0.000547	0.010									
Zinc	0.000959	0.010									

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ICPMS204-B_121210B: 57		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 12/11/12 11:54		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.1	0.10	40		103	70	130				
Arsenic	0.0109	0.0050	0.01		109	70	130				
Cadmium	0.0109	0.0010	0.01		109	70	130				
Copper	0.0209	0.010	0.02		105	70	130				
Iron	107	0.030	100		107	70	130				
Lead	0.000229	0.010				0	0				
Manganese	0.0215	0.010	0.02		108	70	130				
Zinc	0.0119	0.010	0.01		119	70	130				

Associated samples: **H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C**

Run ID :Run Order: ICPMS204-B_121210B: 65		SampType: Method Blank			Sample ID: ICB			Method: E200.8			
Analysis Date: 12/11/12 12:31		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
Aluminum	0.000156	0.030									

Associated samples: **H12120202-006B**

Run ID :Run Order: ICPMS204-B_121210B: 66		SampType: Laboratory Fortified Blank			Sample ID: LFB			Method: E200.8			
Analysis Date: 12/11/12 12:36		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
Aluminum	0.0476	0.10	0.05	0.0001558	95	85	115				

Associated samples: **H12120202-006B**

Run ID :Run Order: ICPMS204-B_121210B: 251		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 12/12/12 03:37		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.252	0.10	0.25		101	90	110				
Arsenic	0.0486	0.0050	0.05		97	90	110				
Cadmium	0.0252	0.0010	0.025		101	90	110				
Copper	0.0499	0.010	0.05		100	90	110				
Iron	0.269	0.030	0.25		108	90	110				
Lead	0.0476	0.010	0.05		95	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ICPMS204-B_121210B: 251	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 12/12/12 03:37	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.248	0.010	0.25		99	90	110				
Zinc	0.0509	0.010	0.05		102	90	110				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 252	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 12/12/12 03:42	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	43.2	0.10	40		108	70	130				
Arsenic	0.000117	0.0050									
Cadmium	0.00103	0.0010									
Copper	0.000206	0.010									
Iron	97.0	0.030	100		97	70	130				
Lead	0.000154	0.010									
Manganese	0.000489	0.010									
Zinc	0.00113	0.010									

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 253	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 12/12/12 03:46	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	44.7	0.10	40		112	70	130				
Arsenic	0.0105	0.0050	0.01		105	70	130				
Cadmium	0.0108	0.0010	0.01		107	70	130				
Copper	0.0203	0.010	0.02		102	70	130				
Iron	104	0.030	100		104	70	130				
Lead	0.000227	0.010				0	0				
Manganese	0.0212	0.010	0.02		106	70	130				
Zinc	0.0112	0.010	0.01		112	70	130				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120202

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Run ID :Run Order: ICPMS204-B_121210B: 318		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 12/12/12 10:49		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.256	0.10	0.25		103	90	110				
Arsenic	0.0500	0.0050	0.05		100	90	110				
Cadmium	0.0266	0.0010	0.025		106	90	110				
Copper	0.0513	0.010	0.05		103	90	110				
Iron	0.273	0.030	0.25		109	90	110				
Lead	0.0502	0.010	0.05		100	90	110				
Manganese	0.253	0.010	0.25		101	90	110				
Zinc	0.0532	0.010	0.05		106	90	110				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 319		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 12/12/12 10:53		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.5	0.10	40		104	70	130				
Arsenic	0.000124	0.0050									
Cadmium	0.000992	0.0010									
Copper	0.000219	0.010									
Iron	104	0.030	100		104	70	130				
Lead	0.000178	0.010									
Manganese	0.000559	0.010									
Zinc	0.00106	0.010									

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 320		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 12/12/12 10:58		Units: mg/L			Prep Info:		Prep Date:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	42.3	0.10	40		106	70	130				
Arsenic	0.0115	0.0050	0.01		115	70	130				
Cadmium	0.0114	0.0010	0.01		114	70	130				
Copper	0.0213	0.010	0.02		107	70	130				
Iron	112	0.030	100		112	70	130				
Lead	0.000251	0.010				0	0				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120202

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Run ID :Run Order: ICPMS204-B_121210B: 320	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 12/12/12 10:58	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0221	0.010	0.02		111	70	130				
Zinc	0.0117	0.010	0.01		117	70	130				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 510	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 12/13/12 04:48	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.253	0.10	0.25		101	90	110				
Arsenic	0.0515	0.0050	0.05		103	90	110				
Cadmium	0.0260	0.0010	0.025		104	90	110				
Copper	0.0529	0.010	0.05		106	90	110				
Iron	0.266	0.030	0.25		106	90	110				
Lead	0.0498	0.010	0.05		100	90	110				
Manganese	0.253	0.010	0.25		101	90	110				
Zinc	0.0537	0.010	0.05		107	90	110				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 541	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 12/13/12 07:32	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.8	0.10	40		102	70	130				
Arsenic	0.000164	0.0050									
Cadmium	0.000958	0.0010									
Copper	0.000215	0.010									
Iron	91.4	0.030	100		91	70	130				
Lead	0.000133	0.010									
Manganese	0.000701	0.010									
Zinc	0.000954	0.010									

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



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Work Order: H12120202

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Run ID :Run Order: ICPMS204-B_121210B: 542		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 12/13/12 07:37		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	42.7	0.10	40		107	70	130				
Arsenic	0.0106	0.0050	0.01		106	70	130				
Cadmium	0.0105	0.0010	0.01		105	70	130				
Copper	0.0210	0.010	0.02		105	70	130				
Iron	98.2	0.030	100		98	70	130				
Lead	0.000209	0.010				0	0				
Manganese	0.0207	0.010	0.02		104	70	130				
Zinc	0.0110	0.010	0.01		110	70	130				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 584		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 12/14/12 01:49		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.258	0.10	0.25		103	90	110				
Arsenic	0.0494	0.0050	0.05		99	90	110				
Cadmium	0.0260	0.0010	0.025		104	90	110				
Copper	0.0516	0.010	0.05		103	90	110				
Iron	0.259	0.030	0.25		103	90	110				
Lead	0.0499	0.010	0.05		100	90	110				
Manganese	0.260	0.010	0.25		104	90	110				
Zinc	0.0529	0.010	0.05		106	90	110				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 585		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 12/14/12 01:54		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.8	0.10	40		95	70	130				
Arsenic	0.000108	0.0050									
Cadmium	0.000831	0.0010									
Copper	0.000181	0.010									
Iron	93.6	0.030	100		94	70	130				
Lead	0.000153	0.010									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120202

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Run ID :Run Order: ICPMS204-B_121210B: 585	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 12/14/12 01:54	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.000567	0.010									
Zinc	0.00102	0.010									

Associated samples: **H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C**

Run ID :Run Order: ICPMS204-B_121210B: 586	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 12/14/12 01:59	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	38.9	0.10	40		97	70	130				
Arsenic	0.0104	0.0050	0.01		104	70	130				
Cadmium	0.0105	0.0010	0.01		105	70	130				
Copper	0.0198	0.010	0.02		99	70	130				
Iron	100	0.030	100		100	70	130				
Lead	0.000218	0.010				0	0				
Manganese	0.0204	0.010	0.02		102	70	130				
Zinc	0.0110	0.010	0.01		110	70	130				

Associated samples: **H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C**

Run ID :Run Order: ICPMS204-B_121210B: 677	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 12/14/12 18:44	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.257	0.10	0.25		103	90	110				
Arsenic	0.0503	0.0050	0.05		101	90	110				
Cadmium	0.0263	0.0010	0.025		105	90	110				
Copper	0.0513	0.010	0.05		103	90	110				
Iron	0.262	0.030	0.25		105	90	110				
Lead	0.0497	0.010	0.05		99	90	110				
Manganese	0.261	0.010	0.25		105	90	110				
Zinc	0.0508	0.010	0.05		102	90	110				

Associated samples: **H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ICPMS204-B_121210B: 678		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8			
Analysis Date: 12/14/12 18:49		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	36.9	0.10	40		92	70	130				
Arsenic	8.10E-05	0.0050									
Cadmium	0.000837	0.0010									
Copper	0.000186	0.010									
Iron	94.0	0.030	100		94	70	130				
Lead	0.000137	0.010									
Manganese	0.000448	0.010									
Zinc	0.000903	0.010									

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 679		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8			
Analysis Date: 12/14/12 18:53		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.3	0.10	40		93	70	130				
Arsenic	0.0106	0.0050	0.01		106	70	130				
Cadmium	0.0102	0.0010	0.01		102	70	130				
Copper	0.0201	0.010	0.02		100	70	130				
Iron	99.7	0.030	100		100	70	130				
Lead	0.000214	0.010				0	0				
Manganese	0.0197	0.010	0.02		98	70	130				
Zinc	0.0109	0.010	0.01		109	70	130				

Associated samples: H12120202-001C; H12120202-002C; H12120202-003C; H12120202-004C; H12120202-005C; H12120202-006B; H12120202-006C; H12120202-007C

Run ID :Run Order: ICPMS204-B_121210B: 685		SampType: Laboratory Fortified Blank			Sample ID: LFB			Method: E200.8			
Analysis Date: 12/14/12 19:21		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
Aluminum	0.0461	0.10	0.05		92	85	115				

Associated samples: H12120202-006B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120202
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Prepared by Helena, MT Branch

Date: 10-Jan-13

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Run ID :Run Order: ICPMS204-B_121210B: 688	SampType: Sample Matrix Spike	Sample ID: H12120095-001AMS	Method: E200.8								
Analysis Date: 12/14/12 19:35	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
Aluminum	0.234	0.030	0.25	0.006715	91	70	130				

Associated samples: **H12120202-006B**

Run ID :Run Order: ICPMS204-B_121210B: 689	SampType: Sample Matrix Spike Duplicate	Sample ID: H12120095-001AMSD	Method: E200.8								
Analysis Date: 12/14/12 19:40	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
Aluminum	0.240	0.030	0.25	0.006715	93	70	130	0.2339	2.7	20	

Associated samples: **H12120202-006B**



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Run ID :Run Order: PHSC_101-H_121212A: 2	SampType: Initial Calibration Verification Standard	Sample ID: SC 150	Method: A2510 B								
Analysis Date: 12/12/12 09:55	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	143	1.0	150		95	90	110				

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: PHSC_101-H_121212A: 3	SampType: Initial Calibration Verification Standard	Sample ID: SC 5000	Method: A2510 B								
Analysis Date: 12/12/12 09:58	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	5000	1.0	5000		100	90	110				

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: PHSC_101-H_121212A: 4	SampType: Initial Calibration Verification Standard	Sample ID: SC 20000	Method: A2510 B								
Analysis Date: 12/12/12 10:00	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	19900	1.0	20000		100	90	110				

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: PHSC_101-H_121212A: 5	SampType: Initial Calibration Verification Standard	Sample ID: SC 2ND 1000	Method: A2510 B								
Analysis Date: 12/12/12 10:03	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	1000	1.0	1000		100	90	110				

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: PHSC_101-H_121212A: 53	SampType: Continuing Calibration Verification Standard	Sample ID: CCV - SC 1413	Method: A2510 B								
Analysis Date: 12/12/12 15:47	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	1420	1.0	1413		100	90	110				

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120202
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Prepared by Helena, MT Branch

Date: 10-Jan-13

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Run ID :Run Order: PHSC_101-H_121212A: 80	SampType: Sample Duplicate	Sample ID: H12120202-005ADUP	Method: A2510 B								
Analysis Date: 12/12/12 16:23	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	169	1.0						168	0.6	10	

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**



Client: MT DEQ-Site Response
Work Order: H12120202

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Run ID :Run Order: PHSC_101-H_121212A: 1	SampType: Initial Calibration Verification Standard	Sample ID: pH 7	Method: A4500-H B								
Analysis Date: 12/12/12 09:53	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.0	0.1	7		100	98	102				

Associated samples: H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A

Run ID :Run Order: PHSC_101-H_121212A: 52	SampType: Continuing Calibration Verification Standard	Sample ID: CCV - pH 7	Method: A4500-H B								
Analysis Date: 12/12/12 15:44	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.0	0.1	7		100	98	102				

Associated samples: H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A

Run ID :Run Order: PHSC_101-H_121212A: 79	SampType: Sample Duplicate	Sample ID: H12120202-005ADUP	Method: A4500-H B								
Analysis Date: 12/12/12 16:23	Units: s.u.	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.6	0.1						7.65	0.1	3	

Associated samples: H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



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Run ID :Run Order: ICP2-HE_121213A: 6		SampType: Initial Calibration Verification Standard			Sample ID: ICV			Method: E200.7				
Analysis Date: 12/13/12 10:22		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	
Aluminum	4.06	0.10	4		102	95	105					
Calcium	40.0	1.0	40		100	95	105					
Magnesium	39.6	1.0	40		99	95	105					
Potassium	40.6	1.0	40		101	95	105					
Sodium	40.8	1.0	40		102	95	105					

Associated samples: H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B; H12120202-005B; H12120202-006B; H12120202-007B

Run ID :Run Order: ICP2-HE_121213A: 7		SampType: Continuing Calibration Verification Standard			Sample ID: CCV-1			Method: E200.7				
Analysis Date: 12/13/12 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	
Aluminum	2.54	0.10	2.5		101	95	105					
Calcium	25.2	1.0	25		101	95	105					
Magnesium	24.7	1.0	25		99	95	105					
Potassium	25.4	1.0	25		102	95	105					
Sodium	25.4	1.0	25		102	95	105					

Associated samples: H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B; H12120202-005B; H12120202-006B; H12120202-007B

Run ID :Run Order: ICP2-HE_121213A: 10		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.7				
Analysis Date: 12/13/12 10:37		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	
Aluminum	518	0.10	500		104	80	120					
Calcium	478	1.0	500		96	80	120					
Magnesium	514	1.0	500		103	80	120					
Potassium	-0.0642	1.0				0	0					
Sodium	0.0178	1.0				0	0					

Associated samples: H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B; H12120202-005B; H12120202-006B; H12120202-007B

Run ID :Run Order: ICP2-HE_121213A: 11		SampType: Interference Check Sample AB			Sample ID: IC SAB			Method: E200.7				
Analysis Date: 12/13/12 10:41		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	
Aluminum	528	0.10	500		106	80	120					

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ICP2-HE_121213A: 11		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.7			
Analysis Date: 12/13/12 10:41		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
Calcium	479	1.0	500		96	80	120				
Magnesium	514	1.0	500		103	80	120				
Potassium	22.2	1.0	20		111	80	120				
Sodium	22.3	1.0	20		112	80	120				

Associated samples: H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B; H12120202-005B; H12120202-006B; H12120202-007B

Run ID :Run Order: ICP2-HE_121213A: 13		SampType: Method Blank			Sample ID: ICB			Method: E200.7			
Analysis Date: 12/13/12 10:49		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
Aluminum	ND	0.002									
Calcium	0.02	0.02									
Magnesium	ND	0.007									
Potassium	ND	0.02									
Sodium	ND	0.02									

Associated samples: H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B; H12120202-005B; H12120202-006B; H12120202-007B

Run ID :Run Order: ICP2-HE_121213A: 14		SampType: Laboratory Fortified Blank			Sample ID: LFB			Method: E200.7			
Analysis Date: 12/13/12 10:53		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
Aluminum	4.92	0.10	5		98	85	115				
Calcium	48.9	1.0	50	0.02126	98	85	115				
Magnesium	49.0	1.0	50		98	85	115				
Potassium	49.2	1.0	50		98	85	115				
Sodium	49.3	1.0	50		99	85	115				

Associated samples: H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B; H12120202-005B; H12120202-006B; H12120202-007B

Run ID :Run Order: ICP2-HE_121213A: 31		SampType: Continuing Calibration Verification Standard			Sample ID: CCV			Method: E200.7			
Analysis Date: 12/13/12 11:57		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
Aluminum	2.54	0.10	2.5		102	90	110				
Calcium	25.1	1.0	25		100	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ICP2-HE_121213A: 31		SampType: Continuing Calibration Verification Standard			Sample ID: CCV			Method: E200.7				
Analysis Date: 12/13/12 11:57		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Magnesium	24.8	1.0	25		99	90	110					
Potassium	26.2	1.0	25		105	90	110					
Sodium	26.1	1.0	25		104	90	110					

Associated samples: **H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B**

Run ID :Run Order: ICP2-HE_121213A: 35		SampType: Sample Matrix Spike			Sample ID: H12120194-011CMS2			Method: E200.7				
Analysis Date: 12/13/12 12:11		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	10.5	0.030	10	0.4276	101	70	130					
Calcium	197	1.0	100	101.4	95	70	130					
Magnesium	127	1.0	100	27.63	99	70	130					
Potassium	139	1.0	100	38.34	100	70	130					
Sodium	144	1.0	100	44.59	100	70	130					

Associated samples: **H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B; H12120202-005B; H12120202-006B; H12120202-007B**

Run ID :Run Order: ICP2-HE_121213A: 36		SampType: Sample Matrix Spike Duplicate			Sample ID: H12120194-011CMSD2			Method: E200.7				
Analysis Date: 12/13/12 12:15		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	10.7	0.030	10	0.4276	103	70	130	10.55	1.5	20		
Calcium	200	1.0	100	101.4	98	70	130	196.7	1.5	20		
Magnesium	128	1.0	100	27.63	100	70	130	126.6	1.0	20		
Potassium	142	1.0	100	38.34	104	70	130	138.6	2.3	20		
Sodium	148	1.0	100	44.59	103	70	130	144.4	2.4	20		

Associated samples: **H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B; H12120202-005B; H12120202-006B; H12120202-007B**

Run ID :Run Order: ICP2-HE_121213A: 43		SampType: Continuing Calibration Verification Standard			Sample ID: CCV			Method: E200.7				
Analysis Date: 12/13/12 12:42		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	2.52	0.10	2.5		101	90	110					
Calcium	25.8	1.0	25		103	90	110					
Magnesium	25.9	1.0	25		104	90	110					

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
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Run ID :Run Order: ICP2-HE_121213A: 43		SampType: Continuing Calibration Verification Standard			Sample ID: CCV			Method: E200.7				
Analysis Date: 12/13/12 12:42		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
Potassium		25.1	1.0	25		100	90	110				
Sodium		24.9	1.0	25		99	90	110				

Associated samples: **H12120202-005B; H12120202-006B; H12120202-007B**

Run ID :Run Order: ICP2-HE_121213A: 49		SampType: Sample Matrix Spike			Sample ID: H12120202-007BMS2			Method: E200.7				
Analysis Date: 12/13/12 13:04		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
Aluminum		5.15	0.030	5		103	70	130				
Calcium		66.6	1.0	50	16.15	101	70	130				
Magnesium		58.7	1.0	50	6.755	104	70	130				
Potassium		51.2	1.0	50	0.3695	102	70	130				
Sodium		52.3	1.0	50	1.895	101	70	130				

Associated samples: **H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B; H12120202-005B; H12120202-006B; H12120202-007B**

Run ID :Run Order: ICP2-HE_121213A: 50		SampType: Sample Matrix Spike Duplicate			Sample ID: H12120202-007BMSD2			Method: E200.7				
Analysis Date: 12/13/12 13:08		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
Aluminum		5.26	0.030	5		105	70	130	5.146	2.2	20	
Calcium		67.0	1.0	50	16.15	102	70	130	66.56	0.7	20	
Magnesium		59.2	1.0	50	6.755	105	70	130	58.74	0.8	20	
Potassium		51.1	1.0	50	0.3695	102	70	130	51.24	0.2	20	
Sodium		52.3	1.0	50	1.895	101	70	130	52.33	0.0	20	

Associated samples: **H12120202-001B; H12120202-002B; H12120202-003B; H12120202-004B; H12120202-005B; H12120202-006B; H12120202-007B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



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Run ID :Run Order: IC102-H_121213A: 15	SampType: Initial Calibration Verification Standard				Sample ID: ICV121312-12	Method: E300.0					
Analysis Date: 12/13/12 13:29	Units: mg/L				Prep Info:	Prep Date:			Prep Method:		
Analytes <u>2</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	96	1.0	100		96	90	110				
Sulfate	380	1.0	400		95	90	110				

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: IC102-H_121213A: 16	SampType: Method Blank				Sample ID: ICB121312-13	Method: E300.0					
Analysis Date: 12/13/12 13:42	Units: mg/L				Prep Info:	Prep Date:			Prep Method:		
Analytes <u>2</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.03									
Sulfate	ND	0.1									

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: IC102-H_121213A: 17	SampType: Laboratory Fortified Blank				Sample ID: LFB121312-14	Method: E300.0					
Analysis Date: 12/13/12 13:54	Units: mg/L				Prep Info:	Prep Date:			Prep Method:		
Analytes <u>2</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	47	1.0	50		93	90	110				
Sulfate	180	1.0	200		92	90	110				

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: IC102-H_121213A: 33	SampType: Continuing Calibration Verification Standard				Sample ID: CCV121312-30	Method: E300.0					
Analysis Date: 12/13/12 17:16	Units: mg/L				Prep Info:	Prep Date:			Prep Method:		
Analytes <u>2</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	94	1.0	100		94	90	110				
Sulfate	380	1.0	400		94	90	110				

Associated samples: **H12120202-001A; H12120202-002A**

Run ID :Run Order: IC102-H_121213A: 45	SampType: Sample Matrix Spike				Sample ID: H12120202-002AMS	Method: E300.0					
Analysis Date: 12/13/12 19:47	Units: mg/L				Prep Info:	Prep Date:			Prep Method:		
Analytes <u>2</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	48	1.0	50	2.442	90	90	110				
Sulfate	230	1.0	200	37.08	97	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120202

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Run ID :Run Order: IC102-H_121213A: 45	SampType: Sample Matrix Spike	Sample ID: H12120202-002AMS	Method: E300.0
Analysis Date: 12/13/12 19:47	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

Associated samples: H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A

Run ID :Run Order: IC102-H_121213A: 46	SampType: Sample Matrix Spike Duplicate	Sample ID: H12120202-002AMSD	Method: E300.0
Analysis Date: 12/13/12 20:00	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	49 1.0 50 2.442	93 90 110 47.67	2.5 20
Sulfate	240 1.0 200 37.08	100 90 110 231.5	2.1 20

Associated samples: H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A

Run ID :Run Order: IC102-H_121213A: 47	SampType: Continuing Calibration Verification Standard	Sample ID: CCV121312-44	Method: E300.0
Analysis Date: 12/13/12 20:12	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	95 1.0 100	95 90 110	
Sulfate	380 1.0 400	94 90 110	

Associated samples: H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A

Run ID :Run Order: IC102-H_121213A: 54	SampType: Sample Matrix Spike	Sample ID: H12120202-007AMS	Method: E300.0
Analysis Date: 12/13/12 21:40	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	45 1.0 50 0.403	89 90 110	S
Sulfate	190 1.0 200 3.055	92 90 110	

Associated samples: H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A

Run ID :Run Order: IC102-H_121213A: 55	SampType: Sample Matrix Spike Duplicate	Sample ID: H12120202-007AMSD	Method: E300.0
Analysis Date: 12/13/12 21:53	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	46 1.0 50 0.403	90 90 110 44.84	1.5 20
Sulfate	190 1.0 200 3.055	93 90 110 187.2	1.5 20

Associated samples: H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



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Run ID :Run Order: MAN-TECH_121217A: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B
Analysis Date: 12/17/12 16:23	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	ND	1	

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: MAN-TECH_121217A: 10	SampType: Laboratory Control Sample	Sample ID: LCS-12072015	Method: A2320 B
Analysis Date: 12/17/12 16:31	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	640	4.0	600

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: MAN-TECH_121217A: 27	SampType: Sample Duplicate	Sample ID: H12120202-004ADUP	Method: A2320 B
Analysis Date: 12/17/12 17:46	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	89	4.0	
Bicarbonate as HCO3	110	4.0	
Carbonate as CO3	0.72	4.0	

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: MAN-TECH_121217A: 31	SampType: Sample Matrix Spike	Sample ID: H12120202-005AMS	Method: A2320 B
Analysis Date: 12/17/12 18:02	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	670	4.0	600

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: MAN-TECH_121217A: 53	SampType: Sample Duplicate	Sample ID: H12120240-006ADUP	Method: A2320 B
Analysis Date: 12/17/12 19:26	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	200	4.0	
Bicarbonate as HCO3	240	4.0	
Carbonate as CO3	2.0	4.0	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120202
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Prepared by Helena, MT Branch

Date: 10-Jan-13

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Run ID :Run Order: MAN-TECH_121217A: 53	SampType: Sample Duplicate	Sample ID: H12120240-006ADUP	Method: A2320 B								
Analysis Date: 12/17/12 19:26	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

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**



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BatchID: TDS121213A

Run ID :Run Order: ACCU-124 (14410200)_121213B: 26	SampType: Method Blank	Sample ID: MB-26_121213A	Method: A2540 C
Analysis Date: 12/13/12 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	
Solids, Total Dissolved TDS @ 180 C	ND	10	

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: ACCU-124 (14410200)_121213B: 27	SampType: Laboratory Control Sample	Sample ID: LCS-27_121213A	Method: A2540 C
Analysis Date: 12/13/12 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	
Solids, Total Dissolved TDS @ 180 C	1880	10	2000
		94	90
		110	

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: ACCU-124 (14410200)_121213B: 29	SampType: Sample Duplicate	Sample ID: H12120202-005A DUP	Method: A2540 C
Analysis Date: 12/13/12 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	
Solids, Total Dissolved TDS @ 180 C	104	10	
			99
		4.9	5

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Run ID :Run Order: ACCU-124 (14410200)_121213B: 31	SampType: Sample Matrix Spike	Sample ID: H12120202-006A MS	Method: A2540 C
Analysis Date: 12/13/12 13:34	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	
Solids, Total Dissolved TDS @ 180 C	2030	10	2000
		99	96
		80	120

Associated samples: **H12120202-001A; H12120202-002A; H12120202-003A; H12120202-004A; H12120202-005A; H12120202-006A; H12120202-007A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount

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.

Workorder Receipt Checklist

MT DEQ-Site Response

H12120202

Login completed by: Tracy L. Lorash

Date Received: 12/11/2012

Reviewed by: BL2000\jweidemoyer

Received by: elm

Reviewed Date: 12/18/2012

Carrier Hand Del
name:

- | | | | |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Temp Blank received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |
| Container/Temp Blank temperature: | 1.4°C On Ice - From Field | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

None



Chain of Custody and Analytical Request Record

Company Name:

MDEA

Report Mail Address:

See Quote H-645

Invoice Address:

Shelie Halstead, 841-5033, shalstead@mtg.com

MTG
11447

PLEASE PRINT (Provide as much information as possible.)
Project Name, PWS, Permit, Etc.

Sect. 35 Turpeh Wks
Phone/Fax:

Sample Origin
State: MT
Email:

EPA/State Compliance:
Yes No
Sampler: (Please Print)
A Dressbach
MTG
Quote/Bottle Order:
11447

Special Report/Formats:

- DW
- POTW/WWTP
- State: _____
- Other: _____
- EDD/EDT (Electronic Data)
- Format: _____
- LEVEL IV
- NELAC

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

ANALYSIS REQUESTED

SEE ATTACHED

Standard Turnaround (TAT)

R U S H

Contact ELL prior to RUSH sample submittal for charges and scheduling - See Instruction Page

Comments:

Shipped by: *Hand*
Cooler ID(s): *Y*

Receipt Temp: *1.4 78*
On Ice: Y N

Custody Seal
On Bottle: Y N
On Cooler: Y N
Intact: Y N
Signature Match: Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED	Standard Turnaround (TAT)	SEE ATTACHED	Comments:	Shipped by: Cooler ID(s)	Receipt Temp	On Ice:	Custody Seal On Bottle On Cooler	Intact	Signature Match
1 S35-SW-07	12/11/12	0915	W										
2 S35-SW-04		0939											
3 S35-SW-03		1029											
4 S35-SW-01		1129											
5 S35-SW-06		1141											
6 S35-SW-05		1349											
7 S35-SW-02		1245	W										
8													
9													
10													

Custody Record MUST be Signed

Revised by (print): Alan Dressbach
Date/Time: 12/11/12 17:08
Signature: *[Signature]*

Received by (print):
Date/Time:
Signature:

Sample Disposal: Return to Client:

Lab Disposal:
Received by (print):
Date/Time:
Signature:

LABORATORY USE ONLY

HH220202

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Section 35 Quarterly												
Quantity	Analysis	Total Rec. Metals	Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
7	¹ Dissolved Metals		⁵ Cations									
9	³ Dissolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
6		⁴ Total Rec. Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

UBMC Quarterly												
Quantity	Analysis	Total Rec. Metals	Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
11	¹ Dissolved Metals		⁵ Cations									
10	³ Dissolved Metals		⁵ Cations	Chloride	Sulfate	Alkalinity	Hardness	Acidity	TDS	TSS	pH	EC
9		⁴ Total Rec. Metals										

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

⁶Additional surface water samples may be collected for seeps.



ANALYTICAL SUMMARY REPORT

January 02, 2013

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12120240 Quote ID: H645 - UBMC

Project Name: Section 35 Groundwater

Energy Laboratories Inc Helena MT received the following 7 samples for MT DEQ-Site Response on 12/14/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12120240-001	S35-MW-09	12/13/12 13:29	12/14/12	Aqueous	Metals by ICP/ICPMS, Dissolved Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H12120240-002	S35-MW-08	12/13/12 13:39	12/14/12	Aqueous	Same As Above
H12120240-003	S35-MW-01	12/13/12 14:40	12/14/12	Aqueous	Same As Above
H12120240-004	S35-MW-03	12/13/12 15:45	12/14/12	Aqueous	Same As Above
H12120240-005	S35-MW-07	12/13/12 15:58	12/14/12	Aqueous	Same As Above
H12120240-006	S35-MW-04	12/13/12 16:34	12/14/12	Aqueous	Same As Above
H12120240-007	S35-MW-06	12/14/12 12:25	12/14/12	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 Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-09
Lab ID: H12120240-001
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 13:29 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.0	s.u.	H	0.1		A4500-H B	12/17/12 09:49 / cm		PHSC_101-H_121217A : 7		R85156
Conductivity @ 25 C	4	umhos/cm		1		A2510 B	12/17/12 09:49 / cm		PHSC_101-H_121217A : 8		R85156
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/17/12 16:06 / cm	12/17/12 13:34	124 (14410200)_121217A : 10		19046
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	12/17/12 16:17 / cm		-124 (14410200)_121217B : 9		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	12/17/12 18:43 / cm		MAN-TECH_121217A : 41		R85169
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	12/17/12 18:43 / cm		MAN-TECH_121217A : 41		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 18:43 / cm		MAN-TECH_121217A : 41		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 16:28 / cm		IC102-H_121219A : 37		R85253
Sulfate	ND	mg/L		1		E300.0	12/19/12 16:28 / cm		IC102-H_121219A : 37		R85253
Hardness as CaCO3	ND	mg/L		1		A2340 B	12/19/12 14:03 / sld		WATERCALC_121219B : 2		R85238
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Cadmium	0.00010	mg/L		0.00008		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Calcium	ND	mg/L		1		E200.7	12/17/12 15:23 / sld		ICP2-HE_121217B : 23		R85182
Copper	0.029	mg/L		0.001		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:23 / sld		ICP2-HE_121217B : 23		R85182
Lead	0.0005	mg/L		0.0005		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Magnesium	ND	mg/L		1		E200.7	12/17/12 15:23 / sld		ICP2-HE_121217B : 23		R85182
Manganese	0.022	mg/L		0.005		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Potassium	ND	mg/L		1		E200.7	12/17/12 15:23 / sld		ICP2-HE_121217B : 23		R85182
Sodium	ND	mg/L		1		E200.7	12/17/12 15:23 / sld		ICP2-HE_121217B : 23		R85182
Zinc	0.02	mg/L		0.01		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-08
Lab ID: H12120240-002
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 13:39 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	4.9	s.u.	H	0.1		A4500-H B	12/17/12 09:56 / cm		PHSC_101-H_121217A : 11		R85156
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	12/17/12 09:56 / cm		PHSC_101-H_121217A : 12		R85156
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	I24 (14410200)_121217A : 11		19046
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	12/17/12 16:17 / cm		I24 (14410200)_121217B : 10		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	12/17/12 18:48 / cm		MAN-TECH_121217A : 43		R85169
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	12/17/12 18:48 / cm		MAN-TECH_121217A : 43		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 18:48 / cm		MAN-TECH_121217A : 43		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 16:41 / cm		IC102-H_121219A : 38		R85253
Sulfate	ND	mg/L		1		E300.0	12/19/12 16:41 / cm		IC102-H_121219A : 38		R85253
Hardness as CaCO3	ND	mg/L		1		A2340 B	12/19/12 14:03 / sld		WATERCALC_121219B : 3		R85238
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Calcium	ND	mg/L		1		E200.7	12/17/12 15:27 / sld		ICP2-HE_121217B : 24		R85182
Copper	0.035	mg/L		0.001		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:27 / sld		ICP2-HE_121217B : 24		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Magnesium	ND	mg/L		1		E200.7	12/17/12 15:27 / sld		ICP2-HE_121217B : 24		R85182
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Potassium	ND	mg/L		1		E200.7	12/17/12 15:27 / sld		ICP2-HE_121217B : 24		R85182
Sodium	ND	mg/L		1		E200.7	12/17/12 15:27 / sld		ICP2-HE_121217B : 24		R85182
Zinc	0.02	mg/L		0.01		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-01
Lab ID: H12120240-003
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 14:40 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	H	0.1		A4500-H B	12/17/12 09:59 / cm		PHSC_101-H_121217A : 13		R85156
Conductivity @ 25 C	295	umhos/cm		1		A2510 B	12/17/12 09:59 / cm		PHSC_101-H_121217A : 14		R85156
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	I24 (14410200)_121217A : 12		19046
Solids, Total Dissolved TDS @ 180 C	141	mg/L		10		A2540 C	12/17/12 16:17 / cm		I24 (14410200)_121217B : 11		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	12/17/12 18:55 / cm		MAN-TECH_121217A : 45		R85169
Bicarbonate as HCO3	190	mg/L		4		A2320 B	12/17/12 18:55 / cm		MAN-TECH_121217A : 45		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 18:55 / cm		MAN-TECH_121217A : 45		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 16:53 / cm		IC102-H_121219A : 39		R85253
Sulfate	8	mg/L		1		E300.0	12/19/12 16:53 / cm		IC102-H_121219A : 39		R85253
Hardness as CaCO3	148	mg/L		1		A2340 B	12/17/12 15:31 / abb		CALC_121218A : 171		R85207
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Calcium	32	mg/L		1		E200.7	12/17/12 15:31 / sld		ICP2-HE_121217B : 25		R85182
Copper	ND	mg/L		0.001		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:31 / sld		ICP2-HE_121217B : 25		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Magnesium	17	mg/L		1		E200.7	12/17/12 15:31 / sld		ICP2-HE_121217B : 25		R85182
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Potassium	1	mg/L		1		E200.7	12/17/12 15:31 / sld		ICP2-HE_121217B : 25		R85182
Sodium	2	mg/L		1		E200.7	12/17/12 15:31 / sld		ICP2-HE_121217B : 25		R85182
Zinc	ND	mg/L		0.01		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-03
Lab ID: H12120240-004
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 15:45 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.	H	0.1		A4500-H B	12/17/12 10:02 / cm		PHSC_101-H_121217A : 15		R85156
Conductivity @ 25 C	329	umhos/cm		1		A2510 B	12/17/12 10:02 / cm		PHSC_101-H_121217A : 16		R85156
Solids, Total Suspended TSS @ 105 C	70	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	I24 (14410200)_121217A : 13		19046
Solids, Total Dissolved TDS @ 180 C	190	mg/L		10		A2540 C	12/17/12 16:17 / cm		I24 (14410200)_121217B : 12		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	12/17/12 19:03 / cm		MAN-TECH_121217A : 47		R85169
Bicarbonate as HCO3	210	mg/L		4		A2320 B	12/17/12 19:03 / cm		MAN-TECH_121217A : 47		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 19:03 / cm		MAN-TECH_121217A : 47		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 17:06 / cm		IC102-H_121219A : 40		R85253
Sulfate	6	mg/L		1		E300.0	12/19/12 17:06 / cm		IC102-H_121219A : 40		R85253
Hardness as CaCO3	149	mg/L		1		A2340 B	12/17/12 15:35 / abb		CALC_121218A : 183		R85207
METALS, DISSOLVED											
Aluminum	0.05	mg/L		0.03		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Calcium	43	mg/L		1		E200.7	12/17/12 15:35 / sld		ICP2-HE_121217B : 26		R85182
Copper	ND	mg/L		0.001		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:35 / sld		ICP2-HE_121217B : 26		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Magnesium	10	mg/L		1		E200.7	12/17/12 15:35 / sld		ICP2-HE_121217B : 26		R85182
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Potassium	2	mg/L		1		E200.7	12/17/12 15:35 / sld		ICP2-HE_121217B : 26		R85182
Sodium	10	mg/L		1		E200.7	12/17/12 15:35 / sld		ICP2-HE_121217B : 26		R85182
Zinc	ND	mg/L		0.01		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-07
Lab ID: H12120240-005
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 15:58 **DateReceived:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	H	0.1		A4500-H B	12/17/12 10:04 / cm		PHSC_101-H_121217A : 17		R85156
Conductivity @ 25 C	329	umhos/cm		1		A2510 B	12/17/12 10:04 / cm		PHSC_101-H_121217A : 18		R85156
Solids, Total Suspended TSS @ 105 C	62	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	I24 (14410200)_121217A : 14		19046
Solids, Total Dissolved TDS @ 180 C	193	mg/L		10		A2540 C	12/17/12 16:17 / cm		I24 (14410200)_121217B : 13		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	12/17/12 19:11 / cm		MAN-TECH_121217A : 49		R85169
Bicarbonate as HCO3	210	mg/L		4		A2320 B	12/17/12 19:11 / cm		MAN-TECH_121217A : 49		R85169
Carbonate as CO3	4	mg/L		4		A2320 B	12/17/12 19:11 / cm		MAN-TECH_121217A : 49		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 17:19 / cm		IC102-H_121219A : 41		R85253
Sulfate	6	mg/L		1		E300.0	12/19/12 17:19 / cm		IC102-H_121219A : 41		R85253
Hardness as CaCO3	147	mg/L		1		A2340 B	12/17/12 15:39 / abb		CALC_121218A : 195		R85207
METALS, DISSOLVED											
Aluminum	0.05	mg/L		0.03		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Calcium	42	mg/L		1		E200.7	12/17/12 15:39 / sld		ICP2-HE_121217B : 27		R85182
Copper	0.001	mg/L		0.001		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:39 / sld		ICP2-HE_121217B : 27		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Magnesium	10	mg/L		1		E200.7	12/17/12 15:39 / sld		ICP2-HE_121217B : 27		R85182
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Potassium	1	mg/L		1		E200.7	12/17/12 15:39 / sld		ICP2-HE_121217B : 27		R85182
Sodium	10	mg/L		1		E200.7	12/17/12 15:39 / sld		ICP2-HE_121217B : 27		R85182
Zinc	ND	mg/L		0.01		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-04
Lab ID: H12120240-006
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 16:34 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.	H	0.1		A4500-H B	12/17/12 10:06 / cm		PHSC_101-H_121217A : 19		R85156
Conductivity @ 25 C	354	umhos/cm		1		A2510 B	12/17/12 10:06 / cm		PHSC_101-H_121217A : 20		R85156
Solids, Total Suspended TSS @ 105 C	185	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	I24 (14410200)_121217A : 15		19046
Solids, Total Dissolved TDS @ 180 C	203	mg/L		10		A2540 C	12/17/12 16:18 / cm		I24 (14410200)_121217B : 14		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	12/17/12 19:18 / cm		MAN-TECH_121217A : 51		R85169
Bicarbonate as HCO3	240	mg/L		4		A2320 B	12/17/12 19:18 / cm		MAN-TECH_121217A : 51		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 19:18 / cm		MAN-TECH_121217A : 51		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 17:56 / cm		IC102-H_121219A : 44		R85253
Sulfate	3	mg/L		1		E300.0	12/19/12 17:56 / cm		IC102-H_121219A : 44		R85253
Hardness as CaCO3	174	mg/L		1		A2340 B	12/19/12 14:03 / sld		WATERCALC_121219B : 4		R85238
METALS, DISSOLVED											
Aluminum	0.03	mg/L		0.03		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Calcium	55	mg/L		1		E200.8	12/21/12 09:17 / dck		ICPMS204-B_121221A : 37		R85328
Copper	ND	mg/L		0.001		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:42 / sld		ICP2-HE_121217B : 28		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Magnesium	12	mg/L		1		E200.8	12/21/12 09:17 / dck		ICPMS204-B_121221A : 37		R85328
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Potassium	3	mg/L		1		E200.7	12/17/12 15:42 / sld		ICP2-HE_121217B : 28		R85182
Sodium	3	mg/L		1		E200.7	12/17/12 15:42 / sld		ICP2-HE_121217B : 28		R85182
Zinc	ND	mg/L		0.01		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-06
Lab ID: H12120240-007
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/14/12 12:25 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	H	0.1		A4500-H B	12/17/12 10:09 / cm		PHSC_101-H_121217A : 21		R85156
Conductivity @ 25 C	371	umhos/cm		1		A2510 B	12/17/12 10:09 / cm		PHSC_101-H_121217A : 22		R85156
Solids, Total Suspended TSS @ 105 C	166	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	I24 (14410200)_121217A : 16		19046
Solids, Total Dissolved TDS @ 180 C	195	mg/L		10		A2540 C	12/17/12 16:18 / cm		I24 (14410200)_121217B : 15		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	210	mg/L		4		A2320 B	12/17/12 19:48 / cm		MAN-TECH_121217A : 60		R85169
Bicarbonate as HCO3	260	mg/L		4		A2320 B	12/17/12 19:48 / cm		MAN-TECH_121217A : 60		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 19:48 / cm		MAN-TECH_121217A : 60		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 18:09 / cm		IC102-H_121219A : 45		R85253
Sulfate	2	mg/L		1		E300.0	12/19/12 18:09 / cm		IC102-H_121219A : 45		R85253
Hardness as CaCO3	181	mg/L		1		A2340 B	12/19/12 14:03 / sld		WATERCALC_121219B : 5		R85238
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Calcium	56	mg/L		1		E200.8	12/21/12 09:22 / dck		ICPMS204-B_121221A : 38		R85328
Copper	0.001	mg/L		0.001		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:46 / sld		ICP2-HE_121217B : 29		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Magnesium	16	mg/L		1		E200.8	12/21/12 09:22 / dck		ICPMS204-B_121221A : 38		R85328
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Potassium	1	mg/L		1		E200.7	12/17/12 15:46 / sld		ICP2-HE_121217B : 29		R85182
Sodium	4	mg/L		1		E200.7	12/17/12 15:46 / sld		ICP2-HE_121217B : 29		R85182
Zinc	ND	mg/L		0.01		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: 19046

Run ID :Run Order: ACCU-124 (14410200)_121217A: 1	SampType: Method Blank	Sample ID: MB-19046	Method: A2540 D
Analysis Date: 12/17/12 16:04	Units: mg/L	Prep Info: Prep Date: 12/17/2012	Prep Method: A2540 D
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	2	

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: ACCU-124 (14410200)_121217A: 2	SampType: Laboratory Control Sample	Sample ID: LCS-19046	Method: A2540 D
Analysis Date: 12/17/12 16:05	Units: mg/L	Prep Info: Prep Date: 12/17/2012	Prep Method: A2540 D
Analytes 1	Result	PQL	SPK value
	SPK Ref Val	%REC	LowLimit
	HighLimit	RPD Ref Val	%RPD
	RPDLimit	Qual	
Solids, Total Suspended TSS @ 105 C	2040	10	2000
			102
			70
			130

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: ACCU-124 (14410200)_121217A: 7	SampType: Sample Duplicate	Sample ID: H12120222-002BDUP	Method: A2540 D
Analysis Date: 12/17/12 16:06	Units: mg/L	Prep Info: Prep Date: 12/17/2012	Prep Method: A2540 D
Analytes 1	Result	PQL	SPK value
	SPK Ref Val	%REC	LowLimit
	HighLimit	RPD Ref Val	%RPD
	RPDLimit	Qual	
Solids, Total Suspended TSS @ 105 C	4.00	10	
			5

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: ACCU-124 (14410200)_121217A: 17	SampType: Sample Duplicate	Sample ID: H12120240-007ADUP	Method: A2540 D
Analysis Date: 12/17/12 16:08	Units: mg/L	Prep Info: Prep Date: 12/17/2012	Prep Method: A2540 D
Analytes 1	Result	PQL	SPK value
	SPK Ref Val	%REC	LowLimit
	HighLimit	RPD Ref Val	%RPD
	RPDLimit	Qual	
Solids, Total Suspended TSS @ 105 C	262	10	
			166
			45
			5
			R

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: 19183

Run ID :Run Order: ACCU-124 (14410200)_130104A: 1	SampType: Method Blank	Sample ID: MB-19183	Method: A2540 D								
Analysis Date: 01/04/13 13:34	Units: mg/L	Prep Info: Prep Date: 1/4/2013	Prep Method: A2540 D								
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	2									

Associated samples: **H12120240-007A**

Run ID :Run Order: ACCU-124 (14410200)_130104A: 2	SampType: Laboratory Control Sample	Sample ID: LCS-19183	Method: A2540 D								
Analysis Date: 01/04/13 13:34	Units: mg/L	Prep Info: Prep Date: 1/4/2013	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	2000	10	2000		100	70	130				

Associated samples: **H12120240-007A**

Run ID :Run Order: ACCU-124 (14410200)_130104A: 4	SampType: Sample Duplicate	Sample ID: H13010055-001BDUP	Method: A2540 D								
Analysis Date: 01/04/13 13:36	Units: mg/L	Prep Info: Prep Date: 1/4/2013	Prep Method: A2540 D								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	20.0	10						20	0.0	5	

Associated samples: **H12120240-007A**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85156

Run ID :Run Order: PHSC_101-H_121217A: 2	SampType: Initial Calibration Verification Standard	Sample ID: SC 150	Method: A2510 B
Analysis Date: 12/17/12 09:10	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	140	1.0	150
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: PHSC_101-H_121217A: 3	SampType: Initial Calibration Verification Standard	Sample ID: SC 5000	Method: A2510 B
Analysis Date: 12/17/12 09:13	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	5000	1.0	5000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: PHSC_101-H_121217A: 4	SampType: Initial Calibration Verification Standard	Sample ID: SC 20000	Method: A2510 B
Analysis Date: 12/17/12 09:15	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	20000	1.0	20000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: PHSC_101-H_121217A: 5	SampType: Initial Calibration Verification Standard	Sample ID: SC 2ND 1000	Method: A2510 B
Analysis Date: 12/17/12 09:18	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	1000	1.0	1000
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: PHSC_101-H_121217A: 10	SampType: Sample Duplicate	Sample ID: H12120240-001ADUP	Method: A2510 B
Analysis Date: 12/17/12 09:53	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Conductivity @ 25 C	1.00	1.0	
			%REC
			LowLimit
			HighLimit
			RPD Ref Val
			%RPD
			RPDLimit
			Qual

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85156

Run ID :Run Order: PHSC_101-H_121217A: 32	SampType: Sample Duplicate	Sample ID: H12120241-004ADUP	Method: A2510 B								
Analysis Date: 12/17/12 10:22	Units: umhos/cm	Prep Info: Prep Date:	Prep Method:								
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity @ 25 C	336	1.0						336	0.0	10	

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85156

Run ID :Run Order: PHSC_101-H_121217A: 1	SampType: Initial Calibration Verification Standard				Sample ID: pH 7			Method: A4500-H B			
Analysis Date: 12/17/12 09:08	Units: s.u.				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.0	0.1	7		100	98	102				

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: PHSC_101-H_121217A: 9	SampType: Sample Duplicate				Sample ID: H12120240-001ADUP			Method: A4500-H B			
Analysis Date: 12/17/12 09:53	Units: s.u.				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	5.0	0.1						4.98	0.0	3	

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: PHSC_101-H_121217A: 31	SampType: Sample Duplicate				Sample ID: H12120241-004ADUP			Method: A4500-H B			
Analysis Date: 12/17/12 10:22	Units: s.u.				Prep Info: Prep Date:			Prep Method:			
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.7	0.1						7.73	0.0	3	

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85169

Run ID :Run Order: MAN-TECH_121217A: 8	SampType: Method Blank	Sample ID: MBLK	Method: A2320 B
Analysis Date: 12/17/12 16:23	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	ND	1	

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: MAN-TECH_121217A: 10	SampType: Laboratory Control Sample	Sample ID: LCS-12072015	Method: A2320 B
Analysis Date: 12/17/12 16:31	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	640	4.0	600

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: MAN-TECH_121217A: 27	SampType: Sample Duplicate	Sample ID: H12120202-004ADUP	Method: A2320 B
Analysis Date: 12/17/12 17:46	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	89	4.0	90.53
Bicarbonate as HCO3	110	4.0	109.3
Carbonate as CO3	0.72	4.0	0.56

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: MAN-TECH_121217A: 31	SampType: Sample Matrix Spike	Sample ID: H12120202-005AMS	Method: A2320 B
Analysis Date: 12/17/12 18:02	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 1	Result	PQL	SPK value
Alkalinity, Total as CaCO3	670	4.0	600

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: MAN-TECH_121217A: 53	SampType: Sample Duplicate	Sample ID: H12120240-006ADUP	Method: A2320 B
Analysis Date: 12/17/12 19:26	Units: mg/L	Prep Info: Prep Date:	Prep Method:
Analytes 3	Result	PQL	SPK value
Alkalinity, Total as CaCO3	200	4.0	199.7
Bicarbonate as HCO3	240	4.0	237.6
Carbonate as CO3	2.0	4.0	2.99

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85169

Run ID :Run Order: MAN-TECH_121217A: 53	SampType: Sample Duplicate	Sample ID: H12120240-006ADUP	Method: A2320 B								
Analysis Date: 12/17/12 19:26	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

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85182

Run ID :Run Order: ICP2-HE_121217B: 6	SampType: Initial Calibration Verification Standard				Sample ID: ICV			Method: E200.7				
Analysis Date: 12/17/12 14:19	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	
Calcium	39.7	1.0	40		99	95	105					
Iron	4.00	0.030	4		100	95	105					
Magnesium	39.9	1.0	40		100	95	105					
Potassium	40.1	1.0	40		100	95	105					
Sodium	40.3	1.0	40		101	95	105					

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order: ICP2-HE_121217B: 7	SampType: Continuing Calibration Verification Standard				Sample ID: CCV-1			Method: E200.7				
Analysis Date: 12/17/12 14:23	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	
Calcium	24.5	1.0	25		98	95	105					
Iron	2.52	0.030	2.5		101	95	105					
Magnesium	24.6	1.0	25		98	95	105					
Potassium	24.6	1.0	25		98	95	105					
Sodium	24.5	1.0	25		98	95	105					

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order: ICP2-HE_121217B: 10	SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.7				
Analysis Date: 12/17/12 14:34	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	
Calcium	468	1.0	500		94	80	120					
Iron	192	0.030	200		96	80	120					
Magnesium	507	1.0	500		101	80	120					
Potassium	-0.0479	1.0				0	0					
Sodium	0.0454	1.0				0	0					

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order: ICP2-HE_121217B: 11	SampType: Interference Check Sample AB				Sample ID: IC SAB			Method: E200.7				
Analysis Date: 12/17/12 14:38	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	
Calcium	467	1.0	500		93	80	120					

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240

ANALYTICAL QC SUMMARY REPORT

Date: 09-Jan-13

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BatchID: R85182

Run ID :Run Order: ICP2-HE_121217B: 11		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.7			
Analysis Date: 12/17/12 14:38		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
Iron	192	0.030	200		96	80	120				
Magnesium	509	1.0	500		102	80	120				
Potassium	22.6	1.0	20		113	80	120				
Sodium	22.8	1.0	20		114	80	120				

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Run ID :Run Order: ICP2-HE_121217B: 13		SampType: Method Blank			Sample ID: ICB			Method: E200.7			
Analysis Date: 12/17/12 14:46		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
Calcium	0.05	0.02									
Iron	ND	0.003									
Magnesium	ND	0.007									
Potassium	ND	0.02									
Sodium	0.02	0.02									

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Run ID :Run Order: ICP2-HE_121217B: 14		SampType: Laboratory Fortified Blank			Sample ID: LFB			Method: E200.7			
Analysis Date: 12/17/12 14:50		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
Calcium	47.6	1.0	50	0.04793	95	85	115				
Iron	4.84	0.030	5		97	85	115				
Magnesium	48.3	1.0	50		97	85	115				
Potassium	49.0	1.0	50		98	85	115				
Sodium	49.2	1.0	50	0.02423	98	85	115				

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Run ID :Run Order: ICP2-HE_121217B: 17		SampType: Sample Matrix Spike			Sample ID: H12120202-006BMS2			Method: E200.7			
Analysis Date: 12/17/12 15:01		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
Calcium	67.7	1.0	50	19.02	97	70	130				
Iron	4.85	0.030	5	0.0221	97	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85182

