



Water Protection Bureau  
P.O. Box 200901  
Helena, MT 59620-0901

## PERMIT FACT SHEET

### MONTANA GROUND WATER POLLUTION CONTROL SYSTEM (MGWPCS)

Permittee:	Weyerhaeuser NR Company
Permit Number:	MTX000325
Permit Type:	Industrial Wastewater
Application Type:	New
Facility Name:	Weyerhaeuser Kalispell Complex
Facility Location:	NE Section 32 and 33, Township 29 North, Range 21 West Latitude: 48.23068, Longitude: -114.28657 Flathead County
Facility Address:	75 Sunset Dr., Kalispell
Facility Contact:	Ashley Williams, Environmental Manager
Treatment Type:	Outfall 004: Oil Water Separator with Granular Activated Carbon filters Outfall 001, 002, 003, and 005: None
Receiving Water:	Class I Ground Water
Number of Outfalls:	5
Effluent Type:	Industrial Wastewater
Mixing Zone:	None Authorized
Effluent Limit Type:	None
Effluent Limits:	None for the upcoming permit cycle
Flow Rate:	See Table 1
Effluent sampling:	5 Locations, Quarterly Sample Frequency, Table 1
Ground water sampling:	6 Monitoring Wells, Quarterly Sample Frequency, Table 3
Fact Sheet Date:	April, 2026
Prepared By:	Chris Boe

## **1.0 PERMIT INFORMATION**

The following fact sheet outlines the basis for issuing a new Montana Ground Water Pollution Control System (MGWPCS) wastewater discharge permit to Weyerhaeuser NR Company (Permittee) for the Kalispell Complex Facility. The MGWPCS permit application and supplemental materials provide the information that serves as the bases for the development of the effluent limit discussion, monitoring requirements, and special conditions outlined within this fact sheet. The scope of this permitting action is for the operation and maintenance of the treatment and disposal systems.

DEQ issues MGWPCS permits for a period of five years. The permit may be renewed at the end of the period, subject to timely application, reevaluation of compliance, water quality, and operations and maintenance.

### **1.1 APPLICATION**

DEQ received an application for issuance of a new permit on October 14, 2025. Applicable fees were received on November 21, 2025, and the application review commenced. DEQ requested, then received supplemental application information on February 06, 2026. DEQ reviewed and issued a completeness letter on February 24, 2026.

### **1.2 PERMIT HISTORY**

This is a new permit for an existing facility.

## **2.0 FACILITY INFORMATION**

### **2.1 LOCATION**

The facility is located at 75 Sunset Dr., in Evergreen, which is near Kalispell (**Figure 1, Figure 2**).

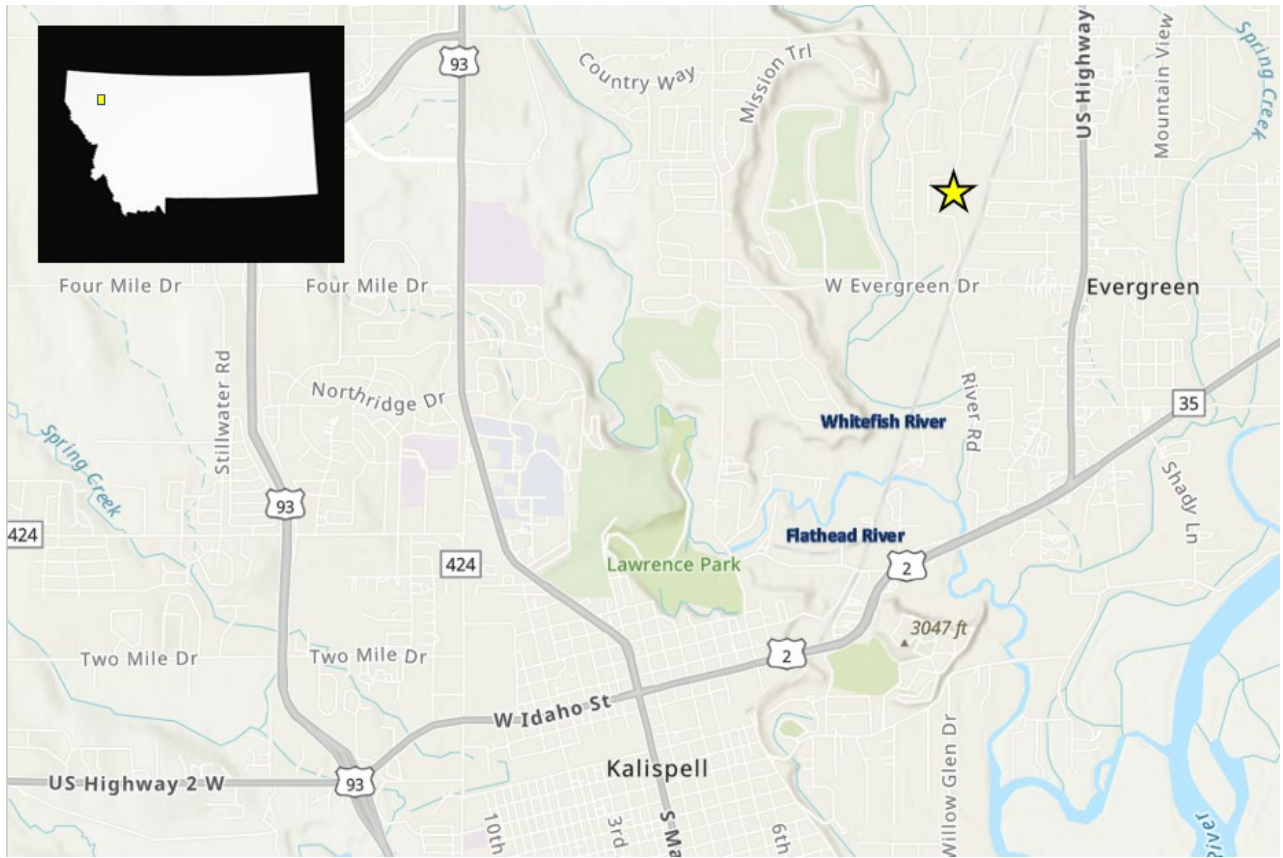


Figure 1: Regional Map

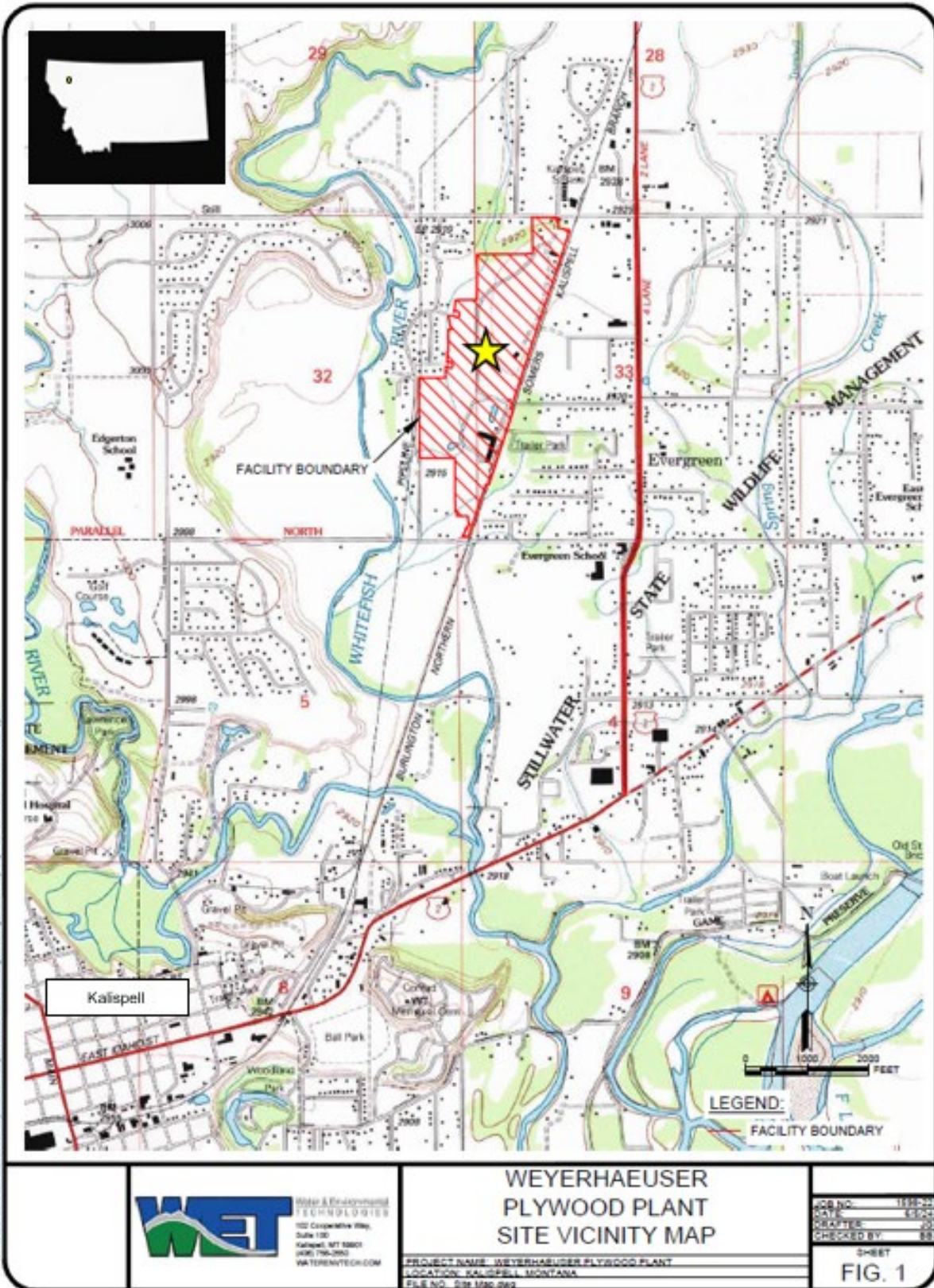


Figure 2: Vicinity Map

## 2.2 OPERATIONS

The timber products facility was established in the early 1960's to provide timber products such as dimensional lumber and plywood. System operations are summarized below in **Table 1**.

<b>Table 1: Operations Summary</b>
<b>Sources and Treatment</b>
<p>This timber products facility consists of a log yard, sawmill, plywood plant, post and dimensional lumber plant, and kilns (wood dryers), and a truck maintenance shop.</p> <p>The application lists the following active and passive activities as generators of wastewater: Operation and maintenance of the Veneer Dryer (washdown). The dryer undergoes washdown once a week, each event produces about 50,000 gpd of wastewater. Operation of the hog fuel boiler results in the collection of blowdown wastewater. Operation of the Coalescing Phase Separator Hydrocarbon Treatment System within the truck maintenance shop. Storm water, log deck, and wood waste pile runoff. Incidental exposure from industrial sources that may occur from large precipitation events.</p> <p>Contributing Sources of Wastewater: Industrial</p> <p>Standard Industrial Code(s) (SIC) of contributing sources:</p> <ul style="list-style-type: none"> <li>Wood Products (2499)</li> <li>Sawmills and Planning Mills, General (2421)</li> <li>Softwood Veneer and Plywood (2436)</li> </ul> <p>Treatment System: The permittee has plans to replace the existing Coalescing Phase Separator Hydrocarbon Treatment System with a new system that contains an Oil Water Separator with Granular Activated Carbon filters.</p> <p>Location of Facility:</p> <p>Northeast Section 32 and 33 , Township 29 North, Range 21 West  Latitude: 48.23068, Longitude: -114.28657  Flathead County</p>
<b>Sampling/Monitoring</b>
<p><b>Wastewater System:</b></p> <p>EFF-001: For Outfall 001 - sample collected from the Stormwater Log Pond (P1)</p> <p>EFF-002: For Outfall 002 - sample collected from the Stormwater Central Pond (P2)</p> <p>EFF-003: For Outfall 003 - sample collected from the Boiler Pond (P3)</p> <p>EFF-004: For Outfall 004 - sample collected from the Truck Shop Pond (P4)</p> <p>EFF-005: For Outfall 005 - sample collected from the Fire Pond (P5)</p> <p>The permittee is required to develop and implement a Wastewater Sampling, Analysis, and Reporting Plan (<b>Section 7</b>).</p> <p>The permittee is required to develop and implement a Wastewater Flow Rate Monitoring and Reporting Plan (<b>Section 7</b>).</p>