Run ID :Run Order: ICP2-HE_121217B: 17		SampType: Sample Matrix Spike			Sample ID: H12120202-006BMS2				Method: E200.7		
Analysis Date: 12/17/12 15:01		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
Magnesium	58.4	1.0	50	8.784	99	70	130				
Potassium	51.3	1.0	50	0.4781	102	70	130				
Sodium	53.0	1.0	50	2.03	102	70	130				

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order: ICP2-HE_121217B: 18		SampType: Sample Matrix Spike Duplicate			Sample ID: H12120202-006BMSD2				Method: E200.7		
Analysis Date: 12/17/12 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
Calcium	66.9	1.0	50	19.02	96	70	130	67.71	1.2	20	
Iron	4.85	0.030	5	0.0221	97	70	130	4.853	0.1	20	
Magnesium	58.2	1.0	50	8.784	99	70	130	58.37	0.2	20	
Potassium	49.5	1.0	50	0.4781	98	70	130	51.29	3.5	20	
Sodium	51.0	1.0	50	2.03	98	70	130	52.97	3.9	20	

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order: ICP2-HE_121217B: 19		SampType: Continuing Calibration Verification Standard			Sample ID: CCV				Method: E200.7		
Analysis Date: 12/17/12 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
Calcium	24.3	1.0	25		97	90	110				
Iron	2.48	0.030	2.5		99	90	110				
Magnesium	24.6	1.0	25		98	90	110				
Potassium	24.5	1.0	25		98	90	110				
Sodium	24.5	1.0	25		98	90	110				

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order: ICP2-HE_121217B: 34		SampType: Sample Matrix Spike			Sample ID: H12120241-001BMS2				Method: E200.7		
Analysis Date: 12/17/12 16:05		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
Calcium	48.1	1.0	50	0.06017	96	70	130				
Iron	4.54	0.030	5		91	70	130				
Magnesium	48.1	1.0	50		96	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85182

Run ID :Run Order: ICP2-HE_121217B: 34	SampType: Sample Matrix Spike				Sample ID: H12120241-001BMS2				Method: E200.7		
Analysis Date: 12/17/12 16:05	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
Potassium	48.4	1.0	50		97	70	130				
Sodium	48.7	1.0	50		97	70	130				

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order: ICP2-HE_121217B: 35	SampType: Sample Matrix Spike Duplicate				Sample ID: H12120241-001BMSD2				Method: E200.7		
Analysis Date: 12/17/12 16:09	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
Calcium	48.3	1.0	50	0.06017	97	70	130	48.06	0.5	20	
Iron	4.65	0.030	5		93	70	130	4.538	2.4	20	
Magnesium	49.1	1.0	50		98	70	130	48.07	2.2	20	
Potassium	48.4	1.0	50		97	70	130	48.42	0.1	20	
Sodium	48.4	1.0	50		97	70	130	48.67	0.5	20	

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85189

Run ID :Run Order: ICPMS204-B_121217A: 9		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8				
Analysis Date: 12/17/12 12:07		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	0.257	0.10	0.25		103	90	110					
Arsenic	0.0511	0.0050	0.05		102	90	110					
Cadmium	0.0262	0.0010	0.025		105	90	110					
Copper	0.0524	0.010	0.05		105	90	110					
Lead	0.0497	0.010	0.05		99	90	110					
Manganese	0.249	0.010	0.25		100	90	110					
Zinc	0.0546	0.010	0.05		109	90	110					

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121217A: 10		SampType: Interference Check Sample A			Sample ID: ICSA			Method: E200.8				
Analysis Date: 12/17/12 12:12		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	40.2	0.10	40		101	70	130					
Arsenic	8.40E-05	0.0050										
Cadmium	0.00106	0.0010										
Copper	0.000188	0.010										
Lead	0.000174	0.010										
Manganese	0.000554	0.010										
Zinc	0.000871	0.010										

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121217A: 11		SampType: Interference Check Sample AB			Sample ID: ICSAB			Method: E200.8				
Analysis Date: 12/17/12 12:17		Units: mg/L			Prep Info:			Prep Date:			Prep Method:	
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	41.6	0.10	40		104	70	130					
Arsenic	0.0105	0.0050	0.01		105	70	130					
Cadmium	0.0108	0.0010	0.01		107	70	130					
Copper	0.0200	0.010	0.02		100	70	130					
Lead	0.000251	0.010				0	0					
Manganese	0.0207	0.010	0.02		104	70	130					
Zinc	0.0110	0.010	0.01		110	70	130					

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits N - Analyte concentration was not sufficiently high to calculate RPD
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Client: MT DEQ-Site Response
Work Order: H12120240

ANALYTICAL QC SUMMARY REPORT

Date: 09-Jan-13

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BatchID: R85189

Run ID :Run Order: ICPMS204-B_121217A: 11	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 12/17/12 12:17	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121217A: 17	SampType: Method Blank	Sample ID: ICB	Method: E200.8								
Analysis Date: 12/17/12 12:44	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0002	0.0001									
Arsenic	ND	5E-05									
Cadmium	ND	5E-06									
Copper	ND	2E-05									
Lead	ND	1E-05									
Manganese	ND	5E-05									
Zinc	0.001	0.0004									

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121217A: 45	SampType: Laboratory Fortified Blank	Sample ID: LFB	Method: E200.8								
Analysis Date: 12/17/12 15:25	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0516	0.10	0.05	0.0002103	103	85	115				
Arsenic	0.0488	0.0050	0.05		98	85	115				
Cadmium	0.0522	0.0010	0.05		104	85	115				
Copper	0.0514	0.010	0.05		103	85	115				
Lead	0.0511	0.010	0.05		102	85	115				
Manganese	0.0505	0.010	0.05		101	85	115				
Zinc	0.0529	0.010	0.05	0.001146	104	85	115				

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121217A: 58	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 12/17/12 16:35	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.251	0.10	0.25		100	90	110				
Arsenic	0.0500	0.0050	0.05		100	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85189

Run ID :Run Order:	ICPMS204-B_121217A: 58	SampType:	Initial Calibration Verification Standard	Sample ID:	ICV STD	Method:	E200.8					
Analysis Date:	12/17/12 16:35	Units:	mg/L	Prep Info:	Prep Date:	Prep Method:						
Analytes	Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0264	0.0010	0.025	105	90	110						
Copper	0.0513	0.010	0.05	103	90	110						
Lead	0.0503	0.010	0.05	101	90	110						
Manganese	0.252	0.010	0.25	101	90	110						
Zinc	0.0541	0.010	0.05	108	90	110						

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order:	ICPMS204-B_121217A: 59	SampType:	Interference Check Sample A	Sample ID:	ICSA	Method:	E200.8					
Analysis Date:	12/17/12 16:40	Units:	mg/L	Prep Info:	Prep Date:	Prep Method:						
Analytes	Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.9	0.10	40	95	70	130						
Arsenic	0.000100	0.0050										
Cadmium	0.000982	0.0010										
Copper	0.000196	0.010										
Lead	0.000157	0.010										
Manganese	0.000547	0.010										
Zinc	0.00101	0.010										

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order:	ICPMS204-B_121217A: 60	SampType:	Interference Check Sample AB	Sample ID:	ICSAB	Method:	E200.8					
Analysis Date:	12/17/12 16:44	Units:	mg/L	Prep Info:	Prep Date:	Prep Method:						
Analytes	Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.1	0.10	40	98	70	130						
Arsenic	0.0107	0.0050	0.01	107	70	130						
Cadmium	0.0108	0.0010	0.01	108	70	130						
Copper	0.0201	0.010	0.02	100	70	130						
Lead	0.000225	0.010			0	0						
Manganese	0.0211	0.010	0.02	105	70	130						
Zinc	0.0111	0.010	0.01	111	70	130						

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85189

Run ID :Run Order: ICPMS204-B_121217A: 125		SampType: Sample Matrix Spike			Sample ID: H12120240-007BMS			Method: E200.8			
Analysis Date: 12/17/12 21:45		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0629	0.030	0.05	0.01668	92	70	130				
Arsenic	0.0542	0.0010	0.05	0.001162	106	70	130				
Cadmium	0.0498	0.0010	0.05	0.0000346	99	70	130				
Copper	0.0514	0.0050	0.05	0.001128	101	70	130				
Lead	0.0503	0.0010	0.05	0.0003704	100	70	130				
Manganese	0.0526	0.0010	0.05	0.00256	100	70	130				
Zinc	0.0538	0.010	0.05	0.002449	103	70	130				

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order: ICPMS204-B_121217A: 126		SampType: Sample Matrix Spike Duplicate			Sample ID: H12120240-007BMSD			Method: E200.8			
Analysis Date: 12/17/12 21:50		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0619	0.030	0.05	0.01668	91	70	130	0.06292	1.6	20	
Arsenic	0.0537	0.0010	0.05	0.001162	105	70	130	0.05416	0.9	20	
Cadmium	0.0492	0.0010	0.05	0.0000346	98	70	130	0.04978	1.2	20	
Copper	0.0505	0.0050	0.05	0.001128	99	70	130	0.05139	1.7	20	
Lead	0.0506	0.0010	0.05	0.0003704	100	70	130	0.05028	0.7	20	
Manganese	0.0526	0.0010	0.05	0.00256	100	70	130	0.05258	0.1	20	
Zinc	0.0536	0.010	0.05	0.002449	102	70	130	0.05376	0.2	20	

Associated samples: H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B

Run ID :Run Order: ICPMS204-B_121217A: 157		SampType: Initial Calibration Verification Standard			Sample ID: ICV STD			Method: E200.8			
Analysis Date: 12/18/12 00:14		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.251	0.10	0.25		100	90	110				
Arsenic	0.0505	0.0050	0.05		101	90	110				
Cadmium	0.0264	0.0010	0.025		105	90	110				
Copper	0.0508	0.010	0.05		102	90	110				
Lead	0.0497	0.010	0.05		99	90	110				
Manganese	0.249	0.010	0.25		100	90	110				
Zinc	0.0524	0.010	0.05		105	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85189

Run ID :Run Order: ICPMS204-B_121217A: 157	SampType: Initial Calibration Verification Standard	Sample ID: ICV STD	Method: E200.8								
Analysis Date: 12/18/12 00:14	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121217A: 158	SampType: Interference Check Sample A	Sample ID: ICSA	Method: E200.8								
Analysis Date: 12/18/12 00:18	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	38.4	0.10	40		96	70	130				
Arsenic	0.000115	0.0050									
Cadmium	0.00100	0.0010									
Copper	0.000202	0.010									
Lead	0.000178	0.010									
Manganese	4.70E-05	0.010									
Zinc	0.000902	0.010									

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121217A: 159	SampType: Interference Check Sample AB	Sample ID: ICSAB	Method: E200.8								
Analysis Date: 12/18/12 00:23	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analytes Z	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.5	0.10	40		99	70	130				
Arsenic	0.0108	0.0050	0.01		108	70	130				
Cadmium	0.0108	0.0010	0.01		108	70	130				
Copper	0.0202	0.010	0.02		101	70	130				
Lead	0.000233	0.010				0	0				
Manganese	0.0202	0.010	0.02		101	70	130				
Zinc	0.0107	0.010	0.01		107	70	130				

Associated samples: **H12120240-001B; H12120240-002B; H12120240-003B; H12120240-004B; H12120240-005B; H12120240-006B; H12120240-007B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240

ANALYTICAL QC SUMMARY REPORT

Date: 09-Jan-13

Project: Section 35 Groundwater

BatchID: R85253

Run ID :Run Order: IC102-H_121219A: 14		SampType: Initial Calibration Verification Standard			Sample ID: ICV121912-12			Method: E300.0			
Analysis Date: 12/19/12 11:28		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	93	1.0	100		93	90	110				
Sulfate	370	1.0	400		93	90	110				

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: IC102-H_121219A: 15		SampType: Method Blank			Sample ID: ICB121912-13			Method: E300.0			
Analysis Date: 12/19/12 11:40		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.03									
Sulfate	ND	0.1									

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: IC102-H_121219A: 16		SampType: Laboratory Fortified Blank			Sample ID: LFB121912-14			Method: E300.0			
Analysis Date: 12/19/12 11:53		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49	1.0	50		98	90	110				
Sulfate	200	1.0	200		99	90	110				

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: IC102-H_121219A: 32		SampType: Continuing Calibration Verification Standard			Sample ID: CCV121912-30			Method: E300.0			
Analysis Date: 12/19/12 15:15		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	93	1.0	100		93	90	110				
Sulfate	370	1.0	400		93	90	110				

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: IC102-H_121219A: 42		SampType: Sample Matrix Spike			Sample ID: H12120240-005AMS			Method: E300.0			
Analysis Date: 12/19/12 17:31		Units: mg/L			Prep Info: Prep Date:			Prep Method:			
Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51	1.0	50	0.789	101	90	110				
Sulfate	210	1.0	200	6.131	101	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85253

Run ID :Run Order: IC102-H_121219A: 42	SampType: Sample Matrix Spike	Sample ID: H12120240-005AMS	Method: E300.0								
Analysis Date: 12/19/12 17:31	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: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: IC102-H_121219A: 43	SampType: Sample Matrix Spike Duplicate	Sample ID: H12120240-005AMSD	Method: E300.0								
Analysis Date: 12/19/12 17:44	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	52	1.0	50	0.789	102	90	110	51.44	0.9	20	
Sulfate	210	1.0	200	6.131	102	90	110	209	0.4	20	

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240

ANALYTICAL QC SUMMARY REPORT

Date: 09-Jan-13

Project: Section 35 Groundwater

BatchID: R85328

Run ID :Run Order: ICPMS204-B_121221A: 9	SampType: Initial Calibration Verification Standard				Sample ID: ICV STD			Method: E200.8			
Analysis Date: 12/21/12 07:05	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
Calcium	2.54	0.50	2.5		102	90	110				
Magnesium	2.62	0.50	2.5		105	90	110				

Associated samples: **H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121221A: 10	SampType: Interference Check Sample A				Sample ID: ICSA			Method: E200.8			
Analysis Date: 12/21/12 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
Calcium	117	0.50	120		98	70	130				
Magnesium	39.0	0.50	40		97	70	130				

Associated samples: **H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121221A: 11	SampType: Interference Check Sample AB				Sample ID: ICSAB			Method: E200.8			
Analysis Date: 12/21/12 07:14	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
Calcium	123	0.50	120		102	70	130				
Magnesium	40.9	0.50	40		102	70	130				

Associated samples: **H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121221A: 20	SampType: Method Blank				Sample ID: ICB			Method: E200.8			
Analysis Date: 12/21/12 07:57	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
Calcium	ND	0.008									
Magnesium	ND	0.0006									

Associated samples: **H12120240-006B; H12120240-007B**

Run ID :Run Order: ICPMS204-B_121221A: 21	SampType: Laboratory Fortified Blank				Sample ID: LFB			Method: E200.8			
Analysis Date: 12/21/12 08:02	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
Calcium	49.8	0.50	50		100	85	115				
Magnesium	47.9	0.50	50		96	85	115				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT
Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: R85328

Run ID :Run Order: **ICPMS204-B_121221A: 21** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**
 Analysis Date: **12/21/12 08:02** 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

Associated samples: **H12120240-006B; H12120240-007B**

Run ID :Run Order: **ICPMS204-B_121221A: 25** SampType: **Sample Matrix Spike** Sample ID: **H12120300-001BMS** Method: **E200.8**
 Analysis Date: **12/21/12 08:20** 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

Calcium	258	1.0	250	24.97	93	70	130				
Magnesium	230	1.0	250	8.27	89	70	130				

Associated samples: **H12120240-006B; H12120240-007B**

Run ID :Run Order: **ICPMS204-B_121221A: 26** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H12120300-001BMSD** Method: **E200.8**
 Analysis Date: **12/21/12 08:25** 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

Calcium	264	1.0	250	24.97	96	70	130	258.2	2.1	20	
Magnesium	235	1.0	250	8.27	91	70	130	230	2.1	20	

Associated samples: **H12120240-006B; H12120240-007B**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount



Client: MT DEQ-Site Response
Work Order: H12120240
Project: Section 35 Groundwater

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Date: 09-Jan-13

BatchID: TDS121217A

Run ID :Run Order: ACCU-124 (14410200)_121217B: 1	SampType: Method Blank	Sample ID: MB-1_121217A	Method: A2540 C
Analysis Date: 12/17/12 16:15	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	
Solids, Total Dissolved TDS @ 180 C	ND	3	

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: ACCU-124 (14410200)_121217B: 2	SampType: Laboratory Control Sample	Sample ID: LCS-2_121217A	Method: A2540 C
Analysis Date: 12/17/12 16:15	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	
Solids, Total Dissolved TDS @ 180 C	1910	10	2000
		95	90
		110	

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: ACCU-124 (14410200)_121217B: 4	SampType: Sample Duplicate	Sample ID: H12120215-001A DUP	Method: A2540 C
Analysis Date: 12/17/12 16:16	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	
Solids, Total Dissolved TDS @ 180 C	13800	10	
			14110
		2.4	5

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: ACCU-124 (14410200)_121217B: 7	SampType: Sample Matrix Spike	Sample ID: H12120227-001A MS	Method: A2540 C
Analysis Date: 12/17/12 16:16	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	
Solids, Total Dissolved TDS @ 180 C	2230	10	2000
		438	90
		80	120

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Run ID :Run Order: ACCU-124 (14410200)_121217B: 16	SampType: Sample Duplicate	Sample ID: H12120240-007A DUP	Method: A2540 C
Analysis Date: 12/17/12 16:18	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	
Solids, Total Dissolved TDS @ 180 C	197	10	
			195
		1.0	5

Associated samples: **H12120240-001A; H12120240-002A; H12120240-003A; H12120240-004A; H12120240-005A; H12120240-006A; H12120240-007A**

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits 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 three times the spike amount

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.

Workorder Receipt Checklist

MT DEQ-Site Response

H12120240

Login completed by: Tracy L. Lorash

Date Received: 12/14/2012

Reviewed by: BL2000\sdull

Received by: wjj

Reviewed Date: 12/19/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	0.2°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Contact and Corrective Action Comments:

Sample ID on COC is S35-MW-. ID on bottles is S35-MW-07. Logged in with ID from bottles. TI 12/14/12.



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: MVED EPA/State Compliance: Yes No

Project Name: Section 35 Groundwater Sample Origin: MT

Contact Name: Shelli Hauland Phone/Fax: 841-5033 Email: shauland@mt.gov

Report Mail Address: See Quote H-645 Invoice Address: Shelli Hauland, 841-5033, Shauland@mt.gov

Sampler: (Please Print) M. Taylor Quote/Bottle Order: 11148

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Comments:
				SEE ATTACHED				
1 535-MW-09	12/13/12	1329	W					
2 535-MW-08		1339						
3 535-MW-01		1440						
4 535-MW-03		1545						
5 535-MW-		1558						
6 535-MW-04	12/13/12	1634						
7 535-MW-06	12/14/12	1725	W					
8								
9								
10								

Special Report/Formats: DW EDD/EDT (Electronic Data) POTW/MWTP State: LEVEL IV Other: NELAC

Number of Containers: _____
 Sample Type: A S V B O DW
 Air Water Soils/Solids Other
 Vegetation Bioassay Other
 DW - Drinking Water

Shipped by: Hand Del
 Cooler ID(s): Y
 Receipt Temp: 0.2 °C
 On Ice: Y
 Custody Seal: Y On Bottle Y On Cooler Y
 Intact: Y
 Signature Match: Y
 H12120240

Signature: _____ Date/Time: _____
 Signature: _____ Date/Time: _____
 Signature: _____ Date/Time: _____
 Received by (print): _____ Date/Time: _____
 Received by (print): _____ Date/Time: _____
 Received by Laboratory: Wanted to be 12-14-12 15:08 Date/Time: _____
 Signature: _____
 Lab Disposal: _____ Return to Client: _____

Custody Record MUST be Signed

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energielab.com for additional information, downloadable fee schedule, forms, and links.

Section 35 Quarterly												
Quantity	Analysis	1 ¹ Disolved Metals	2 ² Total Rec. Metals	3 ³ Cations	4 ⁴ Chloride	5 ⁵ Sulfate	6 ⁶ Alkalinity	7 ⁷ Hardness	8 ⁸ Acidity	9 ⁹ TDS	10 ¹⁰ pH	11 ¹¹ EC
7	Surface Water	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
9	Groundwater	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
6	Sediment		4 ⁴ Total Rec. Metals									

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

UBMC Quarterly												
Quantity	Analysis	1 ¹ Disolved Metals	2 ² Total Rec. Metals	3 ³ Cations	4 ⁴ Chloride	5 ⁵ Sulfate	6 ⁶ Alkalinity	7 ⁷ Hardness	8 ⁸ Acidity	9 ⁹ TDS	10 ¹⁰ pH	11 ¹¹ EC
11	Surface Water	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
10	Groundwater	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
9	Sediment		4 ⁴ Total Rec. Metals									

¹Aluminum

²Arsenic, cadmium, copper, iron, lead, manganese, and zinc

³Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁴Aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc

⁵Calcium, magnesium, potassium, sodium

⁶Additional surface water samples may be collected for seeps.

Appendix B

Data Validation Reports



**DATA SUMMARY REPORT, 2012 ENVIRONMENTAL MONITORING,
SECTION 35, LEWIS & CLARK COUNTY, MONTANA**

Identifier: RPT-1034
Revision: Final (0)
Page: B-2

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UBMC Surface Water

SDG#: H12030340

Number of Samples: 32

Sample Matrix: (18) Surface Water and (14) Sediment

Applicable Analytes: (18) pH, Conductivity, TSS, TDS, Alkalinity: (Total Alkalinity, Bicarbonate, and Carbonate), Anions: (Chloride and Sulfate), Hardness, Dissolved Metals: (Al, Ca, Mg, K, and Na), Total Recoverable Metals: (As, Cd, Cu, Fe, Pb, Mn, and Zn), and (14) Total Metals (Al, As, Cd, Cu, Fe, Pb, Mn, and Zn) by SW-846 6010B

Reporting Tier: 3

Applicable TOS#: N/A

Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring Section 35, Lewis and Clark County, Montana; Portage Inc., 2012; Final Sampling and Analysis Plan for Environmental Monitoring Upper Blackfoot Mining Complex, Lewis and Clark County, Montana; Portage Inc., 2012

Validator 

Date Completed:4/25/12;05/10/13

Portage Review:  _____

Date Completed:04/25/12;05/03/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Surface Water is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Laboratory Case Narrative
- Attachment C: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Surface Water sediment and surface water sample results were received by Portage, Inc. in April 2012. The laboratory analytical request provided for a summary data package attached for the pH, conductivity, TSS, TDS, alkalinity: (total alkalinity, bicarbonate, and carbonate), chloride, sulfate, hardness, dissolved metals (Al, Ca, Mg, K, and Na), total recoverable metals (As, Cd, Cu, Fe, Pb, Mn, and Zn), and Total Metals (Al, As, Cd, Cu, Fe, Pb, Mn, and Zn). The samples were analyzed in accordance with Standard Methods 4500 H-B, 2510B, 2540D, 2540C, 2320B, and 2340B, and USEPA Methods 300.0, 200.7, 200.8, and Sw-846 6010B. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Surface Water Sediment and Surface Water Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35SW05	H1203040-001	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
S35SW07	H1203040-002	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
S35SW01	H1203040-003	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
S35SW06	H1203040-004	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12

Cross-Reference for UBMC Surface Water Sediment and Surface Water Samples					
S35SW02	H1203040-005	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
S35SW04	H1203040-006	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
S35SW03	H1203040-007	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
UBMCBRSW25	H1203040-008	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
UBMCBRSW26	H1203040-009	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
UBMCBRSW22	H1203040-010	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
UBMCBRSW24	H1203040-011	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
UBMCBRSW01	H1203040-012	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12

Cross-Reference for UBMC Surface Water Sediment and Surface Water Samples					
UBMCBRSW2	H1203040-013	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/26/12	03/27/12
UBMCBRSW38	H1203040-014	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/27/12	03/27/12
UBMCBRSW48	H1203040-015	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/27/12	03/27/12
UBMCBRSW23	H1203040-016	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/27/12	03/27/12
UBMCBRSW3A	H1203040-017	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/27/12	03/27/12
UBMCBRSW3B	H1203040-018	Aqueous	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals, Total Recoverable Metals	03/27/12	03/27/12
S35SD05	H1203040-019	Sediment	Total Metals	03/26/12	03/27/12
S35SD06	H1203040-020	Sediment	Total Metals	03/26/12	03/27/12
S35SD01	H1203040-021	Sediment	Total Metals	03/26/12	03/27/12
S35SD02	H1203040-022	Sediment	Total Metals	03/26/12	03/27/12
S35SD04	H1203040-023	Sediment	Total Metals	03/26/12	03/27/12
S35SD03	H1203040-024	Sediment	Total Metals	03/26/12	03/27/12
UBMCBRSD22	H1203040-025	Sediment	Total Metals	03/26/12	03/27/12

Cross-Reference for UBMC Surface Water Sediment and Surface Water Samples					
UBMCBRSD24	H1203040-026	Sediment	Total Metals	03/26/12	03/27/12
UBMCBRSD01	H1203040-027	Sediment	Total Metals	03/26/12	03/27/12
UBMCBRSD38	H1203040-028	Sediment	Total Metals	03/27/12	03/27/12
UBMCBRSD48	H1203040-029	Sediment	Total Metals	03/27/12	03/27/12
UBMCBRSD23	H1203040-030	Sediment	Total Metals	03/27/12	03/27/12
UBMCBRSD3A	H1203040-031	Sediment	Total Metals	03/27/12	03/27/12
UBMCBRSD3B	H1203040-032	Sediment	Total Metals	03/27/12	03/27/12

ANALYTICAL HOLDING TIMES:

The water samples associated with this SDG were collected on 03/26/12 and 03/27/12. The conductivity, TSS, TDS, and alkalinity (total alkalinity, bicarbonate, and carbonate) results were analyzed on 03/28/12 and 03/29/12 within the 28-day holding time for conductivity, the 14-day holding time for alkalinity (total alkalinity, bicarbonate, and carbonate), and the 7-day holding time for TSS and TDS. The chloride and sulfate results were analyzed on 03/28/12 within the 28-day holding time. The hardness results were analyzed on 04/02/12 within the 180-day holding time. The dissolved metals were analyzed on 03/28/12 and the total recoverable metals were analyzed on 04/02/12, total metals results were analyzed on 04/06/12 within the 180-day holding time for the remaining analytes.

The pH samples were collected on 03/26/12 and 03/27/12, received on 03/27/12, and analyzed on 03/27/12 approximately 1-24 hours after the 24-hr holding time had expired. In the professional judgment of the validator, all pH results have been qualified with a "J-" validation flag as prescribed by the USEPA Functional Guidelines.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPARATION BLANKS (PB):

The PB for TDS exhibited a positive detection between the MDL and the RL. The associated TDS results no qualification due to positive detection in the method blank as the reported

results were either non-detect or greater than the RL and greater than five times the PB concentration.

The remaining PB results were non-detect at level less than their respective MDLs and no qualification is warranted.

Field blank, trip blank, and equipment rinsate results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD):

The copper (61%) and lead (156%) MS results for Total Metals by 6010B exhibited recovery outside the 75-125% recovery criteria prescribed by the Functional Guidelines. All associated copper and lead sample results have been qualified with a "J" validation flag due to high or low MS recovery, AS results within the prescribed acceptance criteria, and sample results greater than the RL.

For analytical batch # 78880, the chloride (81% and 86%) and sulfate (86%) exhibited recovery outside the 90-110% recovery criteria prescribed by USEPA Method 300.0. The chloride result for sample S35SW05 and the sulfate results for samples S35SW05, S35SW01, S35SW06, and S35SW02 have been qualified with a "J-" validation flag due to low MS recovery and sample results greater than the RL. The sulfate result for sample S35SW07 and the chloride results for samples S35SW07, S35SW01, S35SW06, and S35SW02 have been qualified with a "UJ" validation flag due to low MS recovery and sample results less than the RL.

The manganese (60%) and zinc (47%) MSD RPD results for Total Metals by 6010B exhibited RPD results greater than the 35% RPD acceptance criteria prescribed by the Functional Guidelines. All associated manganese and zinc results have been qualified with a "J" validation flag due to the poor duplicate precision and sample results greater than the RL.

The remaining MS/MSD recovery and all RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

All LDS and field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE:

Surface Water:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD (UBMC)	Field Duplicate RPD (S35)
pH	N/A	0	0	0
Conductivity	N/A	0.7	0.147167	-0.64725
TSS	N/A	1.8	0	0
TDS	N/A	0	-5.10441	12.04819
Alkalinity	N/A	0.2	0	0
Bicarbonate	N/A	0.2	0	0
Carbonate	N/A	0	0	0
Chloride	0.2	N/A	0	0
Sulfate	2.3	N/A	0	0
Hardness	N/A	N/A	-3.51906	1.37931
Al	2.1	N/A	0	0
Ca	2.1	N/A	-4.30108	5.405405
Mg	2.3	N/A	-3.77358	15.38462
K	9.9	N/A	0	0
Na	0	N/A	0	0
As	0.3	N/A	0	0
Cd	0.3	N/A	-3.19489	0
Cu	1.7	N/A	0	0
Fe	0.9	N/A	0	3.278689
Pb	1.2	N/A	0	0
Mn	0.4	N/A	0	0
Zn	1.3	N/A	0.581395	0

*RPD greater than 20%, however, CRDL criteria not met, Dup ok

Sediment:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD (UBMC)	Field Duplicate RPD (S35)
Al	12	N/A	21.02564	-1.75439
As	9.5	N/A	-12.9032	0
Cd	5.3	N/A	-18.8034	0
Cu	20	N/A	-8.64198	-6.06061
Fe	12	N/A	1.733102	-1.12994
Pb	20	N/A	-8.55895	-40
Mn	60	N/A	-12.766	31.29252
Zn	47	N/A	-14.1823	6.060606

*RPD greater than 35%, however, CRDL criteria not met, Dup ok

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

One cooler was received by Energy Labs on 10/03/12 at 2.4°C. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

REPORTING LIMITS:

The reporting limits presented by the laboratory were acceptable and met the screening level requirements set forth by the project QAPjP and SAP.

OVERALL ASSESSMENT OF DATA:

There were eighteen (18) surface water and fourteen (14) sediment field samples included in SDG# H11120149. Eighteen (18) field samples were analyzed for pH, conductivity, TSS, TDS, alkalinity (total alkalinity, bicarbonate, and carbonate), chloride, sulfate, hardness, dissolved metals, and total recoverable metals, fourteen (14) field samples were analyzed for total metals by SW-846 6010B as outlined in the project QAPP.

All pH results have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

All copper and lead sediment samples have been qualified with a “J” validation flag to denote the reported results are estimates due to poor MS recovery.

All manganese and zinc sediment samples have been qualified with a “J” validation flag to denote the reported results are estimates due to poor MSD precision.

The chloride result for S35SW05 and the sulfate results for samples S35SW05, S35SW01, S35SW06, and S35SW02 have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to low MS/MSD recovery.

The chloride results for samples S35SW07, S35SW01, S35SW06, and S35SW02 and the sulfate result for sample S35SW07 have been qualified with a “UJ” validation flag to denote the sample results are non-detect at the reported value, but the reported value is an estimate due to low MS/MSD recovery.

The remaining field sample data points have been assessed and remain unqualified.

All samples were received by the lab in good condition. Detection limits, analytical methods, detection limits, and reporting were all within the project requirements.

Attachment A: Laboratory Report Forms



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW05
Lab ID: H12030340-001
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 10:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.	J-	0.1		A4500-H B	03/28/12 11:19 / cmm		PHSC_101-H_120328A : 17		R78847
Conductivity @ 25 C	146	umhos/cm		1		A2510 B	03/28/12 11:19 / cmm		PHSC_101-H_120328A : 18		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:10 / cmm	03/28/12 13:48-124 (14410200)_120328A : 11			16073
Solids, Total Dissolved TDS @ 180 C	98	mg/L		10		A2540 C	03/28/12 14:22 / cmm	03/28/12 13:55 J-124 (14410200)_120328B : 9			16075
INORGANICS											
Alkalinity, Total as CaCO3	65	mg/L		4		A2320 B	03/29/12 15:28 / cmm		MAN-TECH_120329A : 24		R78897
Bicarbonate as HCO3	79	mg/L		4		A2320 B	03/29/12 15:28 / cmm		MAN-TECH_120329A : 24		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 15:28 / cmm		MAN-TECH_120329A : 24		R78897
Chloride	2	mg/L	HI	1		E300.0	03/28/12 20:58 / cmm		IC102-H_120328A : 58		R78880
Sulfate	4	mg/L	HI	1		E300.0	03/28/12 20:58 / cmm		IC102-H_120328A : 58		R78880
Hardness as CaCO3	65	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 2		R78918
METALS, DISSOLVED											
Aluminum	0.21	mg/L		0.03		E200.7	03/28/12 12:18 / sld		ICP2-HE_120328B : 41		R78872
Calcium	16	mg/L		1		E200.7	03/28/12 12:18 / sld		ICP2-HE_120328B : 41		R78872
Magnesium	6	mg/L		1		E200.7	03/28/12 12:18 / sld		ICP2-HE_120328B : 41		R78872
Potassium	1	mg/L		1		E200.7	03/28/12 12:18 / sld		ICP2-HE_120328B : 41		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 12:18 / sld		ICP2-HE_120328B : 41		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Copper	0.003	mg/L		0.001		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Iron	0.36	mg/L		0.03		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Manganese	0.023	mg/L		0.005		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071
Zinc	ND	mg/L		0.01		E200.8	04/02/12 21:45 / dck	03/28/12 12:21	ICPMS204-B_120402A : 94		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
04-23-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW07
Lab ID: H12030340-002
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 09:00 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.5	s.u.	J -	0.1		A4500-H B	03/28/12 11:21 / cmm		PHSC_101-H_120328A : 19		R78847
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	03/28/12 11:21 / cmm		PHSC_101-H_120328A : 20		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:11 / cmm	03/28/12 13:48 -124 (14410200)_120328A	: 12		16073
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/28/12 14:22 / cmm	03/28/12 13:55 -124 (14410200)_120328B	: 10		16075
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/29/12 15:32 / cmm		MAN-TECH_120329A : 26		R78897
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/29/12 15:32 / cmm		MAN-TECH_120329A : 26		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 15:32 / cmm		MAN-TECH_120329A : 26		R78897
Chloride	ND	mg/L	UJ	1		E300.0	03/28/12 21:12 / cmm		IC102-H_120328A : 59		R78880
Sulfate	ND	mg/L	UJ	1		E300.0	03/28/12 21:12 / cmm		IC102-H_120328A : 59		R78880
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 3		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:40 / sld		ICP2-HE_120328B : 47		R78872
Calcium	ND	mg/L		1		E200.7	03/28/12 12:40 / sld		ICP2-HE_120328B : 47		R78872
Magnesium	ND	mg/L		1		E200.7	03/28/12 12:40 / sld		ICP2-HE_120328B : 47		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:40 / sld		ICP2-HE_120328B : 47		R78872
Sodium	ND	mg/L		1		E200.7	03/28/12 12:40 / sld		ICP2-HE_120328B : 47		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Copper	ND	mg/L		0.001		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Iron	ND	mg/L		0.03		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Lead	ND	mg/L		0.0005		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Manganese	ND	mg/L		0.005		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968
Zinc	ND	mg/L		0.01		E200.8	04/02/12 22:27 / dck		ICPMS204-B_120402A : 103		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
4-23-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW01
Lab ID: H12030340-003
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 11:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	J-	0.1		A4500-H B	03/28/12 11:24 / cmm		PHSC_101-H_120328A : 21		R78847
Conductivity @ 25 C	154	umhos/cm		1		A2510 B	03/28/12 11:24 / cmm		PHSC_101-H_120328A : 22		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:11 / cmm	03/28/12 13:48 -124 (14410200)_120328A	: 13		16073
Solids, Total Dissolved TDS @ 180 C	88	mg/L		10		A2540 C	03/28/12 14:22 / cmm	03/28/12 13:55 -124 (14410200)_120328B	: 11		16075
INORGANICS											
Alkalinity, Total as CaCO3	77	mg/L		4		A2320 B	03/29/12 15:39 / cmm		MAN-TECH_120329A : 28		R78897
Bicarbonate as HCO3	94	mg/L		4		A2320 B	03/29/12 15:39 / cmm		MAN-TECH_120329A : 28		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 15:39 / cmm		MAN-TECH_120329A : 28		R78897
Chloride	ND	mg/L	UT	1		E300.0	03/28/12 21:25 / cmm		IC102-H_120328A : 60		R78880
Sulfate	2	mg/L	J-	1		E300.0	03/28/12 21:25 / cmm		IC102-H_120328A : 60		R78880
Hardness as CaCO3	73	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 4		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:44 / sld		ICP2-HE_120328B : 48		R78872
Calcium	19	mg/L		1		E200.7	03/28/12 12:44 / sld		ICP2-HE_120328B : 48		R78872
Magnesium	7	mg/L		1		E200.7	03/28/12 12:44 / sld		ICP2-HE_120328B : 48		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:44 / sld		ICP2-HE_120328B : 48		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 12:44 / sld		ICP2-HE_120328B : 48		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Copper	ND	mg/L		0.001		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Iron	0.31	mg/L		0.03		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Manganese	ND	mg/L		0.005		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071
Zinc	ND	mg/L		0.01		E200.8	04/02/12 22:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 107		16071

Report RL - Analyte reporting limit.
Definitions:

JAN
4 23 12

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35SW06
Lab ID: H12030340-004
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 11:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	J-	0.1		A4500-H B	03/28/12 11:26 / cmm		PHSC_101-H_120328A : 23		R78847
Conductivity @ 25 C	155	umhos/cm		1		A2510 B	03/28/12 11:26 / cmm		PHSC_101-H_120328A : 24		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:11 / cmm	03/28/12 13:48-124 (14410200)_120328A	: 14		16073
Solids, Total Dissolved TDS @ 180 C	78	mg/L		10		A2540 C	03/28/12 14:22 / cmm	03/28/12 13:55-124 (14410200)_120328B	: 12		16075
INORGANICS											
Alkalinity, Total as CaCO3	77	mg/L		4		A2320 B	03/29/12 15:46 / cmm		MAN-TECH_120329A : 30		R78897
Bicarbonate as HCO3	94	mg/L		4		A2320 B	03/29/12 15:46 / cmm		MAN-TECH_120329A : 30		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 15:46 / cmm		MAN-TECH_120329A : 30		R78897
Chloride	ND	mg/L	UI	1		E300.0	03/28/12 21:39 / cmm		IC102-H_120328A : 61		R78880
Sulfate	2	mg/L	J-	1		E300.0	03/28/12 21:39 / cmm		IC102-H_120328A : 61		R78880
Hardness as CaCO3	72	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 5		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:47 / sld		ICP2-HE_120328B : 49		R78872
Calcium	18	mg/L		1		E200.7	03/28/12 12:47 / sld		ICP2-HE_120328B : 49		R78872
Magnesium	6	mg/L		1		E200.7	03/28/12 12:47 / sld		ICP2-HE_120328B : 49		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:47 / sld		ICP2-HE_120328B : 49		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 12:47 / sld		ICP2-HE_120328B : 49		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Copper	ND	mg/L		0.001		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Iron	0.30	mg/L		0.03		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Manganese	ND	mg/L		0.005		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071
Zinc	ND	mg/L		0.01		E200.8	04/02/12 22:50 / dck	03/28/12 12:21	ICPMS204-B_120402A : 108		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
4-23-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW02
Lab ID: H12030340-005
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 12:00 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.8	s.u. J-		0.1		A4500-H B	03/28/12 11:29 / cmm		PHSC_101-H_120328A : 25		R78847
Conductivity @ 25 C	148	umhos/cm		1		A2510 B	03/28/12 11:29 / cmm		PHSC_101-H_120328A : 26		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:12 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 16			16073
Solids, Total Dissolved TDS @ 180 C	74	mg/L		10		A2540 C	03/28/12 14:23 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 14			16075
INORGANICS											
Alkalinity, Total as CaCO3	69	mg/L		4		A2320 B	03/29/12 15:53 / cmm		MAN-TECH_120329A : 32		R78897
Bicarbonate as HCO3	85	mg/L		4		A2320 B	03/29/12 15:53 / cmm		MAN-TECH_120329A : 32		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 15:53 / cmm		MAN-TECH_120329A : 32		R78897
Chloride	ND	mg/L JF		1		E300.0	03/28/12 21:52 / cmm		IC102-H_120328A : 62		R78880
Sulfate	4	mg/L		1		E300.0	03/28/12 21:52 / cmm		IC102-H_120328A : 62		R78880
Hardness as CaCO3	69	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 6		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:51 / sld		ICP2-HE_120328B : 50		R78872
Calcium	17	mg/L		1		E200.7	03/28/12 12:51 / sld		ICP2-HE_120328B : 50		R78872
Magnesium	7	mg/L		1		E200.7	03/28/12 12:51 / sld		ICP2-HE_120328B : 50		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:51 / sld		ICP2-HE_120328B : 50		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 12:51 / sld		ICP2-HE_120328B : 50		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Copper	0.001	mg/L		0.001		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Iron	0.04	mg/L		0.03		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Manganese	ND	mg/L		0.005		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071
Zinc	ND	mg/L		0.01		E200.8	04/02/12 22:55 / dck	03/28/12 12:21	ICPMS204-B_120402A : 109		16071

Report Definitions: RL - Analyte reporting limit.

JAN 4-23-12

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW04
Lab ID: H12030340-006
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 13:45 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.	J-	0.1		A4500-H B	03/28/12 11:34 / cmm		PHSC_101-H_120328A : 29		R78847
Conductivity @ 25 C	217	umhos/cm		1		A2510 B	03/28/12 11:34 / cmm		PHSC_101-H_120328A : 30		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:12 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 17			16073
Solids, Total Dissolved TDS @ 180 C	116	mg/L		10		A2540 C	03/28/12 14:23 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 15			16075
INORGANICS											
Alkalinity, Total as CaCO3	70	mg/L		4		A2320 B	03/29/12 16:08 / cmm		MAN-TECH_120329A : 36		R78897
Bicarbonate as HCO3	86	mg/L		4		A2320 B	03/29/12 16:08 / cmm		MAN-TECH_120329A : 36		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:08 / cmm		MAN-TECH_120329A : 36		R78897
Chloride	4	mg/L		1		E300.0	03/29/12 15:52 / cmm		IC102-H_120329A : 24		R78898
Sulfate	26	mg/L		1		E300.0	03/29/12 15:52 / cmm		IC102-H_120329A : 24		R78898
Hardness as CaCO3	99	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 7		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:55 / sld		ICP2-HE_120328B : 51		R78872
Calcium	23	mg/L		1		E200.7	03/28/12 12:55 / sld		ICP2-HE_120328B : 51		R78872
Magnesium	10	mg/L		1		E200.7	03/28/12 12:55 / sld		ICP2-HE_120328B : 51		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:55 / sld		ICP2-HE_120328B : 51		R78872
Sodium	3	mg/L		1		E200.7	03/28/12 12:55 / sld		ICP2-HE_120328B : 51		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Cadmium	0.00018	mg/L		0.00008		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Copper	0.002	mg/L		0.001		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Iron	0.19	mg/L		0.03		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Manganese	0.015	mg/L		0.005		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071
Zinc	0.11	mg/L		0.01		E200.8	04/02/12 23:18 / dck	03/28/12 12:21	ICPMS204-B_120402A : 114		16071

Report Definitions: RL - Analyte reporting limit.

JAN
0423-12

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SW03
Lab ID: H12030340-007
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 14:25 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.	J	0.1		A4500-H B	03/28/12 11:36 / cmm		PHSC_101-H_120328A : 31		R78847
Conductivity @ 25 C	217	umhos/cm		1		A2510 B	03/28/12 11:36 / cmm		PHSC_101-H_120328A : 32		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:12 / cmm	03/28/12 13:48-124 (14410200)_120328A : 18			16073
Solids, Total Dissolved TDS @ 180 C	110	mg/L		10		A2540 C	03/28/12 14:23 / cmm	03/28/12 13:55-124 (14410200)_120328B : 16			16075
INORGANICS											
Alkalinity, Total as CaCO3	70	mg/L		4		A2320 B	03/29/12 16:15 / cmm		MAN-TECH_120329A : 38		R78897
Bicarbonate as HCO3	85	mg/L		4		A2320 B	03/29/12 16:15 / cmm		MAN-TECH_120329A : 38		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:15 / cmm		MAN-TECH_120329A : 38		R78897
Chloride	4	mg/L		1		E300.0	03/29/12 16:05 / cmm		IC102-H_120329A : 25		R78898
Sulfate	26	mg/L		1		E300.0	03/29/12 16:05 / cmm		IC102-H_120329A : 25		R78898
Hardness as CaCO3	96	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 8		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 12:59 / sld		ICP2-HE_120328B : 52		R78872
Calcium	22	mg/L		1		E200.7	03/28/12 12:59 / sld		ICP2-HE_120328B : 52		R78872
Magnesium	10	mg/L		1		E200.7	03/28/12 12:59 / sld		ICP2-HE_120328B : 52		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 12:59 / sld		ICP2-HE_120328B : 52		R78872
Sodium	3	mg/L		1		E200.7	03/28/12 12:59 / sld		ICP2-HE_120328B : 52		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Cadmium	0.00017	mg/L		0.00008		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Copper	0.002	mg/L		0.001		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Iron	0.20	mg/L		0.03		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Lead	ND	mg/L		0.0005		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Manganese	0.024	mg/L		0.005		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968
Zinc	0.12	mg/L		0.01		E200.8	04/02/12 23:23 / dck		ICPMS204-B_120402A : 115		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
04-23-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRWS25
Lab ID: H12030340-008
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.4	s.u.		0.1		A4500-H B	03/28/12 11:39 / cmm		PHSC_101-H_120328A : 33		R78847
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	03/28/12 11:39 / cmm		PHSC_101-H_120328A : 34		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:12 / cmm	03/28/12 13:48-124 (14410200)_120328A : 19			16073
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/28/12 14:24 / cmm	03/28/12 13:55-124 (14410200)_120328B : 17			16075
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/29/12 16:19 / cmm		MAN-TECH_120329A : 40		R78897
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/29/12 16:19 / cmm		MAN-TECH_120329A : 40		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:19 / cmm		MAN-TECH_120329A : 40		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 16:19 / cmm		IC102-H_120329A : 26		R78898
Sulfate	ND	mg/L		1		E300.0	03/29/12 16:19 / cmm		IC102-H_120329A : 26		R78898
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 9		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:02 / sld		ICP2-HE_120328B : 53		R78872
Calcium	ND	mg/L		1		E200.7	03/28/12 13:02 / sld		ICP2-HE_120328B : 53		R78872
Magnesium	ND	mg/L		1		E200.7	03/28/12 13:02 / sld		ICP2-HE_120328B : 53		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:02 / sld		ICP2-HE_120328B : 53		R78872
Sodium	ND	mg/L		1		E200.7	03/28/12 13:02 / sld		ICP2-HE_120328B : 53		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Copper	ND	mg/L		0.001		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Iron	ND	mg/L		0.03		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Lead	ND	mg/L		0.0005		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Manganese	ND	mg/L		0.005		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968
Zinc	ND	mg/L		0.01		E200.8	04/02/12 23:28 / dck		ICPMS204-B_120402A : 116		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
04-23-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRWSW26
Lab ID: H12030340-009
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:15 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.2	s.u.	J-	0.1		A4500-H B	03/28/12 11:42 / cmm		PHSC_101-H_120328A : 35		R78847
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	03/28/12 11:42 / cmm		PHSC_101-H_120328A : 36		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:13 / cmm	03/28/12 13:48-124 (14410200)_120328A : 20			16073
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/28/12 14:24 / cmm	03/28/12 13:55-124 (14410200)_120328B : 18			16075
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/29/12 16:23 / cmm		MAN-TECH_120329A : 42		R78897
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/29/12 16:23 / cmm		MAN-TECH_120329A : 42		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:23 / cmm		MAN-TECH_120329A : 42		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 17:00 / cmm		IC102-H_120329A : 29		R78898
Sulfate	ND	mg/L		1		E300.0	03/29/12 17:00 / cmm		IC102-H_120329A : 29		R78898
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 10		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:06 / sld		ICP2-HE_120328B : 54		R78872
Calcium	ND	mg/L		1		E200.7	03/28/12 13:06 / sld		ICP2-HE_120328B : 54		R78872
Magnesium	ND	mg/L		1		E200.7	03/28/12 13:06 / sld		ICP2-HE_120328B : 54		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:06 / sld		ICP2-HE_120328B : 54		R78872
Sodium	ND	mg/L		1		E200.7	03/28/12 13:06 / sld		ICP2-HE_120328B : 54		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Copper	ND	mg/L		0.001		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Iron	ND	mg/L		0.03		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Lead	ND	mg/L		0.0005		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Manganese	ND	mg/L		0.005		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968
Zinc	ND	mg/L		0.01		E200.8	04/02/12 23:32 / dck		ICPMS204-B_120402A : 117		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JHH
04-28-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW22
Lab ID: H12030340-010
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:50 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.	J-	0.1		A4500-H B	03/28/12 11:44 / cmm		PHSC_101-H_120328A : 37		R78847
Conductivity @ 25 C	680	umhos/cm		1		A2510 B	03/28/12 11:44 / cmm		PHSC_101-H_120328A : 38		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:14 / cmm	03/28/12 13:48-124 (14410200)_120328A : 21			16073
Solids, Total Dissolved TDS @ 180 C	420	mg/L		10		A2540 C	03/28/12 14:24 / cmm	03/28/12 13:55-124 (14410200)_120328B : 19			16075
INORGANICS											
Alkalinity, Total as CaCO3	95	mg/L		4		A2320 B	03/29/12 16:29 / cmm		MAN-TECH_120329A : 44		R78897
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/29/12 16:29 / cmm		MAN-TECH_120329A : 44		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:29 / cmm		MAN-TECH_120329A : 44		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 17:13 / cmm		IC102-H_120329A : 30		R78898
Sulfate	260	mg/L		1		E300.0	03/29/12 17:13 / cmm		IC102-H_120329A : 30		R78898
Hardness as CaCO3	335	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 11		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:10 / sld		ICP2-HE_120328B : 55		R78872
Calcium	91	mg/L		1		E200.7	03/28/12 13:10 / sld		ICP2-HE_120328B : 55		R78872
Magnesium	26	mg/L		1		E200.7	03/28/12 13:10 / sld		ICP2-HE_120328B : 55		R78872
Potassium	1	mg/L		1		E200.7	03/28/12 13:10 / sld		ICP2-HE_120328B : 55		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 13:10 / sld		ICP2-HE_120328B : 55		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Cadmium	0.0154	mg/L		0.00008		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Copper	0.023	mg/L		0.001		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Iron	ND	mg/L		0.03		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Lead	0.0059	mg/L		0.0005		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Manganese	ND	mg/L		0.005		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968
Zinc	3.45	mg/L		0.01		E200.8	04/02/12 23:37 / dck		ICPMS204-B_120402A : 118		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAM
04-23-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRWSW24
Lab ID: H12030340-011
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:55 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.	J	0.1		A4500-H B	03/28/12 11:47 / cmm		PHSC_101-H_120328A : 39		R78847
Conductivity @ 25 C	679	umhos/cm		1		A2510 B	03/28/12 11:47 / cmm		PHSC_101-H_120328A : 40		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:14 / cmm	03/28/12 13:48-124 (14410200)_120328A : 22			16073
Solids, Total Dissolved TDS @ 180 C	442	mg/L		10		A2540 C	03/28/12 14:24 / cmm	03/28/12 13:55-124 (14410200)_120328B : 20			16075
INORGANICS											
Alkalinity, Total as CaCO3	95	mg/L		4		A2320 B	03/29/12 16:43 / cmm		MAN-TECH_120329A : 48		R78897
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/29/12 16:43 / cmm		MAN-TECH_120329A : 48		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:43 / cmm		MAN-TECH_120329A : 48		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 17:27 / cmm		IC102-H_120329A : 31		R78898
Sulfate	260	mg/L		1		E300.0	03/29/12 17:27 / cmm		IC102-H_120329A : 31		R78898
Hardness as CaCO3	347	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 12		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:14 / sld		ICP2-HE_120328B : 56		R78872
Calcium	95	mg/L		1		E200.7	03/28/12 13:14 / sld		ICP2-HE_120328B : 56		R78872
Magnesium	27	mg/L		1		E200.7	03/28/12 13:14 / sld		ICP2-HE_120328B : 56		R78872
Potassium	1	mg/L		1		E200.7	03/28/12 13:14 / sld		ICP2-HE_120328B : 56		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 13:14 / sld		ICP2-HE_120328B : 56		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Cadmium	0.0156	mg/L		0.00008		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Copper	0.023	mg/L		0.001		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Iron	ND	mg/L		0.03		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Lead	0.0059	mg/L		0.0005		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Manganese	ND	mg/L		0.005		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968
Zinc	3.43	mg/L		0.01		E200.8	04/02/12 23:42 / dck		ICPMS204-B_120402A : 119		R78968

Report Definitions: RL - Analyte reporting limit.

JAN
0423-12

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRW01
Lab ID: H12030340-012
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 16:50 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	J-	0.1		A4500-H B	03/28/12 11:49 / cmm		PHSC_101-H_120328A : 41		R78847
Conductivity @ 25 C	131	umhos/cm		1		A2510 B	03/28/12 11:49 / cmm		PHSC_101-H_120328A : 42		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:14 / cmm	03/28/12 13:48-124 (14410200)_120328A	: 23		16073
Solids, Total Dissolved TDS @ 180 C	62	mg/L		10		A2540 C	03/28/12 14:24 / cmm	03/28/12 13:55-124 (14410200)_120328B	: 21		16075
INORGANICS											
Alkalinity, Total as CaCO3	65	mg/L		4		A2320 B	03/29/12 16:50 / cmm		MAN-TECH_120329A : 50		R78897
Bicarbonate as HCO3	79	mg/L		4		A2320 B	03/29/12 16:50 / cmm		MAN-TECH_120329A : 50		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:50 / cmm		MAN-TECH_120329A : 50		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 17:40 / cmm		IC102-H_120329A : 32		R78898
Sulfate	2	mg/L		1		E300.0	03/29/12 17:40 / cmm		IC102-H_120329A : 32		R78898
Hardness as CaCO3	63	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 13		R78918
METALS, DISSOLVED											
Aluminum	0.19	mg/L		0.03		E200.7	03/28/12 13:36 / sld		ICP2-HE_120328B : 62		R78872
Calcium	13	mg/L		1		E200.7	03/28/12 13:36 / sld		ICP2-HE_120328B : 62		R78872
Magnesium	7	mg/L		1		E200.7	03/28/12 13:36 / sld		ICP2-HE_120328B : 62		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:36 / sld		ICP2-HE_120328B : 62		R78872
Sodium	1	mg/L		1		E200.7	03/28/12 13:36 / sld		ICP2-HE_120328B : 62		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Cadmium	ND	mg/L		0.00008		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Copper	0.002	mg/L		0.001		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Iron	0.25	mg/L		0.03		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Lead	ND	mg/L		0.0005		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Manganese	0.006	mg/L		0.005		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071
Zinc	ND	mg/L		0.01		E200.8	04/02/12 23:46 / dck	03/28/12 12:21	ICPMS204-B_120402A : 120		16071

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
04-23-12



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW2
Lab ID: H12030340-013
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 17:25 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.7	s.u.	J-	0.1		A4500-H B	03/28/12 11:52 / cmm		PHSC_101-H_120328A : 43		R78847
Conductivity @ 25 C	440	umhos/cm		1		A2510 B	03/28/12 11:52 / cmm		PHSC_101-H_120328A : 44		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:15 / cmm	03/28/12 13:48 -124 (14410200)_120328A : 24			16073
Solids, Total Dissolved TDS @ 180 C	282	mg/L		10		A2540 C	03/28/12 14:25 / cmm	03/28/12 13:55 -124 (14410200)_120328B : 22			16075
INORGANICS											
Alkalinity, Total as CaCO3	8	mg/L		4		A2320 B	03/29/12 16:55 / cmm		MAN-TECH_120329A : 52		R78897
Bicarbonate as HCO3	10	mg/L		4		A2320 B	03/29/12 16:55 / cmm		MAN-TECH_120329A : 52		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 16:55 / cmm		MAN-TECH_120329A : 52		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 17:54 / cmm		IC102-H_120329A : 33		R78898
Sulfate	190	mg/L		1		E300.0	03/29/12 17:54 / cmm		IC102-H_120329A : 33		R78898
Hardness as CaCO3	193	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 14		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:40 / sld		ICP2-HE_120328B : 63		R78872
Calcium	51	mg/L		1		E200.7	03/28/12 13:40 / sld		ICP2-HE_120328B : 63		R78872
Magnesium	16	mg/L		1		E200.7	03/28/12 13:40 / sld		ICP2-HE_120328B : 63		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:40 / sld		ICP2-HE_120328B : 63		R78872
Sodium	ND	mg/L		1		E200.7	03/28/12 13:40 / sld		ICP2-HE_120328B : 63		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Cadmium	0.00537	mg/L		0.00008		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Copper	0.006	mg/L		0.001		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Iron	0.11	mg/L		0.03		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Lead	0.0219	mg/L		0.0005		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Manganese	1.72	mg/L		0.005		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071
Zinc	1.18	mg/L		0.01		E200.8	04/02/12 23:51 / dck	03/28/12 12:21	ICPMS204-B_120402A : 121		16071

Report RL - Analyte reporting limit.
Definitions:

JAN
04-28-12

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRWS38
Lab ID: H12030340-014
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 08:50 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.	J-	0.1		A4500-H B	03/28/12 11:55 / cmm		PHSC_101-H_120328A : 45		R78847
Conductivity @ 25 C	306	umhos/cm		1		A2510 B	03/28/12 11:55 / cmm		PHSC_101-H_120328A : 46		R78847
Solids, Total Suspended TSS @ 105 C	24	mg/L		10		A2540 D	03/28/12 14:15 / cmm	03/28/12 13:50-124 (14410200)_120328A	: 27		16074
Solids, Total Dissolved TDS @ 180 C	172	mg/L		10		A2540 C	03/28/12 14:25 / cmm	03/28/12 13:55-124 (14410200)_120328B	: 23		16075
INORGANICS											
Alkalinity, Total as CaCO3	51	mg/L		4		A2320 B	03/29/12 17:01 / cmm		MAN-TECH_120329A : 54		R78897
Bicarbonate as HCO3	63	mg/L		4		A2320 B	03/29/12 17:01 / cmm		MAN-TECH_120329A : 54		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 17:01 / cmm		MAN-TECH_120329A : 54		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 18:08 / cmm		IC102-H_120329A : 34		R78898
Sulfate	91	mg/L		1		E300.0	03/29/12 18:08 / cmm		IC102-H_120329A : 34		R78898
Hardness as CaCO3	130	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 15		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:43 / sld		ICP2-HE_120328B : 64		R78872
Calcium	28	mg/L		1		E200.7	03/28/12 13:43 / sld		ICP2-HE_120328B : 64		R78872
Magnesium	14	mg/L		1		E200.7	03/28/12 13:43 / sld		ICP2-HE_120328B : 64		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:43 / sld		ICP2-HE_120328B : 64		R78872
Sodium	1	mg/L		1		E200.7	03/28/12 13:43 / sld		ICP2-HE_120328B : 64		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Cadmium	0.0130	mg/L		0.00008		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Copper	0.118	mg/L		0.001		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Iron	5.88	mg/L		0.03		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Lead	0.0647	mg/L		0.0005		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Manganese	1.66	mg/L		0.005		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071
Zinc	2.64	mg/L		0.01		E200.8	04/02/12 23:56 / dck	03/28/12 12:21	ICPMS204-B_120402A : 122		16071

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
04-23-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW48
Lab ID: H12030340-015
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:05 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.7	s.u.	J-	0.1		A4500-H B	03/28/12 11:57 / cmm		PHSC_101-H_120328A : 47		R78847
Conductivity @ 25 C	301	umhos/cm		1		A2510 B	03/28/12 11:57 / cmm		PHSC_101-H_120328A : 48		R78847
Solids, Total Suspended TSS @ 105 C	30	mg/L		10		A2540 D	03/28/12 14:16 / cmm	03/28/12 13:50-124 (14410200)_120328A : 28			16074
Solids, Total Dissolved TDS @ 180 C	166	mg/L		10		A2540 C	03/28/12 14:25 / cmm	03/28/12 13:55-124 (14410200)_120328B : 24			16075
INORGANICS											
Alkalinity, Total as CaCO3	43	mg/L		4		A2320 B	03/29/12 17:08 / cmm		MAN-TECH_120329A : 56		R78897
Bicarbonate as HCO3	52	mg/L		4		A2320 B	03/29/12 17:08 / cmm		MAN-TECH_120329A : 56		R78897
Carbonate as CO3	ND	mg/L		4		A2320 B	03/29/12 17:08 / cmm		MAN-TECH_120329A : 56		R78897
Chloride	ND	mg/L		1		E300.0	03/29/12 18:48 / cmm		IC102-H_120329A : 37		R78898
Sulfate	94	mg/L		1		E300.0	03/29/12 18:48 / cmm		IC102-H_120329A : 37		R78898
Hardness as CaCO3	130	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 16		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:47 / sld		ICP2-HE_120328B : 65		R78872
Calcium	28	mg/L		1		E200.7	03/28/12 13:47 / sld		ICP2-HE_120328B : 65		R78872
Magnesium	15	mg/L		1		E200.7	03/28/12 13:47 / sld		ICP2-HE_120328B : 65		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:47 / sld		ICP2-HE_120328B : 65		R78872
Sodium	1	mg/L		1		E200.7	03/28/12 13:47 / sld		ICP2-HE_120328B : 65		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	0.004	mg/L		0.003		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Cadmium	0.0103	mg/L		0.00008		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Copper	0.120	mg/L		0.001		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Iron	6.77	mg/L		0.03		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Lead	0.0619	mg/L		0.0005		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Manganese	1.57	mg/L		0.005		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071
Zinc	2.30	mg/L		0.01		E200.8	04/03/12 00:19 / dck	03/28/12 12:21	ICPMS204-B_120402A : 127		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAM
04-23-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW23
Lab ID: H12030340-016
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:30 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	J-	0.1		A4500-H B	03/28/12 12:46 / cmm		PHSC_101-H_120328A : 61		R78847
Conductivity @ 25 C	270	umhos/cm		1		A2510 B	03/28/12 12:46 / cmm		PHSC_101-H_120328A : 62		R78847
Solids, Total Suspended TSS @ 105 C	10	mg/L		10		A2540 D	03/28/12 14:16 / cmm	03/28/12 13:50-124 (14410200)_120328A : 29			16074
Solids, Total Dissolved TDS @ 180 C	154	mg/L		10		A2540 C	03/28/12 14:25 / cmm	03/28/12 13:55-124 (14410200)_120328B : 25			16075
INORGANICS											
Alkalinity, Total as CaCO3	61	mg/L		4		A2320 B	03/30/12 11:53 / cmm		MAN-TECH_120330A : 12		R78916
Bicarbonate as HCO3	74	mg/L		4		A2320 B	03/30/12 11:53 / cmm		MAN-TECH_120330A : 12		R78916
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/12 11:53 / cmm		MAN-TECH_120330A : 12		R78916
Chloride	ND	mg/L		1		E300.0	03/29/12 19:02 / cmm		IC102-H_120329A : 38		R78898
Sulfate	63	mg/L		1		E300.0	03/29/12 19:02 / cmm		IC102-H_120329A : 38		R78898
Hardness as CaCO3	117	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 17		R78918
METALS, DISSOLVED											
Aluminum	0.13	mg/L		0.03		E200.7	03/28/12 13:51 / sld		ICP2-HE_120328B : 66		R78872
Calcium	25	mg/L		1		E200.7	03/28/12 13:51 / sld		ICP2-HE_120328B : 66		R78872
Magnesium	13	mg/L		1		E200.7	03/28/12 13:51 / sld		ICP2-HE_120328B : 66		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:51 / sld		ICP2-HE_120328B : 66		R78872
Sodium	1	mg/L		1		E200.7	03/28/12 13:51 / sld		ICP2-HE_120328B : 66		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Cadmium	0.00790	mg/L		0.00008		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Copper	0.031	mg/L		0.001		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Iron	0.64	mg/L		0.03		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Lead	0.0360	mg/L		0.0005		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Manganese	0.595	mg/L		0.005		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071
Zinc	1.91	mg/L		0.01		E200.8	04/03/12 00:24 / dck	03/28/12 12:21	ICPMS204-B_120402A : 128		16071

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAM
04-23-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSW3A
Lab ID: H12030340-017
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:55 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.	J-	0.1		A4500-H B	03/28/12 12:51 / cmm		PHSC_101-H_120328A : 65		R78847
Conductivity @ 25 C	448	umhos/cm		1		A2510 B	03/28/12 12:51 / cmm		PHSC_101-H_120328A : 66		R78847
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/28/12 14:16 / cmm	03/28/12 13:50-124 (14410200)_120328A : 30			16074
Solids, Total Dissolved TDS @ 180 C	260	mg/L		10		A2540 C	03/28/12 14:26 / cmm	03/28/12 13:57-124 (14410200)_120328B : 28			16076
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	03/30/12 12:00 / cmm		MAN-TECH_120330A : 14		R78916
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/30/12 12:00 / cmm		MAN-TECH_120330A : 14		R78916
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/12 12:00 / cmm		MAN-TECH_120330A : 14		R78916
Chloride	ND	mg/L		1		E300.0	03/29/12 19:16 / cmm		IC102-H_120329A : 39		R78898
Sulfate	120	mg/L		1		E300.0	03/29/12 19:16 / cmm		IC102-H_120329A : 39		R78898
Hardness as CaCO3	210	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 18		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:54 / sld		ICP2-HE_120328B : 67		R78872
Calcium	46	mg/L		1		E200.7	03/28/12 13:54 / sld		ICP2-HE_120328B : 67		R78872
Magnesium	23	mg/L		1		E200.7	03/28/12 13:54 / sld		ICP2-HE_120328B : 67		R78872
Potassium	ND	mg/L		1		E200.7	03/28/12 13:54 / sld		ICP2-HE_120328B : 67		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 13:54 / sld		ICP2-HE_120328B : 67		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Cadmium	0.00426	mg/L		0.00008		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Copper	0.022	mg/L		0.001		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Iron	0.44	mg/L		0.03		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Lead	0.0032	mg/L		0.0005		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Manganese	1.50	mg/L		0.005		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968
Zinc	1.36	mg/L		0.01		E200.8	04/03/12 00:28 / dck		ICPMS204-B_120402A : 129		R78968

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAM
04-23-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRWS3B
Lab ID: H12030340-018
Matrix: Aqueous

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 11:15 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.0	s.u.	J-	0.1		A4500-H B	03/28/12 12:53 / cmm		PHSC_101-H_120328A : 67		R78847
Conductivity @ 25 C	526	umhos/cm		1		A2510 B	03/28/12 12:53 / cmm		PHSC_101-H_120328A : 68		R78847
Solids, Total Suspended TSS @ 105 C	62	mg/L		10		A2540 D	03/28/12 14:16 / cmm	03/28/12 13:50-124 (14410200)_120328A : 32			16074
Solids, Total Dissolved TDS @ 180 C	324	mg/L		10		A2540 C	03/28/12 14:26 / cmm	03/28/12 13:57-124 (14410200)_120328B : 30			16076
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	03/30/12 12:06 / cmm		MAN-TECH_120330A : 16		R78916
Bicarbonate as HCO3	130	mg/L		4		A2320 B	03/30/12 12:06 / cmm		MAN-TECH_120330A : 16		R78916
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/12 12:06 / cmm		MAN-TECH_120330A : 16		R78916
Chloride	ND	mg/L		1		E300.0	03/29/12 19:56 / cmm		IC102-H_120329A : 42		R78898
Sulfate	160	mg/L		1		E300.0	03/29/12 19:56 / cmm		IC102-H_120329A : 42		R78898
Hardness as CaCO3	240	mg/L		1		A2340 B	04/02/12 08:47 / sld		WATERCALC_120402A : 19		R78918
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	03/28/12 13:58 / sld		ICP2-HE_120328B : 68		R78872
Calcium	54	mg/L		1		E200.7	03/28/12 13:58 / sld		ICP2-HE_120328B : 68		R78872
Magnesium	28	mg/L		1		E200.8	04/03/12 18:23 / dck		ICPMS204-B_120402A : 331		R78968
Potassium	ND	mg/L		1		E200.7	03/28/12 13:58 / sld		ICP2-HE_120328B : 68		R78872
Sodium	2	mg/L		1		E200.7	03/28/12 13:58 / sld		ICP2-HE_120328B : 68		R78872
METALS, TOTAL RECOVERABLE											
Arsenic	0.012	mg/L		0.003		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Cadmium	0.00363	mg/L		0.00008		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Copper	0.033	mg/L		0.001		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Iron	3.70	mg/L		0.03		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Lead	0.129	mg/L		0.0005		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Manganese	2.01	mg/L		0.005		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071
Zinc	1.56	mg/L		0.01		E200.8	04/03/12 00:33 / dck	03/28/12 12:21	ICPMS204-B_120402A : 130		16071

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
04-28-12



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD05
Lab ID: H12030340-019
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 10:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	4660	mg/kg		5		SW6010B	04/06/12 08:02 / sld	04/02/12 14:34	ICP2-HE_120405B : 204		16117
Arsenic	6	mg/kg		5		SW6010B	04/10/12 19:58 / sld	04/02/12 14:34	ICP2-HE_120410C : 130		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:02 / sld	04/02/12 14:34	ICP2-HE_120405B : 204		16117
Copper	68	mg/kg		5		SW6010B	04/06/12 08:02 / sld	04/02/12 14:34	ICP2-HE_120405B : 204		16117
Iron	24600	mg/kg		5		SW6010B	04/10/12 19:58 / sld	04/02/12 14:34	ICP2-HE_120410C : 130		16117
Lead	5	mg/kg		5		SW6010B	04/11/12 18:49 / sld	04/02/12 14:34	ICP2-HE_120411C : 96		16117
Manganese	401	mg/kg		5		SW6010B	04/06/12 08:02 / sld	04/02/12 14:34	ICP2-HE_120405B : 204		16117
Zinc	35	mg/kg		5		SW6010B	04/06/12 08:02 / sld	04/02/12 14:34	ICP2-HE_120405B : 204		16117

JAN
04-23-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD01
Lab ID: H12030340-021
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 11:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	11300	mg/kg		5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Arsenic	14	mg/kg		5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Copper	48	mg/kg	4	5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Iron	17600	mg/kg		5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Lead	14	mg/kg		5		SW6010B	04/10/12 20:05 / sld	04/02/12 14:34	ICP2-HE_120410C : 132		16117
Manganese	2550	mg/kg	44	5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117
Zinc	68	mg/kg	44	5		SW6010B	04/06/12 08:09 / sld	04/02/12 14:34	ICP2-HE_120405B : 206		16117

JLN
04-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD06
Lab ID: H12030340-020
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 11:10 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	11500	mg/kg		5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Arsenic	14	mg/kg		5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Copper	51	mg/kg	H	5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Iron	17800	mg/kg		5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Lead	21	mg/kg		5		SW6010B	04/10/12 20:02 / sld	04/02/12 14:34	ICP2-HE_120410C : 131		16117
Manganese	1860	mg/kg		5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117
Zinc	64	mg/kg	H	5		SW6010B	04/06/12 08:05 / sld	04/02/12 14:34	ICP2-HE_120405B : 205		16117

JAN
04-23-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD02
Lab ID: H12030340-022
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 12:00 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	4790	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Arsenic	ND	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Copper	63	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Iron	2980	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Lead	8	mg/kg		5		SW6010B	04/10/12 20:09 / sld	04/02/12 14:34	ICP2-HE_120410C : 133		16117
Manganese	21	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117
Zinc	19	mg/kg		5		SW6010B	04/06/12 08:13 / sld	04/02/12 14:34	ICP2-HE_120405B : 207		16117

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD04
Lab ID: H12030340-023
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 13:45 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	4430	mg/kg		5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Arsenic	7	mg/kg		5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Cadmium	1	mg/kg		1		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Copper	25	mg/kg	J	5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Iron	13700	mg/kg		5		SW6010B	04/10/12 20:13 / sld	04/02/12 14:34	ICP2-HE_120410C : 134		16117
Lead	20	mg/kg	FHH	5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Manganese	877	mg/kg	FHH	5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117
Zinc	555	mg/kg	FHH	5		SW6010B	04/06/12 08:16 / sld	04/02/12 14:34	ICP2-HE_120405B : 208		16117

JAM
04-23-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35SD03
Lab ID: H12030340-024
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 14:25 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	5640	mg/kg		5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Arsenic	10	mg/kg		5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Cadmium	1	mg/kg		1		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Copper	33	mg/kg	J	5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Iron	15300	mg/kg		5		SW6010B	04/10/12 20:24 / sld	04/02/12 14:34	ICP2-HE_120410C : 137		16117
Lead	57	mg/kg	J	5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Manganese	888	mg/kg	J	5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117
Zinc	375	mg/kg	J	5		SW6010B	04/06/12 08:20 / sld	04/02/12 14:34	ICP2-HE_120405B : 209		16117

JAN
04-23-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD22
Lab ID: H12030340-025
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:50 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	8620	mg/kg		5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Arsenic	58	mg/kg		5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Cadmium	53	mg/kg		1		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Copper	1550	mg/kg	J	5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Iron	29100	mg/kg		5		SW6010B	04/10/12 20:27 / sld	04/02/12 14:34	ICP2-HE_120410C : 138		16117
Lead	5480	mg/kg	J	5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Manganese	13200	mg/kg	J	5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117
Zinc	6420	mg/kg	J	5		SW6010B	04/06/12 08:24 / sld	04/02/12 14:34	ICP2-HE_120405B : 210		16117

JAN
01-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD24
Lab ID: H12030340-026
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 15:55 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6980	mg/kg		5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Arsenic	66	mg/kg		5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Cadmium	64	mg/kg		1		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Copper	1690	mg/kg	H	5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Iron	28600	mg/kg		5		SW6010B	04/10/12 20:31 / sld	04/02/12 14:34	ICP2-HE_120410C : 139		16117
Lead	5970	mg/kg	H	5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Manganese	15000	mg/kg	H	5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117
Zinc	7400	mg/kg	H	5		SW6010B	04/06/12 08:28 / sld	04/02/12 14:34	ICP2-HE_120405B : 211		16117

JAN
04-23-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD01
Lab ID: H12030340-027
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/26/12 16:50 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6110	mg/kg		5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Arsenic	10	mg/kg		5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Copper	13	mg/kg	J	5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Iron	13500	mg/kg		5		SW6010B	04/10/12 20:35 / sld	04/02/12 14:34	ICP2-HE_120410C : 140		16117
Lead	19	mg/kg	I	5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Manganese	349	mg/kg	I	5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117
Zinc	92	mg/kg	I	5		SW6010B	04/06/12 08:31 / sld	04/02/12 14:34	ICP2-HE_120405B : 212		16117

JAN
04-23-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD38
Lab ID: H12030340-028
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 08:50 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6690	mg/kg		5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Arsenic	52	mg/kg		5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Cadmium	22	mg/kg		1		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Copper	512	mg/kg	J	5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Iron	33000	mg/kg		5		SW6010B	04/10/12 20:38 / sld	04/02/12 14:34	ICP2-HE_120410C : 141		16117
Lead	1780	mg/kg	J	5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Manganese	4230	mg/kg	J	5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117
Zinc	3860	mg/kg	J	5		SW6010B	04/06/12 08:35 / sld	04/02/12 14:34	ICP2-HE_120405B : 213		16117

JAN
04-23-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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Gillette, WY 866-886-7175 • Rapid City, SD 888-872-1225 • College Station, TX 888-690-2218

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD48
Lab ID: H12030340-029
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:05 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6530	mg/kg		5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Arsenic	84	mg/kg		5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Cadmium	35	mg/kg		1		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Copper	692	mg/kg	J	5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Iron	44500	mg/kg		5		SW6010B	04/10/12 20:42 / sld	04/02/12 14:34	ICP2-HE_120410C : 142		16117
Lead	9090	mg/kg	J	5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Manganese	4810	mg/kg	J	5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117
Zinc	6260	mg/kg	J	5		SW6010B	04/06/12 08:46 / sld	04/02/12 14:34	ICP2-HE_120405B : 216		16117

JAN
04-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD23
Lab ID: H12030340-030
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:30 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	2130	mg/kg		5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Arsenic	26	mg/kg		5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Cadmium	4	mg/kg		1		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Copper	190	mg/kg	J	5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Iron	8660	mg/kg	J	5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Lead	380	mg/kg	J	5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Manganese	394	mg/kg	J	5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117
Zinc	1120	mg/kg	J	5		SW6010B	04/06/12 08:50 / sld	04/02/12 14:34	ICP2-HE_120405B : 217		16117

JAN
0423-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD3A
Lab ID: H12030340-031
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 10:55 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	3760	mg/kg		5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Arsenic	34	mg/kg		5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Cadmium	19	mg/kg		1		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Copper	588	mg/kg	J	5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Iron	15000	mg/kg		5		SW6010B	04/10/12 20:46 / sld	04/02/12 14:34	ICP2-HE_120410C : 143		16117
Lead	286	mg/kg	J	5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Manganese	20400	mg/kg	J	5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117
Zinc	4010	mg/kg	J	5		SW6010B	04/06/12 08:53 / sld	04/02/12 14:34	ICP2-HE_120405B : 218		16117

JAN
04-23-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCBRSD3B
Lab ID: H12030340-032
Matrix: Sediment

Project: UBMC Surface Water and Sediment
Collection Date: 03/27/12 11:15 **Date Received:** 03/27/12
Report Date: 04/17/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	4440	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Arsenic	5	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Cadmium	ND	mg/kg		1		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Copper	31	mg/kg	4	5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Iron	8970	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Lead	22	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Manganese	555	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117
Zinc	101	mg/kg		5		SW6010B	04/06/12 08:57 / sld	04/02/12 14:34	ICP2-HE_120405B : 219		16117

JAN
04-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Attachment C: Chain of Custody Forms and
Sample Receipt Checklist**

ANALYTICAL SUMMARY REPORT

April 17, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12030340 Quote ID: H645 - UBMC

Project Name: UBMC Surface Water and Sediment

Energy Laboratories Inc Helena MT received the following 32 samples for MT DEQ-Site Response on 3/27/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12030340-001	S35SW05	03/26/12 10:10	03/27/12	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H12030340-002	S35SW07	03/26/12 9:00	03/27/12	Aqueous	Same As Above
H12030340-003	S35SW01	03/26/12 11:10	03/27/12	Aqueous	Same As Above
H12030340-004	S35SW06	03/26/12 11:10	03/27/12	Aqueous	Same As Above
H12030340-005	S35SW02	03/26/12 12:00	03/27/12	Aqueous	Same As Above
H12030340-006	S35SW04	03/26/12 13:45	03/27/12	Aqueous	Same As Above
H12030340-007	S35SW03	03/26/12 14:25	03/27/12	Aqueous	Same As Above
H12030340-008	UBMCBRSW25	03/26/12 15:10	03/27/12	Aqueous	Same As Above
H12030340-009	UBMCBRSW26	03/26/12 15:15	03/27/12	Aqueous	Same As Above
H12030340-010	UBMCBRSW22	03/26/12 15:50	03/27/12	Aqueous	Same As Above
H12030340-011	UBMCBRSW24	03/26/12 15:55	03/27/12	Aqueous	Same As Above
H12030340-012	UBMCBRSW01	03/26/12 16:50	03/27/12	Aqueous	Same As Above
H12030340-013	UBMCBRSW2	03/26/12 17:25	03/27/12	Aqueous	Same As Above
H12030340-014	UBMCBRSW38	03/27/12 8:50	03/27/12	Aqueous	Same As Above
H12030340-015	UBMCBRSW48	03/27/12 10:05	03/27/12	Aqueous	Same As Above
H12030340-016	UBMCBRSW23	03/27/12 10:30	03/27/12	Aqueous	Same As Above
H12030340-017	UBMCBRSW3A	03/27/12 10:55	03/27/12	Aqueous	Same As Above
H12030340-018	UBMCBRSW3B	03/27/12 11:15	03/27/12	Aqueous	Same As Above
H12030340-019	S35SD05	03/26/12 10:10	03/27/12	Sediment	Metals by ICP/ICPMS, Total Digestion, Total Metals
H12030340-020	S35SD06	03/26/12 11:10	03/27/12	Sediment	Same As Above
H12030340-021	S35SD01	03/26/12 11:10	03/27/12	Sediment	Same As Above



ANALYTICAL SUMMARY REPORT

H12030340-022	S35SD02	03/26/12 12:00	03/27/12	Sediment	Same As Above
H12030340-023	S35SD04	03/26/12 13:45	03/27/12	Sediment	Same As Above
H12030340-024	S35SD03	03/26/12 14:25	03/27/12	Sediment	Same As Above
H12030340-025	UBMCBRS22	03/26/12 15:50	03/27/12	Sediment	Same As Above
H12030340-026	UBMCBRS24	03/26/12 15:55	03/27/12	Sediment	Same As Above
H12030340-027	UBMCBRS01	03/26/12 16:50	03/27/12	Sediment	Same As Above
H12030340-028	UBMCBRS38	03/27/12 8:50	03/27/12	Sediment	Same As Above
H12030340-029	UBMCBRS48	03/27/12 10:05	03/27/12	Sediment	Same As Above
H12030340-030	UBMCBRS23	03/27/12 10:30	03/27/12	Sediment	Same As Above
H12030340-031	UBMCBRS3A	03/27/12 10:55	03/27/12	Sediment	Same As Above
H12030340-032	UBMCBRS3B	03/27/12 11:15	03/27/12	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 reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Attachment B: Laboratory Case Narrative

Workorder Receipt Checklist



H12030340

Login completed by: Wanda Johnson

Date Received: 3/27/2012

Reviewed by: BL2000\sdu11

Received by: TLL

Reviewed Date: 4/2/2012

Carrier Hand Del
name:

- | | | | |
|---|---|--|---|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |

Container/Temp Blank temperature: °C See Comments

- | | | | |
|--|---|-----------------------------|--|
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

Cooler #1 received at a temperautre of 2.8C, Cooler #2 1.6C & Cooler #3 3.0C-Soils cooler. All samples received on ice. Call into client regarding sample ID for "UBMCBRSD01" on COC but the jar states "UBMCBRSW01". Also contacted client regarding "Total" metals which is on parameter sheet versus "Total Recoverable " metals on quote & what has historically been done on this site. Wj 3/27/12 ID should be "UBMCBRSD" and water metals should be Total Recoverable per A. Dreesbach. Wj 3/29/12



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **MTDEQ** EPA/State Compliance: Yes No

Report Mail Address: **Quote H-645** Project Name, PWS, Permit, Etc.: **WBMC Surface Water** Sample Origin State: **MT**

Invoice Address: **Quote H-645** Contact Name: **Shellie Hoaland** Phone/Fax: **841-5033** Email: **Shoaland@mt.gov** Sampler: (Please Print) **Alan Dreesbach**

Quote/Boottle Order: **Jackie Janesko**

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: Cooler ID(s):
				Number of Containers	Sample Type: A W S V B O DW			
1 S355SW05	03/24/12	1010	W					Hand del
2 S355SW07		0900				X	Comments: Please copy results to adreesbach@portageinc.com	Y
3 S355SW01		1100					402-490-5155	Y
4 S355SW06		1200						Y
5 S355SW02		1345						Y
6 S355SW04		1425						Y
7 S355SW03		1510						Y
8 WBMCBRSW25		1515						Y
9 WBMCBRSW24		1550						Y
10 WBMCBRSW22								Y

Special Report/Formats: DW EDD/EDT (Electronic Data) POTW/MWTP State: LEVEL IV Other: NELAC

Signature: **Alan Dreesbach** Date/Time: **3/27/12 14:34**

Signature: **Tracey Lovesh** Date/Time: **3/27/12 14:34**

Signature: **Tracey Lovesh** Date/Time: **3/27/12 14:34**

Signature: **Tracey Lovesh** Date/Time: **3/27/12 14:34**

Received by (print): _____ Date/Time: _____

Sample Disposal: _____ Return to Client: _____ Lab Disposal: _____

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 sub-contract data will be clearly notated on your analytical report.



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **MDEQ** EPA/State Compliance: Yes No

Project Name, PWS, Permit, Etc.: **WBMC Surface Water** State: **MT**

Contact Name: **Shellie Harland** Phone/Fax: **841-5033** Email: **shahand@mt.gov**

Sampler: (Please Print) **Alan Dreesbach**

Quote: **H-645** Invoice Address: **Quote H-645**

Quote/Bottle Order: **Jackie Janoske**

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Comments: Please copy results to addressback@portageinc.com	Shipped by: Hand del.
				Number of Containers	Sample Type: A W S V B O DW			
1 WBMCBRSWZ4	03/24/12	1555	W	SEE ATTACHED		R U S H		Shipped by: Hand del.
2 WBMCBRSW01	03/24/12	1450						Receipt Temp: Y °C
3 WBMCBRSWZ	03/24/12	1725						On Ice: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
4 WBMCBRSW38	03/27/12	0850						Custody Seal: On Bottle Y <input type="checkbox"/> N <input checked="" type="checkbox"/> On Cooler Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
5 WBMCBRSW48		1005						Intact: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
6 WBMCBRSWZ3		1030						Signature Match: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
7 WBMCBRSW3A		1055						
8 WBMCBRSW3B		1115						
9								
10								

Special Report/Formats: DW EDD/EDT (Electronic Data) POT/WW/TP State: LEVEL IV Other: NELAC

Signature: **Alan Dreesbach** Date/Time: **3/23/12 1937**

Signature: **Tracy Corack** Date/Time: **3/27/12 14:34**

Signature: **Tracy Corack** Date/Time: **3/27/12 14:34**

Signature: **Tracy Corack** Date/Time: **3/27/12 14:34**

Custody Record MUST be Signed

Sample Disposal: _____ Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analytical report. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Chain of Custody and Analytical Request Record



PLEASE PRINT (Provide as much information as possible.)

Company Name: **M DEQ**
 Report Mail Address: **Quote H-645**
 Invoice Address:
 Project Name, PWS, Permit, Etc.: **UBMC Sediment**
 State: **MT**
 Contact Name: **Shellic Hasland 841-5033**
 Phone/Fax: **Shabund@mt.gov**
 Email: **Shabund@mt.gov**
 Purchase Order:
 EPA/State Compliance: Yes No
 Sampler: (Please Print) **Alan Dreesbach**
Jackie Janosko
 Quote/Bottle Order:

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Comments:	Shipped by Cooler ID(s):	Receipt Temp	On Ice:	Custody Seal On Bottle On Cooler	Intact	Signature Match
				Standard Turnaround (TAT)	Contact ELI prior to RUSH samples and scheduling - See Instruction Page							
1 S35SD05	6/3/20/12	1010	Sediment	SEE ATTACHED	X		Hand Del	3.0 °C	Y	Y N	Y N	#12030940
2 S35SD06		1110										
3 S35SD01		1110										
4 S35SD02		1200										
5 S35SD04		1345										
6 S35SD03		1425										
7 WBMCBRSD22		1550										
8 WBMCBRSD2A		1555										
9 WBMCBRSD01		1650										
10												

Special Report/Formats:
 DW
 POTW/WWTP
 State:
 Other:
 EDD/EDT (Electronic Data)
 Format:
 LEVEL IV
 NELAC
 Number of Containers: _____
 Sample Type: A W S V B O DW
 Air Water Gols/Solids
 Vegetation Bioassay Other
 DW - Drinking Water
 Received by (print): _____
 Date/Time: _____
 Signature: _____
 Received by (print): _____
 Date/Time: _____
 Signature: _____
 Received by Laboratory: _____
 Date/Time: _____
 Signature: _____
 Lab Disposal: _____
 Return to Client: _____
Custody Record MUST be Signed

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 sub-contract data will be clearly notated on your analytical report.



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

EPA/State Compliance: Yes No

Company Name: **M DEQ** Project Name, PWS, Permit, Etc.: **WBMC Sediment**

Report Mail Address: **Route H-645** Contact Name: **Shellie Haaland** Phone/Fax: **841-5033** Email: **Shaalnd@mt.gov**

Invoice Address: **Quote H-645** Invoice Contact & Phone: **Shaalnd@mt.gov** Purchase Order: **MT**

Sampler: (Please Print) **Alan Dressbach**

Quoter/Bottle Order: **Jackie Janoska**

Special Report/Formats: DW POT/WWTP State: Other:

EDD/EDT (Electronic Data) Format: LEVEL IV NELAC

Number of Containers: **1** Sample Type: **AWS V B DW** Matrix: **Sediment**

Vegetation Bioassay Other: **None**

DW - Drinking Water

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED	Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page
1 WBMC BRSD 38	03/27/12	0950	Sediment	SEE ATTACHED	X	Comments: Please copy results to addressbach@portageinc.com
2 WBMC BRSD 48		1005			I	406.4905158
3 WBMC BRSD 23		1030				
4 WBMC BRSD 3A		1055				
5 WBMC BRSD 3B		1115				
6						
7						
8						
9						
10						

Shipped by: **Hand del**

Cooler ID(s): **Y**

Receipt Temp: **3.0 °C**

On Ice: **Y**

Custody Seal On Bottle: **Y**

On Cooler: **Y**

Intact: **Y**

Signature Match: **Y**

Signature: **H12090348**

Signature: **Alan Dressbach** Date/Time: **3/27/12 14:34**

Signature: **Tracy Lovel** Date/Time: **3/27/12 14:34**

Signature: **Alan Dressbach** Date/Time: **3/27/12 14:34**

Custody Record MUST be Signed

Relinquished by (print): **Alan Dressbach** Date/Time: **3/27/12 14:34**

Relinquished by (print): **Tracy Lovel** Date/Time: **3/27/12 14:34**

Relinquished by (print): **Alan Dressbach** Date/Time: **3/27/12 14:34**

Sample Disposal: **Return to Client** Lab Disposal: **None**

UBMC Ground Water

SDG#: H12030390

Number of Samples: 15

Sample Matrix: Groundwater

Applicable Analytes: (15) pH, Conductivity, TSS, TDS, Anions: (Chloride and Sulfate), Hardness, Dissolved Metals: (Al, As, Cd, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, and Zn)

Reporting Tier: 3

Applicable TOS#: N/A

Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring Section 35, Lewis and Clark County, Montana; Portage Inc., 2012; Final Sampling and Analysis Plan for Environmental Monitoring Upper Blackfoot Mining Complex, Lewis and Clark County, Montana; Portage Inc., 2012

Validator 

Date Completed:4/25/12;05/10/13

Portage Review: 

Date Completed:04/25/12;05/03/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Ground Water is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Ground Water ground water sample results were received by Portage, Inc. in April 2011. The laboratory analytical request provided for a summary data package attached for the pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, and dissolved metals (Al, As, Cd, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, and Zn). The samples were analyzed in accordance with Standard Methods 4500 H-B, 2320B, 2510B, 2540D, 2540C, and 2340B, and USEPA Methods 300.0 and 200.8. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Groundwater Water Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35MW08	H12030390-001	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/28/12	03/30/12
S35MW09	H12030390-002	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/28/12	03/30/12
S35MW06	H12030390-003	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/28/12	03/30/12
S35MW04	H12030390-004	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/28/12	03/30/12
S35MW07	H12030390-005	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/28/12	03/30/12
S35MW03	H12030390-006	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/28/12	03/30/12
UBMCTDMW07	H12030390-007	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/29/12	03/30/12
UBMCTDMW08	H12030390-008	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/29/12	03/30/12

Cross-Reference for UBMC Groundwater Water Samples					
UBMCTDMW05	H12030390-009	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/29/12	03/30/12
UBMCTDMW4D	H12030390-010	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/29/12	03/30/12
UBMCTDMW06	H12030390-011	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/29/12	03/30/12
UBMCTDMW3D	H12030390-012	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/29/12	03/30/12
UBMCTDMW01	H12030390-013	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/29/12	03/30/12
UBMCTDMW2D	H12030390-014	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/29/12	03/30/12
UBMCTDMW2S	H12030390-015	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	03/29/12	03/30/12

ANALYTICAL HOLDING TIMES:

The water samples associated with this SDG were collected on 03/28/12 and 03/29/12. The conductivity, TSS, TDS, results were analyzed on 03/30/12 within the 28-day holding time for conductivity, and the 7-day holding time for TSS and TDS. The chloride and sulfate results were analyzed on 04/03/12 within the 28-day holding time. The alkalinity results were analyzed on 04/02/12 within the 14-day holding time. The hardness results were analyzed on 04/04/12 within the 180-day holding time. The dissolved metals were analyzed on 04/02/12 and 04/03/12 within the 180-day holding time for the ICP Metals.

The pH samples were collected on 03/2/12 and 03/29/12, received on 03/30/12, and analyzed on 03/30/12. The pH results for samples UBMCTDMW3D, UBMCTDMW01, UBMCTDMW2D, and UBMCTDMW2S were analyzed within the 24-hour holding time. In the professional judgment of the validator, all remaining pH results have been qualified with a "J-" validation flag as prescribed by the USEPA Functional Guidelines and as the samples were analyzed outside the 24-hour holding time.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPRATION BLANKS (PB):

For all analyses, blank results were analyzed at a proper frequency of 1 blank per 20 samples in the analytical batch.

The PB results were non-detect at level less than their respective MDLs and no qualification is warranted.

Field blank, trip blank, and equipment rinsate results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD):

The MS/MSD recovery and all RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

The conductivity (67%) LCS exhibited an RPD greater than 20%. All conductivity results have been qualified with a "J" validation flag.

All remaining LDS and field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD (UBMC)	Field Duplicate RPD (S35)
pH	N/A	4.4	0	-1.30719
Conductivity	N/A	67	0.809717	0.280505
TSS	N/A	8	20	0
TDS	N/A	0	-6.34921	2.040816
Alkalinity	N/A	0.3	-2.04082	0
Bicarbonate	N/A	0.5	0	0
Carbonate	N/A	2.7	0	0
Chloride	0.8	N/A	0	0
Sulfate	0.8	N/A	-6.45161	0
Hardness	N/A	N/A	2.620087	-3.52941
Al	0.2	N/A	0	-18.1818
Ca	3.3	N/A	0	0
Mg	5.2	N/A	0	0
K	1.8	N/A	4.081633	-1.9802
Na	1.7	N/A	0	0
As	0	N/A	0	0
Cd	0.1	N/A	0	0
Cu	0.6	N/A	0	-9.52381
Fe	2.8	N/A	0	0
Pb	1.2	N/A	0	0
Mn	0.9	N/A	0	0
Zn	0.9	N/A	0	0

*RPD greater than 20%, however, CRDL criteria not met, Dup ok

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

Two coolers were received by Energy Labs on 04/03/12 at 0.1°C and 0.9°C. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

REPORTING LIMITS:

The reporting limits presented by the laboratory were acceptable and met the screening level requirements set forth by the project QAPjP and SAP.

OVERALL ASSESSMENT OF DATA:

There were fifteen (15) groundwater field samples included in SDG# H11120229. Nine (9) field samples were analyzed for pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, and dissolved metals as outlined in the project QAPP.

All pH results, **excluding** UBMCTDMW3D, UBMCTDMW01, UBMCTDMW2D, and UBMCTDMW2S, have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

The conductivity sample results have been qualified with a “J” validation flag to denote the reported results are estimates due to poor duplicate precision.

The remaining field sample data points have been assessed and remain unqualified.

All field sample data points presented in this SDG are valid and complete.

All samples were received by the lab in good condition. Detection limits, analytical methods, detection limits, and reporting were all within the project requirements.

Attachment A: Laboratory Report Forms



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35MW08
Lab ID: H12030390-001
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 09:40 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.3	s.u.	JJ	0.1		A4500-H B	03/30/12 12:22 / cmm		PHSC_101-H_120330A : 42		R78901
Conductivity @ 25 C	1	umhos/cm	JJ	1		A2510 B	03/30/12 12:22 / cmm		PHSC_101-H_120330A : 43		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:08 / cmm	03/30/12 11:09 -124 (14410200)_120330A : 13			16096
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/30/12 14:17 / cmm	03/30/12 11:14 J-124 (14410200)_120330B : 9			16097
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	04/02/12 13:07 / cmm		MAN-TECH_120402A : 18		R78946
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	04/02/12 13:07 / cmm		MAN-TECH_120402A : 18		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:07 / cmm		MAN-TECH_120402A : 18		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 15:05 / zeg		IC102-H_120403A : 34		R79043
Sulfate	ND	mg/L		1		E300.0	04/03/12 15:05 / zeg		IC102-H_120403A : 34		R79043
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 6		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Calcium	ND	mg/L		1		E200.7	04/02/12 14:52 / sld		ICP2-HE_120402B : 77		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Magnesium	ND	mg/L		1		E200.7	04/02/12 14:52 / sld		ICP2-HE_120402B : 77		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 14:52 / sld		ICP2-HE_120402B : 77		R78958
Sodium	ND	mg/L		1		E200.7	04/02/12 14:52 / sld		ICP2-HE_120402B : 77		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 06:11 / dck		ICPMS204-B_120402A : 202		R78968

JAN
4-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35MW09
Lab ID: H12030390-002
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 09:45 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.8	s.u.		0.1		A4500-H B	03/30/12 12:26 / cmm		PHSC_101-H_120330A : 44		R78901
Conductivity @ 25 C	2	umhos/cm		1		A2510 B	03/30/12 12:26 / cmm		PHSC_101-H_120330A : 45		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:09 / cmm	03/30/12 11:09-124 (14410200)_120330A : 14			16096
Solids, Total Dissolved TDS @ 180 C	10	mg/L		10		A2540 C	03/30/12 14:17 / cmm	03/30/12 11:14-124 (14410200)_120330B : 10			16097
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	04/02/12 13:12 / cmm		MAN-TECH_120402A : 20		R78946
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	04/02/12 13:12 / cmm		MAN-TECH_120402A : 20		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:12 / cmm		MAN-TECH_120402A : 20		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 15:18 / zeg		IC102-H_120403A : 35		R79043
Sulfate	ND	mg/L		1		E300.0	04/03/12 15:18 / zeg		IC102-H_120403A : 35		R79043
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 7		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Calcium	ND	mg/L		1		E200.7	04/02/12 14:56 / sld		ICP2-HE_120402B : 78		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Magnesium	ND	mg/L		1		E200.7	04/02/12 14:56 / sld		ICP2-HE_120402B : 78		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 14:56 / sld		ICP2-HE_120402B : 78		R78958
Sodium	ND	mg/L		1		E200.7	04/02/12 14:56 / sld		ICP2-HE_120402B : 78		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 06:15 / dck		ICPMS204-B_120402A : 203		R78968

JAN 4-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW06
Lab ID: H12030390-003
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 14:15 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	I-7.5	s.u.		0.1		A4500-H B	03/30/12 12:29 / cmm		PHSC_101-H_120330A : 46		R78901
Conductivity @ 25 C	I-401	umhos/cm		1		A2510 B	03/30/12 12:29 / cmm		PHSC_101-H_120330A : 47		R78901
Solids, Total Suspended TSS @ 105 C	332	mg/L		10		A2540 D	03/30/12 14:09 / cmm	03/30/12 11:09-124 (14410200)_120330A : 15			16096
Solids, Total Dissolved TDS @ 180 C	216	mg/L		10		A2540 C	03/30/12 14:17 / cmm	03/30/12 11:14-124 (14410200)_120330B : 11			16097
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	04/02/12 13:24 / cmm		MAN-TECH_120402A : 24		R78946
Bicarbonate as HCO3	250	mg/L		4		A2320 B	04/02/12 13:24 / cmm		MAN-TECH_120402A : 24		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:24 / cmm		MAN-TECH_120402A : 24		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 15:59 / zeg		IC102-H_120403A : 38		R79043
Sulfate	1	mg/L		1		E300.0	04/03/12 15:59 / zeg		IC102-H_120403A : 38		R79043
Hardness as CaCO3	193	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 8		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Calcium	51	mg/L		1		E200.7	04/02/12 14:59 / sld		ICP2-HE_120402B : 79		R78958
Copper	0.002	mg/L		0.001		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Magnesium	16	mg/L		1		E200.7	04/02/12 14:59 / sld		ICP2-HE_120402B : 79		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968
Potassium	1	mg/L		1		E200.7	04/02/12 14:59 / sld		ICP2-HE_120402B : 79		R78958
Sodium	5	mg/L		1		E200.7	04/02/12 14:59 / sld		ICP2-HE_120402B : 79		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 06:53 / dck		ICPMS204-B_120402A : 211		R78968

JAN
4-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW04
Lab ID: H12030390-004
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 15:10 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	I- J- 7.6	s.u.		0.1		A4500-H B	03/30/12 12:32 / cmm		PHSC_101-H_120330A : 48		R78901
Conductivity @ 25 C	357	umhos/cm		1		A2510 B	03/30/12 12:32 / cmm		PHSC_101-H_120330A : 49		R78901
Solids, Total Suspended TSS @ 105 C	470	mg/L		10		A2540 D	03/30/12 14:09 / cmm	03/30/12 11:09-124 (14410200)_120330A : 16			16096
Solids, Total Dissolved TDS @ 180 C	198	mg/L		10		A2540 C	03/30/12 14:17 / cmm	03/30/12 11:14-124 (14410200)_120330B : 12			16097
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	04/02/12 13:31 / cmm		MAN-TECH_120402A : 26		R78946
Bicarbonate as HCO3	220	mg/L		4		A2320 B	04/02/12 13:31 / cmm		MAN-TECH_120402A : 26		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:31 / cmm		MAN-TECH_120402A : 26		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 16:40 / zeg		IC102-H_120403A : 41		R79043
Sulfate	1	mg/L		1		E300.0	04/03/12 16:40 / zeg		IC102-H_120403A : 41		R79043
Hardness as CaCO3	167	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 9		R78988
METALS, DISSOLVED											
Aluminum	0.05	mg/L		0.03		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Calcium	50	mg/L		1		E200.7	04/02/12 15:03 / sld		ICP2-HE_120402B : 80		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Magnesium	10	mg/L		1		E200.7	04/02/12 15:03 / sld		ICP2-HE_120402B : 80		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968
Potassium	3	mg/L		1		E200.7	04/02/12 15:03 / sld		ICP2-HE_120402B : 80		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:03 / sld		ICP2-HE_120402B : 80		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 06:58 / dck		ICPMS204-B_120402A : 212		R78968

JAN 4-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW07
Lab ID: H12030390-005
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 15:15 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.		0.1		A4500-H B	03/30/12 12:35 / cmm		PHSC_101-H_120330A : 50		R78901
Conductivity @ 25 C	356	umhos/cm		1		A2510 B	03/30/12 12:35 / cmm		PHSC_101-H_120330A : 51		R78901
Solids, Total Suspended TSS @ 105 C	470	mg/L		10		A2540 D	03/30/12 14:09 / cmm	03/30/12 11:09 -124 (14410200)_120330A	: 17		16096
Solids, Total Dissolved TDS @ 180 C	194	mg/L		10		A2540 C	03/30/12 14:17 / cmm	03/30/12 11:14 -124 (14410200)_120330B	: 13		16097
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	04/02/12 13:38 / cmm		MAN-TECH_120402A : 28		R78946
Bicarbonate as HCO3	220	mg/L		4		A2320 B	04/02/12 13:38 / cmm		MAN-TECH_120402A : 28		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:38 / cmm		MAN-TECH_120402A : 28		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 16:53 / zeg		IC102-H_120403A : 42		R79043
Sulfate	1	mg/L		1		E300.0	04/03/12 16:53 / zeg		IC102-H_120403A : 42		R79043
Hardness as CaCO3	173	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 10		R78988
METALS, DISSOLVED											
Aluminum	0.06	mg/L		0.03		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Calcium	51	mg/L		1		E200.7	04/02/12 15:07 / sld		ICP2-HE_120402B : 81		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Iron	0.05	mg/L		0.05		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Magnesium	11	mg/L		1		E200.7	04/02/12 15:07 / sld		ICP2-HE_120402B : 81		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968
Potassium	3	mg/L		1		E200.7	04/02/12 15:07 / sld		ICP2-HE_120402B : 81		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:07 / sld		ICP2-HE_120402B : 81		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:02 / dck		ICPMS204-B_120402A : 213		R78968

JAN
4-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35MW03
Lab ID: H12030390-006
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/28/12 16:20 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	J 7.7	s.u.		0.1		A4500-H B	03/30/12 12:43 / cmm		PHSC_101-H_120330A : 56		R78901
Conductivity @ 25 C	356	umhos/cm		1		A2510 B	03/30/12 12:43 / cmm		PHSC_101-H_120330A : 57		R78901
Solids, Total Suspended TSS @ 105 C	136	mg/L		10		A2540 D	03/30/12 14:10 / cmm	03/30/12 11:09-124 (14410200)_120330A : 18			16096
Solids, Total Dissolved TDS @ 180 C	208	mg/L		10		A2540 C	03/30/12 14:18 / cmm	03/30/12 11:14-124 (14410200)_120330B : 14			16097
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	04/02/12 13:45 / cmm		MAN-TECH_120402A : 30		R78946
Bicarbonate as HCO3	220	mg/L		4		A2320 B	04/02/12 13:45 / cmm		MAN-TECH_120402A : 30		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:45 / cmm		MAN-TECH_120402A : 30		R78946
Chloride	1	mg/L		1		E300.0	04/03/12 17:07 / zeg		IC102-H_120403A : 43		R79043
Sulfate	4	mg/L		1		E300.0	04/03/12 17:07 / zeg		IC102-H_120403A : 43		R79043
Hardness as CaCO3	154	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 11		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Calcium	44	mg/L		1		E200.7	04/02/12 15:11 / sld		ICP2-HE_120402B : 82		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Magnesium	10	mg/L		1		E200.7	04/02/12 15:11 / sld		ICP2-HE_120402B : 82		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968
Potassium	2	mg/L		1		E200.7	04/02/12 15:11 / sld		ICP2-HE_120402B : 82		R78958
Sodium	11	mg/L		1		E200.7	04/02/12 15:11 / sld		ICP2-HE_120402B : 82		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:07 / dck		ICPMS204-B_120402A : 214		R78968