**Table 1: Operations Summary Cont'd.**

<b>Disposal Operation</b>
<p><b>Outfall 001 - Stormwater Log Pond (P1)</b>  Method of Disposal: Infiltration from pond to groundwater.  Contributing Sources: Stormwater, Log Yard runoff, and Incidental Exposure of Industrial Sources from large precipitation events.  Location: Southeast Section 32, Township 29 North, Range 21 West  Latitude: 48.23199, Longitude: -114.28845  Design Capacity: Average Daily Flow (gpd): Not Applicable  Maximum Daily Flow (gpd): 6,191</p>
<p><b>Outfall 002 - Stormwater Central Pond (P2)</b>  Method of Disposal: Infiltration from pond to groundwater.  Contributing Sources: Stormwater, Log Yard runoff, Wood Waste Piles Runoff, and Incidental Exposure of Industrial Sources from large precipitation events.  Location: Southeast Section 32, Township 29 North, Range 21 West  Latitude: 48.23094, Longitude: -114.28792  Design Capacity: Average Daily Flow (gpd): Not Applicable  Maximum Daily Flow (gpd): 326</p>
<p><b>Outfall 003 - Boiler Pond (P3)</b>  Method of Disposal: Infiltration from pond to groundwater.  Contributing Sources: Boiler Wastewater, Kiln Compensate Boiler Water, Dryer Wash Water, Stormwater, Log Yard Runoff, Wood Waste Piles Runoff, Ash Wetting Runoff, and Incidental Exposure of Industrial Sources from large precipitation events. The Kiln Boiler Water and Dryer Wash Water is reused as source water for the Primary Boiler Operations (<b>Figure 4</b>).  Location: Southeast Section 32, Township 29 North, Range 21 West  Latitude: 48.23026, Longitude: -114.28785  Design Capacity: Average Daily Flow (gpd): Not Applicable  Maximum Daily Flow (gpd): 652</p>
<p><b>Outfall 004 - Ash Wetting and Truck Shop Pond (P4)</b>  Method of Disposal: Infiltration from pond to groundwater.  Contributing Sources: Truck Shop Wash Hydrocarbon Treatment System, Stormwater, Log Yard waters, Ash Wetting Runoff, and Incidental Exposure of Industrial Sources from large precipitation events.  Location: Southeast Section 32, Township 29 North, Range 21 West  Latitude: 48.22936, Longitude: -114.28808  Design Capacity: Average Daily Flow (gpd): Not Applicable  Maximum Daily Flow (gpd): 37,799</p>
<p><b>Outfall 005 - Fire Pond (P5)</b>  Method of Disposal: Infiltration from pond to groundwater.  Contributing Sources: Municipal source water, Stormwater, Log Yard waters, and Incidental Exposure of Industrial Sources from large precipitation events.  Location: Southwest Section 33, Township 29 North, Range 21 West  Latitude: 48.23148, Longitude: -114.28582  Design Capacity: Average Daily Flow (gpd): Not Applicable  Maximum Daily Flow (gpd): 121,542</p>

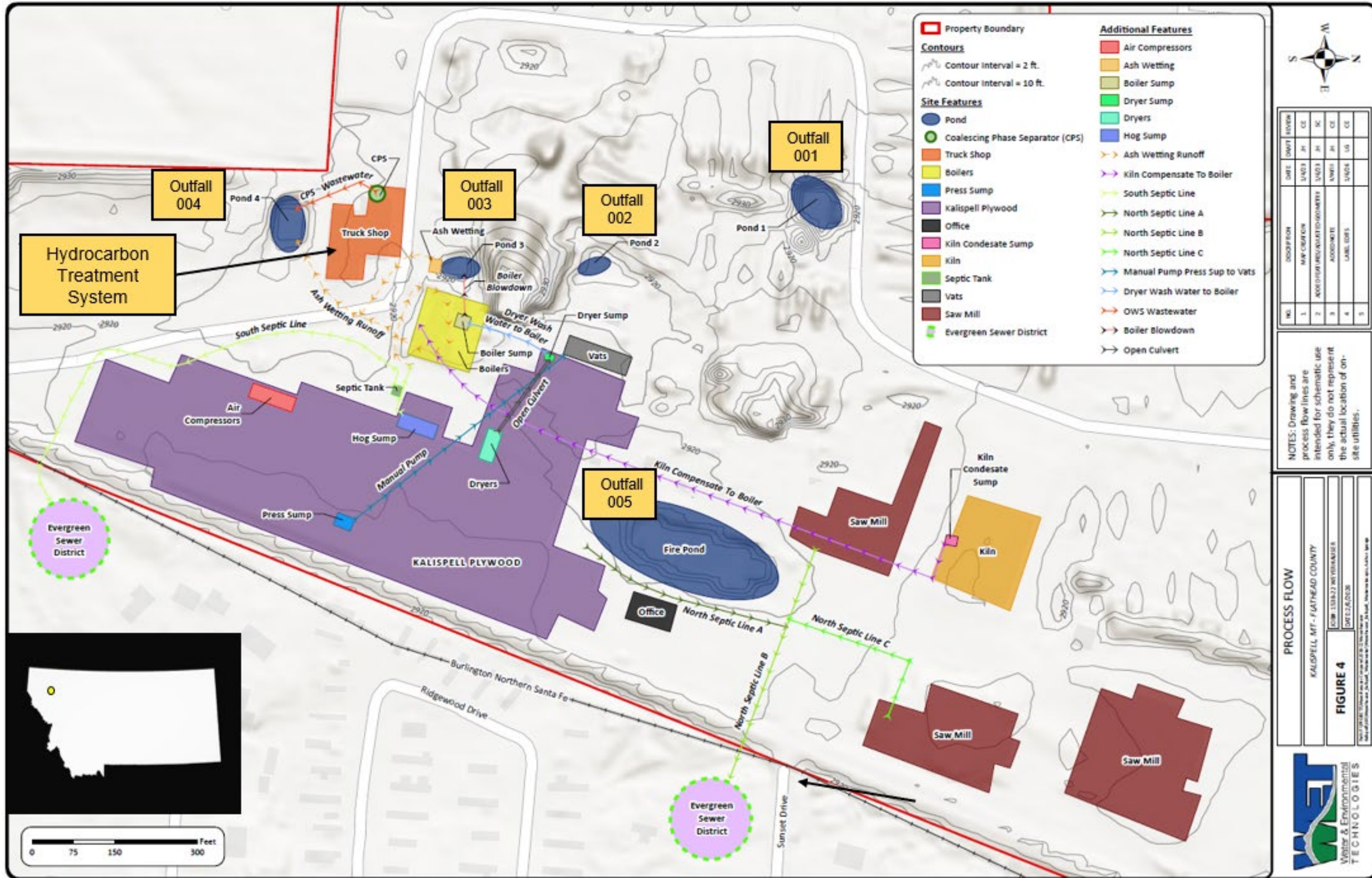


Figure 3: Facility Map and Wastewater Line Diagram

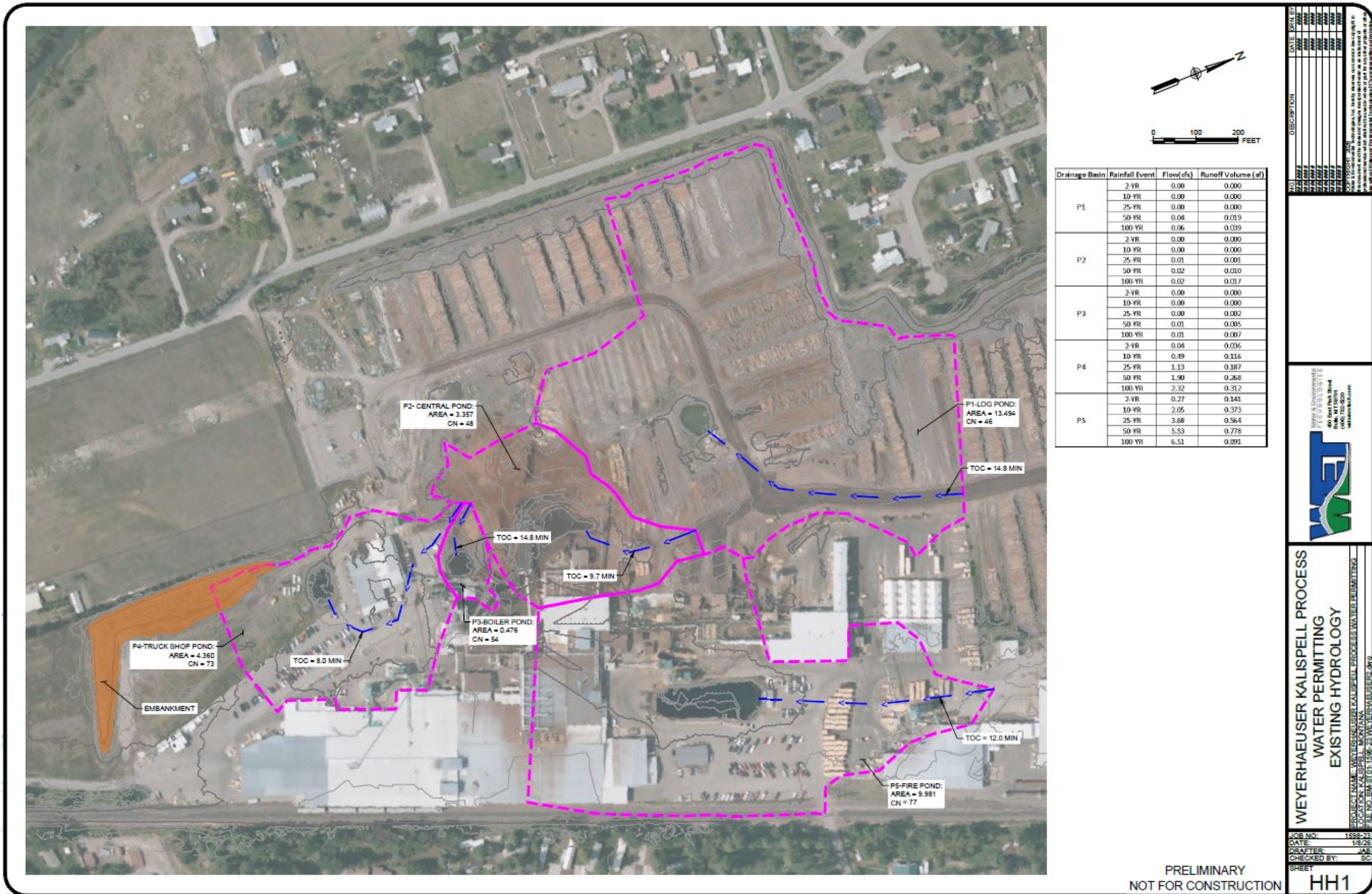


Figure 4: Storm Water Diagram

## 2.3 GEOLOGY/HYDROGEOLOGY/HYDROLOGY

<b>Table 2: Geology/Hydrogeology/Hydrology Summary</b>	
Geology	The Evergreen area just North of Kalispell encompasses the Evergreen Aquifer, which is located in the alluvial plain between the Whitefish and Flathead rivers. The unconfined aquifer consists of unconsolidated gravel containing minor amounts of sand and silt; it is underlain by less permeable glacial till and glaciolacustrine sediments.
Hydrogeology	The facility is located on the Evergreen Aquifer which is considered to have very high permeability (Konizeski, 1968). Most water wells in the area are constructed in this shallow aquifer. The top contact of the water bearing zone is approximately 7 to 10 feet below ground surface with the aquifer being around 28 to 30 feet thick. Ground water flows from north to south and discharges near the confluence of the Stillwater and Flathead rivers. Recharge is primarily from precipitation, and also surface water losses from the Flathead and Whitefish rivers when river stage is high (Konizeski and others, 1968; Noble and Stanford, 1986).
Ground Water Flow	Recently completed water level measurements and potentiometric maps indicate that the baseline ground water flow direction is to the south-southwest (S20°W). To date, monitoring of the shallow aquifer exhibits very little seasonal fluctuations. Regional study supports this flow direction (Noble, 1986).
Hydrology	The Whitefish River generally flows parallel with the Evergreen Aquifer (Noble, 1986). The portion of the aquifer that flows under the facility first parallels then may intersect with an eastern bend of the Whitefish River, 3,900 feet to the South of the facility.

An Aquifer Testing Report is provided in **Appendix A**.

## 2.4 GROUND WATER MONITORING NETWORK

The facility currently has an existing ground water monitoring well network, last updated in 2023. Monitoring well information has been summarized in **Table 3**. A map of the monitoring wells is provided in **Figure 5**. A Monitoring Well Installation Report is provided in **Appendix B**.

<b>Table 3: Monitoring Well Summary</b>
<b>Monitoring Well MW-1</b>
MBMG GWIC Id: Unknown
Use: Monitoring of the shallow unconfined ground water bearing zone.
Permit Status: Active. Installed September 2023.
Location: Located on the far north end of the property. Latitude: 48.23989 Longitude: -114.28232 Elevation (ft): 2914.88 (Surveyed from top of casing, TOC).
Representation: Hydraulically upgradient of the infiltration ponds.

<b>Monitoring Well MW-2</b>
MBMG GWIC Id: Unknown
Use: Monitoring of the shallow unconfined ground water bearing zone.
Permit Status: Active. Installed September 2023.
Location: Located 1,100 ft to the northwest of the sawmill building. Latitude: 48.23669 Longitude: -114.28700 Elevation (ft): 2913.44 (Surveyed from TOC).
Representation: Hydraulically upgradient of the infiltration ponds.
<b>Monitoring Well MW-3</b>
MBMG GWIC Id: Unknown
Use: Monitoring of the shallow unconfined ground water bearing zone.
Permit Status: Active. Installed September 2023.
Location: Located 560 ft to the west of the truck shop. Latitude: 48.22975 Longitude: -114.29070 Elevation (ft): 2910.52 (Surveyed from TOC).
Representation: Hydraulically sidegradient of the infiltration ponds. MW-3 is located in a fill area which contains decomposing lumber, as such, water quality conditions are elevated above expected ambient conditions.
<b>Monitoring Well MW-4</b>
MBMG GWIC Id: Unknown
Use: Monitoring of the shallow unconfined ground water bearing zone.
Permit Status: Active.
Location: Located 100 ft south of the truck shop. Latitude: 48.22941 Longitude: -114.28856 Elevation (ft): 2910.84 (Surveyed from TOC).
Representation: Hydraulically downgradient of the infiltration ponds.
<b>Monitoring Well MW-5</b>
MBMG GWIC Id: Unknown
Use: Monitoring of the shallow unconfined ground water bearing zone.
Permit Status: Active.
Location: Located 500 ft south of the truck shop. Latitude: 48.22837 Longitude: -114.28792 Elevation (ft): 2911.09 (Surveyed from TOC).
Representation: Hydraulically downgradient of the infiltration ponds.
<b>Monitoring Well MW-6</b>
MBMG GWIC Id: Unknown
Use: Monitoring of the shallow unconfined ground water bearing zone.
Permit Status: Active. Installed September 2023.
Location: Located 560 ft south of the plywood plant building. Latitude: 48.22697 Longitude: -114.28719 Elevation (ft): 2910.41 (Surveyed from TOC).
Representation: Hydraulically downgradient of the infiltration ponds.

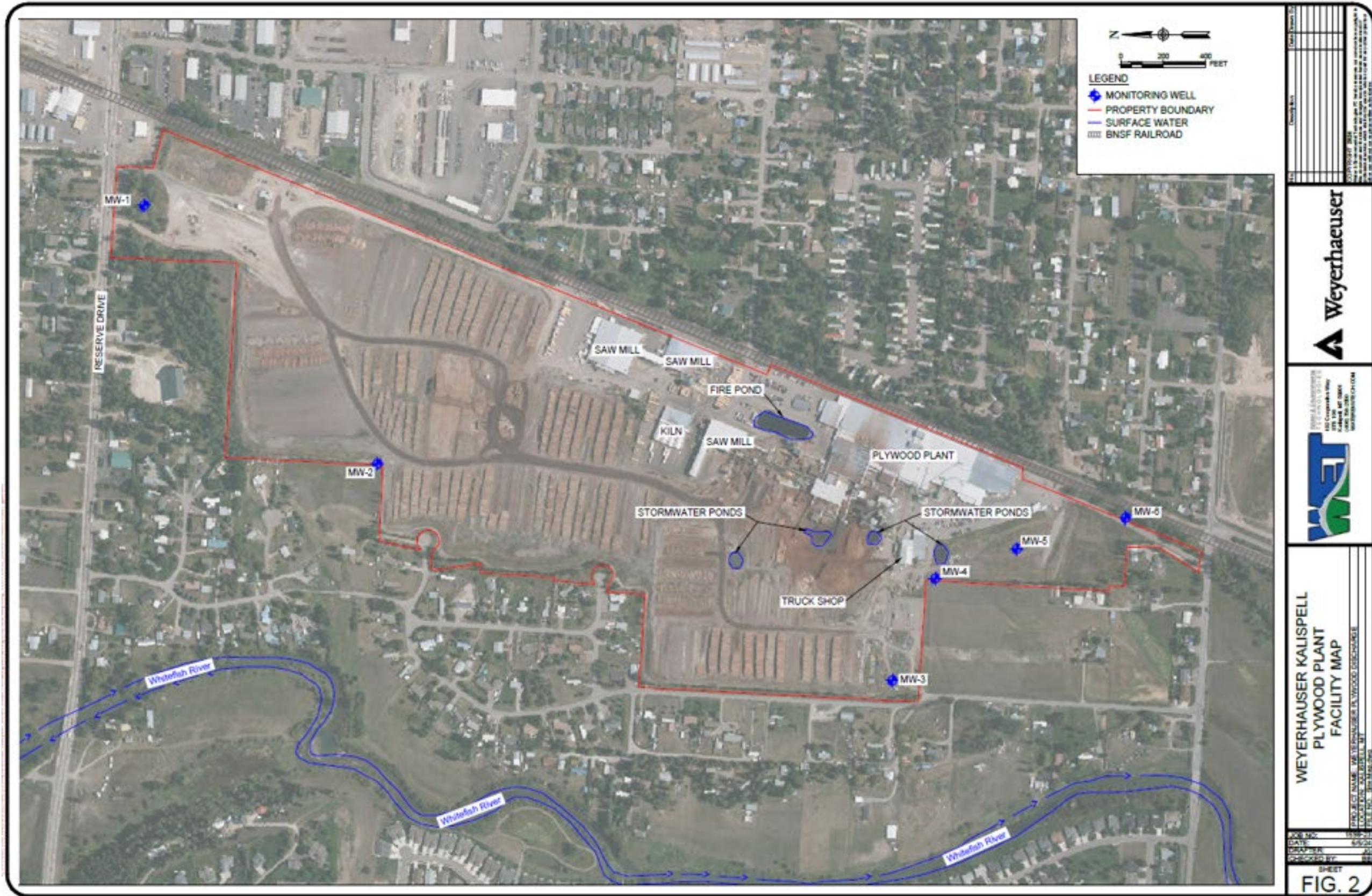


Figure 5: Monitoring Well Map

## 2.5 QUALITY INFORMATION

Quality estimates for the wastewater operation and the underlying aquifer are provided in **Table 4**. As this is for a new permit, wastewater characteristics were conservatively estimated using multiple sources. As this is an existing discharging facility, the ambient and downgradient ground water quality data are indicators of the facilities current impact to the aquifer.

**Table 4: Quality Summary**

Analyte/Measurement	units	Estimated Wastewater Characteristics				Water Quality Standards	Ambient Ground Water Quality
		Outfall 001, 002, 003, 004, 005			Outfall 003		
		Representative from Columbia Falls Operations <i>MTX000097</i>	Best Professional Judgement <i>Application</i>	On-site Downgradient Ground Water Quality Sampling <i>Application</i>	Boiler Wastewater and Dryer Wash Water <i>Application</i>		
Alkalinity, Total [as CaCO <sub>3</sub> ]	mg/L	581	749	318		301	
Biochemical Oxygen Demand [BOD]	mg/L	13	<2	<2		<2	
Chloride [as Cl]	mg/L	58	20	63		30	
Hydrocarbons, Total Petroleum [TPH]	mg/L	0.55					
Nitrogen, Ammonia	mg/L	0.78	<0.05	<0.05	<0.05	<0.05	
Nitrogen, Kjeldahl, total [as N]	mg/L	3.72	0.5	<0.5	1.0	<0.5	
Nitrogen, Nitrite + Nitrate [as N]	mg/L	1.24	1.54	0.88	0.19	10.0	
Nitrogen, Total [as N]	mg/L	4.96	2.0	1.3	1.15	0.97	
pH	s.u.	8.42	8.45	7.3	7.3	7.3	
Phosphorus, Total [as P]	mg/L	0.63	1.30	0.09	0.12	0.01	
Specific Conductivity [SC] @ 25°C	µS/cm	1118	1175	748	377	652	
Solids, total dissolved [TDS]	mg/L	708	816	438	291	359	
Sulfate, Total [as S]	mg/L	12	9	8		5	
Arsenic [as As]	mg/L	0.0027		<0.001	<0.001	0.010	
Barium [as Ba]	mg/L	0.32		0.57		1.0	
Iron [as Fe]	mg/L	0.13	0.03	<0.02	0.16	0.04	
Manganese [as Mn]	mg/L	0.19	<0.01	0.11	0.05	0.32	

## Footnotes:

CFU = Colony Forming Units

ft-bmp: feet below measuring point

MSL: mean sea level

s.u.: standard units

\*Analyte was not required to be sampled in the application process, or not applicable.

The median value is displayed for the parameters that have a skewed, variable, or limited data set; otherwise average is listed.

MTX000097 Outfall 003 was referenced.

Downgradient monitoring is used to determine impacts from the active discharges.

See **Table 3**: MW-4, MW-5, and MW-6 used for downgradient; and MW-1, and MW-2 used for ambient.

(1) Ammonia and organic nitrogen are the primary nitrogen components in untreated and minimally treated wastewater streams.

A Wastewater Quality Summary Report and Ground Water Quality Summary Report is provided in **Appendix C and Appendix D**.

The permittee is planning to replace the existing hydrocarbon treatment system in the Truck Shop building with a new Granular Activated Carbon filter system. The new system may be capable of treating any incidental Volatile Organic Compounds (or similar) to non-detect or near non-detect levels. The permittee has also developed an updated Spill Prevention, Control, and Countermeasures Plan included in **Appendix E**.

## 3.0 WATER QUALITY STANDARDS

Part of DEQ's mission is to protect, maintain, and improve the quality of state waters. Water quality standards provide the basis for limitations that protect state waters. These include maintenance of designated beneficial uses, specific water quality standards, and the State nondegradation policy. DEQ protects all designated uses of state water by basing permit conditions on the most restrictive water quality standards intended to protect the most sensitive uses.

### 3.1 BENEFICIAL USES

The receiving state water is Class I ground water which is a high quality water of the state. The current and future beneficial uses of the aquifer must be protected. The beneficial uses and water quality standards necessary to protect those uses are listed below.

Beneficial uses:

- Public and private water supplies;
- Culinary and food processing purposes;
- Irrigation;
- Drinking water for livestock and wildlife; and,
- Commercial and industrial purposes.

Water quality standards are established to protect these beneficial uses. The applicable standards include the following:

- Ground water human health standards in DEQ 7;
- No increase in any parameter that renders receiving water harmful, detrimental, or injurious to the beneficial uses designated for Class I groundwater in ARM 17.30.1006; and,
- No increase of a parameter that causes violation of the nondegradation provisions in § 75-5-303, MCA.

DEQ protects all the assigned beneficial uses by protecting the most sensitive. The most restrictive standard will be used in formulating limitations (**Section 5**). The corresponding numeric standards are listed above in **Table 4**.

### 3.2 NONDEGRADATION

Montana’s nondegradation policy is intended to preserve the existing condition of high-quality state waters. Any water with existing conditions better than the water quality standards must be maintained at that high quality. The nondegradation policy allows discharges to cause only nonsignificant changes in water quality.