JAN
4-23-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW07
Lab ID: H12030390-007
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 08:15 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.3	s.u.		0.1		A4500-H B	03/30/12 12:46 / cmm		PHSC_101-H_120330A : 58		R78901
Conductivity @ 25 C	2	umhos/cm		1		A2510 B	03/30/12 12:46 / cmm		PHSC_101-H_120330A : 59		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:10 / cmm	03/30/12 11:09-124 (14410200)_120330A : 19			16096
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/30/12 14:18 / cmm	03/30/12 11:14-124 (14410200)_120330B : 15			16097
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	04/02/12 13:58 / cmm		MAN-TECH_120402A : 34		R78946
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	04/02/12 13:58 / cmm		MAN-TECH_120402A : 34		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 13:58 / cmm		MAN-TECH_120402A : 34		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 17:21 / zeg		IC102-H_120403A : 44		R79043
Sulfate	ND	mg/L		1		E300.0	04/03/12 17:21 / zeg		IC102-H_120403A : 44		R79043
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 12		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Calcium	ND	mg/L		1		E200.7	04/02/12 15:14 / sld		ICP2-HE_120402B : 83		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Magnesium	ND	mg/L		1		E200.7	04/02/12 15:14 / sld		ICP2-HE_120402B : 83		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:14 / sld		ICP2-HE_120402B : 83		R78958
Sodium	ND	mg/L		1		E200.7	04/02/12 15:14 / sld		ICP2-HE_120402B : 83		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:12 / dck		ICPMS204-B_120402A : 215		R78968

JAN
4-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: UBMCTDMW08
Lab ID: H12030390-008
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 08:20
Date Received: 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.4	s.u.		0.1		A4500-H B	03/30/12 12:51 / cmm		PHSC_101-H_120330A : 62		R78901
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	03/30/12 12:51 / cmm		PHSC_101-H_120330A : 63		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:10 / cmm	03/30/12 11:09 -124 (14410200)_120330A : 21			16096
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/30/12 14:18 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 17			16097
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	04/02/12 14:03 / cmm		MAN-TECH_120402A : 36		R78946
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	04/02/12 14:03 / cmm		MAN-TECH_120402A : 36		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:03 / cmm		MAN-TECH_120402A : 36		R78946
Chloride	ND	mg/L		1		E300.0	04/10/12 13:10 / cmm		IC102-H_120410A : 24		R79125
Sulfate	ND	mg/L		1		E300.0	04/10/12 13:10 / cmm		IC102-H_120410A : 24		R79125
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 13		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Calcium	ND	mg/L		1		E200.7	04/02/12 15:18 / sld		ICP2-HE_120402B : 84		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Magnesium	ND	mg/L		1		E200.7	04/02/12 15:18 / sld		ICP2-HE_120402B : 84		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:18 / sld		ICP2-HE_120402B : 84		R78958
Sodium	ND	mg/L		1		E200.7	04/02/12 15:18 / sld		ICP2-HE_120402B : 84		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:16 / dck		ICPMS204-B_120402A : 216		R78968

JAN
4-23-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW05
Lab ID: H12030390-009
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 08:45 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.0	s.u.		0.1		A4500-H B	03/30/12 12:54 / cmm		PHSC_101-H_120330A : 64		R78901
Conductivity @ 25 C	289	umhos/cm		1		A2510 B	03/30/12 12:54 / cmm		PHSC_101-H_120330A : 65		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:10 / cmm	03/30/12 11:09-124 (14410200)_120330A : 22			16096
Solids, Total Dissolved TDS @ 180 C	146	mg/L		10		A2540 C	03/30/12 14:18 / cmm	03/30/12 11:14-124 (14410200)_120330B : 18			16097
INORGANICS											
Alkalinity, Total as CaCO3	90	mg/L		4		A2320 B	04/02/12 14:10 / cmm		MAN-TECH_120402A : 38		R78946
Bicarbonate as HCO3	110	mg/L		4		A2320 B	04/02/12 14:10 / cmm		MAN-TECH_120402A : 38		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:10 / cmm		MAN-TECH_120402A : 38		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 17:48 / zeg		IC102-H_120403A : 46		R79043
Sulfate	33	mg/L		1		E300.0	04/03/12 17:48 / zeg		IC102-H_120403A : 46		R79043
Hardness as CaCO3	137	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 14		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Calcium	29	mg/L		1		E200.7	04/02/12 15:22 / sld		ICP2-HE_120402B : 85		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Magnesium	16	mg/L		1		E200.7	04/02/12 15:22 / sld		ICP2-HE_120402B : 85		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:22 / sld		ICP2-HE_120402B : 85		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:22 / sld		ICP2-HE_120402B : 85		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:21 / dck		ICPMS204-B_120402A : 217		R78968

JAN
4-25-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW4D
Lab ID: H12030390-010
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 11:05 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	03/30/12 12:57 / cmm		PHSC_101-H_120330A : 66		R78901
Conductivity @ 25 C	248	umhos/cm		1		A2510 B	03/30/12 12:57 / cmm		PHSC_101-H_120330A : 67		R78901
Solids, Total Suspended TSS @ 105 C	22	mg/L		10		A2540 D	03/30/12 14:10 / cmm	03/30/12 11:09-124 (14410200)_120330A : 23			16096
Solids, Total Dissolved TDS @ 180 C	122	mg/L		10		A2540 C	03/30/12 14:18 / cmm	03/30/12 11:14-124 (14410200)_120330B : 19			16097
INORGANICS											
Alkalinity, Total as CaCO3	97	mg/L		4		A2320 B	04/02/12 14:23 / cmm		MAN-TECH_120402A : 42		R78946
Bicarbonate as HCO3	120	mg/L		4		A2320 B	04/02/12 14:23 / cmm		MAN-TECH_120402A : 42		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:23 / cmm		MAN-TECH_120402A : 42		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 18:29 / zeg		IC102-H_120403A : 49		R79043
Sulfate	15	mg/L		1		E300.0	04/03/12 18:29 / zeg		IC102-H_120403A : 49		R79043
Hardness as CaCO3	116	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 15		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Calcium	25	mg/L		1		E200.7	04/02/12 15:33 / sld		ICP2-HE_120402B : 88		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Magnesium	13	mg/L		1		E200.7	04/02/12 15:33 / sld		ICP2-HE_120402B : 88		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:33 / sld		ICP2-HE_120402B : 88		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:33 / sld		ICP2-HE_120402B : 88		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:26 / dck		ICPMS204-B_120402A : 218		R78968

LAN
4-25-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW06
Lab ID: H12030390-011
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 11:10 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	I-7.4	s.u.		0.1		A4500-H B	03/30/12 12:59 / cmm		PHSC_101-H_120330A : 68		R78901
Conductivity @ 25 C	I-246	umhos/cm		1		A2510 B	03/30/12 12:59 / cmm		PHSC_101-H_120330A : 69		R78901
Solids, Total Suspended TSS @ 105 C	18	mg/L		10		A2540 D	03/30/12 14:11 / cmm	03/30/12 11:09 -124 (14410200)_120330A : 24			16096
Solids, Total Dissolved TDS @ 180 C	130	mg/L		10		A2540 C	03/30/12 14:19 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 20			16097
INORGANICS											
Alkalinity, Total as CaCO3	99	mg/L		4		A2320 B	04/02/12 14:30 / cmm		MAN-TECH_120402A : 44		R78946
Bicarbonate as HCO3	120	mg/L		4		A2320 B	04/02/12 14:30 / cmm		MAN-TECH_120402A : 44		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:30 / cmm		MAN-TECH_120402A : 44		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 18:42 / zeg		IC102-H_120403A : 50		R79043
Sulfate	16	mg/L		1		E300.0	04/03/12 18:42 / zeg		IC102-H_120403A : 50		R79043
Hardness as CaCO3	113	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 16		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Calcium	24	mg/L		1		E200.7	04/02/12 15:48 / sld		ICP2-HE_120402B : 92		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Magnesium	13	mg/L		1		E200.7	04/02/12 15:48 / sld		ICP2-HE_120402B : 92		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:48 / sld		ICP2-HE_120402B : 92		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:48 / sld		ICP2-HE_120402B : 92		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 07:31 / dck		ICPMS204-B_120402A : 219		R78968

JAN
4 25 12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW3D
Lab ID: H12030390-012
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 13:30 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	03/30/12 13:02 / cmm		PHSC_101-H_120330A : 70		R78901
Conductivity @ 25 C	669	umhos/cm		1		A2510 B	03/30/12 13:02 / cmm		PHSC_101-H_120330A : 71		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:11 / cmm	03/30/12 12:43-124 (14410200)_120330A : 27			16101
Solids, Total Dissolved TDS @ 180 C	430	mg/L		10		A2540 C	03/30/12 14:19 / cmm	03/30/12 11:14-124 (14410200)_120330B : 21			16097
INORGANICS											
Alkalinity, Total as CaCO3	58	mg/L		4		A2320 B	04/02/12 14:37 / cmm		MAN-TECH_120402A : 46		R78946
Bicarbonate as HCO3	71	mg/L		4		A2320 B	04/02/12 14:37 / cmm		MAN-TECH_120402A : 46		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:37 / cmm		MAN-TECH_120402A : 46		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 18:56 / zeg		IC102-H_120403A : 51		R79043
Sulfate	260	mg/L		1		E300.0	04/03/12 18:56 / zeg		IC102-H_120403A : 51		R79043
Hardness as CaCO3	335	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 17		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Cadmium	0.00011	mg/L		0.00008		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Calcium	80	mg/L		1		E200.7	04/02/12 15:52 / sld		ICP2-HE_120402B : 93		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Magnesium	33	mg/L		1		E200.7	04/02/12 15:52 / sld		ICP2-HE_120402B : 93		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:52 / sld		ICP2-HE_120402B : 93		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:52 / sld		ICP2-HE_120402B : 93		R78958
Zinc	0.02	mg/L		0.01		E200.8	04/03/12 07:54 / dck		ICPMS204-B_120402A : 224		R78968

JLN
4-25-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW01
Lab ID: H12030390-013
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 15:15 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	Run Order	BatchID
PHYSICAL PROPERTIES										
pH	6.5	s.u.		0.1		A4500-H B	03/30/12 13:04 / cmm		PHSC_101-H_120330A : 72	R78901
Conductivity @ 25 C	J 886	umhos/cm		1		A2510 B	03/30/12 13:04 / cmm		PHSC_101-H_120330A : 73	R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:11 / cmm 03/30/12 12:43-124 (14410200)_120330A : 28			16101
Solids, Total Dissolved TDS @ 180 C	602	mg/L		10		A2540 C	03/30/12 14:19 / cmm 03/30/12 11:14-124 (14410200)_120330B : 22			16097
INORGANICS										
Alkalinity, Total as CaCO3	67	mg/L		4		A2320 B	04/02/12 14:43 / cmm		MAN-TECH_120402A : 48	R78946
Bicarbonate as HCO3	82	mg/L		4		A2320 B	04/02/12 14:43 / cmm		MAN-TECH_120402A : 48	R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:43 / cmm		MAN-TECH_120402A : 48	R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 19:09 / zeg		IC102-H_120403A : 52	R79043
Sulfate	380	mg/L		1		E300.0	04/03/12 19:09 / zeg		IC102-H_120403A : 52	R79043
Hardness as CaCO3	453	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 18	R78988
METALS, DISSOLVED										
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228	R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228	R78968
Cadmium	0.00057	mg/L		0.00008		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228	R78968
Calcium	80	mg/L		1		E200.7	04/02/12 15:55 / sld		ICP2-HE_120402B : 94	R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228	R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228	R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228	R78968
Magnesium	62	mg/L		1		E200.7	04/02/12 15:55 / sld		ICP2-HE_120402B : 94	R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228	R78968
Potassium	1	mg/L		1		E200.7	04/02/12 15:55 / sld		ICP2-HE_120402B : 94	R78958
Sodium	2	mg/L		1		E200.7	04/02/12 15:55 / sld		ICP2-HE_120402B : 94	R78958
Zinc	0.29	mg/L		0.01		E200.8	04/03/12 08:13 / dck		ICPMS204-B_120402A : 228	R78968

JLN
4-25-12

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW2D
Lab ID: H12030390-014
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 15:30 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.		0.1		A4500-H B	03/30/12 13:07 / cmm		PHSC_101-H_120330A : 74		R78901
Conductivity @ 25 C	J 261	umhos/cm		1		A2510 B	03/30/12 13:07 / cmm		PHSC_101-H_120330A : 75		R78901
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/30/12 14:11 / cmm	03/30/12 12:43 -124 (14410200)_120330A : 29			16101
Solids, Total Dissolved TDS @ 180 C	128	mg/L		10		A2540 C	03/30/12 14:19 / cmm	03/30/12 11:14 -124 (14410200)_120330B : 23			16097
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	04/02/12 14:50 / cmm		MAN-TECH_120402A : 50		R78946
Bicarbonate as HCO3	120	mg/L		4		A2320 B	04/02/12 14:50 / cmm		MAN-TECH_120402A : 50		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:50 / cmm		MAN-TECH_120402A : 50		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 19:50 / zeg		IC102-H_120403A : 55		R79043
Sulfate	22	mg/L		1		E300.0	04/03/12 19:50 / zeg		IC102-H_120403A : 55		R79043
Hardness as CaCO3	126	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 19		R78988
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Calcium	26	mg/L		1		E200.7	04/02/12 15:59 / sld		ICP2-HE_120402B : 95		R78958
Copper	ND	mg/L		0.001		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Magnesium	15	mg/L		1		E200.7	04/02/12 15:59 / sld		ICP2-HE_120402B : 95		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968
Potassium	ND	mg/L		1		E200.7	04/02/12 15:59 / sld		ICP2-HE_120402B : 95		R78958
Sodium	1	mg/L		1		E200.7	04/02/12 15:59 / sld		ICP2-HE_120402B : 95		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 08:18 / dck		ICPMS204-B_120402A : 229		R78968

JLN
4-23-12

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBMCTDMW2S
Lab ID: H12030390-015
Matrix: Groundwater

Project: UBMC Groundwater
Collection Date: 03/29/12 15:55 **Date Received:** 03/30/12
Report Date: 04/13/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.5	s.u.		0.1		A4500-H B	03/30/12 13:09 / cmm		PHSC_101-H_120330A : 76		R78901
Conductivity @ 25 C	J 1400	umhos/cm		1		A2510 B	03/30/12 13:09 / cmm		PHSC_101-H_120330A : 77		R78901
Solids, Total Suspended TSS @ 105 C	42	mg/L		10		A2540 D	03/30/12 14:12 / cmm	03/30/12 12:43-124 (14410200)_120330A : 30			16101
Solids, Total Dissolved TDS @ 180 C	1040	mg/L		10		A2540 C	03/30/12 14:21 / cmm	03/30/12 11:14-124 (14410200)_120330B : 24			16097
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	04/02/12 14:57 / cmm		MAN-TECH_120402A : 52		R78946
Bicarbonate as HCO3	150	mg/L		4		A2320 B	04/02/12 14:57 / cmm		MAN-TECH_120402A : 52		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 14:57 / cmm		MAN-TECH_120402A : 52		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 20:04 / zeg		IC102-H_120403A : 56		R79043
Sulfate	670	mg/L	D	2		E300.0	04/03/12 20:04 / zeg		IC102-H_120403A : 56		R79043
Hardness as CaCO3	732	mg/L		1		A2340 B	04/06/12 08:07 / sld		WATERCALC_120406A : 4		R79039
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Cadmium	0.0135	mg/L		0.00008		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Calcium	128	mg/L		1		E200.8	04/04/12 16:05 / dck		ICPMS204-B_120404A : 65		R79000
Copper	ND	mg/L		0.001		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 08:22 / dck		ICPMS204-B_120402A : 230		R78968
Magnesium	108	mg/L		1		E200.8	04/04/12 16:05 / dck		ICPMS204-B_120404A : 65		R79000
Manganese	27.7	mg/L		0.005		E200.8	04/04/12 16:05 / dck		ICPMS204-B_120404A : 65		R79000
Potassium	2	mg/L		1		E200.7	04/02/12 16:03 / sld		ICP2-HE_120402B : 96		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 16:03 / sld		ICP2-HE_120402B : 96		R78958
Zinc	9.47	mg/L		0.01		E200.8	04/04/12 16:05 / dck		ICPMS204-B_120404A : 65		R79000

JAN
4-23-12

Report RL - Analyte reporting limit.
Definitions: D - RL increased due to sample matrix.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Attachment B: Chain of Custody Forms and
Sample Receipt Checklist**

Workorder Receipt Checklist



H12030404

Login completed by: Wanda Johnson

Date Received: 3/30/2012

Reviewed by: BL2000\sdull

Received by: elm

Reviewed Date: 4/4/2012

Carrier Hand Del
name:

- | | | | |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Container/Temp Blank temperature: | 3.7°C On Ice | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

None

Chain of Custody and Analytical Request Record



PLEASE PRINT (Provide as much information as possible.)

Project Name, PWS, Permit, Etc.: Section 35 Groundwater
 State: MT
 Email: Alan@energy.com
 Phone/Fax: 505.235.3535
 Invoice Contact & Phone: Shellic Healand 841-5033
 Purchase Order: ShellicHealand@mt.gov
 Quote/Bottle Order: _____

EPA/State Compliance: Yes No
 Sampler: (Please Print) Alan Healand
 Shipped by: Hand
 Cobler ID(s): Y
 Receipt Temp: 3.7 °C
 On Ice: Y N
 Custody Seal: Y N
 On Bottle: Y N
 On Cooler: Y N
 Intact: Y N
 Signature Match: Y N
112030404

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELL prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Comments: <u>Please approve results to address back e portogoinc.com 790-5135</u>
				Number of Containers	Sample Type: A W S V B O DW			
1 <u>535 MW01</u>	<u>3/30/12</u>	<u>1139</u>	<u>W</u>			<u>SEE ATTACHED</u>		
2								
3								
4								
5								
6								
7								
8								
9								
10								

Received by (print): Alan Healand Date/Time: 3/30/12 1139
 Signature: [Signature]
 Received by (print): _____ Date/Time: _____
 Signature: _____
 Received by Laboratory (print): Section 35 Groundwater Date/Time: 3/30/12 15:04
 Signature: [Signature]
 Lab Disposal: _____ Return to Client: _____

Custody Record MUST be Signed

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 sub-contract data will be clearly notated on your analytical report. www.energy.com for additional information. Downloadable fee schedule, forms, and links.



ANALYTICAL SUMMARY REPORT

April 06, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12030404 Quote ID: H645 - UBMC

Project Name: Section 35 Groundwater

Energy Laboratories Inc Helena MT received the following 1 sample for MT DEQ-Site Response on 3/30/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12030404-001	S35MW01	03/30/12 11:39	03/30/12	Aqueous	Metals by ICP/ICPMS, Dissolved Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

UBMC Section 35 Baseline Ground Water

SDG#: H12030404

Number of Samples: 1

Sample Matrix: (1) Groundwater

Applicable Analytes: Conductivity, TSS, TDS, Alkalinity: (Total Alkalinity, Bicarbonate, and Carbonate), Anions: (Chloride and Sulfate), Hardness, Dissolved Metals: (Al, As, Cd, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, and Zn)

Reporting Tier: 3

Applicable TOS#: N/A

Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring Section 35, Lewis and Clark County, Montana; Portage Inc., 2012

Validator 

Date Completed: 04/24/12;05/09/13

Portage Review: 

Date Completed 04/24/12;05/09/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Section 35 Baseline Ground Water is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Laboratory Case Narrative
- Attachment C: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Section 35 Ground Water sample results were received by Portage, Inc. in April 2011. The laboratory analytical request provided for a summary data package attached for the conductivity, TSS, TDS, alkalinity: (total alkalinity, bicarbonate, and carbonate), chloride, sulfate, hardness, dissolved metals (Al, As, Cd, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, and Zn). The samples were analyzed in accordance with Standard Methods 2510B, 2540D, 2540C, 2320B, and 2340B, and USEPA Methods 300.0, 200.7, and 200.8. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Section 35 Baseline Groundwater Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35MW01	H12030404-001	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity (Total Alkalinity, Bicarbonate, & Carbonate), Chloride, Sulfate, Hardness, Dissolved Metals	03/30/12	03/30/12

ANALYTICAL HOLDING TIMES:

The water sample associated with this SDG was collected on 03/30/12. The conductivity, TSS, TDS, and alkalinity (total alkalinity, bicarbonate, and carbonate) results were analyzed on 04/02/12 within the 28-day holding time for conductivity, the 14-day holding time for alkalinity (total alkalinity, bicarbonate, and carbonate), and the 7-day holding time for TSS and TDS. The chloride and sulfate results were analyzed on 04/03/12 within the 28-day holding time. The hardness results were analyzed on 04/04/12 within the 180-day holding time. The dissolved metals were analyzed on 04/02/12 and 04/03/12 within the 180-day holding time for the remaining analytes.

The pH sample was collected on 03/30/12, received on 03/30/12, and analyzed on 04/02/12. In the professional judgment of the validator, all pH results have been qualified with a "J-" validation flag as prescribed by the USEPA Functional Guidelines and as the samples were analyzed outside the 24-hour holding time.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPARATION BLANKS (PB):

The PB for TDS, TSS, and Total Alkalinity exhibited positive detections between the MDL and the RL. The associated TDS, TSS, and Total Alkalinity results no qualification due to positive detection in the method blank as the reported results were greater than the RL and greater than five times the PB concentration

The remaining PB results were non-detect and no qualification is warranted.

Field blank, trip blank, and equipment rinse results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD):

The chloride (148% and 149%) MS exhibited recoveries greater than the 90-110% acceptance criteria, per USEPA Method 300.0. The associated chloride result was non-detect. Therefore, no qualification is warranted based upon high MS recovery.

The remaining MS/MSD recovery and all RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

All LDS and field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD
pH	N/A	0	N/A
Conductivity	N/A	0.2	N/A
TSS	N/A	0	N/A
TDS	N/A	1.2	N/A
Alkalinity	N/A	0.3	N/A
Bicarbonate	N/A	0.5	N/A
Carbonate	N/A	2.7	N/A
Chloride	0.4	N/A	N/A
Sulfate	0.5	N/A	N/A
Hardness	N/A	N/A	N/A
Al	2.2	N/A	N/A
Ca	0.2	N/A	N/A
Mg	1.2	N/A	N/A
K	1.6	N/A	N/A
Na	1.3	N/A	N/A
As	0.4	N/A	N/A
Cd	2.1	N/A	N/A
Cu	1.1	N/A	N/A
Fe	0.8	N/A	N/A
Pb	3.5	N/A	N/A
Mn	1.8	N/A	N/A
Zn	1.8	N/A	N/A

*RPD greater than 20%, however, CRDL criteria not met, Dup ok

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

One cooler was received by Energy Labs on 03/30/12 at 3.7°C. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

REPORTING LIMITS:

The reporting limits presented by the laboratory were acceptable and met the screening level requirements set forth by the project QAPjP and SAP.

OVERALL ASSESSMENT OF DATA:

There was one (1) groundwater field samples included in SDG# H12030404. One (1) field sample was analyzed for conductivity, TSS, TDS, alkalinity (total alkalinity, bicarbonate, and carbonate), chloride, sulfate, hardness, and dissolved metals as outlined in the project QAPP.

All pH results have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

The remaining field sample data points have been assessed and remain unqualified.

All samples were received by the lab in good condition. Detection limits, analytical methods, detection limits, and reporting were all within the project requirements.

Attachment A: Laboratory Report Forms



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35MW01
Lab ID: H12030404-001
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 03/30/12 11:39 **Date Received:** 03/30/12
Report Date: 04/10/12 **Revised Date:** 05/14/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	04/02/12 10:51 / cmm		PHSC_101-H_120402A : 18		R78924
Conductivity @ 25 C	296	umhos/cm		1		A2510 B	04/02/12 10:51 / cmm		PHSC_101-H_120402A : 19		R78924
Solids, Total Suspended TSS @ 105 C	64	mg/L		10		A2540 D	04/02/12 15:06 / glj	04/02/12 14:36 J-124 (14410200)_120402A : 6			16118
Solids, Total Dissolved TDS @ 180 C	174	mg/L		10		A2540 C	04/02/12 15:00 / cmm	04/02/12 14:40 J-124 (14410200)_120402B : 5			16119
INORGANICS											
Alkalinity, Total as CaCO3	150	mg/L		4		A2320 B	04/02/12 16:05 / cmm		MAN-TECH_120402A : 71		R78946
Bicarbonate as HCO3	190	mg/L		4		A2320 B	04/02/12 16:05 / cmm		MAN-TECH_120402A : 71		R78946
Carbonate as CO3	ND	mg/L		4		A2320 B	04/02/12 16:05 / cmm		MAN-TECH_120402A : 71		R78946
Chloride	ND	mg/L		1		E300.0	04/03/12 22:06 / zeg		IC102-H_120403A : 65		R79043
Sulfate	5	mg/L		1		E300.0	04/03/12 22:06 / zeg		IC102-H_120403A : 65		R79043
Hardness as CaCO3	159	mg/L		1		A2340 B	04/04/12 10:24 / sld		WATERCALC_120404A : 20		R78988
METALS, DISSOLVED											
Aluminum	0.04	mg/L		0.03		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Arsenic	ND	mg/L		0.003		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Cadmium	ND	mg/L		0.00008		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Calcium	34	mg/L		1		E200.7	04/02/12 16:30 / sld		ICP2-HE_120402B : 103		R78958
Copper	0.002	mg/L		0.001		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Iron	ND	mg/L		0.05		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Lead	ND	mg/L		0.0005		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Magnesium	18	mg/L		1		E200.7	04/02/12 16:30 / sld		ICP2-HE_120402B : 103		R78958
Manganese	ND	mg/L		0.005		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968
Potassium	1	mg/L		1		E200.7	04/02/12 16:30 / sld		ICP2-HE_120402B : 103		R78958
Sodium	2	mg/L		1		E200.7	04/02/12 16:30 / sld		ICP2-HE_120402B : 103		R78958
Zinc	ND	mg/L		0.01		E200.8	04/03/12 08:27 / dck		ICPMS204-B_120402A : 231		R78968

JAN
5-9-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Attachment B: Laboratory Case Narrative



ANALYTICAL SUMMARY REPORT

April 06, 2012

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H12030404 Quote ID: H645 - UBMC

Project Name: Section 35 Groundwater

Energy Laboratories Inc Helena MT received the following 1 sample for MT DEQ-Site Response on 3/30/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12030404-001	S35MW01	03/30/12 11:39	03/30/12	Aqueous	Metals by ICP/ICPMS, Dissolved Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

**Attachment C: Chain of Custody Forms and
Sample Receipt Checklist**

Workorder Receipt Checklist



H12030404

Login completed by: Wanda Johnson

Date Received: 3/30/2012

Reviewed by: BL2000\sdull

Received by: elm

Reviewed Date: 4/4/2012

Carrier Hand Del
name:

- | | | | |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Container/Temp Blank temperature: | 3.7°C On Ice | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

None

Chain of Custody and Analytical Request Record



PLEASE PRINT (Provide as much information as possible.)

Project Name, PWS, Permit, Etc.: Section 35 Groundwater
 State: MT
 Email: Alan@energy.com
 Phone/Fax: 505.235.3535
 Invoice Contact & Phone: Shellic Healand 841-5033
 Purchase Order: ShellicHealand@mt.gov
 Quote/Bottle Order: _____
 EPA/State Compliance: Yes No
 Sampler: (Please Print) Alan Healand

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELL prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: Cobler ID(s):
				Number of Containers	DW - Drinking Water			
1 <u>535 MW01</u>	<u>3/30/12</u>	<u>1139</u>	<u>W</u>			<u>SEE ATTACHED</u>		<u>Hand</u>
2								
3								
4								
5								
6								
7								
8								
9								
10								

Receipted by (print): Alan Healand Date/Time: 3/30/12 11:50
 Signature: [Signature]
 Received by (print): _____ Date/Time: _____
 Signature: _____
 Received by Laboratory (print): Shellic Healand Date/Time: 3/30/12 15:04
 Signature: [Signature]
 Lab Disposal: _____ Return to Client: _____

Comments: Please provide results to address book for Portogoini on 790-5135
 Receipt Temp: 3.7 °C
 On Ice: Y N
 Custody Seal: On Bottle Y N, On Cooler Y N
 Intact: Y N
 Signature Match: Y N
 ID: 2030404

Laboratory USE ONLY
 Received by Laboratory (print): _____ Date/Time: _____
 Signature: _____

Custody Record MUST be Signed
 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 sub-contract data will be clearly notated on your analytical report.

UBMC Section 35 Surface Water

SDG#: H12050148

Number of Samples: 7

Sample Matrix: Surface water

Applicable Analytes: (7) pH, Conductivity, TSS, TDS, Alkalinity (Total, Bicarbonate, and Carbonate), Anions: (Chloride and Sulfate), Hardness, Dissolved Metals (Al, Ca, Mg, K, and Na), and Total Metals: (As, Cd, Cu, Fe, Pb, Mn, and Zn)

Reporting Tier: 3

Applicable TOS#: N/A

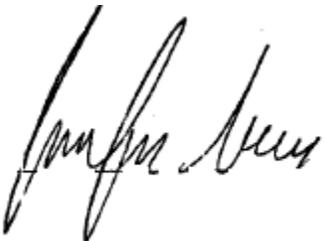
Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring Section 35 Lewis and Clark County, Montana; Portage Inc., 2012


Validator

Date Completed: 06/20/12;05/09/13


Portage Review: _____

Date Completed: 07/03/12;05/09/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Section 35 Surface Water is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Section 35 Surface Water ground water sample results were received by Portage, Inc. in June 2012. The laboratory analytical request provided for a summary data package attached for the pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, total recoverable metals (As, Cd, Cu, Fe, Pb, Mg, and Zn), and dissolved metals (Al, Ca, Mg, K, and Na). The samples were analyzed in accordance with Standard Methods 4500 H-B, 2320B, 2510B, 2540D, 2540C, and 2340B, and USEPA Methods 300.0 and 200.8. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Section 35 Surface Water Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-SW-07	H12050148-001	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	05/08/12	05/08/12
S35-SW-04	H12050148-002	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	05/08/12	05/08/12
S35-SW-03	H12050148-003	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	05/08/12	05/08/12
S35-SW-01	H12050148-004	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	05/08/12	05/08/12
S35-SW-06	H12050148-005	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	05/08/12	05/08/12
S35-SW-02	H12050148-006	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	05/08/12	05/08/12

Cross-Reference for UBMC Section 35 Surface Water Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-SW-05	H12050148-007	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	05/08/12	05/08/12

LABORATORY CASE NARRATIVE:

The laboratory case narrative did not note any non conformance issues with the analytical data.

ANALYTICAL HOLDING TIMES:

The water samples associated with this SDG were collected on 05/08/12. The conductivity, TSS, TDS, results were analyzed on 05/09/12 within the 28-day holding time for conductivity, and the 7-day holding time for TSS and TDS. The chloride and sulfate results were analyzed on 05/10/12 within the 28-day holding time. The alkalinity results were analyzed on 05/09/12 within the 14-day holding time. The hardness results were analyzed on 05/11/12 within the 180-day holding time. The total and dissolved metals were analyzed 05/11/12 within the 180-day holding time for the ICP Metals.

The pH samples were collected on 05/08/12, received on 05/08/12, and analyzed on 05/09/12. The pH results for samples S35-SW-06, S35-SW-02, and S35-SW-05 were analyzed within the 24-hour holding time. In the professional judgment of the validator, all remaining pH results have been qualified with a "J-" validation flag as prescribed by the USEPA Functional Guidelines and as the samples were analyzed outside the 24-hour holding time.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPARATION BLANKS (PB):

For ICP-MS Batch # 16557, the arsenic, iron, lead, manganese, and zinc exhibited positive detections in the PB. However, all arsenic, iron, lead, manganese, and zinc result warrant no qualification due to sample results either less than the RL or greater than five times the blank value.

The remaining PB results were non-detect and no qualification is warranted.

For all analyses, blank results were analyzed at a proper frequency of 1 blank per 20 samples in the analytical batch

Field blank, trip blank, and equipment rinsate results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

The MS/MSD recovery and all RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

All LDS and field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD
pH	N/A	0.1	0
Conductivity	N/A	0	-0.81633
TSS	N/A	0	0
TDS	N/A	0	-3.68098
Alkalinity	N/A	0.4	0
Bicarbonate	N/A	0.4	0
Carbonate	N/A	0	0
Chloride	0.1	N/A	0
Sulfate	0.7	N/A	0
Hardness	N/A	N/A	3.508772
Al	2.0	N/A	0
Ca	1.5	N/A	7.407407
Mg	2.2	N/A	0
K	0.6	N/A	0
Na	2.1	N/A	0
As	0.2	N/A	0
Cd	0.4	N/A	0
Cu	0.1	N/A	66.66667*
Fe	3.3	N/A	0
Pb	0.6	N/A	0
Mn	1.6	N/A	0
Zn	5.2	N/A	0

*RPD Criteria greater than 20%, however, CRDL criteria not met, Dup ok

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

One cooler was received by Energy Labs on 05/08/12 at the proper preservation temperature. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

OVERALL ASSESSMENT OF DATA:

There were seven (7) surface water field samples included in SDG# H12050148. Seven (7) field samples were analyzed for pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, total metals, and dissolved metals as outlined in the project QAPP.

All pH results, **excluding** S35-SW-06, S35-SW-02, and S35-SW-05, have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

The remaining field sample data points have been assessed and remain unqualified.

All samples were received by the lab in good condition. Detection limits, analytical methods, detection limits, and reporting were all within the project requirements.

Attachment A: Laboratory Report Forms



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-07
Lab ID: H12050148-001
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 08:51 **Date Received:** 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	4.6	s.u.	J-	0.1		A4500-H B	05/09/12 10:59 / cmm		PHSC_101-H_120509A : 9		R79840
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	05/09/12 10:59 / cmm		PHSC_101-H_120509A : 10		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:04 / cmm	05/09/12 14:41 J-124 (14410200)_120509A : 3			16567
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	05/09/12 14:50 / cmm		J-124 (14410200)_120509B : 8		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	05/09/12 14:58 / cmm		MAN-TECH_120509B : 12		R79862
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	05/09/12 14:58 / cmm		MAN-TECH_120509B : 12		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 14:58 / cmm		MAN-TECH_120509B : 12		R79862
Chloride	ND	mg/L		1		E300.0	05/10/12 13:13 / cmm		IC102-H_120510A : 22		R79896
Sulfate	ND	mg/L		1		E300.0	05/10/12 13:13 / cmm		IC102-H_120510A : 22		R79896
Hardness as CaCO3	ND	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 1		R79909
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/11/12 00:22 / sld		ICPMS204-B_120510B : 169		R79906
Calcium	ND	mg/L		1		E200.8	05/11/12 00:22 / sld		ICPMS204-B_120510B : 169		R79906
Magnesium	ND	mg/L		1		E200.8	05/11/12 00:22 / sld		ICPMS204-B_120510B : 169		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 00:22 / sld		ICPMS204-B_120510B : 169		R79906
Sodium	ND	mg/L		1		E200.8	05/11/12 00:22 / sld		ICPMS204-B_120510B : 169		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Cadmium	ND	mg/L		0.00008		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Copper	ND	mg/L		0.001		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Iron	ND	mg/L		0.03		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Lead	ND	mg/L		0.0005		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Manganese	ND	mg/L		0.005		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906
Zinc	ND	mg/L		0.01		E200.8	05/11/12 00:59 / sld		ICPMS204-B_120510B : 177		R79906

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-04
Lab ID: H12050148-002
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 09:10
Report Date: 05/21/12
Date Received: 05/08/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.	J-	0.1		A4500-H B	05/09/12 11:06 / cmm		PHSC_101-H_120509A : 13		R79840
Conductivity @ 25 C	192	umhos/cm		1		A2510 B	05/09/12 11:06 / cmm		PHSC_101-H_120509A : 14		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:05 / cmm	05/09/12 14:41	J-124 (14410200)_120509A : 5		16567
Solids, Total Dissolved TDS @ 180 C	117	mg/L		10		A2540 C	05/09/12 14:51 / cmm		J-124 (14410200)_120509B : 9		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	64	mg/L		4		A2320 B	05/09/12 15:05 / cmm		MAN-TECH_120509B : 14		R79862
Bicarbonate as HCO3	79	mg/L		4		A2320 B	05/09/12 15:05 / cmm		MAN-TECH_120509B : 14		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:05 / cmm		MAN-TECH_120509B : 14		R79862
Chloride	3	mg/L		1		E300.0	05/10/12 13:26 / cmm		IC102-H_120510A : 23		R79896
Sulfate	26	mg/L		1		E300.0	05/10/12 13:26 / cmm		IC102-H_120510A : 23		R79896
Hardness as CaCO3	86	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 2		R79909
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/11/12 01:03 / sld		ICPMS204-B_120510B : 178		R79906
Calcium	19	mg/L		1		E200.8	05/11/12 01:03 / sld		ICPMS204-B_120510B : 178		R79906
Magnesium	9	mg/L		1		E200.8	05/11/12 01:03 / sld		ICPMS204-B_120510B : 178		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 01:03 / sld		ICPMS204-B_120510B : 178		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 01:03 / sld		ICPMS204-B_120510B : 178		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Cadmium	0.00037	mg/L		0.00008		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Copper	0.002	mg/L		0.001		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Iron	0.08	mg/L		0.03		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Lead	ND	mg/L		0.0005		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Manganese	0.018	mg/L		0.005		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906
Zinc	0.20	mg/L		0.01		E200.8	05/11/12 01:08 / sld		ICPMS204-B_120510B : 179		R79906

JAN
2-22-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-03
Lab ID: H12050148-003
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 09:53 **Date Received:** 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.	J-	0.1		A4500-H B	05/09/12 11:09 / cmm		PHSC_101-H_120509A : 15		R79840
Conductivity @ 25 C	190	umhos/cm		1		A2510 B	05/09/12 11:09 / cmm		PHSC_101-H_120509A : 16		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:05 / cmm	05/09/12 14:41 J-124 (14410200)_120509A : 6			16567
Solids, Total Dissolved TDS @ 180 C	113	mg/L		10		A2540 C	05/09/12 14:51 / cmm		-124 (14410200)_120509B : 10		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	66	mg/L		4		A2320 B	05/09/12 15:19 / cmm		MAN-TECH_120509B : 18		R79862
Bicarbonate as HCO3	80	mg/L		4		A2320 B	05/09/12 15:19 / cmm		MAN-TECH_120509B : 18		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:19 / cmm		MAN-TECH_120509B : 18		R79862
Chloride	3	mg/L		1		E300.0	05/10/12 13:40 / cmm		IC102-H_120510A : 24		R79896
Sulfate	26	mg/L		1		E300.0	05/10/12 13:40 / cmm		IC102-H_120510A : 24		R79896
Hardness as CaCO3	85	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 3		R79909
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/11/12 01:12 / sld		ICPMS204-B_120510B : 180		R79906
Calcium	19	mg/L		1		E200.8	05/11/12 01:12 / sld		ICPMS204-B_120510B : 180		R79906
Magnesium	9	mg/L		1		E200.8	05/11/12 01:12 / sld		ICPMS204-B_120510B : 180		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 01:12 / sld		ICPMS204-B_120510B : 180		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 01:12 / sld		ICPMS204-B_120510B : 180		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Cadmium	0.00039	mg/L		0.00008		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Copper	0.002	mg/L		0.001		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Iron	0.08	mg/L		0.03		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Lead	ND	mg/L		0.0005		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Manganese	0.020	mg/L		0.005		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906
Zinc	0.20	mg/L		0.01		E200.8	05/11/12 01:17 / sld		ICPMS204-B_120510B : 181		R79906

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Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-01
Lab ID: H12050148-004
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 10:39 **Date Received:** 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	J-	0.1		A4500-H B	05/09/12 11:12 / cmm		PHSC_101-H_120509A : 17		R79840
Conductivity @ 25 C	122	umhos/cm		1		A2510 B	05/09/12 11:12 / cmm		PHSC_101-H_120509A : 18		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:05 / cmm	05/09/12 14:41 J-124 (14410200)_120509A : 7			16557
Solids, Total Dissolved TDS @ 180 C	80	mg/L		10		A2540 C	05/09/12 14:51 / cmm		-124 (14410200)_120509B : 11		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	64	mg/L		4		A2320 B	05/09/12 15:26 / cmm		MAN-TECH_120509B : 20		R79862
Bicarbonate as HCO3	78	mg/L		4		A2320 B	05/09/12 15:26 / cmm		MAN-TECH_120509B : 20		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:26 / cmm		MAN-TECH_120509B : 20		R79862
Chloride	ND	mg/L		1		E300.0	05/10/12 13:54 / cmm		IC102-H_120510A : 25		R79896
Sulfate	3	mg/L		1		E300.0	05/10/12 13:54 / cmm		IC102-H_120510A : 25		R79896
Hardness as CaCO3	58	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 4		R79909
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/11/12 01:21 / sld		ICPMS204-B_120510B : 182		R79906
Calcium	14	mg/L		1		E200.8	05/11/12 01:21 / sld		ICPMS204-B_120510B : 182		R79906
Magnesium	6	mg/L		1		E200.8	05/11/12 01:21 / sld		ICPMS204-B_120510B : 182		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 01:21 / sld		ICPMS204-B_120510B : 182		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 01:21 / sld		ICPMS204-B_120510B : 182		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557
Cadmium	ND	mg/L		0.00008		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557
Copper	0.002	mg/L		0.001		E200.8	05/11/12 18:52 / sld	05/09/12 08:50	ICPMS204-B_120511A : 75		16557
Iron	0.09	mg/L		0.03		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557
Lead	ND	mg/L		0.0005		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557
Manganese	0.008	mg/L		0.005		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557
Zinc	ND	mg/L		0.01		E200.8	05/11/12 01:26 / sld	05/09/12 08:50	ICPMS204-B_120510B : 183		16557

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
2-22-13



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-06
Lab ID: H12050148-005
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 10:49 **DateReceived:** 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.		0.1		A4500-H B	05/09/12 11:14 / cmm		PHSC_101-H_120509A : 19		R79840
Conductivity @ 25 C	123	umhos/cm		1		A2510 B	05/09/12 11:14 / cmm		PHSC_101-H_120509A : 20		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:05 / cmm	05/09/12 14:41 J-124 (14410200)_120509A : 8			16567
Solids, Total Dissolved TDS @ 180 C	83	mg/L		10		A2540 C	05/09/12 14:53 / cmm		-124 (14410200)_120509B : 12		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	64	mg/L		4		A2320 B	05/09/12 15:32 / cmm		MAN-TECH_120509B : 22		R79862
Bicarbonate as HCO3	78	mg/L		4		A2320 B	05/09/12 15:32 / cmm		MAN-TECH_120509B : 22		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:32 / cmm		MAN-TECH_120509B : 22		R79862
Chloride	ND	mg/L		1		E300.0	05/10/12 14:07 / cmm		IC102-H_120510A : 26		R79896
Sulfate	3	mg/L		1		E300.0	05/10/12 14:07 / cmm		IC102-H_120510A : 26		R79896
Hardness as CaCO3	56	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 5		R79909
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/11/12 01:30 / sld		ICPMS204-B_120510B : 184		R79906
Calcium	13	mg/L		1		E200.8	05/11/12 01:30 / sld		ICPMS204-B_120510B : 184		R79906
Magnesium	6	mg/L		1		E200.8	05/11/12 01:30 / sld		ICPMS204-B_120510B : 184		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 01:30 / sld		ICPMS204-B_120510B : 184		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 01:30 / sld		ICPMS204-B_120510B : 184		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557
Cadmium	ND	mg/L		0.00008		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557
Copper	0.001	mg/L		0.001		E200.8	05/11/12 18:57 / sld	05/09/12 08:50	ICPMS204-B_120511A : 76		16557
Iron	0.09	mg/L		0.03		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557
Lead	ND	mg/L		0.0005		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557
Manganese	0.008	mg/L		0.005		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557
Zinc	ND	mg/L		0.01		E200.8	05/11/12 01:53 / sld	05/09/12 08:50	ICPMS204-B_120510B : 189		16557

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-02
Lab ID: H12050148-006
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 11:21 **DateReceived:** 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.9	s.u.		0.1		A4500-H B	05/09/12 11:17 / cmm		PHSC_101-H_120509A : 21		R79840
Conductivity @ 25 C	122	umhos/cm		1		A2510 B	05/09/12 11:17 / cmm		PHSC_101-H_120509A : 22		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:07 / cmm	05/09/12 14:41	J-124 (14410200)_120509A : 9		16567
Solids, Total Dissolved TDS @ 180 C	81	mg/L		10		A2540 C	05/09/12 14:53 / cmm		-124 (14410200)_120509B : 13		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	62	mg/L		4		A2320 B	05/09/12 15:40 / cmm		MAN-TECH_120509B : 24		R79862
Bicarbonate as HCO3	76	mg/L		4		A2320 B	05/09/12 15:40 / cmm		MAN-TECH_120509B : 24		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:40 / cmm		MAN-TECH_120509B : 24		R79862
Chloride	ND	mg/L		1		E300.0	05/10/12 15:15 / cmm		IC102-H_120510A : 31		R79896
Sulfate	3	mg/L		1		E300.0	05/10/12 15:15 / cmm		IC102-H_120510A : 31		R79896
Hardness as CaCO3	56	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 6		R79909
METALS, DISSOLVED											
Aluminum	0.04	mg/L		0.03		E200.8	05/11/12 01:58 / sld		ICPMS204-B_120510B : 190		R79906
Calcium	13	mg/L		1		E200.8	05/11/12 01:58 / sld		ICPMS204-B_120510B : 190		R79906
Magnesium	6	mg/L		1		E200.8	05/11/12 01:58 / sld		ICPMS204-B_120510B : 190		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 01:58 / sld		ICPMS204-B_120510B : 190		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 01:58 / sld		ICPMS204-B_120510B : 190		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Cadmium	ND	mg/L		0.00008		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Copper	0.002	mg/L		0.001		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Iron	0.06	mg/L		0.03		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Lead	ND	mg/L		0.0005		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Manganese	ND	mg/L		0.005		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557
Zinc	ND	mg/L		0.01		E200.8	05/11/12 02:02 / sld	05/09/12 08:50	ICPMS204-B_120510B : 191		16557

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-05
Lab ID: H12050148-007
Matrix: Surface Water

Project: UBMC
Collection Date: 05/08/12 12:12 **DateReceived:** 05/08/12
Report Date: 05/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.9	s.u.		0.1		A4500-H B	05/09/12 11:19 / cmm		PHSC_101-H_120509A : 23		R79840
Conductivity @ 25 C	129	umhos/cm		1		A2510 B	05/09/12 11:19 / cmm		PHSC_101-H_120509A : 24		R79840
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/09/12 15:07 / cmm	05/09/12 14:41	-124 (14410200)_120509A : 10		16567
Solids, Total Dissolved TDS @ 180 C	76	mg/L		10		A2540 C	05/09/12 14:53 / cmm		-124 (14410200)_120509B : 14		TDS120509A
INORGANICS											
Alkalinity, Total as CaCO3	64	mg/L		4		A2320 B	05/09/12 15:47 / cmm		MAN-TECH_120509B : 26		R79862
Bicarbonate as HCO3	78	mg/L		4		A2320 B	05/09/12 15:47 / cmm		MAN-TECH_120509B : 26		R79862
Carbonate as CO3	ND	mg/L		4		A2320 B	05/09/12 15:47 / cmm		MAN-TECH_120509B : 26		R79862
Chloride	ND	mg/L		1		E300.0	05/10/12 15:56 / cmm		IC102-H_120510A : 34		R79896
Sulfate	3	mg/L		1		E300.0	05/10/12 15:56 / cmm		IC102-H_120510A : 34		R79896
Hardness as CaCO3	60	mg/L		1		A2340 B	05/11/12 11:45 / sld		WATERCALC_120511A : 7		R79909
METALS, DISSOLVED											
Aluminum	0.06	mg/L		0.03		E200.8	05/11/12 02:07 / sld		ICPMS204-B_120510B : 192		R79906
Calcium	14	mg/L		1		E200.8	05/11/12 02:07 / sld		ICPMS204-B_120510B : 192		R79906
Magnesium	6	mg/L		1		E200.8	05/11/12 02:07 / sld		ICPMS204-B_120510B : 192		R79906
Potassium	ND	mg/L		1		E200.8	05/11/12 02:07 / sld		ICPMS204-B_120510B : 192		R79906
Sodium	2	mg/L		1		E200.8	05/11/12 02:07 / sld		ICPMS204-B_120510B : 192		R79906
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Cadmium	ND	mg/L		0.00008		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Copper	0.002	mg/L		0.001		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Iron	0.14	mg/L		0.03		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Lead	ND	mg/L		0.0005		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Manganese	0.012	mg/L		0.005		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557
Zinc	ND	mg/L		0.01		E200.8	05/11/12 02:11 / sld	05/09/12 08:50	ICPMS204-B_120510B : 193		16557

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Attachment B: Chain of Custody Forms and
Sample Receipt Checklist**



Workorder Receipt Checklist



H12050148

Login completed by: Tracy L. Lorash

Date Received: 5/8/2012

Reviewed by: BL2000\sdull

Received by: elm

Reviewed Date: 5/9/2012

Carrier Hand Del name:

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on 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

Container/Temp Blank temperature: 3.3°C On Ice

Water - VOA vials have zero headspace? Yes No No VOA vials submitted

Water - pH acceptable upon receipt? Yes No Not Applicable

Contact and Corrective Action Comments:

Temperature taken from temperature blank. TI 5/8/12.



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: MDEQ	Project Name, PWS, Permit, Etc. UBMC Section 35 Surface Water	Sample Origin State: MT	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: Quote H-645	Contact Name: Shellie Haaland	Phone/Fax: 841-5033	Email: shaaland@mt.gov
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Sampler: (Please Print) Alan Dreesbach Brienne Meyer

Page 31 of 32

Special Report/Formats:			ANALYSIS REQUESTED	Bottle Order #9716 SEE ATTACHED	Standard Turnaround (TAT)	R U S H	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: Hand
<input type="checkbox"/> DW	<input type="checkbox"/> EDD/EDT (Electronic Data)	Format: _____					Comments: Please copy results to adreesbach@portageinc.com 406-490-5135	Receipt Temp: 3.3 °C
<input type="checkbox"/> POTWW/WTP	<input type="checkbox"/> LEVEL IV	_____					On Ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Custody Seal
<input type="checkbox"/> State: _____	<input type="checkbox"/> NELAC	_____						On Bottle <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
<input type="checkbox"/> Other: _____								On Cooler <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)			MATRIX					Intact <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
1 ^{BJM} S35-SW-07	5/8/12	0851	W				X	Signature Match <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
2 S35-SW-04		0910						LABORATORY USE ONLY
3 S35-SW-03		0953						
4 S35-SW-01		1039						
5 S35-SW-04		1049						
6 S35-SW-02		1121						
7 S35-SW-05		1212						
8								
9								
10 ^{BJM}								

Custody Record MUST be Signed	Relinquished by (print): Brienne Meyer	Date/Time: 5/8/12 14:15	Signature: <i>[Signature]</i>	Received by (print):	Date/Time:	Signature:
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal: Return to Client:	Lab Disposal:	Received by Laboratory: Esther Merritt	Date/Time: 5/8/12 14:15	Signature: <i>[Signature]</i>	

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

UBMC Section 35 Surface Water (Sediment)

SDG#: H12050151

Number of Samples: 6

Sample Matrix: Sediment

Applicable Analytes: (6) Extractable Metals (Al, As, Cd, Cu, Fe, Pb, Mn, and Zn)

Reporting Tier: 3

Applicable TOS#: N/A

Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring Section 35 Lewis and Clark County, Montana; Portage Inc., 2012

Validator 

Date Completed:07/02/12;05/09/13

Portage Review: 

Date Completed:07/03/12;05/09/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Section 35 Surface Water (Sediment) is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Section 35 Surface Water sediment sample results were received by Portage, Inc. in June 2012. The laboratory analytical request provided for a summary data package attached for the extractable metals (Al, As, Cd, Cu, Fe, Pb, Mn, and Zn). The samples were analyzed in accordance with USEPA Methods 3050B and 6010B. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Section 35 Surface Water Sediment Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-SD-04	H12050151-001	Sediment	Metals	05/08/12	05/08/12
S35-SD-03	H12050151-002	Sediment	Metals	05/08/12	05/08/12
S35-SD-06	H12050151-003	Sediment	Metals	05/08/12	05/08/12
S35-SD-01	H12050151-004	Sediment	Metals	05/08/12	05/08/12
S35-SD-02	H12050151-005	Sediment	Metals	05/08/12	05/08/12
S35-SD-05	H12050151-006	Sediment	Metals	05/08/12	05/08/12

LABORATORY CASE NARRATIVE:

The laboratory case narrative did not note any non conformance issues with the analytical data.