Activities that cause a significant change in water quality may not be authorized without an authorization to degrade. See 75-5-303(3), MCA. The permittee has not requested nor received an authorization to degrade.

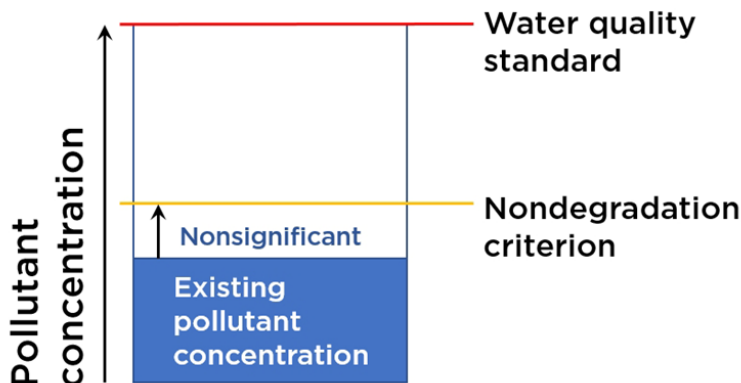


Figure 6: Nonsignificance schematic

### 3.3 SIGNIFICANCE CRITERIA AND DETERMINATION

DEQ determined that the facility was established in the early 1960’s and therefore the activity is not considered to be a new or increased source resulting in a change of existing water quality occurring on or after April 29, 1993 (ARM 17.30.702). DEQ is therefore not required to perform a significance determination (ARM 17.30.715).

### 3.4 PARAMETER CHARACTERIZATION

DEQ analyzed the characteristics of the wastewater sources using available analytical data and best professional judgement. The parameters have been grouped into the following four categories:

- Parameters of Interest: Analytes that require ongoing characterization.
- Parameters of Concern: Analytes that need long-term assessment monitoring.
- Discontinued Parameters: Analytes with fully characterized water quality data that were determined to have no potential impacts.
- New Parameters: Analytes that are newly listed.

A summary is provided below in **Table 5**.

The analytes listed as Parameter of Concern have the potential to affect beneficial uses of the receiving aquifer. Therefore, DEQ performed a reasonable potential analysis to determine if ground water effluent limitations are warranted. The reasonable potential analysis is discussed in **Section 3.5**.

**Table 5: Parameter Characterization Summary**

<p><b>Discontinued Parameters</b></p> <p><b>Fully Characterized Data Sets Analyte not listed as a Parameter of Interest/Concern</b></p>
<p>None, new permit</p>

<p><b>New Parameters</b></p> <p><b>Analytes Newly Listed for Detection or Assessment Monitoring</b></p>
<p>New permit, all newly listed</p>

<p><b>Parameters of Interest</b></p> <p><b>Analytes for Detection Monitoring/Characterization</b></p>
Alkalinity, Total [as CaCO <sub>3</sub> ]
Biochemical Oxygen Demand [BOD]
Chloride [as Cl]
Hydrocarbons, Total Petroleum [TPH]
pH
Phosphorus, Total [as P]
Specific Conductivity [SC] @ 25°C
Solids, total dissolved [TDS]
Sulfate, Total [as S]
Iron [as Fe]
Manganese [as Mn]

<p><b>Parameters of Concern</b></p> <p><b>Analytes for Assessment Monitoring</b></p>
Nitrogen, Ammonia
Nitrogen, Kjeldahl, Total [as N]
Nitrogen, Nitrite + Nitrate [as N]
Nitrogen, Total [as N]
Arsenic [as As]
Barium [as Ba]

### 3.5 REASONABLE POTENTIAL – GROUND WATER

A reasonable potential analysis is used to determine whether a discharge to ground water, either alone or in combination with other sources, could lead to an excursion above an applicable water quality standard. Pending the outcome of the assessment, development of an effluent limitation, or mitigation through best management practices (BMPs) may be established.

The analysis is based on statistical procedures outlined in the United States Environmental Protection Agency (USEPA) Technical Support Document (TSD) document (USEPA, 1991). The critical effluent concentration ( $C_{eff}$ ) is adjusted by the TSD multiplier factor which considers the variability of the effluent data set (95% confidence level).

If the projected pollutant concentration ( $C_{proj}$ ) exceeds an applicable water quality standard then an effluent limit or BMP must be developed. **Table 6** below provides a summary of the reasonable potential analysis. Effluent limitation is further discussed in **Section 5**.

**Table 6: Reasonable Potential Analysis Summary - Ground Water - Outfall 001, 002, 003, 004, 005**

Parameter	Units	Observed Effluent Conc. Value	# of Samples	TSD Multiplier	Adjusted Effluent Conc. Value ( $C_{eff}$ )	Dilution Authorized?	Projected Pollutant Conc. <sup>(1)</sup> ( $C_{proj}$ )	Water Quality Standard (WQS)	Effluent Limit Needed?	Reason
Arsenic [as As]	mg/L	0.0027	30	1.24	0.0033	N	0.0033	0.010	N	$C_{proj} < WQS$
Barium [as Ba]	mg/L	0.32	30	1.14	0.37	N	0.37	1.0	N	$C_{proj} < WQS$
Total Nitrogen [as N]	mg/L	4.96	24	1.19	5.91	N	5.91	10.0	N	$C_{proj} < WQS$

## Footnotes:

TSD = USEPA Technical Support Document For Water Quality-Based Toxics Control, EPA/505/2-90-001.

(1) Projected pollutant (effluent) concentration includes dilution where a mixing zone has been authorized.

### 3.6 REASONABLE POTENTIAL – SURFACE WATER

The Whitefish River is located 3,900 feet to the South of the facility (**Figure 2**). The shallow aquifer beneath the outfall site is likely indirectly hydrologically connected with the river.

As the facility is existing, DEQ was able to analyze real-time impacts by comparing the effluent, upgradient (ambient) and downgradient ground water quality data (**Table 4**). In looking at the assessment analytes (Parameters of Concern, **Table 5**), we see no measurable changes in arsenic when comparing upgradient (<0.001 mg/L) and downgradient (<0.001 mg/L). For total nitrogen, we see a slight increase between upgradient (0.97 mg/L) and downgradient (1.3 mg/L). For barium, the effluent concentration (0.32 mg/L) is estimated to be less than upgradient levels (0.45 mg/L). This points to the assessment analytes having little to no impact on the aquifer and downgradient surface waters.

For arsenic and barium, the discharges may have no added impact to the environment. No added impacts may result in no direct effects occurring to the Whitefish River.

The impact we see from the discharge of total nitrogen to the aquifer may result in a slight increase. However, the downgradient concentration (1.3 mg/L) is well below the estimated discharge concentration (5.7 mg/L). This reduction over a short distance may indicate high levels of dilution capacity in the aquifer and/or attenuation capabilities of the subsurface.

DEQ uses a mixing scenario to assess a ground water discharge's potential to impact surface water. These scenarios estimate in-stream concentrations for assessment analytes. These estimates are simple mass-balance calculations based on instantaneous mixing with the nearest surface water. The surface water concentrations, surface water flow, and effluent characteristics are based upon best available data.

The conservative scenario used to estimate surface water impacts is taking the undiluted effluent, placing it directly into the river, and estimating river concentrations after instantaneous dilution. This direct scenario is considered to be most conservative as it does not account for:

- Dilution within the aquifer;
- Natural processes that provide for attenuation in the subsurface; and,
- Losses that occur in the hyporheic zone.

This overly conservative approach can be useful for demonstrating impacts to surface water.

The calculations underlying these projections are discussed and provided fully in **Appendix F**. Based on these conservative analyses, there will be no measurable increase to surface water. The projection demonstrates the discharge will not directly impact surface water, will not cause degradation of surface water, and is nonsignificant under the Montana Water Quality Act and rules implementing that Act. See §§ 75-5-301, 75-5-303, and 75-5-317, MCA and ARM 17.30.715. The proposed permitting action will not individually or cumulatively have a significant impact on the human environment, and does not have a reasonable potential to impact surface waters.

The Whitefish River is currently impaired due to oil and grease, polychlorinated biphenyls (PCBs), and temperature (DEQ, 2020). The existing facility is not expected to discharge oil and grease and PCBs. Upon the discharge of wastewater to the subsurface, the thermal capacity of the soils will mitigate any thermal transport to the river.

All major discharge permitting actions, including the current action and any future actions, will include any substantive information derived from public input relating to potential impacts on the human environment and on water quality. All future actions related to this current action will be addressed by DEQ through additional discharge permitting process procedures. Any actions that are outside the purview of the discharge permit may not be addressed by DEQ until the next permitting action takes place.

### 3.7 CUMULATIVE EFFECTS

As discussed in **Section 3.6**, DEQ was able to analyze real-time impacts by comparing the effluent, upgradient (ambient) and downgradient ground water quality data (**Table 4**). Data shows that the assessment analytes having little to no impact on the aquifer. This possibly is indicative of the dilution capacity of the aquifer and/or the attenuation capabilities of the subsurface.

Upon dilution and minimum transport, the nitrates drop down to 0.88 mg/L which is close to the ambient water quality levels (**Table 4**). These levels are far below the most restrictive water quality standard that is currently in effect (**Table 4**).

The facility falls within the Evergreen Water and Sewer Districts where most buildings that generate wastewater are connected to the sewer rather than having an on-site septic and disposal system. Ground water quality data (**Table 4**) shows very low ambient nitrates (0.71 mg/L) which are an indicator of very few sources. In fact, nitrate concentrations are well within natural occurring levels (<2 mg/L; Fetter, 1994).

DEQ considered the direct, secondary, and cumulative environmental impacts of the operation of the existing facility and found no significant adverse effects on water quality, the human environment, and the physical environment. DEQ analyses included the cumulative impact from other past and present actions.

All major discharge permitting actions, including the current action and any future actions, will include any substantive information derived from public input relating to potential impacts on the human environment and on water quality. All future actions related to this current action will be addressed by DEQ through additional discharge permitting process procedures. Any actions that are outside the purview of the discharge permit may not be addressed by DEQ until the next permitting action takes place.

To protect beneficial uses, there shall be no increase of a pollutant to a level that renders the waters harmful, detrimental, or injurious. Therefore, no wastewaters may be discharged such that the wastewater either alone or in combination with other wastes will violate or can reasonably be expected to violate any standard.

A ground water monitoring network has been established that will provide for long-term monitoring of the aquifer both upgradient and downgradient of the discharges. The ground water data collected will provide continual monitoring of the aquifer including the cumulative impacts of any upgradient source. This data is available to the public and used by DEQ to update future permit conditions. In addition, any update to permit conditions, including cumulative effect analyses, will be noticed to the public and will undergo public comment.

Long-term monitoring, reporting, renewed analysis and updates of permit conditions, and public notice and comment procedures is a public benefit to having a system that is covered under a pollution control system permit.

## 4.0 MIXING ZONE

A mixing zone is an area of the receiving shallow ground water where the aquifer is able to assimilate wastewater pollutants. The availability of dilution is based on the site-specific aquifer characteristics and the drainfield dimensions. The allowable level of dilution is limited by the permit to ensure that the most restrictive water quality standards are met at the end of the mixing zone.

The applicant did not request a mixing zone. All water quality standards are met prior to discharge. A mixing zone is not currently authorized for the facility.

## 5.0 LIMITATIONS

A ground water reasonable potential analysis was performed on the analytes identified as Parameters of Concern (**Section 3.5**). The analysis determined that exceedance of the most restrictive water quality standard is not reasonable. Therefore, limitations will not be established for this permit cycle.

## 6.0 MONITORING AND REPORTING

Long-term monitoring and reporting of wastewater and ground water will be established as a condition of this permit. Monitoring and sampling will help to ensure compliance with special conditions.

Wastewater samples and measurements shall be representative of the volume and nature of the monitored discharge. Possible stagnant conditions at the infiltration ponds may lead to stratification of the collected wastewaters. Therefore, the log ponds will either need to be mixed thoroughly prior to sampling, or a depth integrated sample needs to be collected. The permittee shall develop a Wastewater Sampling, Analysis, and Reporting Operational Manual which will be used as a guide in preparing and collecting wastewater samples and reports. The manual requirements are summarized in **Section 7.6**.

The collection and reporting of wastewater flow rate data may be a challenge due to:

- Complexity of the wastewater collection and disposal systems,
- Current design and use of discharge structures and conveyance systems,
- Variability of precipitation events, and,
- Intermittent wastewater flows.

The permittee shall develop and maintain a Wastewater Flow Rate Monitoring and Reporting Operational Manual. These are further discussed in **Section 7.4**.

Due to multiple contributing sources, Outfall 004 (Truck Shop Pond) will be required to do the above special condition monitoring and reporting along with an additional report addressing the truck shop hydrocarbon treatment system further discussed in **Section 7.7**.

Ground water monitoring will provide DEQ with ongoing information on the current and future health of the aquifer. The permittee must develop and implement a Ground Water Monitoring, Analysis, and Reporting Operational Manual. This manual is further discussed in **Section 7.1**.

Special Condition reporting methods will be used to capture all pertinent monitoring and sample data for future use. This method collects laboratory analytical data that is unavailable with the current Discharge Monitoring Reports (DMRs) reporting system. Data must be recorded, stored electronically, and provided to DEQ on an annual basis. The special condition reporting requirements are provided below in **Table 7 and Table 8**. DEQ will provide digital copies of the template (Excel) tables to the Permittee and Operator. The tables will need to accumulate individual sampling event data through the term of the permit. All submitted data must be in a digital format and the report must be queryable (e.g. excel table).

<p><b>Table 7: Wastewater Monitoring Requirements</b></p> <p>Monitoring Locations: EFF-001, EFF-002, EFF-003, EFF-004, EFF-005</p> <p>Sampling Frequency: Quarterly</p> <p>Required Laboratory Method: 40 CFR 136<sup>(1)</sup></p>	<p><b>Wastewater Reporting Requirements - Special Condition<sup>(2)</sup></b></p> <p>Cumulative Record of all Individual Sampling Results through Term of the Current Permit Cycle.</p> <p>Statistical Summary Report of all Individual Results through Term of the Current Permit Cycle.<sup>(3)</sup></p> <p>Report Action Date: To be Updated Annually on January 1st through the Term of the Permit Cycle.</p> <p>Each Annual Report must be received by DEQ on or before January 28th.</p>
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Analyte/Measurement	Units	Individual Sample Record (Repeat as Necessary)							Permit Cycle Statistical Summary						
		Sample Collection Date	Operational during sampling period? (y/n)	Lab Result <sup>(4)</sup>	Laboratory Reporting Level	Non-Detect? (y/n)	Laboratory Method	Laboratory Qualifier Code(s) <sup>(5)</sup>	Count of Samples Collected	Lab Results				Count of Non-detects	Average Laboratory Reporting Level
										Minimum	Average	Median	Maximum		
pH	s.u.														
Solids, Total Dissolved (TDS)	mg/L														
Specific Conductivity [SC] @ 25°C	µS/cm														
Alkalinity, Total [as CaCO3]	mg/L														
Biochemical Oxygen Demand [BOD]	mg/L														
Chloride [as Cl]	mg/L														
Hydrocarbons, Total Petroleum [TPH]	mg/L														
Nitrogen, Ammonia	mg/L														
Nitrogen, Kjeldahl, total [as N]	mg/L														
Nitrogen, Nitrite + Nitrate [as N]	mg/L														
Nitrogen, Total [as N]	mg/L														
Phosphorus, Total [as P]	mg/L														
Sulfate, Total [as S]	mg/L														
Dissolved Metals (0.45 micron filter)															
Arsenic [as As]	mg/L														
Barium [as Ba]	mg/L														
Iron [as Fe]	mg/L														
Manganese [as Mn]	mg/L														

Footnotes:

s.u.: standard units

Monitoring and Reporting will be required regardless of the operational status of the facility.

(1) The listed laboratory analytical method must be used unless a written approval for a deviation is approved by DEQ.

(2) The permittee may create their own report in a format that suits their operational and reporting needs. It must however contain all data inputs as shown above and in the respective permit condition.

(3) Each submitted report must cumulate all observations and samples collected to date, starting with the permit effective date and continuing through the term of the permit.

(4) For nondetects, the laboratory reporting level must be entered in as the respective lab result.

(5) Laboratory qualifiers are not common, leave blank if none. Attach a description of all listed codes if any.

<p><b>Table 8: Ground Water Monitoring Requirements</b></p> <p>Monitoring Locations: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6</p> <p>Required Laboratory Method: 40 CFR 136<sup>(1)</sup></p> <p>Monitoring Frequency: Quarterly</p>	<p><b>Ground Water Reporting Requirements - Special Condition<sup>(2)</sup></b></p> <p>Cumulative Record of all Individual Monitoring and Sample Results through Term of the Current Permit Cycle.</p> <p>Statistical Summary Report of all Individual Results through Term of the Current Permit Cycle.<sup>(3)</sup></p> <p>Report Action Date: To be Updated Annually on January 1st through the Term of the Permit Cycle.</p> <p>Each Annual Report must be received by DEQ on or before January 28th.</p>
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Analyte/Measurement	Units	Individual Sample Record (Repeat as Necessary)							Permit Cycle Statistical Summary							
		Sample Collection Date	Dry-Well Conditions? (y/n)	Lab Result <sup>(4)</sup>	Laboratory Reporting Level	Non-Detect? (y/n)	Laboratory Method	Laboratory Qualifier Code(s) <sup>(5)</sup>	Count of Samples Collected	Count of Dry-Well Occurrences	Lab Results				Count of Non-detects	Average Laboratory Reporting Level
											Minimum	Average	Median	Maximum		
Temperature	°C															
Total Well Depth (TD)	ft-bmp															
Static Water Level (SWL)	ft-bmp															
pH	s.u.															
Solids, Total Dissolved (TDS)	mg/L															
Specific Conductivity [SC] @ 25°C	µS/cm															
Alkalinity, Total [as CaCO3]	mg/L															
Biochemical Oxygen Demand [BOD]	mg/L															
Chloride [as Cl]	mg/L															
Hydrocarbons, Total Petroleum [TPH]	mg/L															
Nitrogen, Ammonia	mg/L															
Nitrogen, Kjeldahl, total [as N]	mg/L															
Nitrogen, Nitrite + Nitrate [as N]	mg/L															
Nitrogen, Total [as N]	mg/L															
Phosphorus, Total [as P]	mg/L															
Sulfate, Total [as S]	mg/L															
Dissolved Metals (0.45 micron filter)																
Arsenic [as As]	mg/L															
Barium [as Ba]	mg/L															
Iron [as Fe]	mg/L															
Manganese [as Mn]	mg/L															

Footnotes:

ft-bmp: feet below measuring point.

s.u.: standard units

Monitoring and Reporting will be required regardless of the operational status of the facility or of the condition of the monitoring well.

Samples must not be collected until after the well casing is properly purged as determined by the DEQ approved Ground Water Monitoring Operational Manual.

Measuring point (point of reference) for SWL measurements shall be from top of inner casing or as established by the Ground Water Operational Manual and measured to within 1/100th of one foot.

(1) The listed laboratory analytical method must be used unless a written approval for a deviation is approved by DEQ.

(2) The permittee may create their own report in a format that suits their operational and reporting needs. It must however contain all data inputs as shown above and in the respective permit condition.  
All submitted data must be in a digital format and the report must be queryable (e.g. excel table).

(3) Each submitted report must cumulate all monitoring events and samples collected to date, starting with the permit effective date and continuing through the term of the permit.

(4) For nondetects, the laboratory reporting level must be entered in as the respective lab result.

(5) Laboratory qualifiers are not common, leave blank if none. Attach a description of all listed codes if any.

## 7.0 SPECIAL CONDITIONS

### 7.1 GROUND WATER MONITORING, ANALYSIS, AND REPORTING OPERATIONAL MANUAL

The permittee shall use Best Management Practices (BMPs) in developing SOPs (Standard Operating Procedures) for sampling, analyzing, and reporting ground water characteristics. The SOP manual must be site-specific and result in monitoring and reporting that is representative of the nature of the shallow ground water bearing zone. The manual must provide for consistent identification, development, monitoring, sampling, calculating, recording, and reporting of the monitoring wells. The manual must provide for guidance on: determining and documenting dry-well occurrences; and determining on going well viability. DEQ recommends using the Montana Bureau of Mines and Geology Open-File Report 758 titled Standard Procedures and Guidelines for Field Activities (MBMG, 2023) as a reference in developing a site-specific operational manual.

The completion and submittal date of the manual is listed in **Table 9**. The manual must be reviewed and approved by DEQ prior to implementation. The permittee shall maintain a copy of the manual, monitoring well development records, dry well occurrence records, sampling records, and calibration records at the facility at all times. Ground water monitoring requirements are discussed in **Section 6**. All subsequent amended manuals must be reported to DEQ within 30 calendar days.

### 7.2 MONITORING WELL VIABILITY

The permittee shall monitor and collect representative ground water samples from the receiving ground water aquifer. If any of the wells are abandoned, destroyed, decommissioned, or non-viable; or are no longer able to be monitored due to obstructions or fluctuations in the ground water table; the permittee shall rehab the non-viable well or replace with the installation of a new well.

### 7.3 MONITORING WELL REPLACEMENT, REHABILITATION, AND ABANDONMENT

If for any reason a monitoring well needs to be replaced, rehabilitated, or abandoned, the permittee shall submit a plan to DEQ for approval prior to the action taking place. The plan must document existing site and well specifics and the reasoning behind the proposed action. The plan must detail the specific steps to take place during deconstruction, drilling, workover, and/or construction of the respective wells.

Written permission from DEQ is needed prior to the abandonment of any monitoring well. At minimum, monitoring well abandonment activities must be done in accordance with ARM 36.21.810(2-5). If the monitoring well is located in or around any collection, storage, treatment, disposal, land application, and/or mixing zone workings (or similar) additional actions may be required to prevent preferential subsurface flows, cross contamination, and to mitigate against any unauthorized wastewater releases. All new well installations must have detailed drilling, lithology, geospatial, and well construction information. A follow-up report summarizing all actions and details must be submitted to DEQ within 30 calendar days.

## 7.4 WASTEWATER FLOW RATE MONITORING AND REPORTING OPERATIONAL MANUAL

The permittee shall develop and implement a site-specific wastewater flow rate monitoring and reporting manual for the facility. The manual must document best management practices to be used for consistent collection, documentation, and reporting of wastewater flow rate data. At minimum, the manual must include the following:

- Identification of all potential contributions, losses, or conveyances (in-flows) for all wastewater streams;
- Daily flow rate estimations for all contributions, losses, and conveyances;
- Infiltration (discharge) rates at each outfall; and,
- Determination of non-discharging events.

The permittee shall develop tools using best management practices to estimate the flows occurring at the differing conveyance structures across the facility. The more defined structures, such as for the boiler blow-down sources, may be good candidates for flow meters and recorders. While the more undefined structures, overland storm water flows, may need to be estimated based on precipitation events and runoff area calculations.

For the outfalls with multiple wastewater sources, the flows of each source will need to be independently recorded (or estimated) and reported. The total flows of each outfall will also need to be calculated and reported.

All flow rates must include seasonal variation, impactful precipitation events, and stormwater estimates. The manual will be used as guidance in reporting Annual Wastewater Flow Rate Reports (**Section 7.5**) to DEQ.

The completion and submittal date of the manual is listed in **Table 9**. The manual must be reviewed and approved by DEQ prior to implementation. The permittee shall maintain a copy of the manual at the facility at all times. Wastewater monitoring requirements are discussed in **Section 6**. All subsequent amended manuals must be reported to DEQ within 30 calendar days.

## 7.5 WASTEWATER FLOW RATE REPORT

Wastewater flow rate reports must be completed annually. The report must be constructed using the Wastewater Flow Rate Monitoring and Reporting Operational Manual (**Section 7.4**). The report must include all information listed within **Section 7.4**.

The respective completion and reporting dates are listed within **Table 9**.

## 7.6 WASTEWATER SAMPLING, ANALYSIS, AND REPORTING OPERATION MANUAL

The permittee shall use BMPs in developing SOPs for sampling, analyzing, and reporting wastewater characteristics from the wastewater system. The manual needs to be site-specific and result in monitoring and reporting that is representative of the nature of the wastewater streams. The manual must be used as a guide in:

- Equipment calibration.
- Sample collection method.