ANALYTICAL HOLDING TIMES:

The sediment samples associated with this SDG were collected on 05/08/12. The conductivity, The metals were analyzed 05/14/12, 05/16/12, 05/17/12, 05/18/12, and 05/24/12 within the 180-day holding time for the ICP Metals.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPARATION BLANKS (PB):

The aluminum, iron and zinc exhibited positive detections in the PB. However, all aluminum, iron, and zinc result warrant no qualification due to sample results greater than five times the blank value.

The remaining PB results were non-detect and no qualification is warranted.

For all analyses, blank results were analyzed at a proper frequency of 1 blank per 20 samples in the analytical batch.

Field blank, trip blank, and equipment rinsate results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD):

The MS/MSD recovery and all RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

The lead (36.4%) and manganese (46.3%) sediment field duplicate results exhibited an RPD greater than the +/-35% RPD acceptance criteria. Lead and manganese sample results have been qualified with a "J" validation flag due to poor duplicate precision and sample results greater than the RL.

All LDS and remaining field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD
Al	2.6	N/A	11.69324
As	0.5	N/A	50
Cd	3.2	N/A	0
Cu	0.9	N/A	-28.5714
Fe	1	N/A	8.450704
Pb	2.3	N/A	36.36364
Mn	2.1	N/A	-46.3288
Zn	11	N/A	20.56075

*RPD greater than 35%, however, CRDL criteria not met, Dup ok

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

One cooler was received by Energy Labs on 05/08/12 at the correct preservation temperature. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

REPORTING LIMITS:

The reporting limits presented by the laboratory were acceptable and met the screening level requirements set forth by the project QAPjP and SAP.

OVERALL ASSESSMENT OF DATA:

There were six (6) sediment field samples included in SDG# H12050151. Six (6) field samples were analyzed for metals as outlined in the project QAPP.

The lead and manganese sample results have been qualified with a “J” validation flag to denote the reported results are estimates due to poor field duplicate precision.

The remaining field sample data points have been assessed and remain unqualified.

All field sample data points presented in this SDG are valid and complete.

All samples were received by the lab in good condition. Detection limits, analytical methods, detection limits, and reporting were all within the project requirements.

Attachment A: Laboratory Report Forms



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-04
Lab ID: H12050151-001
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 09:10 **DateReceived:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6080	mg/kg		5		SW6010B	05/16/12 23:40 / stp	05/09/12 08:45	ICP2-HE_120516B : 140		16555
Arsenic	ND	mg/kg		5		SW6010B	05/18/12 19:39 / sld	05/09/12 08:45	ICP2-HE_120518B : 146		16555
Cadmium	2	mg/kg		1		SW6010B	05/14/12 18:15 / sld	05/09/12 08:45	ICP2-HE_120514B : 73		16555
Copper	24	mg/kg		5		SW6010B	05/24/12 00:35 / sld	05/21/12 10:32	ICP2-HE_120523B : 183		16675
Iron	11200	mg/kg		5		SW6010B	05/14/12 18:15 / sld	05/09/12 08:45	ICP2-HE_120514B : 73		16555
Lead	21	mg/kg	J	5		SW6010B	05/14/12 18:15 / sld	05/09/12 08:45	ICP2-HE_120514B : 73		16555
Manganese	936	mg/kg	J	5		SW6010B	05/24/12 00:35 / sld	05/21/12 10:32	ICP2-HE_120523B : 183		16675
Zinc	793	mg/kg		5		SW6010B	05/14/12 18:15 / sld	05/09/12 08:45	ICP2-HE_120514B : 73		16555

JAN
222-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-03
Lab ID: H12050151-002
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 10:14 **DateReceived:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	7350	mg/kg		5		SW6010B	05/16/12 23:44 / stp	05/09/12 08:45	ICP2-HE_120516B : 141		16555
Arsenic	ND	mg/kg		5		SW6010B	05/18/12 19:43 / sld	05/09/12 08:45	ICP2-HE_120518B : 147		16555
Cadmium	2	mg/kg		1		SW6010B	05/14/12 18:18 / sld	05/09/12 08:45	ICP2-HE_120514B : 74		16555
Copper	30	mg/kg		5		SW6010B	05/24/12 00:39 / sld	05/21/12 10:32	ICP2-HE_120523B : 184		16675
Iron	13800	mg/kg		5		SW6010B	05/16/12 23:44 / stp	05/09/12 08:45	ICP2-HE_120516B : 141		16555
Lead	35	mg/kg		5		SW6010B	05/14/12 18:18 / sld	05/09/12 08:45	ICP2-HE_120514B : 74		16555
Manganese	1110	mg/kg		5		SW6010B	05/24/12 00:39 / sld	05/21/12 10:32	ICP2-HE_120523B : 184		16675
Zinc	719	mg/kg		5		SW6010B	05/14/12 18:18 / sld	05/09/12 08:45	ICP2-HE_120514B : 74		16555

JAN
2-22-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-06
Lab ID: H12050151-003
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 10:50 **Date Received:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6200	mg/kg		5		SW6010B	05/16/12 23:48 / stp	05/09/12 08:45	ICP2-HE_120516B : 142		16555
Arsenic	6	mg/kg		5		SW6010B	05/16/12 23:48 / stp	05/09/12 08:45	ICP2-HE_120516B : 142		16555
Cadmium	ND	mg/kg		1		SW6010B	05/14/12 18:56 / sld	05/09/12 08:45	ICP2-HE_120514B : 84		16555
Copper	36	mg/kg		5		SW6010B	05/24/12 00:43 / sld	05/21/12 10:32	ICP2-HE_120523B : 185		16675
Iron	17000	mg/kg		5		SW6010B	05/16/12 23:48 / stp	05/09/12 08:45	ICP2-HE_120516B : 142		16555
Lead	9	mg/kg		5		SW6010B	05/14/12 18:56 / sld	05/09/12 08:45	ICP2-HE_120514B : 84		16555
Manganese	1300	mg/kg		5		SW6010B	05/24/12 00:43 / sld	05/21/12 10:32	ICP2-HE_120523B : 185		16675
Zinc	48	mg/kg		5		SW6010B	05/14/12 18:56 / sld	05/09/12 08:45	ICP2-HE_120514B : 84		16555

JAN
2-22-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-01
Lab ID: H12050151-004
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 11:00 **DateReceived:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6970	mg/kg		5		SW6010B	05/16/12 23:51 / stp	05/09/12 08:45	ICP2-HE_120516B : 143		16555
Arsenic	10	mg/kg		5		SW6010B	05/16/12 23:51 / stp	05/09/12 08:45	ICP2-HE_120516B : 143		16555
Cadmium	ND	mg/kg		1		SW6010B	05/14/12 18:59 / sld	05/09/12 08:45	ICP2-HE_120514B : 85		16555
Copper	27	mg/kg		5		SW6010B	05/24/12 00:54 / sld	05/21/12 10:32	ICP2-HE_120523B : 188		16675
Iron	18500	mg/kg		5		SW6010B	05/16/12 23:51 / stp	05/09/12 08:45	ICP2-HE_120516B : 143		16555
Lead	13	mg/kg	J	5		SW6010B	05/14/12 18:59 / sld	05/09/12 08:45	ICP2-HE_120514B : 85		16555
Manganese	811	mg/kg	J	5		SW6010B	05/24/12 00:54 / sld	05/21/12 10:32	ICP2-HE_120523B : 188		16675
Zinc	59	mg/kg		5		SW6010B	05/14/12 18:59 / sld	05/09/12 08:45	ICP2-HE_120514B : 85		16555

JAM
2-22-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-02
Lab ID: H12050151-005
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 11:27 **Date Received:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	3740	mg/kg		5		SW6010B	05/17/12 00:29 / stp	05/09/12 08:45	ICP2-HE_120516B : 153		16555
Arsenic	ND	mg/kg		5		SW6010B	05/17/12 00:29 / stp	05/09/12 08:45	ICP2-HE_120516B : 153		16555
Cadmium	ND	mg/kg		1		SW6010B	05/14/12 19:03 / sld	05/09/12 08:45	ICP2-HE_120514B : 86		16555
Copper	39	mg/kg		5		SW6010B	05/24/12 00:57 / sld	05/21/12 10:32	ICP2-HE_120523B : 189		16675
Iron	1780	mg/kg		5		SW6010B	05/14/12 19:03 / sld	05/09/12 08:45	ICP2-HE_120514B : 86		16555
Lead	5	mg/kg	J	5		SW6010B	05/14/12 19:03 / sld	05/09/12 08:45	ICP2-HE_120514B : 86		16555
Manganese	13	mg/kg		5		SW6010B	05/24/12 00:57 / sld	05/21/12 10:32	ICP2-HE_120523B : 189		16675
Zinc	14	mg/kg		5		SW6010B	05/14/12 19:03 / sld	05/09/12 08:45	ICP2-HE_120514B : 86		16555

JAN
2-22-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-05
Lab ID: H12050151-006
Matrix: Sediment

Project: UBMC Sediment
Collection Date: 05/08/12 12:18 **Date Received:** 05/08/12
Report Date: 05/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	7650	mg/kg	D	7		SW6010B	05/17/12 00:32 / stp	05/09/12 08:45	ICP2-HE_120516B : 154		16555
Arsenic	9	mg/kg		5		SW6010B	05/18/12 19:54 / sld	05/09/12 08:45	ICP2-HE_120518B : 150		16555
Cadmium	ND	mg/kg		1		SW6010B	05/14/12 19:07 / sld	05/09/12 08:45	ICP2-HE_120514B : 87		16555
Copper	29	mg/kg		5		SW6010B	05/24/12 01:01 / sld	05/21/12 10:32	ICP2-HE_120523B : 190		16675
Iron	28700	mg/kg		5		SW6010B	05/17/12 00:32 / stp	05/09/12 08:45	ICP2-HE_120516B : 154		16555
Lead	10	mg/kg		5		SW6010B	05/14/12 19:07 / sld	05/09/12 08:45	ICP2-HE_120514B : 87		16555
Manganese	462	mg/kg		5		SW6010B	05/24/12 01:01 / sld	05/21/12 10:32	ICP2-HE_120523B : 190		16675
Zinc	44	mg/kg		5		SW6010B	05/14/12 19:07 / sld	05/09/12 08:45	ICP2-HE_120514B : 87		16555

JAN
2-22-13

Report Definitions: RL - Analyte reporting limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Attachment B: Chain of Custody Forms and
Sample Receipt Checklist**



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: MDEQ	Project Name, PWS, Permit, Etc. UBMC Section 35 Sediment	Sample Origin State: MT	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: Quote	Contact Name: Shellie Haaland	Phone/Fax: 841-5033	Email: shaaland@mt.gov
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Sampler: (Please Print) Alan Dreesebach Brienne Meyer
			Quote/Bottle Order:

Special Report/Formats: <input type="checkbox"/> DW <input type="checkbox"/> POTW/WWTP <input type="checkbox"/> State: <input type="checkbox"/> Other:	<input type="checkbox"/> EDD/EDT (Electronic Data) Format: <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC	Number of Containers Sample Type: A W S V B O DW Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water	ANALYSIS REQUESTED										Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page Comments: <i>Please copy results to adreesbach@portageinc.com</i> 406-490-5135	Shipped by: Hand
			Bottle Order # 9717 SEE ATTACHED											Cooler ID(s): 4
			Standard Turnaround (TAT)										Receipt Temp: 3.3 °C	
			R U S H										On Ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
			Intact: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N										Custody Seal: On Bottle: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N On Cooler: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	
			Signature Match: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N										Intact: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)		Collection Date	Collection Time	MATRIX														
1	S35-SD-04	5/8/12	0910	S														
2	S35-SD-03		1014															
3	S35-SD-06		1050															
4	S35-SD-01		1100															
5	S35-SD-02		1127															
6	S35-SD-05		1218															
7	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> BLM 5/8/12 </div>																	
8																		
9																		
10																		

Custody Record MUST be Signed	Relinquished by (print): Brienne Meyer	Date/Time: 5/8/12 14:15	Signature: <i>[Signature]</i>	Received by (print):	Date/Time:	Signature:
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal: Return to Client	Lab Disposal:	Received by Laboratory: Esther Meyer	Date/Time: 5/8/12 14:15	Signature: <i>[Signature]</i>	

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

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LABORATORY USE ONLY H1205015



Workorder Receipt Checklist



H12050151

Login completed by: Tracy L. Lorash

Date Received: 5/8/2012

Reviewed by: BL2000\sdull

Received by: elm

Reviewed Date: 5/9/2012

Carrier Hand Del
name:

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on 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
- Container/Temp Blank temperature: 3.3°C On Ice
- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No Not Applicable

Contact and Corrective Action Comments:

Temperature taken from temperature blank. TI 5/8/12.

UBMC Section 35 Groundwater

SDG#: H12050224

Number of Samples: 8

Sample Matrix: Groundwater

Applicable Analytes: (8) pH, Conductivity, TSS, TDS, Alkalinity (Total, Bicarbonate, and Carbonate), Anions: (Chloride and Sulfate), Hardness, Dissolved Metals (Al, As, Cd, Ca, Cu, Fe, Pb, Mg, K, Na, and Zn))

Reporting Tier: 3

Applicable TOS#: N/A

Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring Section 35, Lewis and Clark County, Montana; Portage Inc., 2012



Validator: _____

Date Completed: 07/02/12;05/09/13



Portage Review: _____

Date Completed: 07/03/12/05/09/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Section 35 Groundwater is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Section 35 Groundwater sample results were received by Portage, Inc. in June 2012. The laboratory analytical request provided for a summary data package attached for the pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, and dissolved metals (Al, As, Cd, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, Zn). The samples were analyzed in accordance with Standard Methods 4500 H-B, 2320B, 2510B, 2540D, 2540C, and 2340B, and USEPA Methods 300.0, 200.7, and 200.8. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Section 35 Groundwater Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-MW-08	H12050224-001	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	05/10/12	05/11/12
S35-MW-09	H12050224-002	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	05/10/12	05/11/12
S35-MW-01	H12050224-003	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	05/10/12	05/11/12
S35-MW-06	H12050224-004	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	05/10/12	05/11/12
S35-MW-04	H12050224-005	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	05/10/12	05/11/12
S35-MW-07	H12050224-006	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	05/10/12	05/11/12
S35-MW-03	H12050224-007	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	05/10/12	05/11/12
S35-MW-02	H12050224-008	Groundwater	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	05/10/12	05/11/12

ANALYTICAL HOLDING TIMES:

The water samples associated with this SDG were collected on 05/10/12. The conductivity, TSS, TDS, results were analyzed on 05/14/12 within the 28-day holding time for conductivity, and the 7-day holding time for TSS and TDS. The chloride and sulfate results were analyzed on 05/14/12 within the 28-day holding time. The alkalinity results were analyzed on 05/14/12 within the 14-day holding time. The hardness results were analyzed on 05/24/12 within the 180-day holding time. The dissolved metals were analyzed 05/14/12, 05/17/12, and 05/22/12 within the 180-day holding time for the ICP Metals.

The pH samples were collected on 05/10/12, received on 05/11/12, and analyzed on 05/14/12. In the professional judgment of the validator, all pH results have been qualified with a “J-” validation flag as prescribed by the USEPA Functional Guidelines and as the samples were received and analyzed outside the 24-hour holding time.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPARATION BLANKS (PB):

The PB results were non-detect and no qualification is warranted.

For all analyses, blank results were analyzed at a proper frequency of 1 blank per 20 samples in the analytical batch

Field blank, trip blank, and equipment rinsate results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD):

The MS/MSD recovery and all RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

All LDS and field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD
pH	N/A	0.4	0
Conductivity	N/A	0.3	0.611621
TSS	N/A	0	1.459854
TDS	N/A	0	-0.49875
Alkalinity	N/A	0.1	0
Bicarbonate	N/A	0.1	0
Carbonate	N/A	0	0
Chloride	0.5	N/A	0
Sulfate	0.6	N/A	0
Hardness	N/A	N/A	-1.25
Al	1.2	N/A	0
Ca	1.7	N/A	0
Mg	2.1	N/A	0
K	5.0	N/A	-2.0202
Na	4.9	N/A	66.66667*
As	1.6	N/A	0
Cd	0.3	N/A	0
Cu	0.5	N/A	9.52381
Fe	0.2	N/A	0
Pb	0.6	N/A	0
Mn	2.0	N/A	-40*
Zn	3.5	N/A	0

*RPD greater than 20%, however, CRDL criteria not met, Dup ok

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

One cooler was received by Energy Labs on 05/11/12 at the proper preservation temperature. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

REPORTING LIMITS:

The reporting limits presented by the laboratory were acceptable and met the screening level requirements set forth by the project QAPjP and SAP.

OVERALL ASSESSMENT OF DATA:

There were eight (8) groundwater field samples included in SDG# H12050224. Eight (8) field samples were analyzed for pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, and dissolved metals as outlined in the project QAPP.

All pH results have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

The remaining field sample data points have been assessed and remain unqualified.

All samples were received by the lab in good condition. Detection limits, analytical methods, detection limits, and reporting were all within the project requirements.

Attachment A: Laboratory Report Forms



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-08
Lab ID: H12050224-001
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 09:25 **Date Received:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	4.6	s.u.	J-	0.1		A4500-H B	05/14/12 11:20 / cmm		PHSC_101-H_120514A : 8		R79940
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	05/14/12 11:20 / cmm		PHSC_101-H_120514A : 9		R79940
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/14/12 15:13 / cmm	05/14/12 14:45-124 (14410200)_120514A : 13			16614
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	05/14/12 14:55 / cmm		-124 (14410200)_120514B : 15		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	05/14/12 18:52 / cmm		MAN-TECH_120514A : 35		R79960
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	05/14/12 18:52 / cmm		MAN-TECH_120514A : 35		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 18:52 / cmm		MAN-TECH_120514A : 35		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 18:09 / cmm		IC102-H_120514A : 37		R79964
Sulfate	ND	mg/L		1		E300.0	05/14/12 18:09 / cmm		IC102-H_120514A : 37		R79964
Hardness as CaCO3	ND	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 8		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Arsenic	ND	mg/L		0.003		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Cadmium	ND	mg/L		0.00008		E200.8	05/22/12 19:07 / dck		ICPMS204-B_120522A : 95		R80136
Calcium	ND	mg/L		1		E200.7	05/14/12 13:08 / sld		ICP2-HE_120514A : 50		R79951
Copper	ND	mg/L		0.001		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Iron	ND	mg/L		0.05		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Lead	ND	mg/L		0.0005		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Magnesium	ND	mg/L		1		E200.7	05/14/12 13:08 / sld		ICP2-HE_120514A : 50		R79951
Manganese	ND	mg/L		0.005		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038
Potassium	ND	mg/L		1		E200.7	05/14/12 13:08 / sld		ICP2-HE_120514A : 50		R79951
Sodium	ND	mg/L		1		E200.7	05/14/12 13:08 / sld		ICP2-HE_120514A : 50		R79951
Zinc	ND	mg/L		0.01		E200.8	05/17/12 03:49 / sld		ICPMS204-B_120516B : 189		R80038

JAN
2-22-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-09
Lab ID: H12050224-002
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 09:28 **Date Received:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	4.6	s.u.	J-	0.1		A4500-H B	05/14/12 11:23 / cmm		PHSC_101-H_120514A : 10		R79940
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	05/14/12 11:23 / cmm		PHSC_101-H_120514A : 11		R79940
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/14/12 15:13 / cmm	05/14/12 14:45-124 (14410200)_120514A : 14			16614
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	05/14/12 14:55 / cmm		-124 (14410200)_120514B : 16		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	05/14/12 19:01 / cmm		MAN-TECH_120514A : 39		R79960
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	05/14/12 19:01 / cmm		MAN-TECH_120514A : 39		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:01 / cmm		MAN-TECH_120514A : 39		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 18:23 / cmm		IC102-H_120514A : 38		R79964
Sulfate	ND	mg/L		1		E300.0	05/14/12 18:23 / cmm		IC102-H_120514A : 38		R79964
Hardness as CaCO3	ND	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 9		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Arsenic	ND	mg/L		0.003		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Cadmium	ND	mg/L		0.00008		E200.8	05/22/12 19:11 / dck		ICPMS204-B_120522A : 96		R80136
Calcium	ND	mg/L		1		E200.7	05/14/12 13:12 / sld		ICP2-HE_120514A : 51		R79951
Copper	ND	mg/L		0.001		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Iron	ND	mg/L		0.05		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Lead	ND	mg/L		0.0005		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Magnesium	ND	mg/L		1		E200.7	05/14/12 13:12 / sld		ICP2-HE_120514A : 51		R79951
Manganese	ND	mg/L		0.005		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038
Potassium	ND	mg/L		1		E200.7	05/14/12 13:12 / sld		ICP2-HE_120514A : 51		R79951
Sodium	ND	mg/L		1		E200.7	05/14/12 13:12 / sld		ICP2-HE_120514A : 51		R79951
Zinc	ND	mg/L		0.01		E200.8	05/17/12 04:08 / sld		ICPMS204-B_120516B : 193		R80038

JAN
2-22-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-01
Lab ID: H12050224-003
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 10:02 **Date Received:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.	J-	0.1		A4500-H B	05/14/12 11:27 / cmm		PHSC_101-H_120514A : 12		R79940
Conductivity @ 25 C	302	umhos/cm		1		A2510 B	05/14/12 11:27 / cmm		PHSC_101-H_120514A : 13		R79940
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/14/12 15:13 / cmm	05/14/12 14:45-124 (14410200)_120514A : 15			16614
Solids, Total Dissolved TDS @ 180 C	168	mg/L		10		A2540 C	05/14/12 14:55 / cmm		-124 (14410200)_120514B : 17		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	05/14/12 19:08 / cmm		MAN-TECH_120514A : 41		R79960
Bicarbonate as HCO3	200	mg/L		4		A2320 B	05/14/12 19:08 / cmm		MAN-TECH_120514A : 41		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:08 / cmm		MAN-TECH_120514A : 41		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 18:36 / cmm		IC102-H_120514A : 39		R79964
Sulfate	7	mg/L		1		E300.0	05/14/12 18:36 / cmm		IC102-H_120514A : 39		R79964
Hardness as CaCO3	148	mg/L		1		A2340 B	05/24/12 08:36 / wj		WATERCALC_120524A : 10		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Arsenic	ND	mg/L		0.003		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Cadmium	ND	mg/L		0.00008		E200.8	05/22/12 19:16 / dck		ICPMS204-B_120522A : 97		R80136
Calcium	33	mg/L		1		E200.7	05/14/12 13:15 / sld		ICP2-HE_120514A : 52		R79951
Copper	ND	mg/L		0.001		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Iron	ND	mg/L		0.05		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Lead	ND	mg/L		0.0005		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Magnesium	18	mg/L		1		E200.8	05/22/12 19:16 / dck		ICPMS204-B_120522A : 97		R80136
Manganese	ND	mg/L		0.005		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038
Potassium	1	mg/L		1		E200.7	05/14/12 13:15 / sld		ICP2-HE_120514A : 52		R79951
Sodium	2	mg/L		1		E200.7	05/14/12 13:15 / sld		ICP2-HE_120514A : 52		R79951
Zinc	ND	mg/L		0.01		E200.8	05/17/12 04:13 / sld		ICPMS204-B_120516B : 194		R80038

JAN
2-22-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-06
Lab ID: H12050224-004
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 11:59 **Date Received:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.1	s.u.	J-	0.1		A4500-H B	05/14/12 11:30 / cmm		PHSC_101-H_120514A : 14		R79940
Conductivity @ 25 C	354	umhos/cm		1		A2510 B	05/14/12 11:30 / cmm		PHSC_101-H_120514A : 15		R79940
Solids, Total Suspended TSS @ 105 C	202	mg/L		10		A2540 D	05/14/12 15:14 / cmm	05/14/12 14:45-124 (14410200)_120514A : 16			16614
Solids, Total Dissolved TDS @ 180 C	212	mg/L		10		A2540 C	05/14/12 14:56 / cmm		-124 (14410200)_120514B : 18		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	05/14/12 19:15 / cmm		MAN-TECH_120514A : 43		R79960
Bicarbonate as HCO3	240	mg/L		4		A2320 B	05/14/12 19:15 / cmm		MAN-TECH_120514A : 43		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:15 / cmm		MAN-TECH_120514A : 43		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 18:50 / cmm		IC102-H_120514A : 40		R79964
Sulfate	1	mg/L		1		E300.0	05/14/12 18:50 / cmm		IC102-H_120514A : 40		R79964
Hardness as CaCO3	170	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 11		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Arsenic	ND	mg/L		0.003		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Cadmium	ND	mg/L		0.00008		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Calcium	49	mg/L		1		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Copper	ND	mg/L		0.001		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Iron	ND	mg/L		0.05		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Lead	ND	mg/L		0.0005		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Magnesium	14	mg/L		1		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Manganese	ND	mg/L		0.005		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Potassium	ND	mg/L		1		E200.7	05/14/12 13:37 / sld		ICP2-HE_120514A : 58		R79951
Sodium	5	mg/L		1		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136
Zinc	ND	mg/L		0.01		E200.8	05/22/12 19:20 / dck		ICPMS204-B_120522A : 98		R80136

JAN
2-22-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-04
Lab ID: H12050224-005
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 12:46 **Date Received:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	J-	0.1		A4500-H B	05/14/12 11:35 / cmm		PHSC_101-H_120514A : 18		R79940
Conductivity @ 25 C	328	umhos/cm		1		A2510 B	05/14/12 11:35 / cmm		PHSC_101-H_120514A : 19		R79940
Solids, Total Suspended TSS @ 105 C	138	mg/L		10		A2540 D	05/14/12 15:14 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 17			16614
Solids, Total Dissolved TDS @ 180 C	200	mg/L		10		A2540 C	05/14/12 14:56 / cmm		-124 (14410200)_120514B : 19		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	190	mg/L		4		A2320 B	05/14/12 19:22 / cmm		MAN-TECH_120514A : 45		R79960
Bicarbonate as HCO3	230	mg/L		4		A2320 B	05/14/12 19:22 / cmm		MAN-TECH_120514A : 45		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:22 / cmm		MAN-TECH_120514A : 45		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 19:04 / cmm		IC102-H_120514A : 41		R79964
Sulfate	2	mg/L		1		E300.0	05/14/12 19:04 / cmm		IC102-H_120514A : 41		R79964
Hardness as CaCO3	159	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 12		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Arsenic	ND	mg/L		0.003		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Cadmium	ND	mg/L		0.00008		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Calcium	49	mg/L		1		E200.7	05/14/12 13:41 / sld		ICP2-HE_120514A : 59		R79951
Copper	0.002	mg/L		0.001		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Iron	ND	mg/L		0.05		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Lead	ND	mg/L		0.0005		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091
Magnesium	11	mg/L		1		E200.8	05/22/12 19:43 / dck		ICPMS204-B_120522A : 103		R80136
Manganese	ND	mg/L		0.005		E200.8	05/22/12 19:43 / dck		ICPMS204-B_120522A : 103		R80136
Potassium	2	mg/L		1		E200.7	05/14/12 13:41 / sld		ICP2-HE_120514A : 59		R79951
Sodium	2	mg/L		1		E200.7	05/14/12 13:41 / sld		ICP2-HE_120514A : 59		R79951
Zinc	ND	mg/L		0.01		E200.8	05/18/12 19:32 / sld		ICPMS204-B_120518A : 127		R80091

JAN
2-22-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-07
Lab ID: H12050224-006
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 12:56 **Date Received:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	J-	0.1		A4500-H B	05/14/12 11:37 / cmm		PHSC_101-H_120514A : 20		R79940
Conductivity @ 25 C	326	umhos/cm		1		A2510 B	05/14/12 11:37 / cmm		PHSC_101-H_120514A : 21		R79940
Solids, Total Suspended TSS @ 105 C	136	mg/L		10		A2540 D	05/14/12 15:14 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 18			16614
Solids, Total Dissolved TDS @ 180 C	201	mg/L		10		A2540 C	05/14/12 14:56 / cmm		-124 (14410200)_120514B : 20		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	190	mg/L		4		A2320 B	05/14/12 19:30 / cmm		MAN-TECH_120514A : 47		R79960
Bicarbonate as HCO3	230	mg/L		4		A2320 B	05/14/12 19:30 / cmm		MAN-TECH_120514A : 47		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:30 / cmm		MAN-TECH_120514A : 47		R79960
Chloride	ND	mg/L		1		E300.0	05/14/12 19:17 / cmm		IC102-H_120514A : 42		R79964
Sulfate	2	mg/L		1		E300.0	05/14/12 19:17 / cmm		IC102-H_120514A : 42		R79964
Hardness as CaCO3	161	mg/L		1		A2340 B	05/24/12 08:36 / wj		WATERCALC_120524A : 13		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Arsenic	ND	mg/L		0.003		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Cadmium	ND	mg/L		0.00008		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Calcium	50	mg/L		1		E200.7	05/14/12 13:45 / sld		ICP2-HE_120514A : 60		R79951
Copper	ND	mg/L		0.001		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Iron	ND	mg/L		0.05		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Lead	ND	mg/L		0.0005		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091
Magnesium	10	mg/L		1		E200.8	05/22/12 19:48 / dck		ICPMS204-B_120522A : 104		R80136
Manganese	ND	mg/L		0.005		E200.8	05/22/12 19:48 / dck		ICPMS204-B_120522A : 104		R80136
Potassium	2	mg/L		1		E200.7	05/14/12 13:45 / sld		ICP2-HE_120514A : 60		R79951
Sodium	3	mg/L		1		E200.8	05/22/12 19:48 / dck		ICPMS204-B_120522A : 104		R80136
Zinc	ND	mg/L		0.01		E200.8	05/18/12 19:36 / sld		ICPMS204-B_120518A : 128		R80091

JAH
2-22-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-03
Lab ID: H12050224-007
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 13:30 **Date Received:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	J-	0.1		A4500-H B	05/14/12 11:40 / cmm		PHSC_101-H_120514A : 22		R79940
Conductivity @ 25 C	336	umhos/cm		1		A2510 B	05/14/12 11:40 / cmm		PHSC_101-H_120514A : 23		R79940
Solids, Total Suspended TSS @ 105 C	86	mg/L		10		A2540 D	05/14/12 15:18 / cmm	05/14/12 14:45 -124 (14410200)_120514A : 19			16614
Solids, Total Dissolved TDS @ 180 C	208	mg/L		10		A2540 C	05/14/12 14:56 / cmm		-124 (14410200)_120514B : 21		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	190	mg/L		4		A2320 B	05/16/12 18:34 / cmm		MAN-TECH_120516B : 34		R80023
Bicarbonate as HCO3	230	mg/L		4		A2320 B	05/16/12 18:34 / cmm		MAN-TECH_120516B : 34		R80023
Carbonate as CO3	ND	mg/L		4		A2320 B	05/16/12 18:34 / cmm		MAN-TECH_120516B : 34		R80023
Chloride	ND	mg/L		1		E300.0	05/14/12 19:31 / cmm		IC102-H_120514A : 43		R79964
Sulfate	5	mg/L		1		E300.0	05/14/12 19:31 / cmm		IC102-H_120514A : 43		R79964
Hardness as CaCO3	150	mg/L		1		A2340 B	05/24/12 08:36 / wj		WATERCALC_120524A : 14		R80170
METALS, DISSOLVED											
Aluminum	0.10	mg/L		0.03		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Arsenic	ND	mg/L		0.003		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Cadmium	ND	mg/L		0.00008		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Calcium	45	mg/L		1		E200.7	05/14/12 13:49 / sld		ICP2-HE_120514A : 61		R79951
Copper	ND	mg/L		0.001		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Iron	ND	mg/L		0.05		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Lead	ND	mg/L		0.0005		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091
Magnesium	11	mg/L		1		E200.8	05/22/12 20:06 / dck		ICPMS204-B_120522A : 108		R80136
Manganese	ND	mg/L		0.005		E200.8	05/22/12 20:06 / dck		ICPMS204-B_120522A : 108		R80136
Potassium	2	mg/L		1		E200.7	05/14/12 13:49 / sld		ICP2-HE_120514A : 61		R79951
Sodium	11	mg/L		1		E200.8	05/22/12 20:06 / dck		ICPMS204-B_120522A : 108		R80136
Zinc	ND	mg/L		0.01		E200.8	05/18/12 19:41 / sld		ICPMS204-B_120518A : 129		R80091

JAN
2-22-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-02
Lab ID: H12050224-008
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 05/10/12 16:15 **Date Received:** 05/11/12
Report Date: 05/30/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.	J-	0.1		A4500-H B	05/14/12 11:43 / cmm		PHSC_101-H_120514A : 24		R79940
Conductivity @ 25 C	439	umhos/cm		1		A2510 B	05/14/12 11:43 / cmm		PHSC_101-H_120514A : 25		R79940
Solids, Total Suspended TSS @ 105 C	22	mg/L		10		A2540 D	05/14/12 15:18 / cmm	05/14/12 14:45-124 (14410200)_120514A : 20			16614
Solids, Total Dissolved TDS @ 180 C	264	mg/L		10		A2540 C	05/14/12 14:56 / cmm		-124 (14410200)_120514B : 22		TDS120514A
INORGANICS											
Alkalinity, Total as CaCO3	250	mg/L		4		A2320 B	05/14/12 19:44 / cmm		MAN-TECH_120514A : 51		R79960
Bicarbonate as HCO3	300	mg/L		4		A2320 B	05/14/12 19:44 / cmm		MAN-TECH_120514A : 51		R79960
Carbonate as CO3	ND	mg/L		4		A2320 B	05/14/12 19:44 / cmm		MAN-TECH_120514A : 51		R79960
Chloride	2	mg/L		1		E300.0	05/14/12 19:44 / cmm		IC102-H_120514A : 44		R79964
Sulfate	7	mg/L		1		E300.0	05/14/12 19:44 / cmm		IC102-H_120514A : 44		R79964
Hardness as CaCO3	224	mg/L		1		A2340 B	05/24/12 08:36 / wjj		WATERCALC_120524A : 15		R80170
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Arsenic	ND	mg/L		0.003		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Cadmium	0.00046	mg/L		0.00008		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Calcium	69	mg/L		1		E200.7	05/14/12 13:52 / sld		ICP2-HE_120514A : 62		R79951
Copper	0.001	mg/L		0.001		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Iron	ND	mg/L		0.05		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Lead	ND	mg/L		0.0005		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091
Magnesium	15	mg/L		1		E200.8	05/22/12 20:11 / dck		ICPMS204-B_120522A : 109		R80136
Manganese	ND	mg/L		0.005		E200.8	05/22/12 20:11 / dck		ICPMS204-B_120522A : 109		R80136
Potassium	1	mg/L		1		E200.7	05/14/12 13:52 / sld		ICP2-HE_120514A : 62		R79951
Sodium	4	mg/L		1		E200.8	05/22/12 20:11 / dck		ICPMS204-B_120522A : 109		R80136
Zinc	ND	mg/L		0.01		E200.8	05/18/12 19:45 / sld		ICPMS204-B_120518A : 130		R80091

JAM
2-22-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Attachment B: Chain of Custody Forms and
Sample Receipt Checklist**



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: MDEQ	Project Name, PWS, Permit, Etc. Section 35 Groundwater	Sample Origin State: MA	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: See Quote H-645	Contact Name: Shellic Hanland	Phone/Fax: 841-5033	Email: sheland@mt.gov
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Sampler: (Please Print) A. Dresbach B. Meyer
			Quote/Bottle Order:

Special Report/Formats:			ANALYSIS REQUESTED	<input type="checkbox"/> DW <input type="checkbox"/> POTW/WWTP <input type="checkbox"/> State: <input type="checkbox"/> Other:	<input type="checkbox"/> EDD/EDT (Electronic Data) Format: <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC	Number of Containers Sample Type: A W S V B O D W Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page Comments:	Shipped by: Hand del. Cooler ID(s): Y Receipt Temp 3.0 °C On Ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Custody Seal On Bottle <input checked="" type="checkbox"/> Y <input type="checkbox"/> N On Cooler <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Intact <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Signature Match <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
<input type="checkbox"/> DW <input type="checkbox"/> POTW/WWTP <input type="checkbox"/> State: <input type="checkbox"/> Other:								
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	LABORATORY USE ONLY 12050224 				
1 535-MW-08	5/10/12	0925	W					
2 535-MW-09		0928						
3 535-MW-01		1002						
4 535-MW-06		1159						
5 535-MW-04		1246						
6 535-MW-07		1256						
7 535-MW-03		1330						
8 535-MW-02		1615	W					
9								
10								

Custody Record MUST be Signed	Relinquished by (print): Alan Dresbach	Date/Time: 5/10/12 9:36	Signature: 	Received by (print):	Date/Time:	Signature:
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal: Return to Client:	Lab Disposal:	Received by Laboratory: Tracy Walsh	Date/Time: 5/11/12 9:36	Signature: 	

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.



Workorder Receipt Checklist



H12050224

MT DEQ-Site Response

Login completed by: Wanda Johnson

Date Received: 5/11/2012

Reviewed by: BL2000\sdull

Received by: TLL

Reviewed Date: 5/16/2012

Carrier Hand Del
name:

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on 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

Container/Temp Blank temperature: 3.0°C On Ice/Temperature Blank

Water - VOA vials have zero headspace? Yes No No VOA vials submitted

Water - pH acceptable upon receipt? Yes No Not Applicable

Contact and Corrective Action Comments:

Metals containers for samples S35-MW-04 & S35-MW-07 do not have a collection time on them. Used time from COC. Wj 5/11/12. Wj

UBMC Section 35 Surface Water

SDG#: H12100097

Number of Samples: 13

Sample Matrix: (6) Sediment and (7) Surface water

Applicable Analytes: (7) pH, Conductivity, TSS, TDS, Alkalinity (Total, Bicarbonate, and Carbonate), Anions: (Chloride and Sulfate), Hardness, Dissolved Metals (Al, Ca, Mg, K, and Na), and Total Recoverable Metals: (As, Cd, Cu, Fe, Pb, Mn, and Zn) and (6) for Total Extractable Metals: (Al, As, Cd, Cu, Fe, Pb, Mn, and Zn)

Reporting Tier: 3

Applicable TOS#: N/A

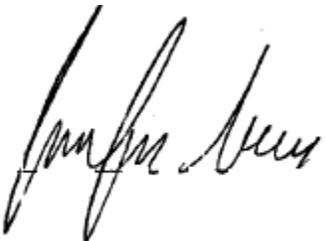
Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring Section 35, Lewis and Clark County, Montana; Portage Inc., 2012


Validator

Date Completed: 01/25/13;05/09/13


Portage Review: _____

Date Completed: 01/25/13;05/09/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Section 35 Surface Water is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Section 35 Surface Water ground water and sediment sample results were received by Portage, Inc. in October 2012. The laboratory analytical request provided for a summary data package attached for the pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, total recoverable metals (As, Cd, Cu, Fe, Pb, Mg, and Zn), dissolved metals (Al, Ca, Mg, K, and Na), and total recoverable metals: (Al, As, Cd, Cu, Fe, Pb, Mn, and Zn). The samples were analyzed in accordance with Standard Methods 4500 H-B, 2320B, 2510B, 2540D, 2540C, and 2340B, USEPA SW-846 Methods 3050B and 6010B, and USEPA Methods 300.0, 200.7, and 200.8. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Section 35 Sediment and Surface Water Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-SW-07	H1210097-001	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	10/03/12	10/03/12
S35-SW-04	H1210097-002	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	10/03/12	10/03/12
S35-SW-03	H1210097-003	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	10/03/12	10/03/12
S35-SW-01	H1210097-004	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	10/03/12	10/03/12
S35-SW-02	H1210097-005	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	10/03/12	10/03/12
S35-SW-05	H1210097-006	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	10/03/12	10/03/12
S35-SD-04	H1210097-007	Sediment	Total Extractable Metals	10/03/12	10/03/12

Cross-Reference for UBMC Section 35 Sediment and Surface Water Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-SD-03	H1210097-008	Sediment	Total Extractable Metals	10/03/12	10/03/12
S35-SD-01	H1210097-009	Sediment	Total Extractable Metals	10/03/12	10/03/12
S35-SD-02	H1210097-010	Sediment	Total Extractable Metals	10/03/12	10/03/12
S35-SD-05	H1210097-011	Sediment	Total Extractable Metals	10/03/12	10/03/12
S35-SW-06	H1210097-012	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	10/03/12	10/03/12
S35-SD-06	H1210097-013	Sediment	Total Extractable Metals	10/03/12	10/03/12

LABORATORY CASE NARRATIVE:

The laboratory case narrative did not note any non conformance issues with the analytical data.

ANALYTICAL HOLDING TIMES:

The water samples associated with this SDG were collected on 10/03/12. The conductivity, TSS, and TDS results were analyzed on 10/04/12 within the 28-day holding time for conductivity, and the 7-day holding time for TSS and TDS. The chloride and sulfate results were analyzed on 10/04/12 within the 28-day holding time. The alkalinity results were analyzed on 10/04/12 within the 14-day holding time. The hardness results were analyzed on 10/04/12 and 10/08/12 within the 180-day holding time. The total extractable, total recoverable, and dissolved metals were analyzed 10/04/12, 10/05/12, 10/11/12, 10/16/12, and 10/17/12 within the 180-day holding time for the ICP Metals.

The pH samples were collected on 10/03/12, received on 10/03/12, and analyzed on 10/04/12. The pH results for samples S35-SW02 and S35-SW-05 were analyzed within the 24-hour holding time. In the professional judgment of the validator, all remaining pH results have been qualified with a "J-" validation flag as prescribed by the USEPA Functional Guidelines and as the samples were analyzed outside the 24-hour holding time.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPARATION BLANKS (PB):

For all analyses, blank results were analyzed at a proper frequency of 1 blank per 20 samples in the analytical batch.

The remaining PB results were non-detect at level less than their respective MDLs and no qualification is warranted.

Field blank, trip blank, and equipment rinse results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD):

The arsenic (58% and 60%), lead (67% and 50%), and zinc (67% and 43%) sediment MS/MSD results and the manganese (42%) MSD results were outside the 75-125% recovery criteria. Qualification is as follows:

- The arsenic and lead results for sample S35-SD-02 have been qualified with a “UJ” validation flag due to sample results less than the MDL. The remaining arsenic and lead sediment sample results were qualified with a “J-“ validation flag due to low MS/MSD recovery and sample results less than the MDL
- The manganese and zinc sediment samples results were qualified with a “J-“ validation flag due to low MS/MSD recovery and sample results less than the MDL

The remaining MS/MSD recovery and all RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

All LDS and field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE:*Surface Water:*

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD
pH	N/A	0.4	-1.27389
Conductivity	N/A	4.5	-0.78125
TSS	N/A	0	0
TDS	N/A	2.2	12.88136
Alkalinity	N/A	2.2	0
Bicarbonate	N/A	0	6.896552
Carbonate	N/A	0.6	0
Chloride	0.8	N/A	0
Sulfate	0.4	N/A	0
Hardness	N/A	N/A	0
Al	1.5	N/A	15.38462
Ca	0.1	N/A	0
Mg	0.2	N/A	0
K	0.4	N/A	0
Na	0.7	N/A	0
As	1.7	N/A	0
Cd	0.9	N/A	0
Cu	2.6	N/A	0
Fe	1.7	N/A	-6.45161
Pb	1.6	N/A	0
Mn	1.7	N/A	0
Zn	1.4	N/A	0

*RPD greater than 20%, however, CRDL criteria not met, Dup ok

Sediment:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD
Al	7.0	N/A	4.411765
As	1.7	N/A	-11.7647
Cd	4.7	N/A	0
Cu	13	N/A	-5.71429
Fe	2.8	N/A	-2.06186
Pb	9.3	N/A	0
Mn	18	N/A	-11.2575
Zn	5.6	N/A	-1.62602

*RPD greater than 35%, however, CRDL criteria not met, Dup ok

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

One cooler was received by Energy Labs on 10/03/12 at 2.4°C. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

REPORTING LIMITS:

The reporting limits presented by the laboratory were acceptable and met the screening level requirements set forth by the project QAPjP and SAP.

OVERALL ASSESSMENT OF DATA:

There were seven (7) surface water and six (6) sediment field samples included in SDG# H12100097. Seven (7) field samples were analyzed for pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, total recoverable metals, and dissolved metals and six (6) field samples were analyzed for total extractable metals as outlined in the project QAPP.

All pH results, **excluding** S35-SW-02 and S35-SW-05, have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

The arsenic and lead results for sample S35-SD-02 have been qualified with a “UJ” validation flag to denote the data is non-detect at the reported value, and the reported value is an estimate due to low MS/MSD recovery. All remaining arsenic and lead sediment sample results have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to low MS/MSD recovery.

The manganese and zinc sediment sample results have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to low MS/MSD recovery.

The remaining field sample data points have been assessed and remain unqualified.

All field sample data points presented in this SDG are valid and complete.

All samples were received by the lab in good condition. Detection limits, analytical methods, detection limits, and reporting were all within the project requirements.