- Sample equipment.
- Preparing and collecting wastewater samples.
- Analyte calculations (**Table 7**).
- Recording and reporting wastewater characteristics.

The outfalls are used to dispose of wastewater from multiple wastewater sources that may not share the same conveyance structures. The permittee will develop procedures that develop best practices in determining the nature of the commingled wastewater streams that best represent characteristics of the infiltrate (discharge to the subsurface). This will be determined using the permittee's best professional judgement. Potential procedure examples may include: thorough mixing of the pond prior to the sample event, or, a depth integrated sample. The permittee may decide to use Columbia Falls MTX000092 existing guidance manuals as a reference.

The completion and submittal date for the manual is listed in **Table 9**. The manual must be reviewed and approved by DEQ prior to implementation. The permittee shall maintain a copy of the operational manual, sampling, and calibration records at the facility at all times. Wastewater monitoring requirements are discussed in **Section 6**. All subsequent amended manuals must be reported to DEQ within 30 calendar days.

## **7.7 TRUCK SHOP HYDROCARBON TREATMENT SYSTEM REPORT**

The permittee shall provide annual reports with updates on the operation and maintenance of the treatment system. The report shall address toxic and carcinogen analytes of interest as related to the wastewater generators (incidental and direct) found within the Truck Shop building. At minimum, BTEXn (Benzene, Toluene, Ethylbenzene, Xylenes, and Naphthalene) should be analyzed along with iron and manganese.

In addition to the annual reports, the permittee shall provide a one time as-built construction report documenting the details of the new hydrocarbon treatment system located in the Truck Shop building. Upon construction, the report must accompany the respective annual report for that calendar year.

The respective completion and reporting dates are listed within **Table 9**.

## 8.0 COMPLIANCE SCHEDULE

The actions listed in **Table 9** must be completed on or before the respective scheduled completion date. A report documenting each respective action must be received by DEQ on or before the scheduled reporting date. Unless otherwise stated, completion of all actions or deliverables must be reported to DEQ in accordance with Part II and Part IV.G of the permit.

<b>Table 9: Compliance Schedule</b>			
<b>Action</b>	<b>Frequency</b>	<b>Completion Date of Action</b>	<b>Reporting Due Date</b>
Develop and implement a <b>Ground Water Monitoring, Analysis, and Reporting Operational Manual.</b>	Single event	<i>Within 180 days of the effective date of the permit.</i>	Due on or before the 28th day of the month following the completion date.
Develop and implement a <b>Wastewater Flow Rate Monitoring and Reporting Operational Manual.</b>	Single event	<i>Within 180 days of the effective date of the permit.</i>	Due on or before the 28th day of the month following the completion date.
Develop and implement a <b>Wastewater Sampling, Analysis, and Reporting Operational Manual.</b>	Single event	<i>Within 180 days of the effective date of the permit.</i>	Due on or before the 28th day of the month following the completion date.
Submit <b>Annual Wastewater Monitoring Reports.</b>	Annually	Annually on December 31st.	Annually on January 28th. (The initial report for the 2026 calendar year is due on January 28, 2027.)
Submit <b>Annual Wastewater Flow Rate Report.</b>	Annually	Annually on December 31st.	Annually on January 28th. (The initial report for the 2026 calendar year is due on January 28, 2027.)
Submit <b>Annual Ground Water Monitoring Reports.</b>	Annually	Annually on December 31st.	Annually on January 28th. (The initial report for the 2026 calendar year is due on January 28, 2027.)
<b>Truck Shop Treatment System Report</b>	Annually	Annually on December 31st.	Annually on January 28th. (The initial report for the 2026 calendar year is due on January 28, 2027.)

## 9.0 PUBLIC NOTICE

Legal notice information for water quality discharge permits is listed at the following website: <http://deq.mt.gov/Public/notices/wqnotices>. Public comments on this proposal are invited any time prior to close of business on **June 25, 2026**. Comments may be directed to [DEQWPBPublicComments@mt.gov](mailto:DEQWPBPublicComments@mt.gov) or to

Montana Department of Environmental Quality  
Water Protection Bureau  
PO Box 200901  
Helena, MT 59620

All comments received or postmarked prior to the close of the public comment period will be considered in the formulation of the final permit. DEQ will respond to all substantive comments pertinent to this permitting action and may issue a final decision within thirty days of the close of the public comment period.

All persons, including the applicant, who believe any condition of the draft permit is inappropriate, or that DEQ's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, shall raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing). All public comments received for this draft permit will be included in the administrative record and will be available for public viewing during normal business hours.

Copies of the public notice are mailed to the applicant, state and federal agencies, and interested persons who have expressed interest in being notified of permit actions. A copy of the distribution list is available in the administrative record for this draft permit. Electronic copies of the public notice, draft permit, fact sheet, and draft environmental assessment are available at the following website: <http://deq.mt.gov/Public/notices/wqnotices>.

Any person interested in being placed on the mailing list for information regarding this permit may contact the DEQ Water Protection Bureau at (406) 444-5546 or email [DEQWPBPublicComments@mt.gov](mailto:DEQWPBPublicComments@mt.gov). All inquiries will need to reference the permit number (MTX000325), and include the following information: name, address, and phone number.

During the public comment period provided by the notice, DEQ will accept requests for a public hearing. A request for a public hearing must be in writing and must state the nature of the issue proposed to be raised in the hearing.

## 10.0 REFERENCES

40 CFR § 136. Guidelines Establishing Test Procedures for the Analysis of Pollutants. 2011.

Administrative Rules of Montana, Title 17, Chapter 30, Water Quality:

- Subchapter 2 - Water Quality Permit Fees.
- Subchapter 5 – Mixing Zones in Surface and Ground Water.
- Subchapter 7 – Nondegradation of Water Quality.
- Subchapter 10 – Montana Ground Water Pollution Control System.
- Subchapter 13 – Montana Pollutant Discharge Elimination System.

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Department of Environmental Quality. 2020. Administrative Record for the Montana Ground Water Pollution Control System (MGWPCS) Permit: MTX000092.

Department of Environmental Quality, Flathead-Stillwater Planning Area, Nutrient, Sediment, and Temperature TMDLs and Water Quality Improvement Plan – Final. December 2014. Document Number C11-TMDL-02aF.

Department of Environmental Quality, Water Quality Circulars:

- Circular DEQ-2 – Design Standards for Wastewater Facilities.
- Circular DEQ-4 – Montana Standards for On-Site Subsurface Sewage Treatment Systems.
- Circular DEQ-7 – Montana Numeric Water Quality Standards, Required Reporting Values, and Trigger Values.

Department of Environmental Quality, Surface Water Assessment Record. 2020 Reporting Cycle. MT76P003\_010. Online: <https://clean-water-act-information-center-mtdeq.hub.arcgis.com/>

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U.S. Environmental Protection Agency, Effluent Limitation Guidelines, <https://www.epa.gov/eg>. Timber Products Processing Effluent Guidelines, <https://www.epa.gov/eg/timber-products-processing-effluent-guidelines>.

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## **APPENDIX A: AQUIFER TESTING REPORT**



## TECHNICAL MEMORANDUM

To: Zachary Hiatt, Weyerhaeuser

From: Brad Bennett, Senior Hydrogeologist, Water & Environmental Technologies

Copy: Ashley Williams, Weyerhaeuser

Project: WET 1598-23

Date: June 11, 2024

Re: Weyerhaeuser Kalispell Sawmill and Plywood Facility Hydraulic Conductivity Assessment Memo

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### INTRODUCTION

Water and Environmental Technologies (WET) is preparing an application for Weyerhaeuser's Kalispell Plywood Plant and Sawmill to obtain a Montana Ground Water Control System (MGWPCS) permit for industrial wastewater discharge from the Department of Environmental Quality (DEQ). The Weyerhaeuser Kalispell facility is located north of Kalispell Montana approximately 0.25 miles west of the intersection of U.S. Highway 2 and West Reserve Drive. The complex encompasses approximately 120 acres and includes a log yard, sawmill, plywood plant, post and dimensional lumber plant, and associated kilns. The property is located in Sections 32 and 33 of Township 29 North, Range 21 West of Flathead County, Montana. A site map with well locations provided as **Figure 1**. The wastewater permitting process requires evaluation of the receiving aquifer's physical characteristics including hydraulic conductivity which allows assessment of contaminant transport within the aquifer. This memorandum provides specifics of the hydraulic conductivity assessment including slug testing conducted in the facility monitoring wells and analysis of the slug testing data.

### EVERGREEN AQUIFER CHARACTERISTICS

The Weyerhaeuser facility overlies the Evergreen Aquifer. This aquifer is the shallowest groundwater source in the area and is composed of alluvium overlying low-permeability silts and clays. The Evergreen Aquifer occupies approximately 40 square miles between the Whitefish and Flathead Rivers. This aquifer is very productive, with yields reaching 1,500 gallons per minute (gpm) and a median depth to water of 12 feet below ground surface (ft bgs) (Konizeski, 1968). Area well logs indicate that the gravel layer that composes the Evergreen Aquifer is approximately 28 to 30 feet thick.

Permeability in the Evergreen Aquifer has been documented to be extremely high. Konizeski (1968) evaluated several high-flow, long-term pumping tests and determined transmissivity of 174,200 ft<sup>2</sup>/day and bulk transmissivity in the range of 120,000 to 241,200 ft<sup>2</sup>/day. Transmissivity

( $T$ ) is calculated by multiplying the hydraulic conductivity ( $K$ ) by the saturated thickness of the aquifer. Large-scale tests like those evaluated by Konizeski on production wells are more representative of general aquifer characteristics as opposed to short-term slug tests. However, slug testing is a more economical method to estimate hydraulic conductivity. Additionally, the construction of the small monitoring wells restricts the size of pumps which can be deployed, therefore limiting the volume of water that can be purged from a well and a formation such as the Evergreen Aquifer would not likely show a response to pumping at low flow rates. As such slug testing of site monitoring wells was deemed appropriate to evaluate site specific parameters in this scenario.

## SLUG TESTING PROCEDURES

Slug tests were conducted in the six facility monitoring wells to determine the hydraulic conductivity and transmissivity of the water-bearing sediments underlying the facility. Slug testing is a method where a sudden change in water level is introduced within a well and the subsequent water level response is recorded over time. This was achieved in the facility monitoring wells by deploying a vented In-Situ LevelTroll 500 pressure transducer data logger with a 5 PSI pressure rating to record water levels in the monitoring well during testing. The transducer was programmed to record readings at one second intervals for monitoring well MW-1 and 0.5 second intervals for all other monitoring wells. Depending on the monitoring well completion either only slug-out or a combination of slug-in and slug out tests were completed. The slug utilized was a 48-inch length of 1.5-inch outer diameter PVC filled with sand and sealed so that it sinks in the water column. To initiate the slug test, the PVC bailer was either dropped vertically into the well (for slug-in testing) or removed from the well (for slug-out testing). Slug testing was completed on May 9, 2024. Slug testing determines the hydraulic conductivity of the formation in the immediate vicinity of small diameter wells.

## SLUG TESTING ANALYSIS

A minimum of two tests were completed on each of the monitoring wells. Slug tests were analyzed by importing individual slug test water level data into Aqtesolv and analyzing the plots by curve matching methods. Depending on the characteristics of the data plot, analysis was completed utilizing either a straight-line method (Bower Rice, 1976), or underdamped analysis (Butler, 2003).

The Bower Rice method utilizes the following formula to estimate hydraulic conductivity ( $K$ ):

$$K = \frac{(r^2)}{2L} \ln \left( \frac{H_0}{H_t} \right) \frac{1}{t}$$

Where:

$K$  is hydraulic conductivity (feet per day),

$r^2$  is the radius of the well casing (feet), and

$L$  is the length of the well screen (or the thickness of the aquifer if fully penetrated)

$H_0$  is the initial displacement of the water level

$H_t$  is the water level displacement at time  $t$   
 $t$  is the time elapsed since the start of the test.

Assumptions utilized for this method include that the aquifer being tested is confined or semi-confined, the well partially penetrates the aquifer, the aquifer properties are homogeneous and isotropic, and that the well is properly developed to minimize the skin effects.