Attachment A: Laboratory Report Forms



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-07
Lab ID: H12100097-001
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 07:45 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.3	s.u.	J- H	0.1		A4500-H B	10/04/12 10:37 / cmm		PHSC_101-H_121004A : 23		R83422
Conductivity @ 25 C	8	umhos/cm		1		A2510 B	10/04/12 10:37 / cmm		PHSC_101-H_121004A : 24		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:46 / cmm	10/04/12 14:25 -124 (14410200)_121004A : 10			18263
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	10/04/12 15:57 / cmm	J-124 (14410200)_121004B : 3			TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	10/04/12 17:56 / cmm		MAN-TECH_121004B : 34		R83460
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	10/04/12 17:56 / cmm		MAN-TECH_121004B : 34		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 17:56 / cmm		MAN-TECH_121004B : 34		R83460
Chloride	ND	mg/L		1		E300.0	10/04/12 23:27 / cmm		IC102-H_121004A : 40		R83467
Sulfate	ND	mg/L		1		E300.0	10/04/12 23:27 / cmm		IC102-H_121004A : 40		R83467
Hardness as CaCO3	ND	mg/L		1		A2340 B	10/08/12 07:58 / sld		WATERCALC_121008A : 4		R83484
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/05/12 16:45 / sld		ICP2-HE_121005A : 102		R83483
Calcium	ND	mg/L		1		E200.7	10/04/12 11:02 / sld		ICP2-HE_121004A : 22		R83458
Magnesium	ND	mg/L		1		E200.7	10/04/12 11:02 / sld		ICP2-HE_121004A : 22		R83458
Potassium	ND	mg/L		1		E200.7	10/04/12 11:02 / sld		ICP2-HE_121004A : 22		R83458
Sodium	ND	mg/L		1		E200.7	10/04/12 11:02 / sld		ICP2-HE_121004A : 22		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Cadmium	ND	mg/L		0.00008		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Copper	ND	mg/L		0.001		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Iron	ND	mg/L		0.03		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Manganese	ND	mg/L		0.005		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256
Zinc	ND	mg/L		0.01		E200.8	10/11/12 20:39 / dck	10/04/12 08:54	ICPMS204-B_121010C : 381		18256

Report RL - Analyte reporting limit.
Definitions: H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
1-24-13



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-04
Lab ID: H12100097-002
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 08:21 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	J- H	0.1		A4500-H B	10/04/12 10:40 / cmm		PHSC_101-H_121004A : 25		R83422
Conductivity @ 25 C	228	umhos/cm		1		A2510 B	10/04/12 10:40 / cmm		PHSC_101-H_121004A : 26		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:47 / cmm	10/04/12 14:25-124 (14410200)_121004A : 12			18263
Solids, Total Dissolved TDS @ 180 C	125	mg/L		10		A2540 C	10/04/12 15:58 / cmm		J-124 (14410200)_121004B : 5		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	86	mg/L		4		A2320 B	10/04/12 18:03 / cmm		MAN-TECH_121004B : 36		R83460
Bicarbonate as HCO3	110	mg/L		4		A2320 B	10/04/12 18:03 / cmm		MAN-TECH_121004B : 36		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:03 / cmm		MAN-TECH_121004B : 36		R83460
Chloride	2	mg/L		1		E300.0	10/04/12 23:40 / cmm		IC102-H_121004A : 41		R83467
Sulfate	23	mg/L		1		E300.0	10/04/12 23:40 / cmm		IC102-H_121004A : 41		R83467
Hardness as CaCO3	110	mg/L		1		A2340 B	10/04/12 11:05 / abb		CALC_121005A : 147		R83473
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/05/12 16:49 / sld		ICP2-HE_121005A : 103		R83483
Calcium	25	mg/L		1		E200.7	10/04/12 11:05 / sld		ICP2-HE_121004A : 23		R83458
Magnesium	12	mg/L		1		E200.7	10/04/12 11:05 / sld		ICP2-HE_121004A : 23		R83458
Potassium	ND	mg/L		1		E200.7	10/04/12 11:05 / sld		ICP2-HE_121004A : 23		R83458
Sodium	3	mg/L		1		E200.7	10/04/12 11:05 / sld		ICP2-HE_121004A : 23		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Cadmium	0.00012	mg/L		0.00008		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Copper	0.001	mg/L		0.001		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Iron	0.05	mg/L		0.03		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Manganese	ND	mg/L		0.005		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256
Zinc	0.05	mg/L		0.01		E200.8	10/11/12 19:53 / dck	10/04/12 08:54	ICPMS204-B_121010C : 371		18256

JAN 124-13

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-03
Lab ID: H12100097-003
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 09:03 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	J- H	0.1		A4500-H B	10/04/12 10:43 / cmm		PHSC_101-H_121004A : 27		R83422
Conductivity @ 25 C	227	umhos/cm		1		A2510 B	10/04/12 10:43 / cmm		PHSC_101-H_121004A : 28		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:47 / cmm	10/04/12 14:25-124 (14410200)_121004A : 13			18263
Solids, Total Dissolved TDS @ 180 C	129	mg/L		10		A2540 C	10/04/12 15:58 / cmm		J-124 (14410200)_121004B : 7		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	86	mg/L		4		A2320 B	10/04/12 18:11 / cmm		MAN-TECH_121004B : 38		R83460
Bicarbonate as HCO3	100	mg/L		4		A2320 B	10/04/12 18:11 / cmm		MAN-TECH_121004B : 38		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:11 / cmm		MAN-TECH_121004B : 38		R83460
Chloride	2	mg/L		1		E300.0	10/04/12 23:53 / cmm		IC102-H_121004A : 42		R83467
Sulfate	23	mg/L		1		E300.0	10/04/12 23:53 / cmm		IC102-H_121004A : 42		R83467
Hardness as CaCO3	109	mg/L		1		A2340 B	10/04/12 11:09 / abb		CALC_121005A : 159		R83473
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/05/12 16:53 / sld		ICP2-HE_121005A : 104		R83483
Calcium	24	mg/L		1		E200.7	10/04/12 11:09 / sld		ICP2-HE_121004A : 24		R83458
Magnesium	12	mg/L		1		E200.7	10/04/12 11:09 / sld		ICP2-HE_121004A : 24		R83458
Potassium	ND	mg/L		1		E200.7	10/04/12 11:09 / sld		ICP2-HE_121004A : 24		R83458
Sodium	3	mg/L		1		E200.7	10/04/12 11:09 / sld		ICP2-HE_121004A : 24		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Cadmium	0.00011	mg/L		0.00008		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Copper	0.001	mg/L		0.001		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Iron	0.05	mg/L		0.03		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Manganese	ND	mg/L		0.005		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256
Zinc	0.05	mg/L		0.01		E200.8	10/11/12 19:58 / dck	10/04/12 08:54	ICPMS204-B_121010C : 372		18256

JAN 1-24-13

Report RL - Analyte reporting limit.
Definitions: H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SW-01
Lab ID: H12100097-004
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 10:02 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.8	s.u.	J- H	0.1		A4500-H B	10/04/12 10:45 / cmm		PHSC_101-H_121004A : 29		R83422
Conductivity @ 25 C	255	umhos/cm		1		A2510 B	10/04/12 10:45 / cmm		PHSC_101-H_121004A : 30		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:47 / cmm	10/04/12 14:25-124 (14410200)_121004A : 14			18263
Solids, Total Dissolved TDS @ 180 C	157	mg/L		10		A2540 C	10/04/12 15:59 / cmm	J-124 (14410200)_121004B : 8			TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	10/04/12 18:19 / cmm		MAN-TECH_121004B : 40		R83460
Bicarbonate as HCO3	150	mg/L		4		A2320 B	10/04/12 18:19 / cmm		MAN-TECH_121004B : 40		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:19 / cmm		MAN-TECH_121004B : 40		R83460
Chloride	5	mg/L		1		E300.0	10/05/12 00:56 / cmm		IC102-H_121004A : 47		R83467
Sulfate	2	mg/L		1		E300.0	10/05/12 00:56 / cmm		IC102-H_121004A : 47		R83467
Hardness as CaCO3	120	mg/L		1		A2340 B	10/04/12 11:13 / abb		CALC_121005A : 171		R83473
METALS, DISSOLVED											
Aluminum	0.07	mg/L		0.03		E200.7	10/05/12 16:57 / sld		ICP2-HE_121005A : 105		R83483
Calcium	32	mg/L		1		E200.7	10/04/12 11:13 / sld		ICP2-HE_121004A : 25		R83458
Magnesium	10	mg/L		1		E200.7	10/04/12 11:13 / sld		ICP2-HE_121004A : 25		R83458
Potassium	7	mg/L		1		E200.7	10/04/12 11:13 / sld		ICP2-HE_121004A : 25		R83458
Sodium	2	mg/L		1		E200.7	10/04/12 11:13 / sld		ICP2-HE_121004A : 25		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Cadmium	ND	mg/L		0.00008		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Copper	0.002	mg/L		0.001		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Iron	0.15	mg/L		0.03		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Manganese	0.013	mg/L		0.005		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256
Zinc	ND	mg/L		0.01		E200.8	10/11/12 20:21 / dck	10/04/12 08:54	ICPMS204-B_121010C : 377		18256

JAN 1-24-13

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-02
Lab ID: H12100097-005
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 11:20 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.8	s.u.	H	0.1		A4500-H B	10/04/12 10:48 / cmm		PHSC_101-H_121004A : 31		R83422
Conductivity @ 25 C	150	umhos/cm		1		A2510 B	10/04/12 10:48 / cmm		PHSC_101-H_121004A : 32		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:47 / cmm	10/04/12 14:25 -124 (14410200)_121004A : 15			18263
Solids, Total Dissolved TDS @ 180 C	89	mg/L		10		A2540 C	10/04/12 15:59 / cmm		J-124 (14410200)_121004B : 9		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	74	mg/L		4		A2320 B	10/04/12 18:26 / cmm		MAN-TECH_121004B : 42		R83460
Bicarbonate as HCO3	90	mg/L		4		A2320 B	10/04/12 18:26 / cmm		MAN-TECH_121004B : 42		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:26 / cmm		MAN-TECH_121004B : 42		R83460
Chloride	ND	mg/L		1		E300.0	10/05/12 01:08 / cmm		IC102-H_121004A : 48		R83467
Sulfate	2	mg/L		1		E300.0	10/05/12 01:08 / cmm		IC102-H_121004A : 48		R83467
Hardness as CaCO3	70	mg/L		1		A2340 B	10/04/12 11:17 / abb		CALC_121005A : 183		R83473
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/05/12 17:00 / sld		ICP2-HE_121005A : 106		R83483
Calcium	17	mg/L		1		E200.7	10/04/12 11:17 / sld		ICP2-HE_121004A : 26		R83458
Magnesium	7	mg/L		1		E200.7	10/04/12 11:17 / sld		ICP2-HE_121004A : 26		R83458
Potassium	ND	mg/L		1		E200.7	10/04/12 11:17 / sld		ICP2-HE_121004A : 26		R83458
Sodium	2	mg/L		1		E200.7	10/04/12 11:17 / sld		ICP2-HE_121004A : 26		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Cadmium	ND	mg/L		0.00008		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Copper	0.002	mg/L		0.001		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Iron	0.09	mg/L		0.03		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Manganese	0.011	mg/L		0.005		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256
Zinc	ND	mg/L		0.01		E200.8	10/11/12 20:25 / dck	10/04/12 08:54	ICPMS204-B_121010C : 378		18256

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-05
Lab ID: H12100097-006
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 12:35 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.8	s.u.	H	0.1		A4500-H B	10/04/12 10:50 / cmm		PHSC_101-H_121004A : 33		R83422
Conductivity @ 25 C	212	umhos/cm		1		A2510 B	10/04/12 10:50 / cmm		PHSC_101-H_121004A : 34		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:48 / cmm	10/04/12 14:25-124 (14410200)_121004A : 16			18263
Solids, Total Dissolved TDS @ 180 C	124	mg/L		10		A2540 C	10/04/12 15:59 / cmm	-124 (14410200)_121004B : 10			TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	10/04/12 18:33 / cmm		MAN-TECH_121004B : 44		R83460
Bicarbonate as HCO3	130	mg/L		4		A2320 B	10/04/12 18:33 / cmm		MAN-TECH_121004B : 44		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:33 / cmm		MAN-TECH_121004B : 44		R83460
Chloride	1	mg/L		1		E300.0	10/05/12 01:21 / cmm		IC102-H_121004A : 49		R83467
Sulfate	3	mg/L		1		E300.0	10/05/12 01:21 / cmm		IC102-H_121004A : 49		R83467
Hardness as CaCO3	106	mg/L		1		A2340 B	10/04/12 11:21 / abb		CALC_121005A : 195		R83473
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/05/12 17:04 / sld		ICP2-HE_121005A : 107		R83483
Calcium	24	mg/L		1		E200.7	10/04/12 11:21 / sld		ICP2-HE_121004A : 27		R83458
Magnesium	11	mg/L		1		E200.7	10/04/12 11:21 / sld		ICP2-HE_121004A : 27		R83458
Potassium	2	mg/L		1		E200.7	10/04/12 11:21 / sld		ICP2-HE_121004A : 27		R83458
Sodium	2	mg/L		1		E200.7	10/04/12 11:21 / sld		ICP2-HE_121004A : 27		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Cadmium	ND	mg/L		0.00008		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Copper	ND	mg/L		0.001		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Iron	0.06	mg/L		0.03		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Manganese	0.008	mg/L		0.005		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256
Zinc	ND	mg/L		0.01		E200.8	10/11/12 20:30 / dck	10/04/12 08:54	ICPMS204-B_121010C : 379		18256

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-04
Lab ID: H12100097-007
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 08:21 Date Received: 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	4970	mg/kg		5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Arsenic	5	mg/kg	J-	5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Cadmium	2	mg/kg		1		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Copper	32	mg/kg		5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Iron	13000	mg/kg		5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Lead	19	mg/kg	J-	5		SW6010B	10/17/12 14:41 / sld	10/10/12 14:57	ICP2-HE_121017B : 22		18328
Manganese	909	mg/kg	J-	5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328
Zinc	609	mg/kg	J-	5		SW6010B	10/16/12 19:32 / sld	10/10/12 14:57	ICP2-HE_121016D : 72		18328

JAM
1-24-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-03
Lab ID: H12100097-008
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 09:03 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	5440	mg/kg		5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Arsenic	7	mg/kg	J-	5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Cadmium	1	mg/kg		1		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Copper	27	mg/kg		5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Iron	12400	mg/kg		5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Lead	21	mg/kg	J-	5		SW6010B	10/17/12 14:45 / sld	10/10/12 14:57	ICP2-HE_121017B : 23		18328
Manganese	822	mg/kg	J-	5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328
Zinc	401	mg/kg	J-	5		SW6010B	10/16/12 19:36 / sld	10/10/12 14:57	ICP2-HE_121016D : 73		18328

JAN
1-24-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-01
Lab ID: H12100097-009
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 10:02 **DateReceived:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	13900	mg/kg		5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Arsenic	8	mg/kg	J-	5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Cadmium	ND	mg/kg		1		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Copper	51	mg/kg		5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Iron	14400	mg/kg		5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Lead	15	mg/kg	J-	5		SW6010B	10/17/12 14:48 / sld	10/10/12 14:57	ICP2-HE_121017B : 24		18328
Manganese	788	mg/kg	J-	5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328
Zinc	61	mg/kg	J-	5		SW6010B	10/16/12 19:39 / sld	10/10/12 14:57	ICP2-HE_121016D : 74		18328

JAM
1-24-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-02
Lab ID: H12100097-010
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 11:20 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	2610	mg/kg		5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Arsenic	ND	mg/kg	UJ	5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Cadmium	ND	mg/kg		1		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Copper	27	mg/kg		5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Iron	1800	mg/kg		5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Lead	ND	mg/kg	UJ	5		SW6010B	10/17/12 14:52 / sld	10/10/12 14:57	ICP2-HE_121017B : 25		18328
Manganese	14	mg/kg	J-	5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328
Zinc	11	mg/kg	J-	5		SW6010B	10/16/12 19:43 / sld	10/10/12 14:57	ICP2-HE_121016D : 75		18328

JAN
1-24-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-SD-05
Lab ID: H12100097-011
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 12:35 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6030	mg/kg		5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Arsenic	6	mg/kg	J -	5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Cadmium	ND	mg/kg		1		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Copper	29	mg/kg		5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Iron	16600	mg/kg		5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Lead	7	mg/kg	J -	5		SW6010B	10/17/12 14:56 / sld	10/10/12 14:57	ICP2-HE_121017B : 26		18328
Manganese	266	mg/kg	J -	5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328
Zinc	39	mg/kg	J -	5		SW6010B	10/16/12 19:47 / sld	10/10/12 14:57	ICP2-HE_121016D : 76		18328

JAN
1-24-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-06
Lab ID: H12100097-012
Matrix: Aqueous

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 10:18 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.	J- H	0.1		A4500-H B	10/04/12 10:52 / cmm		PHSC_101-H_121004A : 35		R83422
Conductivity @ 25 C	257	umhos/cm		1		A2510 B	10/04/12 10:52 / cmm		PHSC_101-H_121004A : 36		R83422
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/04/12 15:48 / cmm	10/04/12 14:25 -124 (14410200)_121004A : 17			18263
Solids, Total Dissolved TDS @ 180 C	138	mg/L		10		A2540 C	10/04/12 15:59 / cmm		-124 (14410200)_121004B : 11		TDS121004A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	10/04/12 18:40 / cmm		MAN-TECH_121004B : 46		R83460
Bicarbonate as HCO3	140	mg/L		4		A2320 B	10/04/12 18:40 / cmm		MAN-TECH_121004B : 46		R83460
Carbonate as CO3	ND	mg/L		4		A2320 B	10/04/12 18:40 / cmm		MAN-TECH_121004B : 46		R83460
Chloride	5	mg/L		1		E300.0	10/05/12 01:33 / cmm		IC102-H_121004A : 50		R83467
Sulfate	2	mg/L		1		E300.0	10/05/12 01:33 / cmm		IC102-H_121004A : 50		R83467
Hardness as CaCO3	120	mg/L		1		A2340 B	10/04/12 11:24 / abb		CALC_121005A : 207		R83473
METALS, DISSOLVED											
Aluminum	0.06	mg/L		0.03		E200.7	10/05/12 17:08 / sld		ICP2-HE_121005A : 108		R83483
Calcium	32	mg/L		1		E200.7	10/04/12 11:24 / sld		ICP2-HE_121004A : 28		R83458
Magnesium	10	mg/L		1		E200.7	10/04/12 11:24 / sld		ICP2-HE_121004A : 28		R83458
Potassium	7	mg/L		1		E200.7	10/04/12 11:24 / sld		ICP2-HE_121004A : 28		R83458
Sodium	2	mg/L		1		E200.7	10/04/12 11:24 / sld		ICP2-HE_121004A : 28		R83458
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Cadmium	ND	mg/L		0.00008		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Copper	0.002	mg/L		0.001		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Iron	0.16	mg/L		0.03		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Lead	ND	mg/L		0.0005		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Manganese	0.013	mg/L		0.005		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256
Zinc	ND	mg/L		0.01		E200.8	10/11/12 20:34 / dck	10/04/12 08:54	ICPMS204-B_121010C : 380		18256

JAN 1-24-13

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-06
Lab ID: H12100097-013
Matrix: Sediment

Project: Section 35 Surface Water/Sediment
Collection Date: 10/03/12 10:18 **Date Received:** 10/03/12
Report Date: 10/25/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	13300	mg/kg		5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Arsenic	9	mg/kg	J -	5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Cadmium	ND	mg/kg		1		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Copper	54	mg/kg		5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Iron	14700	mg/kg		5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Lead	15	mg/kg	J -	5		SW6010B	10/17/12 14:59 / sld	10/10/12 14:57	ICP2-HE_121017B : 27		18328
Manganese	882	mg/kg	J -	5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328
Zinc	62	mg/kg	J -	5		SW6010B	10/16/12 19:50 / sld	10/10/12 14:57	ICP2-HE_121016D : 77		18328

JAN
1-24-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Attachment B: Chain of Custody Forms and
Sample Receipt Checklist**



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.

Workorder Receipt Checklist

MT DEQ-Site Response

H12100097

Login completed by: Wanda Johnson

Date Received: 10/3/2012

Reviewed by: BL2000\sdull

Received by: TLL

Reviewed Date: 10/12/2012

Carrier Hand Del
name:

- | | | | |
|---|---|--|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Temp Blank received? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | Not Applicable <input type="checkbox"/> |
| Container/Temp Blank temperature: | 2.4°C On Ice - From Field | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

None



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: MDEQ	Project Name, PWS, Permit, Etc. Section 35 Surface Water Treatment	Sample Origin State: MD	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: See Quote H-645	Contact Name: Shellicha Land	Phone/Fax: 841-5033	Email: shlandest-gov
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order: 10761

Special Report/Formats: <input type="checkbox"/> DW <input type="checkbox"/> EDD/EDT (Electronic Data) <input type="checkbox"/> POTW/WWTP Format: _____ <input type="checkbox"/> State: _____ <input type="checkbox"/> LEVEL IV <input type="checkbox"/> Other: _____ <input type="checkbox"/> NELAC	Number of Containers Sample Type: <input type="checkbox"/> A <input type="checkbox"/> W <input type="checkbox"/> S <input type="checkbox"/> B <input type="checkbox"/> O <input type="checkbox"/> DW <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Solids/Solids <input type="checkbox"/> Vegetation <input type="checkbox"/> Bioassay <input type="checkbox"/> Other <input type="checkbox"/> DW - Drinking Water	ANALYSIS REQUESTED												Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page Comments:	Shipped by: Hand
		SEE ATTACHED													Cooler ID(s): Y

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED												Standard Turnaround (TAT)	R U S H	Receipt Temp	On Ice:	Custody Seal	Intact	Signature Match		
1 535-SW-02	10/3/12	0745	W																	Y N	Y N	Y N	Y N	
2 535-SW-04		0821																		Y N	Y N	Y N	Y N	
3 535-SW-03		0903																		Y N	Y N	Y N	Y N	
4 535-SW-01		1002																		Y N	Y N	Y N	Y N	
5 535-SW-02		1120																		Y N	Y N	Y N	Y N	
6 535-SW-05		1235	W																	Y N	Y N	Y N	Y N	
7 535-SW-04		0821	S																	Y N	Y N	Y N	Y N	
8 535-SW-03		0903																		Y N	Y N	Y N	Y N	
9 535-SW-01		1002																		Y N	Y N	Y N	Y N	
10 535-SW-02	10/3/12	1120	S																	Y N	Y N	Y N	Y N	

Custody Record MUST be Signed	Relinquished by (print): Alan Dresbach	Date/Time: 10/3/12 06:13	Signature: <i>[Signature]</i>	Received by (print):	Date/Time:	Signature:
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal: Return to Client	Lab Disposal:	Received by Laboratory: Tracy Lewis	Date/Time: 10/3/12 16:13	Signature: <i>[Signature]</i>	

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

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Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: <u>MDEQ</u>	Project Name, PWS, Permit, Etc. <u>Section 35 Surface Water/Sediment</u>	Sample Origin State: <u>MT</u>	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: <u>Sac Quete H-645</u>	Contact Name: <u>Shelley Howland</u>	Phone/Fax: <u>841-5033</u>	Email: <u>shlandont.gov</u>
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Sampler: (Please Print) <u>A. Drews Loh</u> <u>M. Towler</u>
			Quote/Bottle Order: <u>10761</u>

Special Report/Formats: <input type="checkbox"/> DW <input type="checkbox"/> POTW/WWTP <input type="checkbox"/> State: _____ <input type="checkbox"/> Other: _____			<input type="checkbox"/> EDD/EDT (Electronic Data) Format: _____ <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC			Number of Containers Sample Type: A W S V B O D W Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water	ANALYSIS REQUESTED				SEE ATTACHED Standard Turnaround (TAT) R U S H	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: <u>Hand</u>																																																																																																																																													
<table border="1"> <thead> <tr> <th>SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)</th> <th>Collection Date</th> <th>Collection Time</th> <th>MATRIX</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Comments:</th> <th>Receipt Temp <u>2.4 °C</u></th> </tr> </thead> <tbody> <tr> <td><u>535-50-05</u></td> <td><u>10/3/12</u></td> <td><u>1205</u></td> <td><u>S</u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><u>Y</u></td> </tr> <tr> <td><u>535-5W-06</u></td> <td><u>10/3/12</u></td> <td><u>1018</u></td> <td><u>W</u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><u>Y</u> <u>N</u></td> </tr> <tr> <td><u>535-50-06</u></td> <td><u>10/3/12</u></td> <td><u>1018</u></td> <td><u>S</u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><u>Y</u> <u>N</u></td> </tr> <tr> <td></td> <td><u>Y</u> <u>N</u></td> </tr> <tr> <td></td> <td><u>Y</u> <u>N</u></td> </tr> <tr> <td></td> <td><u>Y</u> <u>N</u></td> </tr> <tr> <td></td> <td><u>Y</u> <u>N</u></td> </tr> <tr> <td></td> <td><u>Y</u> <u>N</u></td> </tr> <tr> <td></td> <td><u>Y</u> <u>N</u></td> </tr> </tbody> </table>			SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time		MATRIX										Comments:	Receipt Temp <u>2.4 °C</u>	<u>535-50-05</u>	<u>10/3/12</u>	<u>1205</u>	<u>S</u>										<u>Y</u>	<u>535-5W-06</u>	<u>10/3/12</u>	<u>1018</u>	<u>W</u>										<u>Y</u> <u>N</u>	<u>535-50-06</u>	<u>10/3/12</u>	<u>1018</u>	<u>S</u>										<u>Y</u> <u>N</u>														<u>Y</u> <u>N</u>														<u>Y</u> <u>N</u>														<u>Y</u> <u>N</u>														<u>Y</u> <u>N</u>														<u>Y</u> <u>N</u>														<u>Y</u> <u>N</u>	Custody Record MUST be Signed			Received by (print): <u>Alan Dressbach</u>			Date/Time: <u>10/3/12 16:13</u>			Signature: <u>[Signature]</u>
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Sample Disposal: Return to Client: _____ Lab Disposal: _____			Received by (print): <u>Tracy Lovad</u>			Date/Time: <u>10/3/12 16:13</u>			Signature: <u>[Signature]</u>																																																																																																																																																	

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UBMC Section 35 Ground Water

SDG#: H12100142

Number of Samples: (8)

Sample Matrix: (8) Ground water

Applicable Analytes: pH, Conductivity, TSS, TDS, Alkalinity (Total, Bicarbonate, and Carbonate), Anions: (Chloride and Sulfate), Hardness, Dissolved Metals (Al, As, Cd, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, and Zn)

Reporting Tier: 3

Applicable TOS#: N/A

Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring Section 35, Lewis and Clark County, Montana; Portage Inc., 2012



Validator

Date Completed:02/15/13;05/09/13



Portage Review: _____

Date Completed:02/15/13;05/09/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Section 35 Ground Water is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Section 35 Ground Water sample results were received by Portage, Inc. in October 2012. The laboratory analytical request provided for a summary data package attached for the pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, and dissolved metals (Al, As, Cd, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, and Zn). The samples were analyzed in accordance with Standard Methods 4500 H-B, 2320B, 2510B, 2540D, 2540C, and 2340B, and USEPA Methods 300.0, 200.7, and 200.8. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Section 35 Ground Water Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-MW-08	H1200142-001	Groundwater	Dissolved Metals, Alkalinity, Conductivity, Hardness, Anions, pH, TSS, TDS	10/05/12	10/08/12
S35-MW-09	H1200142-002	Groundwater	Dissolved Metals, Alkalinity, Conductivity, Hardness, Anions, pH, TSS, TDS	10/05/12	10/08/12
S35-MW-01	H1200142-003	Groundwater	Dissolved Metals, Alkalinity, Conductivity, Hardness, Anions, pH, TSS, TDS	10/05/12	10/08/12
S35-MW-03	H1200142-004	Groundwater	Dissolved Metals, Alkalinity, Conductivity, Hardness, Anions, pH, TSS, TDS	10/05/12	10/08/12
S35-MW-04	H1200142-005	Groundwater	Dissolved Metals, Alkalinity, Conductivity, Hardness, Anions, pH, TSS, TDS	10/05/12	10/08/12
S35-MW-07	H1200142-006	Groundwater	Dissolved Metals, Alkalinity, Conductivity, Hardness, Anions, pH, TSS, TDS	10/05/12	10/08/12
S35-MW-02	H1200142-007	Groundwater	Dissolved Metals, Alkalinity, Conductivity, Hardness, Anions, pH, TSS, TDS	10/05/12	10/08/12
S35-MW-06	H1200142-008	Groundwater	Dissolved Metals, Alkalinity, Conductivity, Hardness, Anions, pH, TSS, TDS	10/05/12	10/08/12

LABORATORY CASE NARRATIVE:

The laboratory case narrative did not note any non conformance issues with the analytical data.

ANALYTICAL HOLDING TIMES:

The water samples associated with this SDG were collected on 10/05/12. The conductivity, TSS, and TDS results were analyzed on 10/08/12 and 10/09/12 within the 28-day holding time for conductivity, and the 7-day holding time for TSS and TDS. The chloride and sulfate results were analyzed on 10/11/12 within the 28-day holding time. The alkalinity results were analyzed on 10/09/12 within the 14-day holding time. The hardness results were analyzed on 10/16/12 within the 180-day holding time. The dissolved metals were analyzed 10/09/12 and 10/12/12 within the 180-day holding time for the ICP Metals.

The pH samples were collected on 10/05/12, received on 10/08/12, and analyzed on 10/08/12. In the professional judgment of the validator, all pH results have been qualified with a "J-" validation flag as prescribed by the USEPA Functional Guidelines and as the samples were analyzed outside the 24-hour holding time.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPARATION BLANKS (PB):

For all analyses, blank results were analyzed at a proper frequency of 1 blank per 20 samples in the analytical batch.

The PB results were non-detect at level less than their respective MDLs and no qualification is warranted.

Field blank, trip blank, and equipment rinsate results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD):

The chloride (111% and 111%) MS and MSD results were outside the 90-110% recovery criteria outlined in USEPA Method 300.0. However, no qualification is warranted due to the high MS result as all chloride results were non-detect.

The remaining MS/MSD recovery and all RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

All LDS and field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD
pH	N/A	0	0
Conductivity	N/A	0.3	-0.61538
TSS	N/A	5.4	5.780347
TDS	N/A	0.4	3.814714
Alkalinity	N/A	0.4	0
Bicarbonate	N/A	0	0
Carbonate	N/A	2.9	0
Chloride	0.9	N/A	0
Sulfate	0.1	N/A	0
Hardness	N/A	N/A	0
Al	0.7	N/A	0
Ca	1.9	N/A	0
Mg	2.6	N/A	0
K	4.1	N/A	-2.29885
Na	4.5	N/A	0
As	1.2	N/A	0
Cd	1.7	N/A	0
Cu	0.2	N/A	0
Fe	1.7	N/A	0
Pb	0.6	N/A	0
Mn	2.5	N/A	0
Zn	4.8	N/A	0

*RPD greater than 20%, however, CRDL criteria not met, Dup ok

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

One cooler was received by Energy Labs on 10/08/12 at 0.2°C. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

REPORTING LIMITS:

The reporting limits presented by the laboratory were acceptable and met the screening level requirements set forth by the project QAPjP and SAP.

OVERALL ASSESSMENT OF DATA:

There were eight (8) ground water samples in SDG# H12100142. Eight (8) field samples were analyzed for pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, and dissolved metals as outlined in the project QAPP.

All pH results have been qualified with a "J-" validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

The remaining field sample data points have been assessed and remain unqualified.

All field sample data points presented in this SDG are valid and complete.

All samples were received by the lab in good condition. Detection limits, analytical methods, detection limits, and reporting were all within the project requirements.

Attachment A: Laboratory Report Forms



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Gillette, WY 888-886-7175 • Rapid City, SD 888-672-1225 • College Station, TX 888-690-2218

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-08
Lab ID: H12100142-001
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 08:52 **Date Received:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.6	s.u.	J- H	0.1		A4500-H B	10/08/12 13:57 / cmm		PHSC_101-H_121008A : 29		R83496
Conductivity @ 25 C	2	umhos/cm		1		A2510 B	10/08/12 13:57 / cmm		PHSC_101-H_121008A : 30		R83496
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/08/12 14:36 / cmm	10/08/12 14:26 J-124 (14410200)_121008A : 9			18299
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	10/08/12 14:43 / cmm		J-124 (14410200)_121008B : 3		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	10/09/12 14:58 / cmm		MAN-TECH_121009B : 18		R83569
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	10/09/12 14:58 / cmm		MAN-TECH_121009B : 18		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 14:58 / cmm		MAN-TECH_121009B : 18		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 21:00 / cmm		IC102-H_121011B : 41		R83652
Sulfate	ND	mg/L		1		E300.0	10/11/12 21:00 / cmm		IC102-H_121011B : 41		R83652
Hardness as CaCO3	ND	mg/L		1		A2340 B	10/16/12 12:42 / sld		WATERCALC_121016B : 1		R83713
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/09/12 16:43 / sld		ICP2-HE_121009B : 25		R83570
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Calcium	ND	mg/L		1		E200.7	10/09/12 16:43 / sld		ICP2-HE_121009B : 25		R83570
Copper	ND	mg/L		0.001		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Magnesium	ND	mg/L		1		E200.7	10/09/12 16:43 / sld		ICP2-HE_121009B : 25		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638
Potassium	ND	mg/L		1		E200.7	10/09/12 16:43 / sld		ICP2-HE_121009B : 25		R83570
Sodium	ND	mg/L		1		E200.7	10/09/12 16:43 / sld		ICP2-HE_121009B : 25		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 05:11 / dck		ICPMS204-B_121010C : 495		R83638

JAM
2-19-13

Report RL - Analyte reporting limit.
Definitions: H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-09
Lab ID: H12100142-002
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 09:03 **Date Received:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.9	s.u.	J-H	0.1		A4500-H B	10/08/12 13:59 / cmm		PHSC_101-H_121008A : 31		R83496
Conductivity @ 25 C	4	umhos/cm		1		A2510 B	10/08/12 13:59 / cmm		PHSC_101-H_121008A : 32		R83496
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/08/12 14:36 / cmm	10/08/12 14:26-124 (14410200)_121008A : 11			18299
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	10/08/12 14:44 / cmm		J-124 (14410200)_121008B : 5		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	10/09/12 15:02 / cmm		MAN-TECH_121009B : 20		R83569
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	10/09/12 15:02 / cmm		MAN-TECH_121009B : 20		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:02 / cmm		MAN-TECH_121009B : 20		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 21:13 / cmm		IC102-H_121011B : 42		R83652
Sulfate	ND	mg/L		1		E300.0	10/11/12 21:13 / cmm		IC102-H_121011B : 42		R83652
Hardness as CaCO3	ND	mg/L		1		A2340 B	10/16/12 12:42 / sld		WATERCALC_121016B : 2		R83713
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/09/12 16:58 / sld		ICP2-HE_121009B : 29		R83570
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638
Cadmium	0.00008	mg/L		0.00008		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638
Calcium	ND	mg/L		1		E200.7	10/09/12 16:58 / sld		ICP2-HE_121009B : 29		R83570
Copper	0.015	mg/L		0.001		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638
Magnesium	ND	mg/L		1		E200.7	10/09/12 16:58 / sld		ICP2-HE_121009B : 29		R83570
Manganese	0.007	mg/L		0.005		E200.8	10/15/12 23:15 / dck		ICPMS204-B_121015A : 111		R83694
Potassium	ND	mg/L		1		E200.7	10/09/12 16:58 / sld		ICP2-HE_121009B : 29		R83570
Sodium	ND	mg/L		1		E200.7	10/09/12 16:58 / sld		ICP2-HE_121009B : 29		R83570
Zinc	0.03	mg/L		0.01		E200.8	10/12/12 05:16 / dck		ICPMS204-B_121010C : 496		R83638

JAN
2-19-13

Report RL - Analyte reporting limit.
Definitions: H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-01
Lab ID: H12100142-003
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 10:38 **Date Received:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	J- H	0.1		A4500-H B	10/08/12 14:02 / cmm		PHSC_101-H_121008A : 33		R83496
Conductivity @ 25 C	294	umhos/cm		1		A2510 B	10/08/12 14:02 / cmm		PHSC_101-H_121008A : 34		R83496
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	10/08/12 14:36 / cmm	10/08/12 14:26 -124 (14410200)_121008A : 12			18299
Solids, Total Dissolved TDS @ 180 C	157	mg/L		10		A2540 C	10/08/12 14:44 / cmm		J-124 (14410200)_121008B : 7		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	10/09/12 15:09 / cmm		MAN-TECH_121009B : 22		R83569
Bicarbonate as HCO3	190	mg/L		4		A2320 B	10/09/12 15:09 / cmm		MAN-TECH_121009B : 22		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:09 / cmm		MAN-TECH_121009B : 22		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 21:26 / cmm		IC102-H_121011B : 43		R83652
Sulfate	6	mg/L		1		E300.0	10/11/12 21:26 / cmm		IC102-H_121011B : 43		R83652
Hardness as CaCO3	153	mg/L		1		A2340 B	10/09/12 17:02 / abb		CALC_121013A : 63		R83661
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/09/12 17:02 / sld		ICP2-HE_121009B : 30		R83570
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Calcium	32	mg/L		1		E200.7	10/09/12 17:02 / sld		ICP2-HE_121009B : 30		R83570
Copper	ND	mg/L		0.001		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Magnesium	18	mg/L		1		E200.7	10/09/12 17:02 / sld		ICP2-HE_121009B : 30		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638
Potassium	1	mg/L		1		E200.7	10/09/12 17:02 / sld		ICP2-HE_121009B : 30		R83570
Sodium	2	mg/L		1		E200.7	10/09/12 17:02 / sld		ICP2-HE_121009B : 30		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 05:21 / dck		ICPMS204-B_121010C : 497		R83638

JAN
2-19-13

Report RL - Analyte reporting limit.
Definitions: H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-03
Lab ID: H12100142-004
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 11:25 **Date Received:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	J- H	0.1		A4500-H B	10/08/12 14:05 / cmm		PHSC_101-H_121008A : 35		R83496
Conductivity @ 25 C	324	umhos/cm		1		A2510 B	10/08/12 14:05 / cmm		PHSC_101-H_121008A : 36		R83496
Solids, Total Suspended TSS @ 105 C	89	mg/L		10		A2540 D	10/08/12 14:37 / cmm	10/08/12 14:26-124 (14410200)_121008A : 13			18299
Solids, Total Dissolved TDS @ 180 C	187	mg/L		10		A2540 C	10/08/12 14:44 / cmm		J-124 (14410200)_121008B : 8		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	170	mg/L		4		A2320 B	10/09/12 15:16 / cmm		MAN-TECH_121009B : 24		R83569
Bicarbonate as HCO3	210	mg/L		4		A2320 B	10/09/12 15:16 / cmm		MAN-TECH_121009B : 24		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:16 / cmm		MAN-TECH_121009B : 24		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 21:38 / cmm		IC102-H_121011B : 44		R83652
Sulfate	4	mg/L		1		E300.0	10/11/12 21:38 / cmm		IC102-H_121011B : 44		R83652
Hardness as CaCO3	151	mg/L		1		A2340 B	10/09/12 17:13 / abb		CALC_121013A : 75		R83661
METALS, DISSOLVED											
Aluminum	0.06	mg/L		0.03		E200.8	10/16/12 16:12 / dck		ICPMS204-B_121016A : 63		R83744
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Calcium	43	mg/L		1		E200.7	10/09/12 17:13 / sld		ICP2-HE_121009B : 33		R83570
Copper	ND	mg/L		0.001		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Magnesium	10	mg/L		1		E200.7	10/09/12 17:13 / sld		ICP2-HE_121009B : 33		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638
Potassium	2	mg/L		1		E200.7	10/09/12 17:13 / sld		ICP2-HE_121009B : 33		R83570
Sodium	11	mg/L		1		E200.7	10/09/12 17:13 / sld		ICP2-HE_121009B : 33		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 05:25 / dck		ICPMS204-B_121010C : 498		R83638

JAN
2-19-13

Report RL - Analyte reporting limit.
Definitions: H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-04
Lab ID: H12100142-005
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 12:18 **Date Received:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	J-H	0.1		A4500-H B	10/08/12 14:07 / cmm		PHSC_101-H_121008A : 37		R83496
Conductivity @ 25 C	333	umhos/cm		1		A2510 B	10/08/12 14:07 / cmm		PHSC_101-H_121008A : 38		R83496
Solids, Total Suspended TSS @ 105 C	30	mg/L		10		A2540 D	10/08/12 14:37 / cmm	10/08/12 14:26-124 (14410200)_121008A : 14			18299
Solids, Total Dissolved TDS @ 180 C	192	mg/L		10		A2540 C	10/08/12 14:44 / cmm		J-124 (14410200)_121008B : 9		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	10/09/12 15:24 / cmm		MAN-TECH_121009B : 26		R83569
Bicarbonate as HCO3	220	mg/L		4		A2320 B	10/09/12 15:24 / cmm		MAN-TECH_121009B : 26		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:24 / cmm		MAN-TECH_121009B : 26		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 22:16 / cmm		IC102-H_121011B : 47		R83652
Sulfate	2	mg/L		1		E300.0	10/11/12 22:16 / cmm		IC102-H_121011B : 47		R83652
Hardness as CaCO3	171	mg/L		1		A2340 B	10/09/12 17:17 / abb		CALC_121013A : 87		R83661
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	10/09/12 17:17 / sld		ICP2-HE_121009B : 34		R83570
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Calcium	51	mg/L		1		E200.7	10/09/12 17:17 / sld		ICP2-HE_121009B : 34		R83570
Copper	ND	mg/L		0.001		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Magnesium	11	mg/L		1		E200.7	10/09/12 17:17 / sld		ICP2-HE_121009B : 34		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638
Potassium	3	mg/L		1		E200.7	10/09/12 17:17 / sld		ICP2-HE_121009B : 34		R83570
Sodium	2	mg/L		1		E200.7	10/09/12 17:17 / sld		ICP2-HE_121009B : 34		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 05:57 / dck		ICPMS204-B_121010C : 505		R83638

JAN
2-19-13

Report RL - Analyte reporting limit.
Definitions: H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID S35-MW-07
Lab ID: H12100142-006
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 11:41 **Date Received:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	J - H	0.1		A4500-H B	10/08/12 14:10 / cmm		PHSC_101-H_121008A : 39		R83496
Conductivity @ 25 C	326	umhos/cm		1		A2510 B	10/08/12 14:10 / cmm		PHSC_101-H_121008A : 40		R83496
Solids, Total Suspended TSS @ 105 C	84	mg/L		10		A2540 D	10/08/12 14:37 / cmm	10/08/12 14:26 -124 (14410200)_121008A : 15			18299
Solids, Total Dissolved TDS @ 180 C	180	mg/L		10		A2540 C	10/08/12 14:45 / cmm	-124 (14410200)_121008B : 10			TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	170	mg/L		4		A2320 B	10/09/12 15:31 / cmm		MAN-TECH_121009B : 28		R83569
Bicarbonate as HCO3	210	mg/L		4		A2320 B	10/09/12 15:31 / cmm		MAN-TECH_121009B : 28		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:31 / cmm		MAN-TECH_121009B : 28		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 22:54 / cmm		IC102-H_121011B : 50		R83652
Sulfate	4	mg/L		1		E300.0	10/11/12 22:54 / cmm		IC102-H_121011B : 50		R83652
Hardness as CaCO3	151	mg/L		1		A2340 B	10/09/12 17:20 / abb		CALC_121013A : 99		R83661
METALS, DISSOLVED											
Aluminum	0.06	mg/L		0.03		E200.8	10/16/12 16:47 / dck		ICPMS204-B_121016A : 71		R83744
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Calcium	44	mg/L		1		E200.7	10/09/12 17:20 / sld		ICP2-HE_121009B : 35		R83570
Copper	ND	mg/L		0.001		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Magnesium	10	mg/L		1		E200.7	10/09/12 17:20 / sld		ICP2-HE_121009B : 35		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638
Potassium	2	mg/L		1		E200.7	10/09/12 17:20 / sld		ICP2-HE_121009B : 35		R83570
Sodium	11	mg/L		1		E200.7	10/09/12 17:20 / sld		ICP2-HE_121009B : 35		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 06:01 / dck		ICPMS204-B_121010C : 506		R83638

JAH
2-19-13

Report RL - Analyte reporting limit.
Definitions: H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-02
Lab ID: H12100142-007
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 14:30 **Date Received:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	J- H	0.1		A4500-H B	10/08/12 14:12 / cmm		PHSC_101-H_121008A : 41		R83496
Conductivity @ 25 C	369	umhos/cm		1		A2510 B	10/08/12 14:12 / cmm		PHSC_101-H_121008A : 42		R83496
Solids, Total Suspended TSS @ 105 C	64	mg/L		10		A2540 D	10/08/12 14:37 / cmm	10/08/12 14:26-124 (14410200)_121008A : 16			18299
Solids, Total Dissolved TDS @ 180 C	208	mg/L		10		A2540 C	10/08/12 14:45 / cmm		-124 (14410200)_121008B : 11		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	10/09/12 15:38 / cmm		MAN-TECH_121009B : 30		R83569
Bicarbonate as HCO3	240	mg/L		4		A2320 B	10/09/12 15:38 / cmm		MAN-TECH_121009B : 30		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:38 / cmm		MAN-TECH_121009B : 30		R83569
Chloride	1	mg/L		1		E300.0	10/11/12 23:06 / cmm		IC102-H_121011B : 51		R83652
Sulfate	7	mg/L		1		E300.0	10/11/12 23:06 / cmm		IC102-H_121011B : 51		R83652
Hardness as CaCO3	190	mg/L		1		A2340 B	10/09/12 17:24 / abb		CALC_121013A : 111		R83661
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	10/16/12 16:51 / dck		ICPMS204-B_121016A : 72		R83744
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Cadmium	0.00015	mg/L		0.00008		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Calcium	53	mg/L		1		E200.7	10/09/12 17:24 / sld		ICP2-HE_121009B : 36		R83570
Copper	0.001	mg/L		0.001		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Iron	ND	mg/L		0.05		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Magnesium	14	mg/L		1		E200.7	10/09/12 17:24 / sld		ICP2-HE_121009B : 36		R83570
Manganese	0.009	mg/L		0.005		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638
Potassium	1	mg/L		1		E200.7	10/09/12 17:24 / sld		ICP2-HE_121009B : 36		R83570
Sodium	4	mg/L		1		E200.7	10/09/12 17:24 / sld		ICP2-HE_121009B : 36		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 06:06 / dck		ICPMS204-B_121010C : 507		R83638

JAN
2-19-13

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-06
Lab ID: H12100142-008
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 10/05/12 16:34 **Date Received:** 10/08/12
Report Date: 10/24/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	I H	0.1		A4500-H B	10/08/12 14:15 / cmm		PHSC_101-H_121008A : 43		R83496
Conductivity @ 25 C	368	umhos/cm		1		A2510 B	10/08/12 14:15 / cmm		PHSC_101-H_121008A : 44		R83496
Solids, Total Suspended TSS @ 105 C	422	mg/L		10		A2540 D	10/08/12 14:38 / cmm	10/08/12 14:26 -124 (14410200)_121008A : 17			18299
Solids, Total Dissolved TDS @ 180 C	189	mg/L		10		A2540 C	10/08/12 14:45 / cmm		-124 (14410200)_121008B : 12		TDS121008A
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	10/09/12 15:53 / cmm		MAN-TECH_121009B : 34		R83569
Bicarbonate as HCO3	250	mg/L		4		A2320 B	10/09/12 15:53 / cmm		MAN-TECH_121009B : 34		R83569
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/12 15:53 / cmm		MAN-TECH_121009B : 34		R83569
Chloride	ND	mg/L		1		E300.0	10/11/12 23:19 / cmm		IC102-H_121011B : 52		R83652
Sulfate	ND	mg/L		1		E300.0	10/11/12 23:19 / cmm		IC102-H_121011B : 52		R83652
Hardness as CaCO3	186	mg/L		1		A2340 B	10/09/12 17:28 / abb		CALC_121013A : 123		R83661
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	10/16/12 16:56 / dck		ICPMS204-B_121016A : 73		R83744
Arsenic	ND	mg/L		0.003		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638
Cadmium	ND	mg/L		0.00008		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638
Calcium	49	mg/L		1		E200.7	10/09/12 17:28 / sld		ICP2-HE_121009B : 37		R83570
Copper	ND	mg/L		0.001		E200.8	10/16/12 00:01 / dck		ICPMS204-B_121015A : 121		R83694
Iron	ND	mg/L		0.05		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638
Lead	ND	mg/L		0.0005		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638
Magnesium	16	mg/L		1		E200.7	10/09/12 17:28 / sld		ICP2-HE_121009B : 37		R83570
Manganese	ND	mg/L		0.005		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638
Potassium	2	mg/L		1		E200.7	10/09/12 17:28 / sld		ICP2-HE_121009B : 37		R83570
Sodium	5	mg/L		1		E200.7	10/09/12 17:28 / sld		ICP2-HE_121009B : 37		R83570
Zinc	ND	mg/L		0.01		E200.8	10/12/12 06:10 / dck		ICPMS204-B_121010C : 508		R83638

JAN
2-19-13

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.

**Attachment B: Chain of Custody Forms and
Sample Receipt Checklist**

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.

Workorder Receipt Checklist

MT DEQ-Site Response

H12100142

Login completed by: Wanda Johnson

Date Received: 10/8/2012

Reviewed by: BL2000\sdull

Received by: wjj

Reviewed Date: 10/15/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	0.2°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Contact and Corrective Action Comments:

None



Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: **MDFEQ**
 Report Mail Address: **Joe Quate H-645**
 Invoice Address: **Joe Quate H-645**

Project Name, PWS, Permit, Etc.: **Section 35 Groundwater**
 Contact Name: **Shellic Hadden 841-5033 shadden@mt.gov**
 Phone/Fax: _____
 Invoice Contact & Phone: _____

Sample Origin: **MT**
 State: **MT**
 Email: _____
 Purchase Order: **10761**

EPA/State Compliance: Yes No
 Sampler: (Please Print) **A. Dresbach**
 Quote/Bottle Order: _____

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED		Standard Turnaround (TAT)	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Comments:	Shipped by: Cooler ID(s):	Receipt Temp: °C	On Ice:	Custody Seal On Bottle On Cooler	Intact	Signature Match
				Number of Containers	Sample Type: AW S V B O DW Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water									
1 535-MW-08	10/5/12	0952	W			SEE ATTACHED								
2 535-MW-09		0903												
3 535-MW-01		1038												
4 535-MW-03		1125												
5 535-MW-04		1218												
6 535-MW-07		1141												
7 535-MW-02		1430												
8 535-MW-06	10/5/12	1634	W											
9														
10														

Received by (print): **Alan Dresbach** Date/Time: **10/8/12 10:31**
 Signature: *[Signature]*

Received by (print): _____ Date/Time: _____
 Signature: _____

Received by Laboratory: **Wanderson** Date/Time: **10-8-12 10:34**
 Signature: *[Signature]*

Sample Disposal: _____ Return to Client: _____
 Lab Disposal: _____

Custody Record MUST be Signed

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

UBMC Section 35 Sediment

SDG#: H12120182

Number of Samples: 6

Sample Matrix: (6) Sediment

Applicable Analytes: Total Extractable Metals: (Al, As, Cd, Cu, Fe, Pb, Mn, and Zn)

Reporting Tier: 3

Applicable TOS#: N/A

Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring of Section 35, Lewis and Clark County, Montana; Portage Inc., 2012


Validator

Date Completed: 02/19/13;05/08/13


Portage Review: _____

Date Completed: 02/19/13;05/08/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Section 35 Sediment is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Section 35 sediment sample results were received by Portage, Inc. in December 2012. The laboratory analytical request provided for a summary data package attached for the total recoverable metals: (Al, As, Cd, Cu, Fe, Pb, Mn, and Zn). The samples were analyzed in accordance USEPA SW-846 Methods 3050B and 6010B. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Section 35 Sediment Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-SD-04	H12120182-001	Sediment	Total Extractable Metals	12/11/12	12/11/12
S35-SD-03	H12120182-002	Sediment	Total Extractable Metals	12/11/12	12/11/12
S35-SD-01	H12120182-003	Sediment	Total Extractable Metals	12/11/12	12/11/12
S35-SD-06	H12120182-004	Sediment	Total Extractable Metals	12/11/12	12/11/12
S35-SD-02	H12120182-005	Sediment	Total Extractable Metals	12/11/12	12/11/12
S35-SD-05	H12120182-006	Sediment	Total Extractable Metals	12/11/12	12/11/12

LABORATORY CASE NARRATIVE:

The laboratory case narrative did not note any non conformance issues with the analytical data.

ANALYTICAL HOLDING TIMES:

The sediment samples associated with this SDG were collected on 12/11/12. The total extractable metals were analyzed 12/17/12 and 12/18/12 within the 180-day holding time for the ICP Metals.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPRATION BLANKS (PB):

For all analyses, blank results were analyzed at a proper frequency of 1 blank per 20 samples in the analytical batch.

The PB results were non-detect at level less than their respective MDLs and no qualification is warranted.

Field blank, trip blank, and equipment rinsate results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD):

The manganese (160% and 51%) sediment MS/MSD results and the zinc (128%) MS results were outside the 75-125% recovery criteria. The manganese (42%) MSD exhibited an RPD great than the 35% acceptance criteria. Qualification is as follows:

- The manganese sample results were qualified with a “J” validation flag due to high MS recovery, low MSD recovery, and sample results greater than the MDL.
- The zinc sediment samples results were qualified with a “J+” validation flag due to high MS recovery, poor duplicate precision, and sample results greater than the MDL.

The remaining MS/MSD recovery and remaining RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

All LDS and field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD
Al	8.4	N/A	9.022556
As	10	N/A	25
Cd	0.1	N/A	0
Cu	0.2	N/A	13.59223
Fe	0.5	N/A	5.263158
Pb	0.1	N/A	8
Mn	42	N/A	24.8062
Zn	15	N/A	7.751938

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

One cooler was received by Energy Labs on 12/11/12 at 0.4°C. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

REPORTING LIMITS:

The reporting limits presented by the laboratory were acceptable and met the screening level requirements set forth by the project QAPjP and SAP.

OVERALL ASSESSMENT OF DATA:

There were six (6) sediment field samples included in SDG# H12120182. Six (6) field samples were analyzed for total extractable metals as outlined in the project QAPP.

The manganese sample results have been qualified with a “J” validation flag to denote the reported results are estimates high MS recovery, low MSD recovery, and poor duplicate precision.

The zinc sample results have been qualified with a “J+” validation flag to denote the reported results are estimates with a high bias due to high MS recovery.

The remaining field sample data points have been assessed and remain unqualified.

All field sample data points presented in this SDG are valid and complete.

Attachment A: Laboratory Report Forms

**Attachment B: Chain of Custody Forms and
Sample Receipt Checklist**



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-04
Lab ID: H12120182-001
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 09:39 **Date Received:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	5600	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Arsenic	9	mg/kg		5		SW6010B	12/18/12 18:38 / sld	12/12/12 14:26	ICP2-HE_121218B : 71		18996
Cadmium	2	mg/kg		1		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Copper	44	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Iron	15700	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Lead	26	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Manganese	1720	mg/kg		5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996
Zinc	766	mg/kg	FF+	5		SW6010B	12/17/12 20:18 / sld	12/12/12 14:26	ICP2-HE_121217C : 72		18996

JAN
2-19-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-03
Lab ID: H12120182-002
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 10:29 Date Received: 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	5430	mg/kg		5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Arsenic	5	mg/kg		5		SW6010B	12/18/12 18:42 / sld	12/12/12 14:26	ICP2-HE_121218B : 72		18996
Cadmium	ND	mg/kg		1		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Copper	26	mg/kg		5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Iron	11300	mg/kg		5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Lead	20	mg/kg		5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Manganese	686	mg/kg	J	5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996
Zinc	263	mg/kg	J+	5		SW6010B	12/17/12 20:22 / sld	12/12/12 14:26	ICP2-HE_121217C : 73		18996

JAN
02-19-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-01
Lab ID: H12120182-003
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 11:29 **Date Received:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	13900	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Arsenic	9	mg/kg		5		SW6010B	12/18/12 18:45 / sld	12/12/12 14:26	ICP2-HE_121218B : 73		18996
Cadmium	ND	mg/kg		1		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Copper	55	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Iron	15600	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Lead	13	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Manganese	1450	mg/kg		5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996
Zinc	67	mg/kg	J J+	5		SW6010B	12/17/12 20:25 / sld	12/12/12 14:26	ICP2-HE_121217C : 74		18996

JAM
02-19-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-06
Lab ID: H12120182-004
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 11:41 **Date Received:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	12700	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Arsenic	7	mg/kg		5		SW6010B	12/18/12 18:49 / sld	12/12/12 14:26	ICP2-HE_121218B : 74		18996
Cadmium	ND	mg/kg		1		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Copper	48	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Iron	14800	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Lead	12	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Manganese	1130	mg/kg		5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996
Zinc	62	mg/kg	JJ+	5		SW6010B	12/17/12 20:29 / sld	12/12/12 14:26	ICP2-HE_121217C : 75		18996

JAN
02-19-13

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-02
Lab ID: H12120182-005
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 12:45 **Date Received:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	3640	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Arsenic	ND	mg/kg		5		SW6010B	12/18/12 18:53 / sld	12/12/12 14:26	ICP2-HE_121218B : 75		18996
Cadmium	ND	mg/kg		1		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Copper	36	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Iron	2370	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Lead	ND	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Manganese	21	mg/kg		5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996
Zinc	17	mg/kg	J J+	5		SW6010B	12/17/12 20:33 / sld	12/12/12 14:26	ICP2-HE_121217C : 76		18996

JAN
2-19-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SD-05
Lab ID: H12120182-006
Matrix: Sediment

Project: Section 35 Sediment
Collection Date: 12/11/12 13:49 **Date Received:** 12/11/12
Report Date: 12/21/12

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
3050 EXTRACTABLE METALS											
Aluminum	6230	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Arsenic	6	mg/kg		5		SW6010B	12/18/12 18:56 / sld	12/12/12 14:26	ICP2-HE_121218B : 76		18996
Cadmium	ND	mg/kg		1		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Copper	24	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Iron	13100	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Lead	9	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Manganese	202	mg/kg		5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996
Zinc	38	mg/kg	FF+	5		SW6010B	12/17/12 20:36 / sld	12/12/12 14:26	ICP2-HE_121217C : 77		18996

JAM
2-19-13

Report RL - Analyte reporting limit.
Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Attachment B: Chain of Custody Forms and
Sample Receipt Checklist**

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.

Workorder Receipt Checklist

MT DEQ-Site Response

H12120182

Login completed by: Wanda Johnson

Date Received: 12/11/2012

Reviewed by: BL2000\jweidemoyer

Received by: elm

Reviewed Date: 12/14/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	0.4°C From Field/On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

Contact and Corrective Action Comments:

None

UBMC Section 35 Surface Water

SDG#: H12120202

Number of Samples: 7

Sample Matrix: (7) Surface water

Applicable Analytes: pH, Conductivity, TSS, TDS, Alkalinity (Total, Bicarbonate, and Carbonate), Anions: (Chloride and Sulfate), Hardness, Dissolved Metals (Al, Ca, Mg, K, and Na), and Total Recoverable Metals: (As, Cd, Cu, Fe, Pb, Mn, and Zn)

Reporting Tier: 3

Applicable TOS#: N/A

Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring Section 35 Lewis and Clark County, Montana; Portage Inc., 2012

Validator 

Date Completed:02/20/13;05/09/13

Portage Review: 

Date Completed:02/20/13;05/09/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Section 35 Surface Water is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Section 35 Surface Water sample results were received by Portage, Inc. in December 2012. The laboratory analytical request provided for a summary data package attached for the pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, total recoverable metals (As, Cd, Cu, Fe, Pb, Mg, and Zn), and dissolved metals (Al, Ca, Mg, K, and Na). The samples were analyzed in accordance with Standard Methods 4500 H-B, 2320B, 2510B, 2540D, 2540C, and 2340B, and USEPA Methods 300.0, 200.7, and 200.8. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Surface Water Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-SW-07	H12120202-001	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	12/11/12	12/11/12
S35-SW-04	H12120202-002	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	12/11/12	12/11/12
S35-SW-03	H12120202-003	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	12/11/12	12/11/12
S35-SW-01	H12120202-004	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	12/11/12	12/11/12
S35-SW-06	H12120202-005	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	12/11/12	12/11/12
S35-SW-05	H12120202-006	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	12/11/12	12/11/12

Cross-Reference for UBMC Surface Water Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-SW-02	H12120202-007	Surface Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Total Metals, Dissolved Metals	12/11/12	12/11/12

LABORATORY CASE NARRATIVE:

The laboratory case narrative did not note any non conformance issues with the analytical data.