Underdamped analysis was utilized where an oscillatory response in water levels was observed following introduction of the slug. Hydraulic conductivity ( $K$ ) and specific storage ( $S_s$ ) were estimated through Aqtesolv utilizing the following equations:

$$\omega_d = \frac{2\pi}{T}$$

$$\zeta = \frac{\Delta t}{2T}$$

$$T = 2\pi \sqrt{\frac{r^2 S_s}{K}}$$

$$\zeta = \frac{K}{2S_s r^2}$$

where:

$\omega_d$  is the damped natural frequency (rad/s),  
 $T$  is the period of the oscillation (s),  
 $\zeta$  is the damping ratio (dimensionless),  
 $\Delta t$  is the logarithmic decrement of successive peaks,  
 $K$  is the hydraulic conductivity ( $\frac{L}{T}$ ),  
 $S_s$  is the specific storage ( $L^{-1}$ ), and  
 $r$  is the radius of the well casing (L)

**Table 1** (next page) provides a summary of the hydraulic conductivity values obtained from each test and the method utilized to evaluate each of the tests. AQTESOLV plots for each of the analyses are provided in **Appendix A**.

Mean hydraulic conductivity values ranged from 715 to 2,896 feet per day (ft/day); the overall combined mean being 1,614 ft/day. Published values in the literature (Fetter, 2001) indicate that hydraulic conductivity values for well sorted gravel range from 28.3 to 2,835 feet per day. The calculated hydraulic conductivity values were at the high end of the theoretical range.

Table 1				
Slug Test Analysis				
Monitoring Well	Test ID	Conductivity Analysis (feet/day)	Mean Conductivity (feet/day)	Analysis method
MW-1	ST-2	1,992	2,834	Butler, underdamped
	ST-4	3,504		
	ST-6	3,005		
MW-2	ST-1	1,366	1,385	Butler, underdamped
	ST-2	1,272		
	ST-3	1,518		
MW-3	ST-2	2,060	2,896	Butler, underdamped
	ST-3	2,803		
	ST-8	3,825		
MW-4	ST-2	1,047	778	Bouwer-Rice Straight Line
	ST-4	721		
	ST-5	706		
	ST-6	639		
MW-5	ST-2	959	1,074	Bouwer-Rice Straight Line
	ST-4	975		
	ST-6	1,287		
MW-6	ST-1	696	715	Bouwer-Rice Straight Line
	ST-2	734		
Site Mean			1,614	
Site Median			1,280	

The groundwater discharge velocity was calculated using the previously determined values of hydraulic conductivity of 715 and 2,896 ft/day using the following equation:

$$V = Ki \quad (\text{Fetter, 2001})$$

Where:

$V$  is the groundwater discharge velocity

$K$  is the hydraulic conductivity ( $\frac{L}{T}$ ),

$i$  = hydraulic gradient

Based on groundwater elevation data recorded at the site, the hydraulic gradient averages 0.00099 ft/ft.

Based on these variables, the groundwater seepage velocity ranges from a low of 0.71 ft/day (259 ft/year) to a high of 2.87 ft/day (1,048 ft/year).

## REFERENCES

- Bower, H. & Rice, R.C. (1976) *A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells*, Water Resources Research, Vol, 12, no. 3, p. 423-428.
- Butler, J.J, Garnett, E.J, & Healey, J.M. (2003) *Analysis of slug tests in formations of high hydraulic conductivity*, Ground Water, v. 41, no. 5, p 620-630.
- Konizeski, R.L., Brietkrietz, A., & McMurtrey, R.G. (1968) *Geology and Ground Water Resources of the Kalispell Valley, Northwestern Montana; Montana Bureau of Mines and Geology Bulletin No. 68*, p.36, 42.
- Noble, R.A. & Stanford, J.A. (1986) *Groundwater Resources and Water-Quality of the Unconfined Aquifers in the Kalispell Valley, Montana; Montana Bureau of Mines and Geology Open-File Report 177*, p.106.
- Fetter, C.W. (2001) *Applied Hydrogeology, Fourth Edition*, p.100, 108, & 197.

K:\PROJECTS\KALISPELL\1598-23 Weyerhaeuser Kalispell Process Water Permitting\Monitoring\CAD\Site Map.dwg PLOT DATE: 2024-6-11 09:24 USER: jgraham



0 200 400 FEET

**LEGEND**

- MONITORING WELL
- PROPERTY BOUNDARY
- SURFACE WATER
- BNSF RAILROAD

No.	Description	Date	Drawn By

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 WATERVTECH.COM



**WEYERHAUSER KALISPELL  
 PLYWOOD PLANT  
 FACILITY MAP**

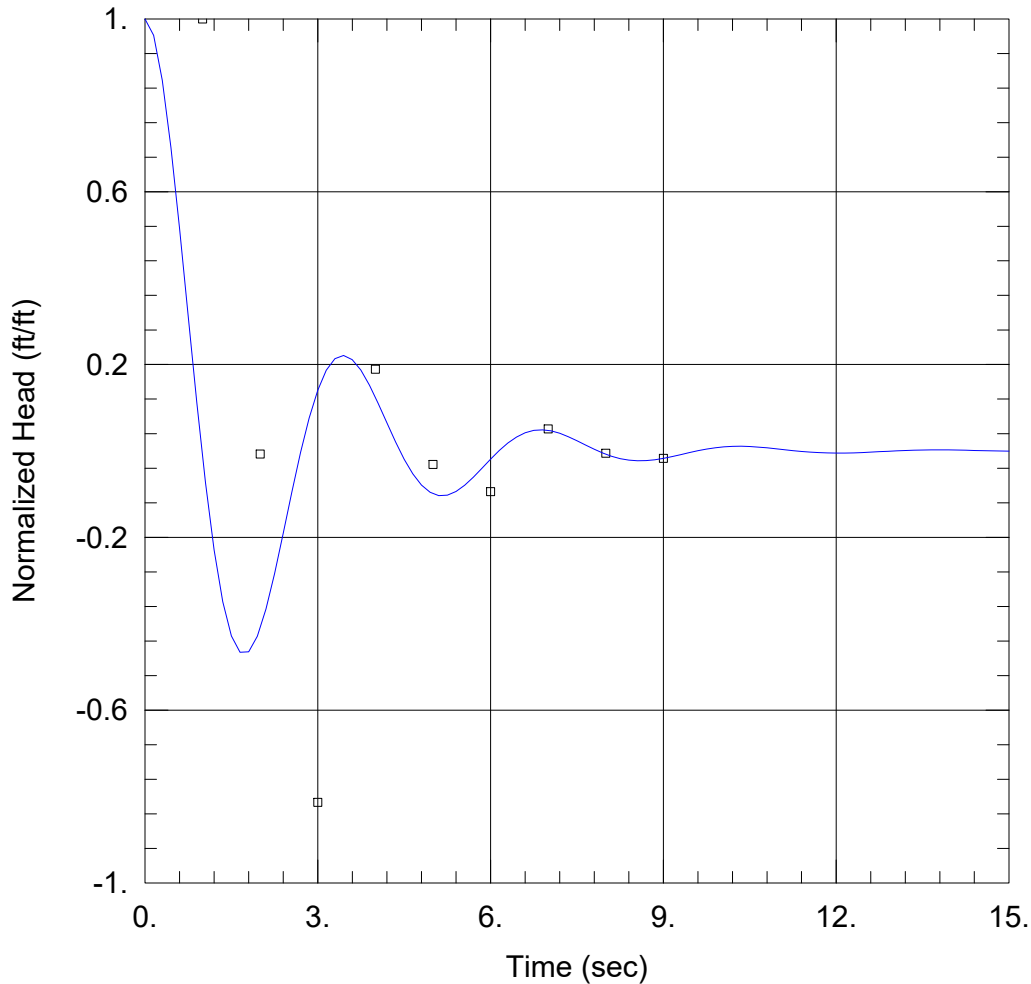
PROJECT NAME: WEYERHAUSER PLYWOOD DISCHARGE  
 LOCATION: KALISPELL, MT  
 FILE NO. Site Map.dwg

JOB NO.: 1598-23  
 DATE: 6/11/24  
 DRAFTER: JGC  
 CHECKED BY: BB

SHEET  
**FIG. 1**

# **Appendix A**

## **Slug Testing Aqtesolv Plots**



### WELL TEST ANALYSIS

Data Set: K:\...\MW-1 ST-2 UD.aqt  
 Date: 08/08/24

Time: 08:59:52

### PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-1  
 Test Date: 5/9/24

### AQUIFER DATA

Saturated Thickness: 10.89 ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (New Well)

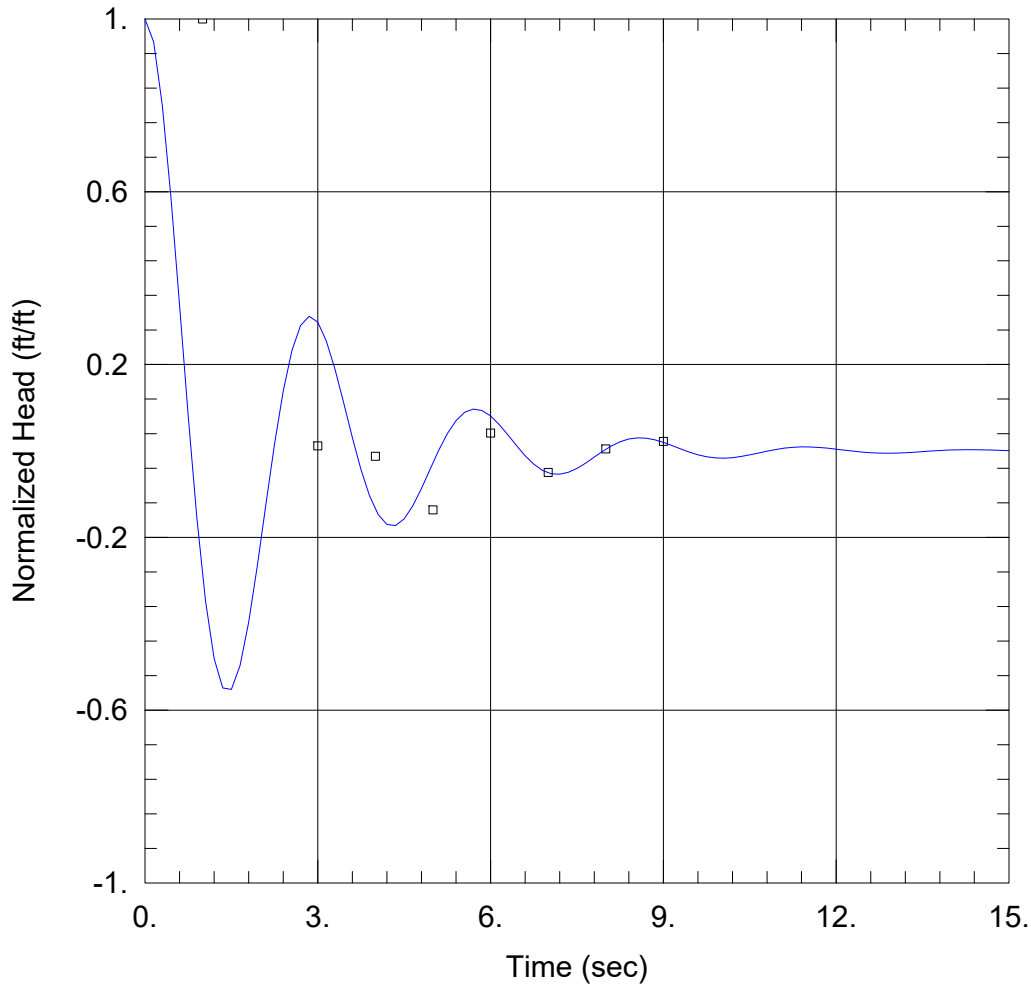
Initial Displacement: -0.187 ft  
 Total Well Penetration Depth: 10.89 ft  
 Casing Radius: 0.1666 ft

Static Water Column Height: 10.89 ft  
 Screen Length: 10. ft  
 Well Radius: 0.166 ft

### SOLUTION

Aquifer Model: Confined  
 K = 1992.2 ft/day

Solution Method: Butler  
 Le = 9.103 ft



### WELL TEST ANALYSIS

Data Set: K:\...\MW-1 ST-4 UD.aqt  
 Date: 08/08/24

Time: 09:00:22

### PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-1  
 Test Date: 5/9/24

### AQUIFER DATA

Saturated Thickness: 10.89 ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW-1)