ANALYTICAL HOLDING TIMES:

The water samples associated with this SDG were collected on 12/11/12. The conductivity, TSS, and TDS results were analyzed on 12/12/12 and 12/13/12 within the 28-day holding time for conductivity, and the 7-day holding time for TSS and TDS. The chloride and sulfate results were analyzed on 12/13/12 within the 28-day holding time. The alkalinity results were analyzed on 12/13/12 within the 14-day holding time. The hardness results were analyzed on 12/13/12 within the 180-day holding time. The total recoverable and dissolved metals were analyzed 12/13/12 and 12/14/12 within the 180-day holding time for the ICP Metals.

The pH samples were collected on 12/11/12, received on 12/11/12, and analyzed on 12/12/12. In the professional judgment of the validator, all pH results have been qualified with a “J-” validation flag as prescribed by the USEPA Functional Guidelines and as the samples were analyzed outside the 24-hour holding time.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPARATION BLANKS (PB):

For all analyses, blank results were analyzed at a proper frequency of 1 blank per 20 samples in the analytical batch.

The PB results were non-detect at level less than their respective MDLs and no qualification is warranted.

Field blank, trip blank, and equipment rinsate results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD):

The chloride (89%) MS results were outside the 90-110% recovery criteria. The chloride results for samples S35-SW-04 and S35-SW-03 have been qualified with a “J-” validation flag due to low MS recovery and sample results greater than the RL. All remaining chloride sample results have been qualified with a “UJ” validation flag due to low MS recovery and sample results less than the RL.

The remaining MS/MSD recovery and all RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

All LDS and field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE:

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD
pH	N/A	0.1	1.30719
Conductivity	N/A	0.6	0
TSS	N/A	0	0
TDS	N/A	0.0	1.005025
Alkalinity	N/A	0.1	2.222222
Bicarbonate	N/A	0.8	0
Carbonate	N/A	0	0
Chloride	2.5	N/A	0
Sulfate	2.1	N/A	0
Hardness	N/A	N/A	-1.16959
Al	2.7	N/A	0
Ca	1.5	N/A	0
Mg	1.0	N/A	0
K	2.3	N/A	0
Na	2.4	N/A	0
As	1.7	N/A	0
Cd	0.5	N/A	0
Cu	0.9	N/A	0
Fe	1.6	N/A	0
Pb	0.5	N/A	0
Mn	0.8	N/A	0
Zn	2.1	N/A	0

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

One cooler was received by Energy Labs on 10/03/12 at 2.4°C. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

REPORTING LIMITS:

The reporting limits presented by the laboratory were acceptable and met the screening level requirements set forth by the project QAPjP and SAP.

OVERALL ASSESSMENT OF DATA:

There were seven (7) surface water field samples included in SDG# H12120202. Seven (7) field samples were analyzed for pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, total recoverable metals, and dissolved metals as outlined in the project QAPP.

All pH results have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

The chloride results for samples S35-SW-04 and S35-SW-03 have been qualified with a “J-” validation flag to denote the reported results are estimates with a low bias due to low MS recovery. All remaining chloride sample results have been qualified with a “UJ” validation flag to denote the reported results are estimates with a low bias due to low MS recovery.

The remaining field sample data points have been assessed and remain unqualified.

All field sample data points presented in this SDG are valid and complete.

All samples were received by the lab in good condition. Detection limits, analytical methods, detection limits, and reporting were all within the project requirements.

Attachment A: Laboratory Report Forms



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-07
Lab ID: H12120202-001
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 09:15 **DateReceived:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.3	s.u.	J- H	0.1		A4500-H B	12/12/12 16:10 / cm		PHSC_101-H_121212A : 69		R85072
Conductivity @ 25 C	18	umhos/cm		1		A2510 B	12/12/12 16:10 / cm		PHSC_101-H_121212A : 70		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:17 / cm	12/13/12 11:01	124 (14410200)_121213A : 21		19013
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	12/13/12 13:32 / cm		124 (14410200)_121213B : 22		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	12/17/12 17:17 / cm		MAN-TECH_121217A : 19		R85169
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	12/17/12 17:17 / cm		MAN-TECH_121217A : 19		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 17:17 / cm		MAN-TECH_121217A : 19		R85169
Chloride	ND	mg/L	UJ	1		E300.0	12/13/12 19:22 / cm		IC102-H_121213A : 43		R85125
Sulfate	ND	mg/L		1		E300.0	12/13/12 19:22 / cm		IC102-H_121213A : 43		R85125
Hardness as CaCO3	ND	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 11		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:26 / sld		ICP2-HE_121213A : 39		R85116
Calcium	ND	mg/L		1		E200.7	12/13/12 12:26 / sld		ICP2-HE_121213A : 39		R85116
Magnesium	ND	mg/L		1		E200.7	12/13/12 12:26 / sld		ICP2-HE_121213A : 39		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:26 / sld		ICP2-HE_121213A : 39		R85116
Sodium	ND	mg/L		1		E200.7	12/13/12 12:26 / sld		ICP2-HE_121213A : 39		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Cadmium	ND	mg/L		0.00008		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Copper	0.004	mg/L		0.001		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Iron	ND	mg/L		0.03		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Manganese	ND	mg/L		0.005		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011
Zinc	ND	mg/L		0.01		E200.8	12/14/12 16:27 / dck	12/13/12 08:50	ICPMS204-B_121210B : 651		19011

JAN
2-22-13

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-04
Lab ID: H12120202-002
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 09:39 **Date Received:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	J- H	0.1		A4500-H B	12/12/12 16:12 / cm		PHSC_101-H_121212A : 71		R85072
Conductivity @ 25 C	242	umhos/cm		1		A2510 B	12/12/12 16:12 / cm		PHSC_101-H_121212A : 72		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:17 / cm	12/13/12 11:01124 (14410200)_121213A : 22			19013
Solids, Total Dissolved TDS @ 180 C	141	mg/L		10		A2540 C	12/13/12 13:32 / cm		124 (14410200)_121213B : 23		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	70	mg/L		4		A2320 B	12/17/12 17:24 / cm		MAN-TECH_121217A : 21		R85169
Bicarbonate as HCO3	86	mg/L		4		A2320 B	12/17/12 17:24 / cm		MAN-TECH_121217A : 21		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 17:24 / cm		MAN-TECH_121217A : 21		R85169
Chloride	2	mg/L	J-	1		E300.0	12/13/12 19:34 / cm		IC102-H_121213A : 44		R85125
Sulfate	37	mg/L		1		E300.0	12/13/12 19:34 / cm		IC102-H_121213A : 44		R85125
Hardness as CaCO3	114	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 12		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:30 / sld		ICP2-HE_121213A : 40		R85116
Calcium	25	mg/L		1		E200.7	12/13/12 12:30 / sld		ICP2-HE_121213A : 40		R85116
Magnesium	12	mg/L		1		E200.7	12/13/12 12:30 / sld		ICP2-HE_121213A : 40		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:30 / sld		ICP2-HE_121213A : 40		R85116
Sodium	3	mg/L		1		E200.7	12/13/12 12:30 / sld		ICP2-HE_121213A : 40		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Cadmium	0.00029	mg/L		0.00008		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Copper	0.001	mg/L		0.001		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Iron	0.07	mg/L		0.03		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Manganese	0.028	mg/L		0.005		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011
Zinc	0.20	mg/L		0.01		E200.8	12/14/12 16:50 / dck	12/13/12 08:50	ICPMS204-B_121210B : 656		19011

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.

JAN
2-22-13



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-03
Lab ID: H12120202-003
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 10:29 **Date Received:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.	J- H	0.1		A4500-H B	12/12/12 16:15 / cm		PHSC_101-H_121212A : 73		R85072
Conductivity @ 25 C	246	umhos/cm		1		A2510 B	12/12/12 16:15 / cm		PHSC_101-H_121212A : 74		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:18 / cm	12/13/12 11:01	124 (14410200)_121213A : 23		19013
Solids, Total Dissolved TDS @ 180 C	146	mg/L		10		A2540 C	12/13/12 13:32 / cm		124 (14410200)_121213B : 24		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	70	mg/L		4		A2320 B	12/17/12 17:31 / cm		MAN-TECH_121217A : 23		R85169
Bicarbonate as HCO3	86	mg/L		4		A2320 B	12/17/12 17:31 / cm		MAN-TECH_121217A : 23		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 17:31 / cm		MAN-TECH_121217A : 23		R85169
Chloride	2	mg/L	J-	1		E300.0	12/13/12 20:37 / cm		IC102-H_121213A : 49		R85125
Sulfate	37	mg/L		1		E300.0	12/13/12 20:37 / cm		IC102-H_121213A : 49		R85125
Hardness as CaCO3	114	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 13		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:34 / sld		ICP2-HE_121213A : 41		R85116
Calcium	25	mg/L		1		E200.7	12/13/12 12:34 / sld		ICP2-HE_121213A : 41		R85116
Magnesium	12	mg/L		1		E200.7	12/13/12 12:34 / sld		ICP2-HE_121213A : 41		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:34 / sld		ICP2-HE_121213A : 41		R85116
Sodium	3	mg/L		1		E200.7	12/13/12 12:34 / sld		ICP2-HE_121213A : 41		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Cadmium	0.00029	mg/L		0.00008		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Copper	ND	mg/L		0.001		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Iron	0.08	mg/L		0.03		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Manganese	0.034	mg/L		0.005		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011
Zinc	0.21	mg/L		0.01		E200.8	12/14/12 16:54 / dck	12/13/12 08:50	ICPMS204-B_121210B : 657		19011

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.

JAN
2-22-13



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Gillette, WY 888-686-7175 • Rapid City, SD 888-872-1225 • College Station, TX 888-690-2218

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-01
Lab ID: H12120202-004
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 11:29 **Date Received:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	J -H	0.1		A4500-H B	12/12/12 16:18 / cm		PHSC_101-H_121212A : 75		R85072
Conductivity @ 25 C	168	umhos/cm		1		A2510 B	12/12/12 16:18 / cm		PHSC_101-H_121212A : 76		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:18 / cm	12/13/12 11:01	124 (14410200)_121213A : 24		19013
Solids, Total Dissolved TDS @ 180 C	100	mg/L		10		A2540 C	12/13/12 13:33 / cm		124 (14410200)_121213B : 25		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	91	mg/L		4		A2320 B	12/17/12 17:39 / cm		MAN-TECH_121217A : 25		R85169
Bicarbonate as HCO3	110	mg/L		4		A2320 B	12/17/12 17:39 / cm		MAN-TECH_121217A : 25		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 17:39 / cm		MAN-TECH_121217A : 25		R85169
Chloride	ND	mg/L	UT	1		E300.0	12/13/12 20:50 / cm		IC102-H_121213A : 50		R85125
Sulfate	2	mg/L		1		E300.0	12/13/12 20:50 / cm		IC102-H_121213A : 50		R85125
Hardness as CaCO3	85	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 14		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:38 / sld		ICP2-HE_121213A : 42		R85116
Calcium	22	mg/L		1		E200.7	12/13/12 12:38 / sld		ICP2-HE_121213A : 42		R85116
Magnesium	8	mg/L		1		E200.7	12/13/12 12:38 / sld		ICP2-HE_121213A : 42		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:38 / sld		ICP2-HE_121213A : 42		R85116
Sodium	2	mg/L		1		E200.7	12/13/12 12:38 / sld		ICP2-HE_121213A : 42		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Cadmium	ND	mg/L		0.00008		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Copper	ND	mg/L		0.001		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Iron	0.15	mg/L		0.03		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Manganese	ND	mg/L		0.005		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011
Zinc	ND	mg/L		0.01		E200.8	12/14/12 17:34 / dck	12/13/12 08:50	ICPMS204-B_121210B : 663		19011

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.

JTM
2-22-13



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-06
Lab ID: H12120202-005
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 11:41 Date Received: 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.	J- H	0.1		A4500-H B	12/12/12 16:20 / cm		PHSC_101-H_121212A : 77		R85072
Conductivity @ 25 C	168	umhos/cm		1		A2510 B	12/12/12 16:20 / cm		PHSC_101-H_121212A : 78		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:18 / cm	12/13/12 11:02	124 (14410200)_121213A : 27		19014
Solids, Total Dissolved TDS @ 180 C	99	mg/L		10		A2540 C	12/13/12 13:33 / cm		124 (14410200)_121213B : 28		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	89	mg/L		4		A2320 B	12/17/12 17:53 / cm		MAN-TECH_121217A : 29		R85169
Bicarbonate as HCO3	110	mg/L		4		A2320 B	12/17/12 17:53 / cm		MAN-TECH_121217A : 29		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 17:53 / cm		MAN-TECH_121217A : 29		R85169
Chloride	ND	mg/L	WJ	1		E300.0	12/13/12 21:03 / cm		IC102-H_121213A : 51		R85125
Sulfate	2	mg/L		1		E300.0	12/13/12 21:03 / cm		IC102-H_121213A : 51		R85125
Hardness as CaCO3	86	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 15		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:49 / sld		ICP2-HE_121213A : 45		R85116
Calcium	22	mg/L		1		E200.7	12/13/12 12:49 / sld		ICP2-HE_121213A : 45		R85116
Magnesium	8	mg/L		1		E200.7	12/13/12 12:49 / sld		ICP2-HE_121213A : 45		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:49 / sld		ICP2-HE_121213A : 45		R85116
Sodium	2	mg/L		1		E200.7	12/13/12 12:49 / sld		ICP2-HE_121213A : 45		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Cadmium	ND	mg/L		0.00008		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Copper	ND	mg/L		0.001		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Iron	0.15	mg/L		0.03		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Manganese	ND	mg/L		0.005		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011
Zinc	ND	mg/L		0.01		E200.8	12/14/12 17:39 / dck	12/13/12 08:50	ICPMS204-B_121210B : 664		19011

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN 2-22-13



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-05
Lab ID: H12120202-006
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 13:49 **Date Received:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.	J - H	0.1		A4500-H B	12/12/12 16:25 / cm		PHSC_101-H_121212A : 81		R85072
Conductivity @ 25 C	171	umhos/cm		1		A2510 B	12/12/12 16:25 / cm		PHSC_101-H_121212A : 82		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:19 / cm	12/13/12 11:02124 (14410200)_121213A : 29			19014
Solids, Total Dissolved TDS @ 180 C	99	mg/L		10		A2540 C	12/13/12 13:33 / cm		124 (14410200)_121213B : 30		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	85	mg/L		4		A2320 B	12/17/12 18:09 / cm		MAN-TECH_121217A : 33		R85169
Bicarbonate as HCO3	100	mg/L		4		A2320 B	12/17/12 18:09 / cm		MAN-TECH_121217A : 33		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 18:09 / cm		MAN-TECH_121217A : 33		R85169
Chloride	ND	mg/L	UT	1		E300.0	12/13/12 21:15 / cm		IC102-H_121213A : 52		R85125
Sulfate	5	mg/L		1		E300.0	12/13/12 21:15 / cm		IC102-H_121213A : 52		R85125
Hardness as CaCO3	87	mg/L		1		A2340 B	12/17/12 13:50 / sld		WATERCALC_121217B : 1		R85164
METALS, DISSOLVED											
Aluminum	0.04	mg/L		0.03		E200.8	12/14/12 20:03 / dck		ICPMS204-B_121210B : 694		R85054
Calcium	20	mg/L		1		E200.7	12/13/12 12:53 / sld		ICP2-HE_121213A : 46		R85116
Magnesium	9	mg/L		1		E200.7	12/13/12 12:53 / sld		ICP2-HE_121213A : 46		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:53 / sld		ICP2-HE_121213A : 46		R85116
Sodium	2	mg/L		1		E200.7	12/13/12 12:53 / sld		ICP2-HE_121213A : 46		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Cadmium	ND	mg/L		0.00008		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Copper	ND	mg/L		0.001		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Iron	0.07	mg/L		0.03		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Manganese	ND	mg/L		0.005		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011
Zinc	ND	mg/L		0.01		E200.8	12/14/12 20:07 / dck	12/13/12 08:50	ICPMS204-B_121210B : 695		19011

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

JAN
2-22-13



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-SW-02
Lab ID: H12120202-007
Matrix: Aqueous

Project: Section 35 Surface Water
Collection Date: 12/11/12 12:45 **Date Received:** 12/11/12
Report Date: 01/08/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.7	s.u.	J - H	0.1		A4500-H B	12/12/12 16:28 / cm		PHSC_101-H_121212A : 83		R85072
Conductivity @ 25 C	134	umhos/cm		1		A2510 B	12/12/12 16:28 / cm		PHSC_101-H_121212A : 84		R85072
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/13/12 13:19 / cm	12/13/12 11:02124 (14410200)_	121213A : 30		19014
Solids, Total Dissolved TDS @ 180 C	86	mg/L		10		A2540 C	12/13/12 13:34 / cm		124 (14410200)_121213B : 32		TDS121213A
INORGANICS											
Alkalinity, Total as CaCO3	69	mg/L		4		A2320 B	12/17/12 18:16 / cm		MAN-TECH_121217A : 35		R85169
Bicarbonate as HCO3	84	mg/L		4		A2320 B	12/17/12 18:16 / cm		MAN-TECH_121217A : 35		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 18:16 / cm		MAN-TECH_121217A : 35		R85169
Chloride	ND	mg/L	WS	1		E300.0	12/13/12 21:28 / cm		IC102-H_121213A : 53		R85125
Sulfate	3	mg/L		1		E300.0	12/13/12 21:28 / cm		IC102-H_121213A : 53		R85125
Hardness as CaCO3	68	mg/L		1		A2340 B	12/13/12 15:17 / sld		WATERCALC_121213B : 17		R85117
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.7	12/13/12 12:57 / sld		ICP2-HE_121213A : 47		R85116
Calcium	16	mg/L		1		E200.7	12/13/12 12:57 / sld		ICP2-HE_121213A : 47		R85116
Magnesium	7	mg/L		1		E200.7	12/13/12 12:57 / sld		ICP2-HE_121213A : 47		R85116
Potassium	ND	mg/L		1		E200.7	12/13/12 12:57 / sld		ICP2-HE_121213A : 47		R85116
Sodium	2	mg/L		1		E200.7	12/13/12 12:57 / sld		ICP2-HE_121213A : 47		R85116
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.003		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Cadmium	ND	mg/L		0.00008		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Copper	0.001	mg/L		0.001		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Iron	0.07	mg/L		0.03		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Lead	ND	mg/L		0.0005		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Manganese	ND	mg/L		0.005		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011
Zinc	ND	mg/L		0.01		E200.8	12/14/12 20:12 / dck	12/13/12 08:50	ICPMS204-B_121210B : 696		19011

JAN
2-22-13

Report Definitions: RL - Analyte reporting limit.
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

**Attachment B: Chain of Custody Forms and
Sample Receipt Checklist**

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.

Workorder Receipt Checklist

MT DEQ-Site Response

H12120202

Login completed by: Tracy L. Lorash

Date Received: 12/11/2012

Reviewed by: BL2000\jweidemoyer

Received by: elm

Reviewed Date: 12/18/2012

Carrier Hand Del
name:

- | | | | |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Temp Blank received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |
| Container/Temp Blank temperature: | 1.4°C On Ice - From Field | | |
| Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

Contact and Corrective Action Comments:

None

Chain of Custody and Analytical Request Record

Company Name:

Report Mail Address:

MDEA
See Quote H-645

PLEASE PRINT (Provide as much information as possible.)
Project Name, PWS, Permit, Etc.

Sect. 35 Turpeh Wks

Sample Origin
State: MT

EPA/State Compliance:
Yes No

Shelie Halstead, 841-5033, shalstead@mt.gov
Invoice Contact & Phone:

Sampler: (Please Print)
A Dressbach
MT Fowler
Quote/Bottle Order:
11447

Special Report/Formats:

- DW
- POTW/WWTP
- State: _____
- Other: _____
- EDD/EDT (Electronic Data)
- Format: _____
- LEVEL IV
- NELAC

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

ANALYSIS REQUESTED

SEE ATTACHED

Standard Turnaround (TAT)

R U S H

Contact EII prior to RUSH sample submittal for charges and scheduling - See Instruction Page

Comments:

Shipped by:
Cooler ID(s)

Receipt Temp
1.4 78

On Ice: Y N

Custody Seal
On Bottle Y N

Intact Y N

Signature Match Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	ANALYSIS REQUESTED	Standard Turnaround (TAT)	Comments:	Shipped by: Cooler ID(s)	Receipt Temp	On Ice:	Custody Seal On Bottle	Intact	Signature Match
1 S35-SW-07	12/11/12	0915	W									
2 S35-SW-04		0939										
3 S35-SW-03		1029										
4 S35-SW-01		1129										
5 S35-SW-06		1141										
6 S35-SW-05		1349										
7 S35-SW-02		1245	W									
8												
9												
10												

Custody Record MUST be Signed

Requisitioned by (print): Alan Dressbach
Date/Time: 12/11/12 17:08
Signature: [Signature]

Received by (print): [Signature]
Date/Time: 12/11/12 17:08
Signature: [Signature]

Sample Disposal: Return to Client:

Lab Disposal: [Signature]
Received by (print): [Signature]
Date/Time: 12/11/12 17:08
Signature: [Signature]

LABORATORY USE ONLY

HH220202

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 sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

UBMC Section 35 Ground Water

SDG#: H12120240

Number of Samples: 7

Sample Matrix: (7) Ground water

Applicable Analytes: pH, Conductivity, TSS, TDS, Alkalinity (Total, Bicarbonate, and Carbonate), Anions: (Chloride and Sulfate), Hardness, and Dissolved Metals (Al, As, Cd, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, and Zn)

Reporting Tier: 3

Applicable TOS#: N/A

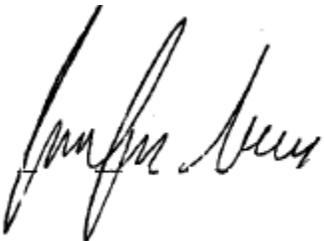
Laboratory: Energy Laboratories

Validation Level: EPA Level III

Validator Affiliation: Portage, Inc.

Project#: UBMC

Project SAP/QUAPP: Final Sampling and Analysis Plan for Environmental Monitoring Section 35 Lewis and Clark County, Montana; Portage Inc., 2012

Validator 

Date Completed: 02/20/13;05/09/13

Portage Review: 

Date Completed: 02/20/13;05/09/13

REPORT ORGANIZATION:

Limitations & Validation (L&V) Report UBMC Section 35 Ground Water is organized into the following five sections:

- Glossary of Terms & Method References
- Data Quality Statement
- L&V Report
- Attachment A: Laboratory Report Forms Corrected for Qualification
- Attachment B: Chain of Custody Forms & Sample Receipt Checklist

GLOSSARY OF VALIDATION TERMS & METHOD VALIDATION REFERENCES

Terms:

CRDL	Contract Required Detection Limit
IDL	Instrument Detection Limit
SOW	Statement of Work
SOP	Standard Operating Procedure
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank
PB	Preparation Blank
LCS	Laboratory Control Sample
SDS	Serial Dilution Sample
SDG	Sample Delivery Group

Qualifiers:

- U -** The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
Note: This detection limit may be elevated to a level greater than the IDL due to a detection of a target compound in the method blank, and as a result, the sample value, which was less than ten times the blank result, has been qualified 'U' as a non-detect.
- J -** The analyte was positively identified in the sample, but the associated numerical value may not be an accurate representation of the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.
- R -** The data are unusable (may or may not be present). Resampling and reanalysis are necessary for verification.
- UJ -** The material was analyzed for but was not detected. The sample quantitation limit is an estimated quantity.

Reference:

The validation of this data was performed according to:

1. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004.*
2. *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILM04.0, January 2000.*

LIMITATIONS AND VALIDATION REPORT

INTRODUCTION:

The UBMC Section 35 Ground Water sample results were received by Portage, Inc. in December 2012. The laboratory analytical request provided for a summary data package attached for the pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, and dissolved metals (Al, As, Cd, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, and Zn). The samples were analyzed in accordance with Standard Methods 4500 H-B, 2320B, 2510B, 2540D, 2540C, and 2340B, and USEPA Methods 300.0, 200.7, and 200.8. Data validation was performed utilizing the USEPA Functional Guidelines for Inorganic Data Review. The following cross-reference has been provided to assist data users in comparing field identifications to the corresponding laboratory numbers.

Cross-Reference for UBMC Ground Water Samples					
Field Id#:	Lab Id#:	Matrix:	Analysis Request:	Date of Collection:	Date of Laboratory Receipt:
S35-MW-09	H12120240-001	Ground Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	12/13/12	12/14/12
S35-MW-08	H12120240-002	Ground Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	12/13/12	12/14/12
S35-MW-01	H12120240-003	Ground Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	12/13/12	12/14/12
S35-MW-03	H12120240-004	Ground Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	12/13/12	12/14/12
S35-MW-07	H12120240-005	Ground Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	12/13/12	12/14/12
S35-MW-04	H12120240-006	Ground Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	12/13/12	12/14/12
S35-MW-06	H12120240-007	Ground Water	pH, Conductivity, TSS, TDS, Alkalinity, Chloride, Sulfate, Hardness, Dissolved Metals	12/14/12	12/14/12

LABORATORY CASE NARRATIVE:

The laboratory case narrative did not note any non conformance issues with the analytical data.

ANALYTICAL HOLDING TIMES:

The water samples associated with this SDG were collected on 12/13/12 and 12/14/12. The conductivity, TSS, and TDS results were analyzed on 12/17/12 within the 28-day holding time for conductivity, and the 7-day holding time for TSS and TDS. The chloride and sulfate results were analyzed on 12/19/12 within the 28-day holding time. The alkalinity results were analyzed on 12/17/12 within the 14-day holding time. The hardness results were analyzed on 12/17/12 within the 180-day holding time. The dissolved metals were 12/17/12 within the 180-day holding time for the ICP Metals.

The pH samples were collected on 12/12/12 and 12/13/12, received on 12/14/12, and analyzed on 12/17/12. In the professional judgment of the validator, all pH results have been qualified with a "J-" validation flag as prescribed by the USEPA Functional Guidelines and as the samples were analyzed outside the 24-hour holding time.

INITIAL AND CONTINUING CALIBRATION (ICV and CCV):

All ICV and CCV results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

PREPARATION BLANKS (PB):

For all analyses, blank results were analyzed at a proper frequency of 1 blank per 20 samples in the analytical batch.

The PB results were non-detect at level less than their respective MDLs and no qualification is warranted.

Field blank, trip blank, and equipment rinsate results were not included in this data deliverable.

INTERFERENCE CHECK SAMPLE (ICS):

All ICS results were within the acceptance criteria prescribed by the USEPA Functional Guidelines and the analytical methods.

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD):

The MS/MSD recovery and all RPD results were within the acceptance criteria and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and the analytical methods. MS/MSD sample were obtained from project field samples.

LABORATORY DUPLICATE SAMPLE (LDS) RPD:

All LDS and field duplicate results were within the RPD criteria and ran at the proper frequency (1 in 20) prescribed by the USEPA Functional Guidelines and the analytical methods.

DUPLICATE SUMMARY TABLE: (*RPD criteria not met, but results less than five times CRDL)

Analyte	Matrix Spike Duplicate RPD	Laboratory Duplicate RPD	Field Duplicate RPD
pH	N/A	0.0	1.290323
Conductivity	N/A	0.0	0
TSS	N/A	45*	12.12121
TDS	N/A	1.0	-1.56658
Alkalinity	N/A	0.1	0
Bicarbonate	N/A	0.8	0
Carbonate	N/A	0.0	0
Chloride	0.9	N/A	0
Sulfate	0.4	N/A	0
Hardness	N/A	N/A	1.351351
Al	1.6	N/A	0
Ca	1.2	N/A	0
Mg	0.2	N/A	0
K	3.5	N/A	2.352941
Na	3.9	N/A	0
As	0.9	N/A	0
Cd	1.2	N/A	0
Cu	1.7	N/A	0
Fe	0.1	N/A	0
Pb	0.7	N/A	66.66667*
Mn	0.1	N/A	0
Zn	0.2	N/A	0

LABORATORY CONTROL SAMPLE (LCS):

The LCS results were of matrix types similar to the field samples and properly prepared with the field samples.

All analytes exhibited recoveries within the guidelines and analyzed at the proper frequency (1 in 20) as prescribed by the USEPA Functional Guidelines and analytical methods.

Surrogate analyses are not applicable to metals and miscellaneous wet chemistry analysis types and methods.

CHAIN OF CUSTODY:

The laboratory chain of custody (COC) forms are complete and accurate.

One cooler was received by Energy Labs on 12/14/12 at 0.2°C. Custody was maintained as documents by the field and laboratory personnel signatures, dates, and time of receipt.

REPORTING LIMITS:

The reporting limits presented by the laboratory were acceptable and met the screening level requirements set forth by the project QAPjP and SAP.

OVERALL ASSESSMENT OF DATA:

There were seven (7) ground water field samples included in SDG# H12120240. Seven (7) field samples were analyzed for pH, conductivity, alkalinity, TSS, TDS, chloride, sulfate, hardness, and dissolved metals as outlined in the project QAPP.

All pH results have been qualified with a "J-" validation flag to denote the reported results are estimates with a low bias due to exceeded holding times.

The remaining field sample data points have been assessed and remain unqualified.

All field sample data points presented in this SDG are valid and complete.

All samples were received by the lab in good condition. Detection limits, analytical methods, detection limits, and reporting were all within the project requirements.

Attachment A: Laboratory Report Forms



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-09
Lab ID: H12120240-001
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 13:29 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.0	s.u.	J- H	0.1		A4500-H B	12/17/12 09:49 / cm		PHSC_101-H_121217A : 7		R85156
Conductivity @ 25 C	4	umhos/cm		1		A2510 B	12/17/12 09:49 / cm		PHSC_101-H_121217A : 8		R85156
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/17/12 16:06 / cm	12/17/12 13:34124 (14410200)_121217A : 10			19046
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	12/17/12 16:17 / cm		-124 (14410200)_121217B : 9		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	12/17/12 18:43 / cm		MAN-TECH_121217A : 41		R85169
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	12/17/12 18:43 / cm		MAN-TECH_121217A : 41		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 18:43 / cm		MAN-TECH_121217A : 41		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 16:28 / cm		IC102-H_121219A : 37		R85253
Sulfate	ND	mg/L		1		E300.0	12/19/12 16:28 / cm		IC102-H_121219A : 37		R85253
Hardness as CaCO3	ND	mg/L		1		A2340 B	12/19/12 14:03 / sld		WATERCALC_121219B : 2		R85238
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Cadmium	0.00010	mg/L		0.00008		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Calcium	ND	mg/L		1		E200.7	12/17/12 15:23 / sld		ICP2-HE_121217B : 23		R85182
Copper	0.029	mg/L		0.001		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:23 / sld		ICP2-HE_121217B : 23		R85182
Lead	0.0005	mg/L		0.0005		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Magnesium	ND	mg/L		1		E200.7	12/17/12 15:23 / sld		ICP2-HE_121217B : 23		R85182
Manganese	0.022	mg/L		0.005		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189
Potassium	ND	mg/L		1		E200.7	12/17/12 15:23 / sld		ICP2-HE_121217B : 23		R85182
Sodium	ND	mg/L		1		E200.7	12/17/12 15:23 / sld		ICP2-HE_121217B : 23		R85182
Zinc	0.02	mg/L		0.01		E200.8	12/17/12 21:13 / dck		ICPMS204-B_121217A : 118		R85189

JAN
2-22-13

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-08
Lab ID: H12120240-002
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 13:39 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	4.9	s.u.	J- H	0.1		A4500-H B	12/17/12 09:56 / cm		PHSC_101-H_121217A : 11		R85156
Conductivity @ 25 C	1	umhos/cm		1		A2510 B	12/17/12 09:56 / cm		PHSC_101-H_121217A : 12		R85156
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	124 (14410200)_121217A : 11		19046
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	12/17/12 16:17 / cm		124 (14410200)_121217B : 10		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	12/17/12 18:48 / cm		MAN-TECH_121217A : 43		R85169
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	12/17/12 18:48 / cm		MAN-TECH_121217A : 43		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 18:48 / cm		MAN-TECH_121217A : 43		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 16:41 / cm		IC102-H_121219A : 38		R85253
Sulfate	ND	mg/L		1		E300.0	12/19/12 16:41 / cm		IC102-H_121219A : 38		R85253
Hardness as CaCO3	ND	mg/L		1		A2340 B	12/19/12 14:03 / sld		WATERCALC_121219B : 3		R85238
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Calcium	ND	mg/L		1		E200.7	12/17/12 15:27 / sld		ICP2-HE_121217B : 24		R85182
Copper	0.035	mg/L		0.001		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:27 / sld		ICP2-HE_121217B : 24		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Magnesium	ND	mg/L		1		E200.7	12/17/12 15:27 / sld		ICP2-HE_121217B : 24		R85182
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189
Potassium	ND	mg/L		1		E200.7	12/17/12 15:27 / sld		ICP2-HE_121217B : 24		R85182
Sodium	ND	mg/L		1		E200.7	12/17/12 15:27 / sld		ICP2-HE_121217B : 24		R85182
Zinc	0.02	mg/L		0.01		E200.8	12/17/12 21:18 / dck		ICPMS204-B_121217A : 119		R85189

JAN
2-22-13

Report RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-01
Lab ID: H12120240-003
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 14:40 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	J- H	0.1		A4500-H B	12/17/12 09:59 / cm		PHSC_101-H_121217A : 13		R85156
Conductivity @ 25 C	295	umhos/cm		1		A2510 B	12/17/12 09:59 / cm		PHSC_101-H_121217A : 14		R85156
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	124 (14410200)_121217A : 12		19046
Solids, Total Dissolved TDS @ 180 C	141	mg/L		10		A2540 C	12/17/12 16:17 / cm		124 (14410200)_121217B : 11		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	12/17/12 18:55 / cm		MAN-TECH_121217A : 45		R85169
Bicarbonate as HCO3	190	mg/L		4		A2320 B	12/17/12 18:55 / cm		MAN-TECH_121217A : 45		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 18:55 / cm		MAN-TECH_121217A : 45		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 16:53 / cm		IC102-H_121219A : 39		R85253
Sulfate	8	mg/L		1		E300.0	12/19/12 16:53 / cm		IC102-H_121219A : 39		R85253
Hardness as CaCO3	148	mg/L		1		A2340 B	12/17/12 15:31 / abb		CALC_121218A : 171		R85207
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Calcium	32	mg/L		1		E200.7	12/17/12 15:31 / sld		ICP2-HE_121217B : 25		R85182
Copper	ND	mg/L		0.001		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:31 / sld		ICP2-HE_121217B : 25		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Magnesium	17	mg/L		1		E200.7	12/17/12 15:31 / sld		ICP2-HE_121217B : 25		R85182
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189
Potassium	1	mg/L		1		E200.7	12/17/12 15:31 / sld		ICP2-HE_121217B : 25		R85182
Sodium	2	mg/L		1		E200.7	12/17/12 15:31 / sld		ICP2-HE_121217B : 25		R85182
Zinc	ND	mg/L		0.01		E200.8	12/17/12 21:22 / dck		ICPMS204-B_121217A : 120		R85189

JM
2-22-13

Report RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-03
Lab ID: H12120240-004
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 15:45 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.	J- H	0.1		A4500-H B	12/17/12 10:02 / cm		PHSC_101-H_121217A : 15		R85156
Conductivity @ 25 C	329	umhos/cm		1		A2510 B	12/17/12 10:02 / cm		PHSC_101-H_121217A : 16		R85156
Solids, Total Suspended TSS @ 105 C	70	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	124 (14410200)_121217A : 13		19046
Solids, Total Dissolved TDS @ 180 C	190	mg/L		10		A2540 C	12/17/12 16:17 / cm		I24 (14410200)_121217B : 12		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	12/17/12 19:03 / cm		MAN-TECH_121217A : 47		R85169
Bicarbonate as HCO3	210	mg/L		4		A2320 B	12/17/12 19:03 / cm		MAN-TECH_121217A : 47		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 19:03 / cm		MAN-TECH_121217A : 47		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 17:06 / cm		IC102-H_121219A : 40		R85253
Sulfate	6	mg/L		1		E300.0	12/19/12 17:06 / cm		IC102-H_121219A : 40		R85253
Hardness as CaCO3	149	mg/L		1		A2340 B	12/17/12 15:35 / abb		CALC_121218A : 183		R85207
METALS, DISSOLVED											
Aluminum	0.05	mg/L		0.03		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Calcium	43	mg/L		1		E200.7	12/17/12 15:35 / sld		ICP2-HE_121217B : 26		R85182
Copper	ND	mg/L		0.001		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:35 / sld		ICP2-HE_121217B : 26		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Magnesium	10	mg/L		1		E200.7	12/17/12 15:35 / sld		ICP2-HE_121217B : 26		R85182
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189
Potassium	2	mg/L		1		E200.7	12/17/12 15:35 / sld		ICP2-HE_121217B : 26		R85182
Sodium	10	mg/L		1		E200.7	12/17/12 15:35 / sld		ICP2-HE_121217B : 26		R85182
Zinc	ND	mg/L		0.01		E200.8	12/17/12 21:27 / dck		ICPMS204-B_121217A : 121		R85189

JAN
2-22-13

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-07
Lab ID: H12120240-005
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 15:58 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.	J- H	0.1		A4500-H B	12/17/12 10:04 / cm		PHSC_101-H_121217A : 17		R85156
Conductivity @ 25 C	329	umhos/cm		1		A2510 B	12/17/12 10:04 / cm		PHSC_101-H_121217A : 18		R85156
Solids, Total Suspended TSS @ 105 C	62	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	124 (14410200)_121217A : 14		19046
Solids, Total Dissolved TDS @ 180 C	193	mg/L		10		A2540 C	12/17/12 16:17 / cm		124 (14410200)_121217B : 13		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	12/17/12 19:11 / cm		MAN-TECH_121217A : 49		R85169
Bicarbonate as HCO3	210	mg/L		4		A2320 B	12/17/12 19:11 / cm		MAN-TECH_121217A : 49		R85169
Carbonate as CO3	4	mg/L		4		A2320 B	12/17/12 19:11 / cm		MAN-TECH_121217A : 49		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 17:19 / cm		IC102-H_121219A : 41		R85253
Sulfate	6	mg/L		1		E300.0	12/19/12 17:19 / cm		IC102-H_121219A : 41		R85253
Hardness as CaCO3	147	mg/L		1		A2340 B	12/17/12 15:39 / abb		CALC_121218A : 195		R85207
METALS, DISSOLVED											
Aluminum	0.05	mg/L		0.03		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Calcium	42	mg/L		1		E200.7	12/17/12 15:39 / sld		ICP2-HE_121217B : 27		R85182
Copper	0.001	mg/L		0.001		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:39 / sld		ICP2-HE_121217B : 27		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Magnesium	10	mg/L		1		E200.7	12/17/12 15:39 / sld		ICP2-HE_121217B : 27		R85182
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189
Potassium	1	mg/L		1		E200.7	12/17/12 15:39 / sld		ICP2-HE_121217B : 27		R85182
Sodium	10	mg/L		1		E200.7	12/17/12 15:39 / sld		ICP2-HE_121217B : 27		R85182
Zinc	ND	mg/L		0.01		E200.8	12/17/12 21:31 / dck		ICPMS204-B_121217A : 122		R85189

JAN
2-22-13

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-04
Lab ID: H12120240-006
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/13/12 16:34 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.	J- H	0.1		A4500-H B	12/17/12 10:06 / cm		PHSC_101-H_121217A : 19		R85156
Conductivity @ 25 C	354	umhos/cm		1		A2510 B	12/17/12 10:06 / cm		PHSC_101-H_121217A : 20		R85156
Solids, Total Suspended TSS @ 105 C	185	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34	124 (14410200)_121217A : 15		19046
Solids, Total Dissolved TDS @ 180 C	203	mg/L		10		A2540 C	12/17/12 16:18 / cm		124 (14410200)_121217B : 14		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	12/17/12 19:18 / cm		MAN-TECH_121217A : 51		R85169
Bicarbonate as HCO3	240	mg/L		4		A2320 B	12/17/12 19:18 / cm		MAN-TECH_121217A : 51		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 19:18 / cm		MAN-TECH_121217A : 51		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 17:56 / cm		IC102-H_121219A : 44		R85253
Sulfate	3	mg/L		1		E300.0	12/19/12 17:56 / cm		IC102-H_121219A : 44		R85253
Hardness as CaCO3	174	mg/L		1		A2340 B	12/19/12 14:03 / sld		WATERCALC_121219B : 4		R85238
METALS, DISSOLVED											
Aluminum	0.03	mg/L		0.03		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Calcium	55	mg/L		1		E200.8	12/21/12 09:17 / dck		ICPMS204-B_121221A : 37		R85328
Copper	ND	mg/L		0.001		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:42 / sld		ICP2-HE_121217B : 28		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Magnesium	12	mg/L		1		E200.8	12/21/12 09:17 / dck		ICPMS204-B_121221A : 37		R85328
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189
Potassium	3	mg/L		1		E200.7	12/17/12 15:42 / sld		ICP2-HE_121217B : 28		R85182
Sodium	3	mg/L		1		E200.7	12/17/12 15:42 / sld		ICP2-HE_121217B : 28		R85182
Zinc	ND	mg/L		0.01		E200.8	12/17/12 21:36 / dck		ICPMS204-B_121217A : 123		R85189

JAN
2-22-13

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: H - Analysis performed past recommended holding time.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID: S35-MW-06
Lab ID: H12120240-007
Matrix: Aqueous

Project: Section 35 Groundwater
Collection Date: 12/14/12 12:25 **Date Received:** 12/14/12
Report Date: 01/02/13

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.4	s.u.	J- H	0.1		A4500-H B	12/17/12 10:09 / cm		PHSC_101-H_121217A : 21		R85156
Conductivity @ 25 C	371	umhos/cm		1		A2510 B	12/17/12 10:09 / cm		PHSC_101-H_121217A : 22		R85156
Solids, Total Suspended TSS @ 105 C	166	mg/L		10		A2540 D	12/17/12 16:07 / cm	12/17/12 13:34124 (14410200)_121217A : 16			19046
Solids, Total Dissolved TDS @ 180 C	195	mg/L		10		A2540 C	12/17/12 16:18 / cm		124 (14410200)_121217B : 15		TDS121217A
INORGANICS											
Alkalinity, Total as CaCO3	210	mg/L		4		A2320 B	12/17/12 19:48 / cm		MAN-TECH_121217A : 60		R85169
Bicarbonate as HCO3	260	mg/L		4		A2320 B	12/17/12 19:48 / cm		MAN-TECH_121217A : 60		R85169
Carbonate as CO3	ND	mg/L		4		A2320 B	12/17/12 19:48 / cm		MAN-TECH_121217A : 60		R85169
Chloride	ND	mg/L		1		E300.0	12/19/12 18:09 / cm		IC102-H_121219A : 45		R85253
Sulfate	2	mg/L		1		E300.0	12/19/12 18:09 / cm		IC102-H_121219A : 45		R85253
Hardness as CaCO3	181	mg/L		1		A2340 B	12/19/12 14:03 / sld		WATERCALC_121219B : 5		R85238
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Arsenic	ND	mg/L		0.003		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Cadmium	ND	mg/L		0.00008		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Calcium	56	mg/L		1		E200.8	12/21/12 09:22 / dck		ICPMS204-B_121221A : 38		R85328
Copper	0.001	mg/L		0.001		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Iron	ND	mg/L		0.05		E200.7	12/17/12 15:46 / sld		ICP2-HE_121217B : 29		R85182
Lead	ND	mg/L		0.0005		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Magnesium	16	mg/L		1		E200.8	12/21/12 09:22 / dck		ICPMS204-B_121221A : 38		R85328
Manganese	ND	mg/L		0.005		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189
Potassium	1	mg/L		1		E200.7	12/17/12 15:46 / sld		ICP2-HE_121217B : 29		R85182
Sodium	4	mg/L		1		E200.7	12/17/12 15:46 / sld		ICP2-HE_121217B : 29		R85182
Zinc	ND	mg/L		0.01		E200.8	12/17/12 21:41 / dck		ICPMS204-B_121217A : 124		R85189

JAN
2013

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

H - Analysis performed past recommended holding time.

**Attachment B: Chain of Custody Forms and
Sample Receipt Checklist**

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.

Workorder Receipt Checklist

MT DEQ-Site Response

H12120240

Login completed by: Tracy L. Lorash

Date Received: 12/14/2012

Reviewed by: BL2000\sdull

Received by: wjj

Reviewed Date: 12/19/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	0.2°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Contact and Corrective Action Comments:

Sample ID on COC is S35-MW-. ID on bottles is S35-MW-07. Logged in with ID from bottles. TI 12/14/12.

Appendix C

Field Notes and Logs

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SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 5355005
PROJECT NUMBER: T0-10 T0 14	SAMPLE NUMBER: 5355005
LOCATION: SECTION 35	WEATHER: 60 F, 4/11
DATE/TIME: 3/26/12 @ 1010	SAMPLERS: AN, JS

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.15	0.4	143	12.31	85.7	253.8

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: snow covered - sample collected 1-30yd upstream

Water flow (circle one): laminar Stagnant Turbulent Other(describe)

Stream bed description: gravel/rock

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35

Date: 2/26/12

Time: 10/0

Sampler(s): A0. JT

Field Sample Id#: 535 5005

Weather: clear, cool, w/a

Number / Type of Containers this Sample: 1-250ML HDPE

Sampling Method Used: GRAB

Photo: 5, + 2

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations: 6/11/12 230y ± upstream from 5005
Deep flow



SITE: SECTION 35

PERSONNEL: AD, JS

DATE: 3/26/12

Gage Reading: _____

TIME: 1020

Gage Time _____

Other: DISCHARGE CALCULATED AT OFFICE

535505

DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec) n/1
1	6	0.1	0
2	6.2	0.2	0.03
3	6.4	0.2	0.07
4	6.6	0.2	0.11
5	6.8	0.3	0.23
6	7.0	0.3	0.26
7	7.2	0.3	0.25
8	7.4	0.2	0.32
9	7.6	0.2	0.15
10	7.8	0.1	0.04
11	8.0	0	0
12	/		
13			
14			
15			
16			
17			
18			
19			
20			



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 535 SW 01
PROJECT NUMBER: T0-10-T011	SAMPLE NUMBER: 535 SW 01
LOCATION: SECTION 35	WEATHER: Cloudy, clear, calm
DATE/TIME: 3/26/12 @ 11:10	SAMPLERS: AB, JT

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.18	0.13	153	11.13	76.4	245.8

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Gravel, grass covered

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Gravel/rock

Water quality description: Clear

collected 2 duplicate sample 535 SW 06



Sediment Sampling Collection Summary

Site: Section 35 Date: 3/21/12
Time: 1110 Sampler(s): A 2, T5
Field Sample Id#: 5355A01 Weather: clear, cool, calm
Number / Type of Containers this Sample: 1-250ML HDPE

Sampling Method Used: GRAB

Photo: None

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations: Collected duplicate sample 5355A02



SITE: SECTION 35

PERSONNEL: AP, JT

DATE: 3/26/17

Gage Reading:

TIME: 1115

Gage Time

Other: DISCHARGE CALCULATED AT OFFICE

535 SW 01

DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec) M/S
1	1.5	0.1	0
2	1.6	0.1	0
3	1.7	0.1	0
4	1.8	0.4	0
5	1.9	0.9	0
6	2.0	0.9	0.01
7	2.1	0.9	0.01
8	2.2	0.9	0.02
9	2.3	0.9	0.02
10	2.4	0.9	0.12
11	2.5	0.1	0.09
12	2.6	0	0
13			
14			
15			
16			
17			
18			
19			
20			



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 535 SW02
PROJECT NUMBER: T0-10-14	SAMPLE NUMBER: 535 SW02
LOCATION: SECTION 35	WEATHER: 40/10/15
DATE/TIME: 3/26/12	SAMPLERS: AD, JJ

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
6.79	2.95	145	6.99	51.9	230.4

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: snow covered

Water flow (circle one) Laminar stagnant Turbulent Other(describe)

Stream bed description: deep pools

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 3/26/12
Time: 1200 Sampler(s): AD, JS
Field Sample Id#: 535 5002 Weather: Cal, 40%
Number / Type of Containers this Sample: 1-250ML HDPE
Sampling Method Used: GRAB
Photo: Y, /

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand Delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AD, JT

DATE: 3/26/12

Gage Reading: —

TIME: 1210

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

5355W02
DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec) <i>n/s</i>
1	0.2	0.2	0.01
2	4.2	0.2	0.02
3	All at 4.2		0.0
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 535 SW04
PROJECT NUMBER: TO-1014	SAMPLE NUMBER: 535 SW04
LOCATION: SECTION 35	WEATHER: Cool, calm
DATE/TIME: 3/26/12 @ 1345	SAMPLERS: A1, J5

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.35	0.44	0-212M 212	11.54	80.0	252.3

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Snow covered

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Rocky, gravel

Water quality description: Clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 3/26/12
Time: 1345 Sampler(s): AO, JT
Field Sample Id#: 5355004 Weather: Calm, cool
Number / Type of Containers this Sample: 1-250ML HDPE

Sampling Method Used: GRAB
Photo: Yes

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:
Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AD, JJ

DATE: 7/26/12

Gage Reading: _____

TIME: 13:50

Gage Time _____

Other: DISCHARGE CALCULATED AT OFFICE

5355W04
DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec) $N/1$
1	2.7	0.7	0.30
2	2.8	0.3	0.31
3	3.2	0.3	0.38
4	3.6	0.4	0.52
5	4.0	0.4	0.54
6	4.7	0.6	0.54
7	4.8	0.6	0.56
8	5.2	0.7	0.57
9	5.6	0.5	0.64
10	6.0	0.6	0.63
11	6.4	0.6	0.59
12	6.8	0.6	0.57
13	7.2	0.5	0.58
14	7.6	0.4	0.58
15	8.0	0.4	0.56
16	8.4	0.4	0.52
17	8.7	0.3	0.50
18	9.2	0.3	0.39
19	9.6	0.3	0.37
20	10.0	0.3	0.26
	10.4	0.2	0.16
	10.8	0.1	0
	11.2	0	0



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 535 SW 03
PROJECT NUMBER: TO-10-14	SAMPLE NUMBER: 535 SW 03
LOCATION: SECTION 35	WEATHER: 6/12, cool
DATE/TIME: 3/26/12 @ 1425	SAMPLERS: AL, JJ

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.35	0.29	210	11.05	76.5	253.3

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Snow covered

Water flow (circle one) Laminar Stagnant Turbulent Other(describe)

Stream bed description: rocky, gravelly

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 3/26/12
Time: 1425 Sampler(s): A0, JT
Field Sample Id#: 5355003 Weather: Calm, cool
Number / Type of Containers this Sample: 1-250ML HDPE

Sampling Method Used: GRAB

Photo: Yes

Sediment Analyses:

➤ Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AD, JT

DATE: 3/26/12

Gage Reading: —

TIME: 1430

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

535 SW 03

DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec) m/s
1	3	0.1	0
2	4	0.1	0.06
3	5	0.2	0.03
4	6	0.2	0.06
5	7	0.2	0.10
6	8	0.3	0.09
7	9	0.3	0.08
8	10	0.3	0.12
9	11	0.3	0.12
10	12	0.4	0.16
11	13	0.4	0.19
12	14	0.5	0.23
13	15	0.5	0.24
14	16	0.5	0.27
15	17	0.5	0.25
16	18	0.5	0.27
17	19	0.5	0.28
18	20	0.6	0.27
19	21	0.7	0.26
20	22	0.6	0.29
	23	0.6	0.03
	24	0.5	0.11
	25	0.7	0.14
	26	0.1	0



Groundwater Sampling Collection Summary

Site: MDEQ – SECTION 35	Date: 3/28/12
Time: 1415	Sampler(s): 10, JT
Field Sample Id#: 535 MW06	Weather: 6.1 overcast
Preservative(s): HNO3 FOR DISOLVED METALS, COOL ON ICE	
Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE	
Sampling Method Used: BLADDER PUMP	
Photo: Y.	

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.33	6.82	321	7.89	67.9	202.1
7.38	6.87	321	7.88	64.8	207.3
7.37	6.86	321	7.96	65.2	207.4
7.37	6.88	321	7.91	65.1	207.5

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
69.65	38.45'	—	—	2.5L

Transducer Downloaded: Y.

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:

Aug 2 delivery



Groundwater Sampling Collection Summary

Site: MDEQ – SECTION 35 Date: 3/28/12
 Time: 1:10 Sampler(s): AD, JT
 Field Sample Id#: 535 MW04 Weather: Cloudy, cool
 Preservative(s): HNO3 FOR DISSOLVED METALS, COOL ON ICE
 Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE
 Sampling Method Used: BLADDER PUMP
 Photo:

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.53	6.37	379	10.72	86.7	206.7
7.55	5.93	352	10.76	87.0	209.2
7.56	5.92	371	10.77	87.2	209.9
7.55	5.77	371	10.79	87.7	209.4

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

535 MW04 is field duplicate

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
43.02	70.76	—	—	1.5L

Transducer Downloaded:

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:

H-118 de 11/02/02



Groundwater Sampling Collection Summary

Site: MDEQ – SECTION 35 Date: 3/21/12
 Time: 1620 Sampler(s): AP, JJ
 Field Sample Id#: 525 MW 03 Weather: Cloudy, cool
 Preservative(s): HNO3 FOR DISSOLVED METALS, COOL ON ICE
 Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE
 Sampling Method Used: BLADDER PUMP
 Photo: Y

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.62	5.07	329	4.09	31.7	213.7
7.62	5.03	329	4.02	31.5	213.7
7.62	5.03	310	4.0	31.4	213.6
7.63	5.07	329	3.76	31.1	213.6

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
41.45	12.25	—	—	1.66

Transducer Downloaded: Y

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:
 Hand delivered



Daily Contractor Quality Control Summary

Date: 3/21/12

Samples packed on ice? / N
Chain of custody complete? / N
Is sample custody secured? / N
Sampling procedures used properly? / N

Describe any deviations that occurred during field activities due to site conditions:

could not sample SS5 AWQ 1 with bladder pump
being partially collapsed - will have to use peristaltic
pump

Were these deviations detrimental to sampling (explain)?

~~_____~~
~~_____~~
~~_____~~
~~_____~~
~~_____~~
~~_____~~

Other observations:

~~_____~~
~~_____~~
~~_____~~
~~_____~~
~~_____~~
~~_____~~



Groundwater Sampling Collection Summary

Site: MDEQ - SECTION 35 Date: 3/30/12
 Time: 1047 Sampler(s): AD
 Field Sample Id#: 535 MW 01 Weather: Cloudy, windy, cool
 Preservative(s): HNO3 FOR DISSOLVED METALS, COOL ON ICE
 Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE

Sampling Method Used: BLADDER PUMP *Peristaltic pump*
 Photo: *Yes*

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.22	20.7	301	8.12	62.5	203.3
7.42	6.84	300	8.10	66.3	207.5
7.46	6.83	301	8.08	66.0	207.5

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
43.5'	14.6'	-	-	25L

Transducer Downloaded: *Yes*

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:
Hand Delivered



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 5204
PROJECT NUMBER: TO-10-14	SAMPLE NUMBER: 5355204
LOCATION: SECTION 35	WEATHER: Clear, cool
DATE/TIME: 5/8/10 @ 0710	SAMPLERS: BP, BA

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.6	5.87	190	7.01	69.6	203.2

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: willow, grass

Water flow (circle one) Laminar Stagnant Turbulent Other(describe)

Stream bed description: rock/gravel

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35

Date: 5/9/12

Time: 0910

Sampler(s): AD, BM

Field Sample Id#: 535 5004

Weather: Clear, cool

Number / Type of Containers this Sample: 1-250ML HDPE

Sampling Method Used: GRAB

Photo: Yes

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand Delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AD

DATE: 5/2/12

Gage Reading: —

TIME: 0719

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

535 SW04
DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	1.5	0	0
2	2	.5	1.03
3	2.5	.9	2.29
4	3	.9	2.75
5	3.5	.5	2.70
6	4	.9	2.89
7	4.5	1	3.10
8	5	1	3.41
9	5.5	1.1	3.31
10	6	1	3.51
11	6.5	.9	3.49
12	7	1	3.25
13	7.5	1	3.05
14	8	1	3.22
15	8.5	1	3.94
16	9	1	3.06
17	9.5	1.1	3.21
18	10	1.1	2.73
19	10.5	1	2.37
20	11	1.1	2.61
	11.5	1	3.11
	12	1.1	2.17
	12.5	1	2.26
	13	.7	2.19
	13.5	.7	2.17
	14	.6	1.91
	14.5	.5	1.55
	15	.3	1.36
	15.5	.2	.76
	16	.1	.16
	16.5	0	0



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: SW03
PROJECT NUMBER: TO-10-14	SAMPLE NUMBER: 5355203
LOCATION: SECTION 35	WEATHER: Clear, cool
DATE/TIME: 5/7/12 @ 0953	SAMPLERS: 10, 13A

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.2	1.9	172	9.67	77.3	206.6

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Vegetated

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: rock, gravel

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 5/7/12
Time: 1014 Sampler(s): AP, BM
Field Sample Id#: 5355003 Weather: Clear, cool
Number / Type of Containers this Sample: 1-250ML HDPE
Sampling Method Used: GRAB
Photo: Y

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AB, SA

DATE: 5/9/12

Gage Reading: —

TIME: 1001

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

53,5603
DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	2	0	0
2	3	.5	.21
3	4	.5	1.49
4	5	.6	1.40
5	6	.6	1.47
6	7	.6	1.32
7	7	.6	1.40
8	7	.6	1.01
9	10	.7	1.63
10	11	.7	1.68
11	12	.7	1.78
12	13	.7	1.73
13	17	.7	2.03
14	15	.7	2.17
15	16	.7	2.04
16	17	.7	2.10
17	18	.7	2.39
18	19	1.0	2.81
19	20	1.1	2.35
20	21	1.1	2.54
	22	1.2	2.52
	23	1.2	2.21
	24	1.9	1.91
	25	.7	1.95
	26	.7	1.11
	27	.5	1.04
	28	0	0



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 5201
PROJECT NUMBER: TO-30-14	SAMPLE NUMBER: 1355U01
LOCATION: SECTION 35	WEATHER: clear, cool
DATE/TIME: 5/8/12 @ 10:30	SAMPLERS: K. BA

Field duplicate 1, 5355U06

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.58	7.32	119	12.35	85.9	203.5

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Grassy

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Gravel

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 5/2/12
Time: 1100 Sampler(s): RD, DM
Field Sample Id#: 5355001 Weather: Clear, cool
Number / Type of Containers this Sample: 1-250ML HDPE
Collected field duplicate 5355006
Sampling Method Used: GRAB
Photo: Yes

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AO, BA

DATE: 5/2/12

Gage Reading: —

TIME: 1100

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

535501

DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	.6	0	0
2	.8	.5	0.08
3	1.0	.7	0.53
4	1.2	.7	1.05
5	1.4	.8	1.06
6	1.6	.8	.92
7	1.8	.8	.72
8	2	.8	.09
9	2.2	.8	.02
10	2.4	.6	0
11	2.6	0	0
12			
13			
14			
15			
16			
17			
18			
19			
20			



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 515 SW 02
PROJECT NUMBER: TO-1014	SAMPLE NUMBER: 515 SW 02
LOCATION: SECTION 35	WEATHER: Clear, cool
DATE/TIME: 5/11/12 @ 11:21	SAMPLERS: 100, 150

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
6.79	6.09	116	9.93	71.9	200.1

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Bo g

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Deep quick

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 5/8/12

Time: 1127 Sampler(s): VB, RA

Field Sample Id#: 1255002 Weather: Clear, cool

Number / Type of Containers this Sample: 1-250ML HDPE

Sampling Method Used: GRAB

Photo: Yes

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:
Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: NO, AM

DATE: 5/8/12

Gage Reading: —

TIME: 1127

Gage Time: —

Other: DISCHARGE CALCULATED AT OFFICE

535 SW 02
DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	1	0	0
2	1.6	.5	-1.6
3	2.2	.4	-2.6
4	2.8	.5	-1.3
5	3.4	.4	-2.5
6	4.0	.5	-1.8
7	4.6	.7	-5.1
8	5.2	.6	-0.6
9	5.8	.6	-1.6
10	6.4	.5	-2.2
11	7.0	.6	-2.7
12	7.6	0	0
13	8.2	0	0
14			
15			
16			
17			
18			
19			
20			



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: SW05
PROJECT NUMBER: TO-10/4	SAMPLE NUMBER: 35 SW05
LOCATION: SECTION 35	WEATHER: Clear, cool
DATE/TIME: 5/7/12 @ 1212	SAMPLERS: AB, BA

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.57	8.56	125	9.33	79.8	196.2

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Grassy

Water flow (circle one) Laminar Stagnant Turbulent Other(describe)

Stream bed description: Gravel

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 5/8/12
Time: 12:18 Sampler(s): AP, BM
Field Sample Id#: 8355905 Weather: clear, cool
Number / Type of Containers this Sample: 1-250ML HDPE
Sampling Method Used: GRAB
Photo: Yes

Sediment Analyses:

> Total Recoverable Metals (Y) (N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AD, BA

DATE: 5/9/12

Gage Reading: —

TIME: 1230

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

SSSSWOS

DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	1.5	.1	0
2	1.7	.3	.43
3	1.9	.4	2.22
4	2.1	.4	2.03
5	2.3	.4	2.25
6	2.5	.4	2.06
7	2.7	.4	1.40
8	2.9	.3	0.83
9	3.1	.1	0
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			



Daily Contractor Quality Control Summary

Date: 5/8/12

- Samples packed on ice? / N
- Chain of custody complete? / N
- Is sample custody secured? / N
- Sampling procedures used properly? / N

Describe any deviations that occurred during field activities due to site conditions:

Were these deviations detrimental to sampling (explain)?

Other observations:



Groundwater Sampling Collection Summary

Site: MDEQ - SECTION 35 Date: 5/10/14
 Time: 1002 Sampler(s): AP, 8/2
 Field Sample Id#: 5377201 Weather: Part. cloudy, cool
 Preservative(s): HNO3 FOR DISSOLVED METALS, COOL ON ICE
 Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE
 Sampling Method Used: ~~BLADDER PUMP~~ Grab
 Photo: Yes

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.38	6.7	300	9.43	77.2	122.9

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
6.5 ft	2.5 ft			

Transducer Downloaded: Yes

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:

Hand delivered



Groundwater Sampling Collection Summary

Site: MDEQ – SECTION 35	Date: 5/12/12
Time: 1330	Sampler(s): AD, DA
Field Sample Id#: 535 4003	Weather: cloudy, cool
Preservative(s): HNO3 FOR DISSOLVED METALS, COOL ON ICE	
Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE	
Sampling Method Used: BLADDER PUMP	
Photo: Y1,	

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.56	5.92	6335	5.6	45.0	184.2
7.57	6.0	332	5.58	44.8	183.5
7.60	5.99	335	5.57	44.8	183.0

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
41.3'	6.72'	—	—	~5L

Transducer Downloaded: Y2,

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:
 Hand Delivered



Groundwater Sampling Collection Summary

Site: MDEQ – SECTION 35 Date: 7/10/17
 Time: 1437 - 1615 sample Sampler(s): AD, BS
 Field Sample Id#: 535 GW 02 Weather:
 Preservative(s): HNO3 FOR DISSOLVED METALS, COOL ON ICE
 Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE
 Sampling Method Used: BLADDER PUMP
 Photo:

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.23	7.35	722	7.76	67.5	120.5

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Pump 1 well dry - Sampled after recharge. Very low

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
83.0	77.71	—	—	2/6

Transducer Downloaded:

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:
 Hand delivered



Daily Contractor Quality Control Summary

Date: 5/10/12

- Samples packed on ice? Y / N
- Chain of custody complete? Y / N
- Is sample custody secured? Y / N
- Sampling procedures used properly? Y / N

Describe any deviations that occurred during field activities due to site conditions:

~~_____

_____~~

Were these deviations detrimental to sampling (explain)?

~~_____

_____~~

Other observations:

~~_____

_____~~



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: SW04
PROJECT NUMBER: TO-10 14	SAMPLE NUMBER: S35 SW04
LOCATION: SECTION 35	WEATHER: Cold, snowing
DATE/TIME: 10/2/12 @ 0821	SAMPLERS: AD, MT

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.70	5.5	271	11.95	94.6	51.0

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Willow, river rock

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Gravel, rock

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 10/3/12
Time: 0821 Sampler(s): A0, A1
Field Sample Id#: 53J5009 Weather: Cold, snow
Number / Type of Containers this Sample: 1-250ML HDPE
Sampling Method Used: GRAB
Photo: Xc,

Sediment Analyses:

- Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AD, MT

DATE: 10/3/12

Gage Reading:

TIME: 0821

Gage Time

Other: DISCHARGE CALCULATED AT OFFICE

535 SW 04
DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	11	0.0	0
2	11.5	1	0
3	12	2	0
4	12.5	2	0.04
5	13	4	1.14
6	13.5	7	1.64
7	14	5	1.02
8	14.5	5	0.83
9	15	4	1.33
10	15.5	4	0.74
11	16	4	1.62
12	16.5	3	1.54
13	17	3	2.15
14	17.5	3	1.55
15	18	3	0.70
16	18.5	3	0.64
17	19	3	1.82
18	19.5	2	2.04
19	20	2	1.74
20	20.5	2	2.05
	21.0	3	1.82
	21.5	4	1.03
	22	4	1.20
	22.5	3	1.05
	23	2	0.22
	23.5	1	0



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 535 SW 03
PROJECT NUMBER: TO-10-19	SAMPLE NUMBER: 535 SW 03
LOCATION: SECTION 35	WEATHER: Wind, rain
DATE/TIME: 10/3/12 @ 0903	SAMPLERS: AB, MT

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.85	5.32	239	12.01	95	43.3

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: rock, sand

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: rock, gravel

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 12/3/12
Time: 0903 Sampler(s): 1A1, 1A5
Field Sample Id#: 53551003 Weather: cold, hazy
Number / Type of Containers this Sample: 1-250ML HDPE
Sampling Method Used: GRAB
Photo: y

Sediment Analyses:

➤ Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand Delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AA, MT

DATE: 10/3/12

Gage Reading: —

TIME: 0903

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

53, 5W 03

DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	4	0	0
2	5	0	0
3	6	.1	0
4	7	.2	0
5	8	.2	0.01
6	9	.2	0.08
7	10	.1	0.01
8	11	.2	0
9	12	.3	0.12
10	13	.3	0.12
11	14	.3	0.26
12	15	.4	0.64
13	16	.3	0.41
14	17	.3	0.68
15	18	.4	0.41
16	19	.5	0.79
17	20	.5	1.29
18	21	.5	1.79
19	22	.6	1.83
20	23	.6	1.07
	24	.6	1.33
	25	.6	1.04
	26	.6	0.54
	27	.3	0.05
	28	.1	0



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: F W 0 1
PROJECT NUMBER: TO-10-14	SAMPLE NUMBER: SSTSW01
LOCATION: SECTION 35	WEATHER: mild, sunny
DATE/TIME: 10/3/12 @ 10:02	SAMPLERS: AO, MT

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.87	5.29	259	11.25	89.1	12.3

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Grassy

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Gravel

Water quality description: clear

Duplicate sample in SSTSW06



Sediment Sampling Collection Summary

Site: Section 35 Date: 10/3/12
Time: 1002 Sampler(s): AD, MT
Field Sample Id#: 1355001 Weather: cold, sunny
Number / Type of Containers this Sample: 1-250ML HDPE
Sampling Method Used: GRAB
Photo: Y.

Sediment Analyses:

> Total Recoverable Metals (Y) N

Chain of Custody & Shipping Information:

Hwa J. J. J.

Sample Location (latitude / longitude in deg/min/sec):

Other Observations: Duplicate sample 1355006



SITE: SECTION 35

PERSONNEL: AP, Mt

DATE: 10/3/12

Gage Reading: —

TIME: 1002

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

535 SW 01
DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	0 - 0.6	0.2	0.04
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: SW02
PROJECT NUMBER: TO-10-14	SAMPLE NUMBER: 135 SW02
LOCATION: SECTION 35	WEATHER: Cold, Snow
DATE/TIME: 10/3/12	SAMPLERS: 40, 17T

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
6.83	5.06	154	4.92	33.3	2.4

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Mud

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Deep MUD

Water quality description: Clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 10/3/12
Time: 1120 Sampler(s): AB, MT
Field Sample Id#: 5355002 Weather: Cold, snowing
Number / Type of Containers this Sample: 1-250ML HDPE
Sampling Method Used: GRAB
Photo: Y

Sediment Analyses:

➤ Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: UMBC

PERSONNEL: AO, MT

DATE: 10/3/12

Gage Reading: —

TIME: 1:20

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

535 SW 02
DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	0.4 - 1.0	0.1	0.08
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: SW05
PROJECT NUMBER: TO-10-14	SAMPLE NUMBER: 535 SW05
LOCATION: SECTION 35	WEATHER: Cold, rain-wind
DATE/TIME: 10/31/2012 12:35	SAMPLERS: AO, MT

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.8	7.87	212	12.25	93.0	11.3

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Grassy

Water flow (circle one) Laminar Stagnant Turbulent Other(describe)

Stream bed description: gravel

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 10/3/12
Time: 1235 Sampler(s): 140, 125
Field Sample Id#: 5355005 Weather: Cold, snowing
Number / Type of Containers this Sample: 1-250ML HDPE
Sampling Method Used: GRAB
Photo: Yes

Sediment Analyses:

➤ Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

How delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: UMBC

PERSONNEL: AO, MT

DATE: 10/2/12

Gage Reading:

TIME: 1235

Gage Time

Other: DISCHARGE CALCULATED AT OFFICE

535 SW05

DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	2-6	0-1	0
2	2-7	0-1	0-2
3	2-8	0-2	0-16
4	2-9	.2	0-05
5	3-0	.2	0-39
6	2-1	.2	0-47
7	2-2	.2	0-50
8	2-3	.2	0-41
9	2-4	.2	0-39
10	2-5	.2	0-12
11	3-6	.1	0-06
12	3-7	0	0
13			
14			
15			
16			
17			
18			
19			
20			



Daily Contractor Quality Control Summary

Date: 10/3/12

Samples packed on ice? Y / N
Chain of custody complete? Y / N
Is sample custody secured? Y / N
Sampling procedures used properly? Y / N

Describe any deviations that occurred during field activities due to site conditions:

~~_____~~
~~_____~~
~~_____~~
~~_____~~
~~_____~~
~~_____~~

Were these deviations detrimental to sampling (explain)?

~~_____~~
~~_____~~
~~_____~~
~~_____~~
~~_____~~
~~_____~~

Other observations:

~~_____~~
~~_____~~
~~_____~~
~~_____~~
~~_____~~
~~_____~~



Groundwater Sampling Collection Summary

Site: MDEQ – SECTION 35 Date: 10/5/12
 Time: 1038 Sampler(s): AD, MT
 Field Sample Id#: 5357401 Weather: Clear, cold
 Preservative(s): HNO₃ FOR DISOLVED METALS, COOL ON ICE
 Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE
 Sampling Method Used: ~~BLADDER PUMP~~ Peristaltic Pump
 Photo: Yes

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.22	6.90	303	6.94	52.0	54.6
7.22	6.92	302	6.97	52.5	55.7
7.22	6.91	302	6.91	52.1	52.3

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO ₃	HNO ₃
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
43.5'	6.95'	—	—	23L

Transducer Downloaded: Yes

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:

Hand delivered



Groundwater Sampling Collection Summary

Site: MDEQ – SECTION 35	Date: 10/5/12
Time: 1125	Sampler(s): HQ, MT
Field Sample Id#: 535 MW03	Weather: Clear, cold
Preservative(s): HNO3 FOR DISSOLVED METALS, COOL ON ICE	
Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE	
Duplicate sample is (535 MW03)	
Sampling Method Used: BLADDER PUMP	
Photo: Yes	

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.34	6.84	221	4.56	32.6	23.7
7.33	6.95	222	4.58	36.9	24.6
7.34	6.90	232	4.54	32.3	26.0
7.34	6.92	233	4.66	37.3	22.8
7.35	6.92	222	4.68	26.4	22.5

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
41.2'	13.89'	—	—	2.1L

Transducer Downloaded: Yes

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:

Hand Delivered



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: <u>SW04</u>
PROJECT NUMBER: <u>TO-1014</u>	SAMPLE NUMBER: <u>1375W04</u>
LOCATION: SECTION 35	WEATHER: <u>Cold, overcast</u>
DATE/TIME: <u>12/11/12 @ 0939</u>	SAMPLERS: <u>140, 141</u>

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
<u>7.71</u>	<u>6.02</u>	<u>305</u>	<u>12.20</u>	<u>83.1</u>	<u>121.2</u>

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Willow, gravel, Fec

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Gravel

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 12/10/12
Time: 0939 Sampler(s): AG, MT
Field Sample Id#: J35 5004 Weather: Overcast, 21
Number / Type of Containers this Sample: 1-250ML HDPE
Sampling Method Used: GRAB
Photo: Y

Sediment Analyses:

➤ Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AD, MT

DATE: 12/11/12

Gage Reading: —

TIME: 0939

Gage Time: —

Other: DISCHARGE CALCULATED AT OFFICE

535 Swoy
DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	0-11	1.2	1.15
2	Heavy	ice - would not	
3	break		
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 5003
PROJECT NUMBER: TO-10-19	SAMPLE NUMBER: 535503
LOCATION: SECTION 35	WEATHER: overcast, cold
DATE/TIME: 12/11/12 @ 1029	SAMPLERS: AD, MT

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.53	0.09	307	11.23	21.2	117.6

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Shale bank

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Gravel, rocks

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 12/11/12
Time: 1029 Sampler(s): 91, MT
Field Sample Id#: 5355W03 Weather: Overcast, cold
Number / Type of Containers this Sample: 1-250ML HDPE

Sampling Method Used: GRAB

Photo: Yes

Sediment Analyses:

➤ Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AD, MT

DATE: 12/11/12

Gage Reading: —

TIME: 1029

Gage Time: —

Other: DISCHARGE CALCULATED AT OFFICE

535-5003

DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	3.5	.4	.52
2	4	.6	.25
3	4.5	.6	.53
4	5	.6	.55
5	5.5	.7	.62
6	6	.6	.55
7	6.5	.7	.60
8	7	.7	.57
9	7.5	.6	.40
10	8	.6	.53
11	8.5	.7	.38
12	9	.6	.42
13	9.5	.5	.31
14	10	.6	.39
15	10.5	.5	.32
16	11	.5	.34
17	11.5	.4	.32
18	12	.4	.32
19	12.5	.2	.31
20	13	.2	.31
	13.5	.2	.25
	14	.2	.21
	14.5	.2	.13
	15	.2	.11
	15.5	.2	.04
	16	.2	.01
	16.5		0



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: SW01
PROJECT NUMBER: TO-1014	SAMPLE NUMBER: S35 SW01
LOCATION: SECTION 35	WEATHER: Overcast, cold
DATE/TIME: 12/11/12	SAMPLERS: AD, MT

Duplicate sample is S35 SW02

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.41	0.28	204	11.55	29.9	105.3

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Gravel Snow covered

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Gravel

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 12/11/12
Time: 1129 Sampler(s): VQ, NT
Field Sample Id#: 535SW01 Weather: Overcast, cold
Number / Type of Containers this Sample: 1-250ML HDPE
Duplicate sample is 535SW06
Sampling Method Used: GRAB
Photo: Y

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AD, MT

DATE: 12/11/12

Gage Reading: —

TIME: 1129

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

5355601

DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	.2	.2	0
2	.4	.2	.01
3	.6	.2	.17
4	.8	.2	.23
5	1.0	.2	.22
6	1.2	.2	.19
7	1.4	.1	.05
8	1.6	0	0
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 5W02
PROJECT NUMBER: TO-10-14	SAMPLE NUMBER: 5355W02
LOCATION: SECTION 35	WEATHER: Overcast, cold
DATE/TIME: 12/11/14	SAMPLERS: 90, MT

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.04	3.09	164	5.72	42.4	102.2

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Big

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: deep mud

Water quality description: clear



Sediment Sampling Collection Summary

Site: Section 35 Date: 12/11/12
Time: 1245 Sampler(s): 170, MT
Field Sample Id#: 535 1002 Weather: Overcast, cold
Number / Type of Containers this Sample: 1-250ML HDPE

Sampling Method Used: GRAB

Photo: y

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in deg/min/sec):

Other Observations:



SITE: SECTION 35

PERSONNEL: AD, MT

DATE: 12/11/12

Gage Reading: —

TIME: 1245

Gage Time —

Other: DISCHARGE CALCULATED AT OFFICE

53, SW 02

DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	4	0.5	0
2	4.5	0.5	0
3	5	0.25	0
4	5.5	0.2	0
5	6	0.2	0.02
6	6.5	0.2	0.01
7	7	0.2	0.01
8	7.5	0.2	0
9	8	0.2	0
10	8.5	0.2	0.02
11	9	0.2	0.04
12	9.5	0.2	0
13	10	1	0
14	10.5	0	0
15	11	0	0
16	11.5	—	—
17			
18			
19			
20			



SURFACE WATER SAMPLING RECORD

PROJECT: MDEQ-SECTION 35 BASELINE	STATION NUMBER: 5205
PROJECT NUMBER: TO-10-14	SAMPLE NUMBER: 5355205
LOCATION: SECTION 35	WEATHER: Overcast, cold
DATE/TIME: 12/11/12 @ 1349	SAMPLERS: V9, 05

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.66	0.13	213	11.8	91.1	92.7

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Streambank description: Shrub covered

Water flow (circle one): Laminar Stagnant Turbulent Other(describe)

Stream bed description: Gravel

Water quality description: clear



Sediment Sampling Collection Summary

Site: UBMC *Section 35* Date: *12/11/12*
Time: *1349* Sampler(s): *40, NT*
Field Sample Id#: *58, 5005* Weather: *Overcast, cold*
Number / Type of Containers this Sample: *1-250ML HDPE*

Sampling Method Used: GRAB

Photo: *Y2*

Sediment Analyses:

> Total Recoverable Metals (Y/N)

Chain of Custody & Shipping Information:

Hand delivered

Sample Location (latitude / longitude in *deg/min/sec*):

Other Observations:



SITE: SECTION 35

PERSONNEL: VAO, MT

DATE: 12/4/12

Gage Reading:

TIME: 1349

Gage Time

Other: DISCHARGE CALCULATED AT OFFICE

535 SW 05
DISCHARGE MEASUREMENTS

	Tape (ft)	Depth (ft)	Velocity (ft/sec)
1	-2	-2	0
2	-4	-3	.03
3	-6	-4	.02
4	-8	-4	.06
5	1.0	-5	.20
6	1.2	-5	.63
7	1.4	4#	.36
8	1.6	-4	1.6
9	1.8	2	0.1
10	2.0	0	0
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			



Daily Contractor Quality Control Summary

Date: 12/4/12

- Samples packed on ice? Y / N
- Chain of custody complete? Y / N
- Is sample custody secured? Y / N
- Sampling procedures used properly? Y / N

Describe any deviations that occurred during field activities due to site conditions:

could not break ice at PIT SWAY. One gaging
point in center of channel.

Were these deviations detrimental to sampling (explain)?

~~_____~~

Other observations:

~~_____~~



Groundwater Sampling Collection Summary

Site: MDEQ – SECTION 35 Date: 12/13/12
 Time: 1440 Sampler(s): AT, MT
 Field Sample Id#: 535 MW 01 Weather: clear, windy, cold
 Preservative(s): HNO3 FOR DISOLVED METALS, COOL ON ICE
 Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE
 Sampling Method Used: BLADDER PUMP Peristaltic pump
 Photo: Yes

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.83	6.21	322	7.02	55.1	122.8
7.74	6.36	302	6.73	54.8	127.9
7.70	6.44	307	6.40	52.1	132.7
7.69	6.33	296	6.33	51.3	132.4

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
—	13.04'	—	—	1645L

Transducer Downloaded: Yes

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:

Hand delivered



Groundwater Sampling Collection Summary

Site: MDEQ – SECTION 35 Date: 12/13/12
 Time: 1545 Sampler(s): NO, MT
 Field Sample Id#: 535 MW 03 Weather: clear, windy, cold
 Preservative(s): HNO3 FOR DISSOLVED METALS, COOL ON ICE
 Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE
 535 MW 03 is duplicate
 Sampling Method Used: BLADDER PUMP
 Photo: Y.1

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.91	6.10	340	5.18	42.4	141.9
7.88	6.20	340	5.11	41.2	143.3
7.86	6.18	340	5.23	42.2	143.2
7.85	6.18	340	5.36	42.2	144.3

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
—	15.32'	—		14L

Transducer Downloaded: Y.1

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:

Hand delivered



Groundwater Sampling Collection Summary

Site: MDEQ – SECTION 35 Date: 12/13/12
 Time: 1634 Sampler(s): 1A, 1B
 Field Sample Id#: 535AW04 Weather: Clear, cold
 Preservative(s): HNO3 FOR DISSOLVED METALS, COOL ON ICE
 Number / Type of Containers this Sample: 1-500ML HDPE, 2-250ML HDPE
 Sampling Method Used: BLADDER PUMP
 Photo: Yes

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.97	3.95	321	8.16	20.35	137.1
7.96	4.43	355	9.05	69.2	140.4
7.95	7.58	362	7.98	67.7	141.1
7.81	4.63	362	7.96	68.5	141.3
7.80	4.64	367	1.86	67.7	141.5

SAMPLES

	TDS, TSS, Acidity, Alkalinity, Hardness, Carbonate, Bicarbonate, Total Sulfate, Total Chloride, pH, EC	Total Metals, Total Cations	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3	HNO3
Filtered	No	No	Yes
Container	500ml HDPE	250ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
—	40.43'	—	—	2.5L

Transducer Downloaded: Yes

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:

Hand Delivered



Groundwater Sampling Collection Summary

Site: MDEQ - UBMC Section 35 Date: 12/17/12
 Time: 535 MW06 (1225) Sampler(s): A, MT
 Field Sample Id#: 535 MW06 Weather: Clear, cold
 Preservative(s): HNO3 FOR DISSOLVED METALS, COOL ON ICE
 Number / Type of Containers this Sample: 1-500ML HDPE, 1-250ML HDPE
 Sampling Method Used: BLADDER PUMP
 Photo: Yes

WATER QUALITY PARAMETERS

pH (SU)	Temperature (°C)	Conductivity (µs/cm)	D.O. (mg/l)	D.O. (%sat.)	ORP (mv)
7.13	5.11	406	8.23	71.0	190.5
7.14	5.90	405	7.77	57.4	190.4
7.14	5.95	407	7.10	57.1	190.2
7.14	6.03	403	7.19	57.9	190.4
7.15	6.07	403	7.20	58.1	190.2

SAMPLES

	TDS, TSS, Hardness, Total Sulfate, Total Chloride, pH, EC	Dissolved Metals, Dissolved Cations
Preservative	No	HNO3
Filtered	No	Yes
Container	500ml HDPE	250ml HDPE

Water Table Information

Total Depth (Top of casing to bottom of well)	Static Water Level (Top of Casing to water level)	Stick Up (Top of casing to ground surface)	Water Column	Volume Purged
—	37.73	—	—	23.2

Transducer Downloaded: Yes

Sample Location (latitude / longitude in deg/min/sec):

Chain of Custody Form Number & Shipping Information:
 Hand Delivered



Daily Contractor Quality Control Summary

Date: 12/14/12

- Samples packed on ice? Y / N
- Chain of custody complete? Y / N
- Is sample custody secured? Y / N
- Sampling procedures used properly? Y / N

Describe any deviations that occurred during field activities due to site conditions:

~~_____

_____~~

Were these deviations detrimental to sampling (explain)?

~~_____

_____~~

Other observations:

~~_____

_____~~

Appendix D

Photographs



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S35-PZ-05 March 2012



S35-PZ-10 March 2012



S35-MW-01 March 2012



S34-MW-03 March 2012



S35-MW-05 March 2012



S35-SW-01 March 2012



S35-SW-05 March 2012



S35-SW-02 March 2012



S35-SW-04 May 2012



S35-MW-01 May 2012



S35-SW-04 May 2012



S35-SW-02 May 2012



S35-SW-05 May 2012



S35-MW-01 May 2012



S35-PZ-05 May 2012



S35-PZ-10 May 2012



S35-MW-06 May 2012



S35-MW-03 May 2012



S35-MW-04 May 2012



S35-SW-03 November 2012



S35-SW-01 November 2012



S35-SW-02 November 2012



S35-SW-05 November 2012



S35-PZ-05 November 2012



S35-PZ-10 November 2012



S35-PZ-04 November 2012



S35-MW-01 November 2012



S35-MW-06 November 2012



S35-PZ-22 November 2012



S35-MW-03 November 2012



S35-MW-02 November 2012



S35-MW-05 November 2012



S35-SW-03 December 2012



S35-SW-04 December 2012



S35-SW-01 December 2012



S35-SW-02 December 2012



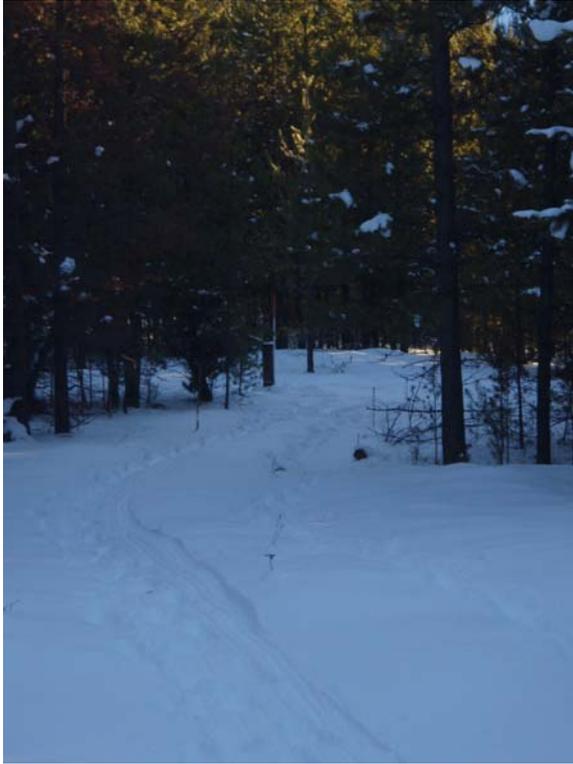
S35-PZ-05 December 2012



S35-SW-05 December 2012



S35-PZ-10 December 2012



S35-MW-05 December 2012



S35-PZ-22 December 2012



S35-MW-06 December 2012



S35-MW-02 December 2012



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Appendix E

Data Logger Graphical Output



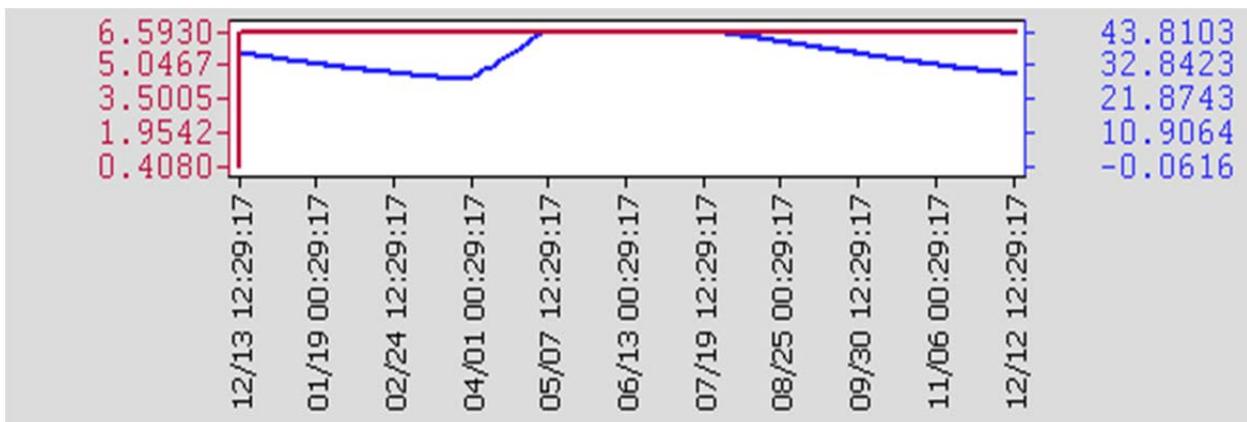
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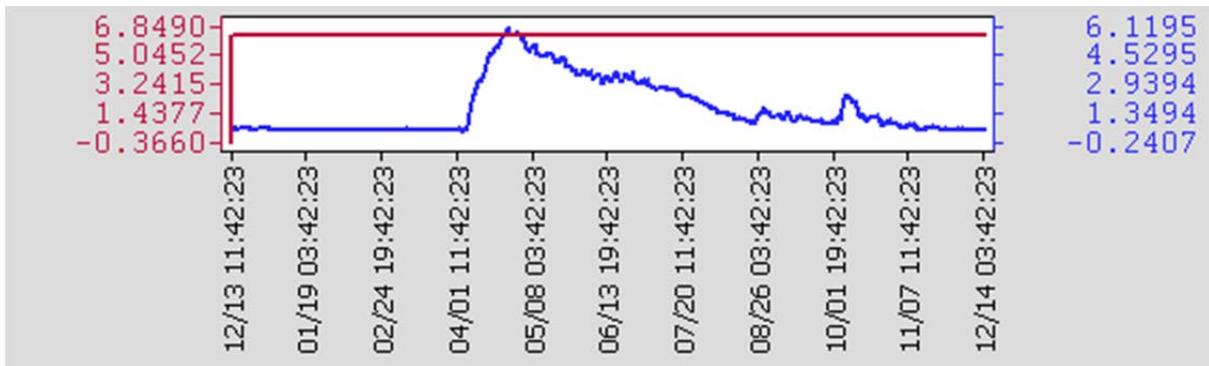
Temperature (°C)

Level (ft)

S35-MW-01

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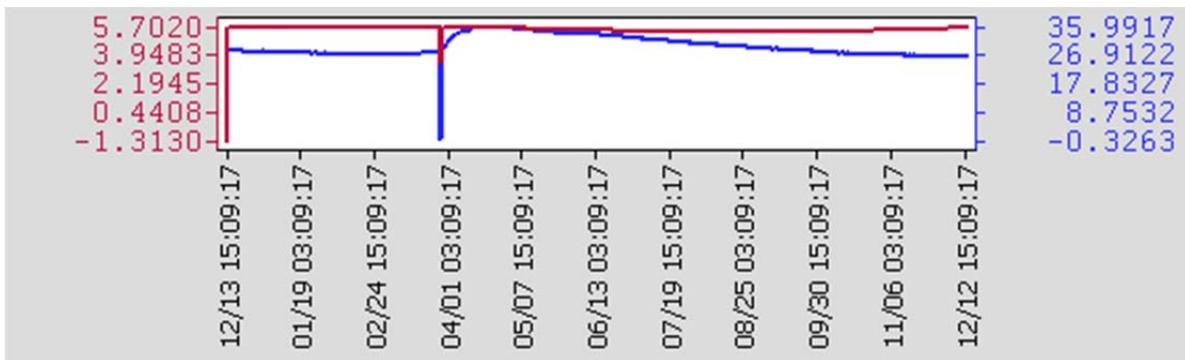
Temperature (°C)

Level (ft)

S35-MW-02

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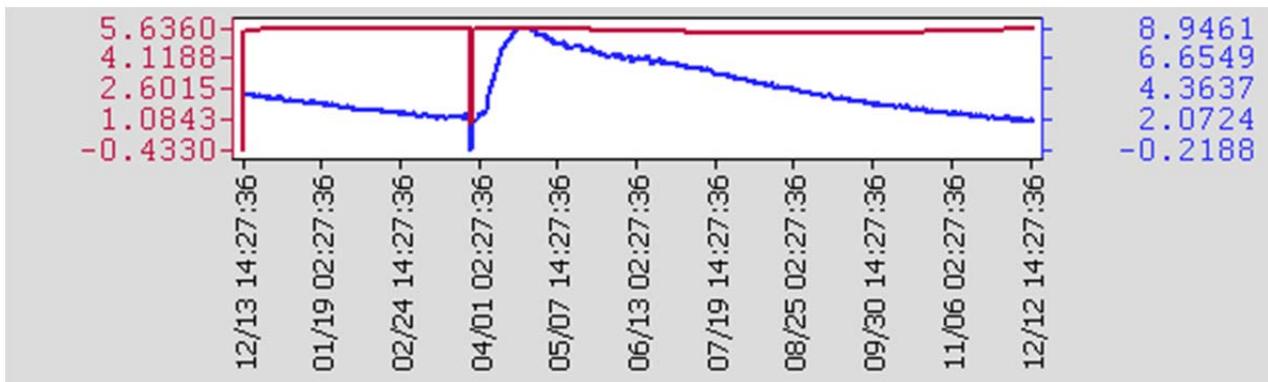
Temperature (°C)

Level (ft)

S35-MW-03

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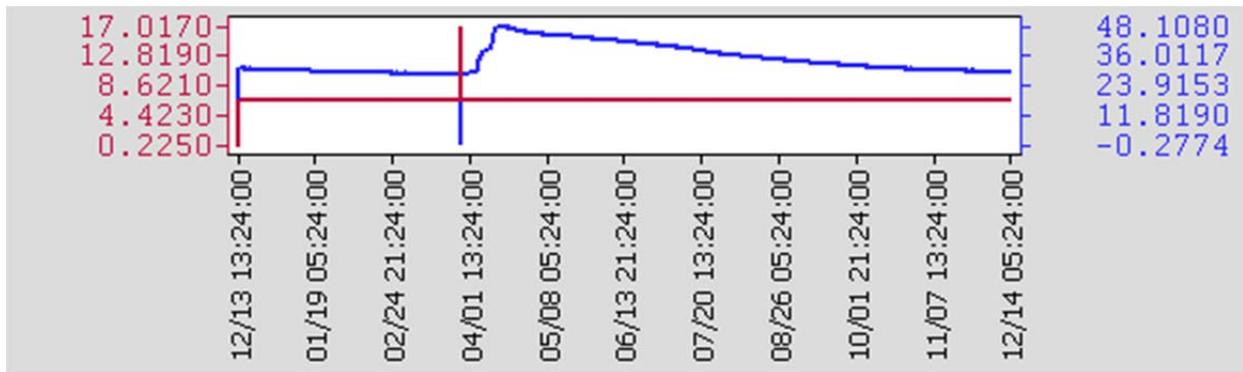
Temperature (°C)

Level (ft)

S35-MW-04

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Temperature (°C)

Level (ft)

S35-MW-06

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Appendix F

Certifications

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1830 West Airfield Drive
DFW Airport, Texas 75261

Calibration Certificate Traceability Statement

Asset Number: 1101434
MFG/Model Number: YSI/556-02
Serial Number: 09J100079
Description: MULTIPARAMETER
Customer: PORTAGE INC
Address: 1065 N. EWING
HELENA MT 59601

Customer P.O. No: CC 1434609
Rental Agreement Number: 1434609-0
Certificate Number: 143460901101434115 2

This certifies that the above product was calibrated to manufacturer's specifications using approved procedures and traceable measurement standards.

This calibration was performed by TRS-Environmental, located at 1830 West Airfield Drive DFW Airport, TX 75261.

The Quality System of TRS-Environmental is registered by UL DQS Certificate Number 10000112 to the Quality Management System Standard ISO 9001:2008.

Measurement standards are calibrated at planned intervals. Traceability is to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) or other recognized National Metrology Institute (NMI), natural physical constants, consensus standards, or by ratio type measurements using self calibrating techniques. Supporting documentation relative to traceability is available for review by appointment.

This instrument is initially being sent to the above customer calibrated and fully functional.

This certificate pertains to only the asset listed above and cannot be reproduced, except in full, without written approval of TRS-Environmental.

To determine the date for recalibration, the customer should use an interval that satisfies their own organization's internal quality system requirements.

Conditions of calibration are as follows:

Calibration Date: May 02, 2011

Calibrated By: TOM COLLINS

Quality Assurance:



Peel Off Sticker Here ---->

TRS-Environmental 800-532-3384
ID: 1101434 Date: 05/02/11
COLLINTO



1830 West Airfield Drive
DFW Airport, Texas 75261

Calibration Certificate Traceability Statement

Asset Number: 1101434
MFG/Model Number: YSI/556-02
Serial Number: 09J100079
Description: MULTIPARAMETER
Customer: PORTAGE INC
Address: 1065 N. EWING
 HELENA MT 59601

Customer P.O. No: CC 1434609
Rental Agreement Number: 1434609-0
Certificate Number: 143460901101434115 2

Laboratory Standards

MFG/MDL	Description	Asset	Cal. Type	Cal. Date	Due Cal
TEST SOLUTION	WATER, DEIONIZED	1091991	CNC	Feb 24, 2011	Feb 24, 2012
TEST SOLUTION	CONDUCTIVITY STANDARD	1091992	CNC	Jun 21, 2010	Jun 21, 2011
TEST SOLUTION	REDOX BUFFER (ZOBELLS)	1091993	CNC	Nov 18, 2010	Nov 18, 2011
TEST SOLUTION	BUFFER SOLUTION PH 4.0	1091995	CNC	Nov 09, 2010	Nov 09, 2012
TEST SOLUTION	BUFFER SOLUTION PH 7.0	1091996	CNC	Nov 16, 2010	Nov 16, 2012
TEST SOLUTION	BUFFER SOLUTION PH 10.0	1091997	CNC	Aug 16, 2010	Aug 16, 2012
OAKTON/03316-72	BAROMETER	1106232	CNC	Oct 18, 2010	Oct 18, 2011

Peel Off Sticker Here --->

TRS-Environmental 800-532-3384
 ID: 1101434 Date: 05/02/11
 COLLINTO



1830 West Airfield Drive
DFW Airport, Texas 75261

Certificate of Functionality

Asset Number: 1119309
MFG/Model Number: GEO/GEOCONTROL PRO-V2
Serial Number: 1113/103
Description: GEOCONTROL PRO
Customer: PORTAGE INC
Address: 1065 N. EWING
HELENA MT 59601

Customer P.O. No: CC RA # 1431903
Rental Agreement Number: 1431903-0
Certificate Number: 14319030111930911421

The Quality System of TRS-Environmental is registered by UL DQS Certificate Number 10000112 to the Quality Management System Standard ISO 9001:2008.

The operation of this instrument was verified before shipment. Calibration is not required.

This certificate pertains to only the asset listed above and cannot be reproduced, except in full, without written approval of TRS-Environmental.

Verified By: TOM COLLINS

Verified Date: 4/21/2011

Quality Assurance:



Peel Off Sticker Here --->

TRS-Environmental 800-532-3384
ID: 1119309 Date: 04/21/11
COLLINTO FUNC/CHECK



YSI incorporated
 1700/1725 Brannum Lane
 Yellow Springs OH 45387 USA
 tel: 937-767-7241 • fax: 937-767-9353



SonTek/YSI Inc.
 San Diego, CA

Packing List

Delivery Number	Packing Slip Number	Date Shipped
804546	YSI-243746	11-MAY-11
Shipped Via: FEDEX-Truck-Ground		

CERTIFICATE OF COMPLIANCE

This is to certify that the materials, processes and finished products were controlled, tested, and accepted in accordance with our quality system and the applicable specifications.

Rick Omlor

Rick Omlor
 President / CEO

SOLD TO
 PORTAGE INC
 1065 N EWING
 HELENA, MT 59601, United States
SHIP TO
 PORTAGE INC
 1065 N EWING
 HELENA, MT 59601, United States

PICKUP DATE	PAYMENT TERMS	FREIGHT TERMS	SR NUMBER	F.O.B	TAX NAME	TAX NO.	Supplier No.
11-MAY-11	Net 30 Days	Prepaid	287140	Shipping Point	Exempt		

ORDER LINE NO.	YSI ITEM NO.	ORDER NO.	CUSTOMER ITEM NO.	PO NO.	PO Line#	DESCRIPTION	HS NO.	UOM	QTY ORDERED	QTY SHIPPED	BACK ORDERED
2.1	RS56	635598		WARRANT Y		Repair, Model 556 556 SN 11C100910	9801.10.0000	EA	1	1	0
UNIT MEETS YSI SPECS Repair, Model 556-4 5563-4 SN 11C01 CUSTOMER CONCERN: PH PROBE SOCKET PIN, DO PROBE HANDHELD TESTED/PASSED BOARD TEST CABLE TESTED FOR SHORTS, HIGH IMPEDENCE LEAKAGE AND PHYSICAL DAMAGE/NO PROBLEM FOUND											
4.1	RS563-4	635598		WARRANT Y			9801.10.0000	EA	1	1	0

-For terms and conditions refer to WWW.YSI.COM/TERMS CONDITIONS
 -These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

**OPEN CHANNEL
CALIBRATION CERTIFICATE**

Model: 2000-51 Serial Number: 2007542

Sensor #: 5365

Type of Reading

Velocity: FPS

Level: IN N/A

Standard: Zero Static Velocity

2.02 Dynamic Velocity

N/A Level

Measured: -0.001 2.01 A

Tolerance: ±0.05 FPS ±2% ±0.4 in.

Calibration Technician: Jim Bennett Date: 4-15-11

Calibration is traceable to the National Institute of Standards and Technology (NIST), Gaithersburg, MD. For Product Information, service, or calibration, please contact the Customer Service Department.



**MARSH
MCBIRNEY**

A Hach Company Brand

PO Box 389, Loveland, CO 80539-0389

(970) 669-3050 • (800)-227-4224 • FAX (970) 669-2932

www.hach.com

Appendix G

DEQ Purge Water Disposal Flowchart

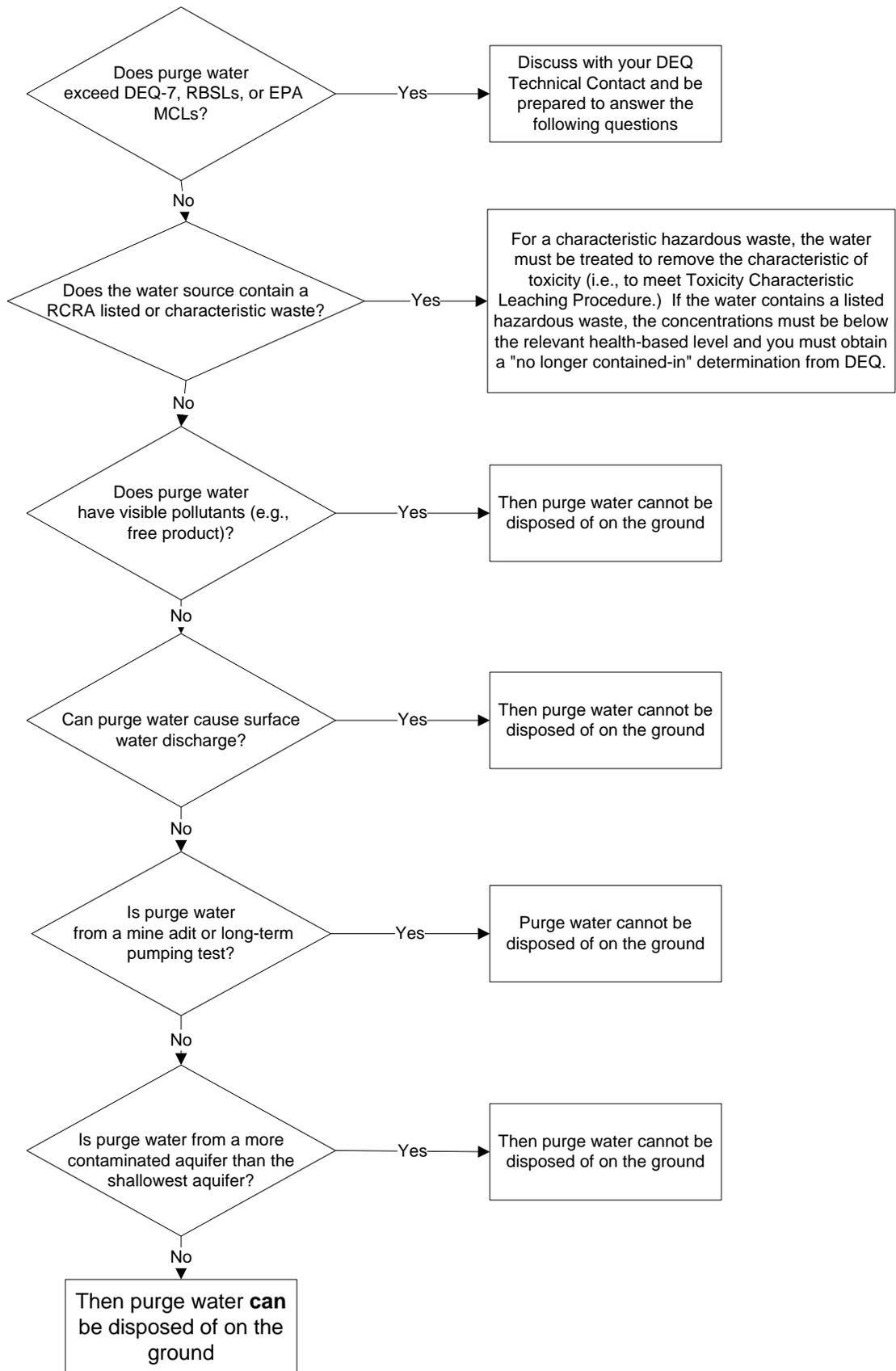


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PURGE WATER DISPOSAL FLOWCHART
(Untreated)
2/22/11



Appendix H

Electronic Copies



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