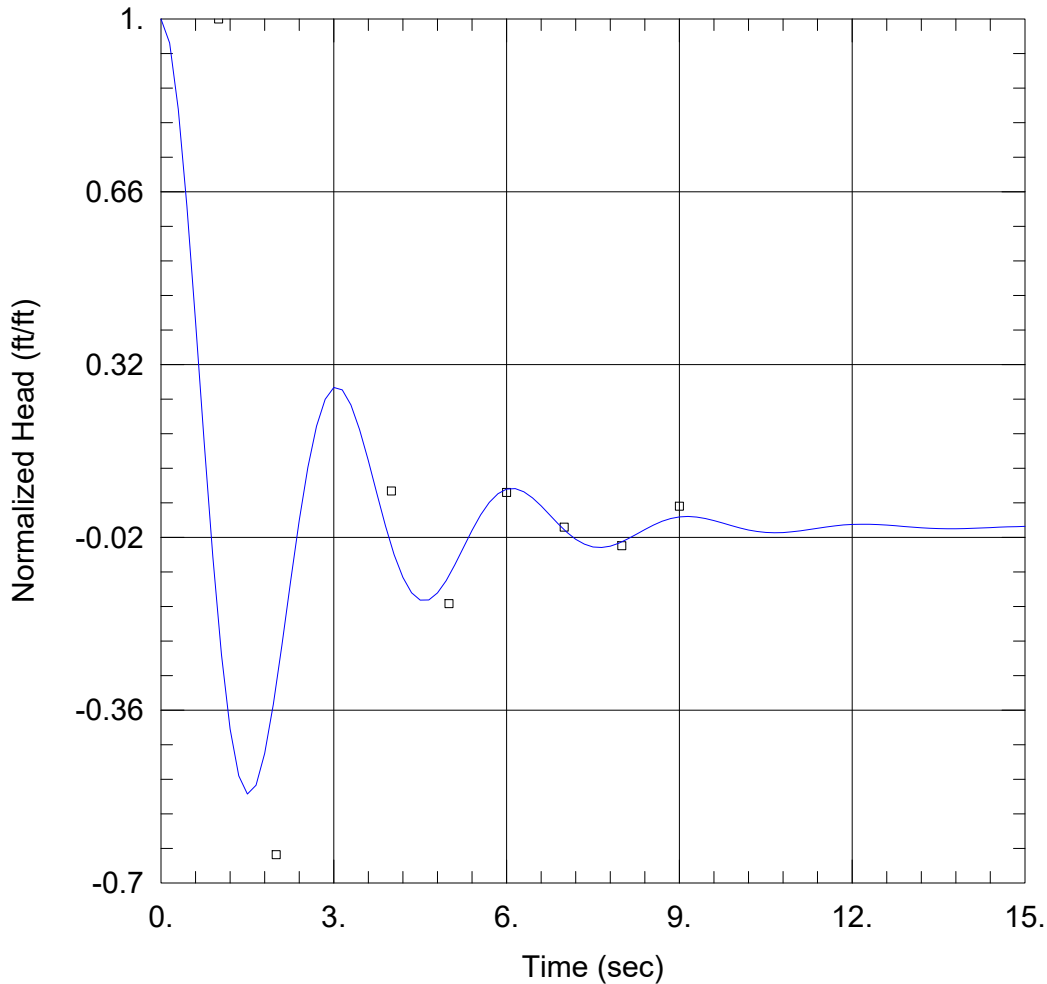
Initial Displacement: -0.1484 ft  
 Total Well Penetration Depth: 10.89 ft  
 Casing Radius: 0.166 ft

Static Water Column Height: 10.89 ft  
 Screen Length: 10. ft  
 Well Radius: 0.166 ft

### SOLUTION

Aquifer Model: Confined  
 K = 3504.1 ft/day

Solution Method: Butler  
 Le = 6.459 ft



### WELL TEST ANALYSIS

Data Set: K:\...\MW-1 ST-6 UD.aqt  
 Date: 08/08/24

Time: 09:01:38

### PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-1  
 Test Date: 5/9/24

### AQUIFER DATA

Saturated Thickness: 10.89 ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW-1)

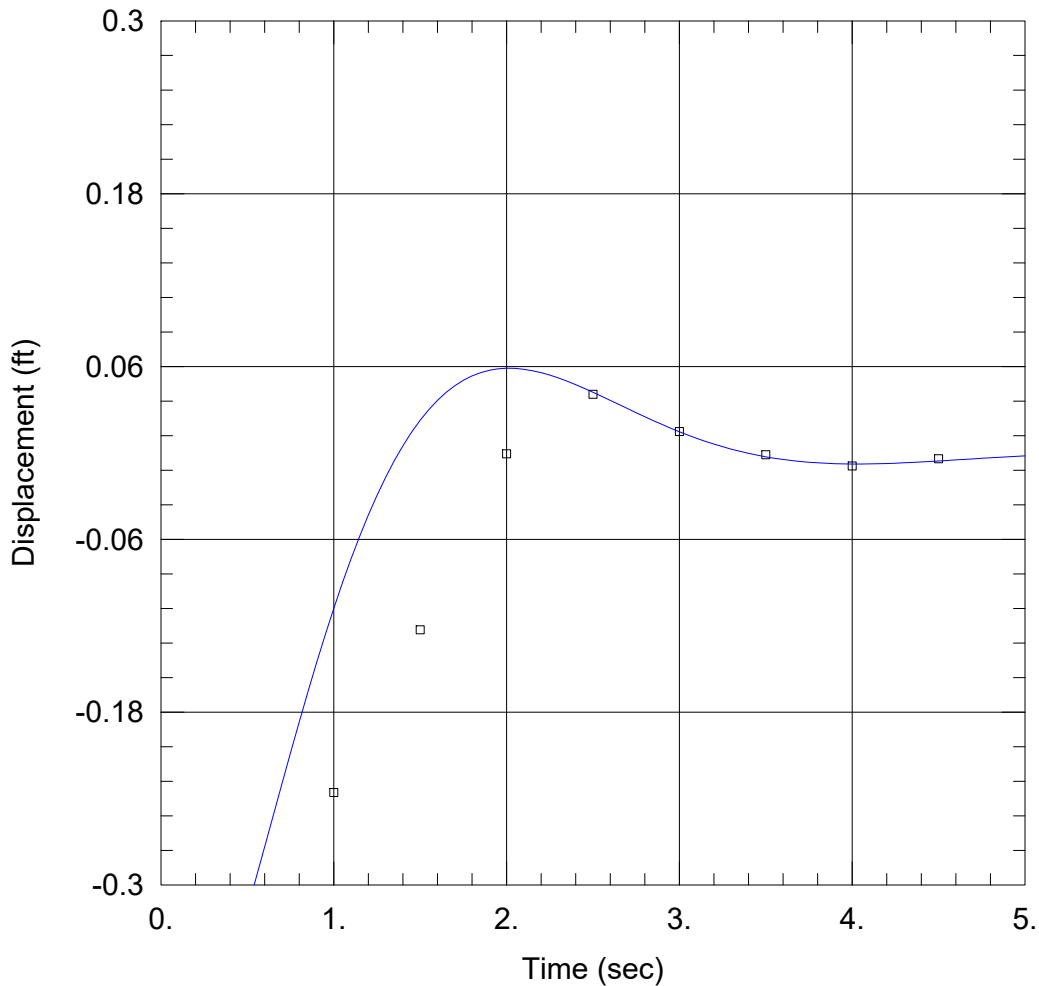
Initial Displacement: -0.1191 ft  
 Total Well Penetration Depth: 10.89 ft  
 Casing Radius: 0.166 ft

Static Water Column Height: 10.89 ft  
 Screen Length: 10. ft  
 Well Radius: 0.166 ft

### SOLUTION

Aquifer Model: Confined  
 K = 3004.7 ft/day

Solution Method: Butler  
 Le = 7.26 ft



WELL TEST ANALYSIS

Data Set: K:\...\MW-2 ST-1.aqt  
 Date: 08/08/24

Time: 09:02:13

PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-2  
 Test Date: 5/9/24

AQUIFER DATA

Saturated Thickness: 7.9 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

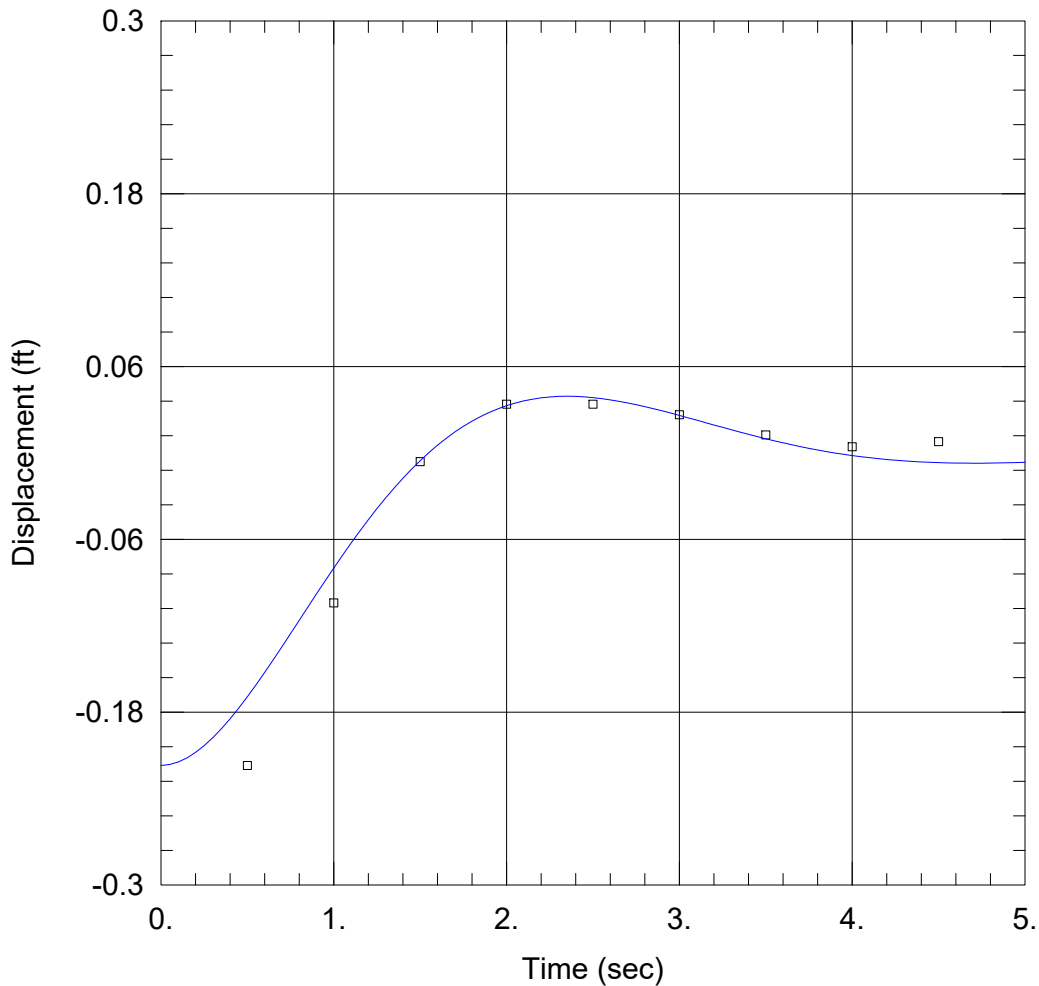
Initial Displacement: -0.45 ft  
 Total Well Penetration Depth: 7.9 ft  
 Casing Radius: 0.166 ft

Static Water Column Height: 7.9 ft  
 Screen Length: 7.9 ft  
 Well Radius: 0.166 ft

SOLUTION

Aquifer Model: Confined  
 K = 1365.7 ft/day

Solution Method: Butler  
 Le = 9.314 ft



### WELL TEST ANALYSIS

Data Set: K:\...\MW-2 ST-2 UD.aqt  
 Date: 08/08/24

Time: 09:02:31

### PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-2  
 Test Date: 5/9/24

### AQUIFER DATA

Saturated Thickness: 7.9 ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW-2)

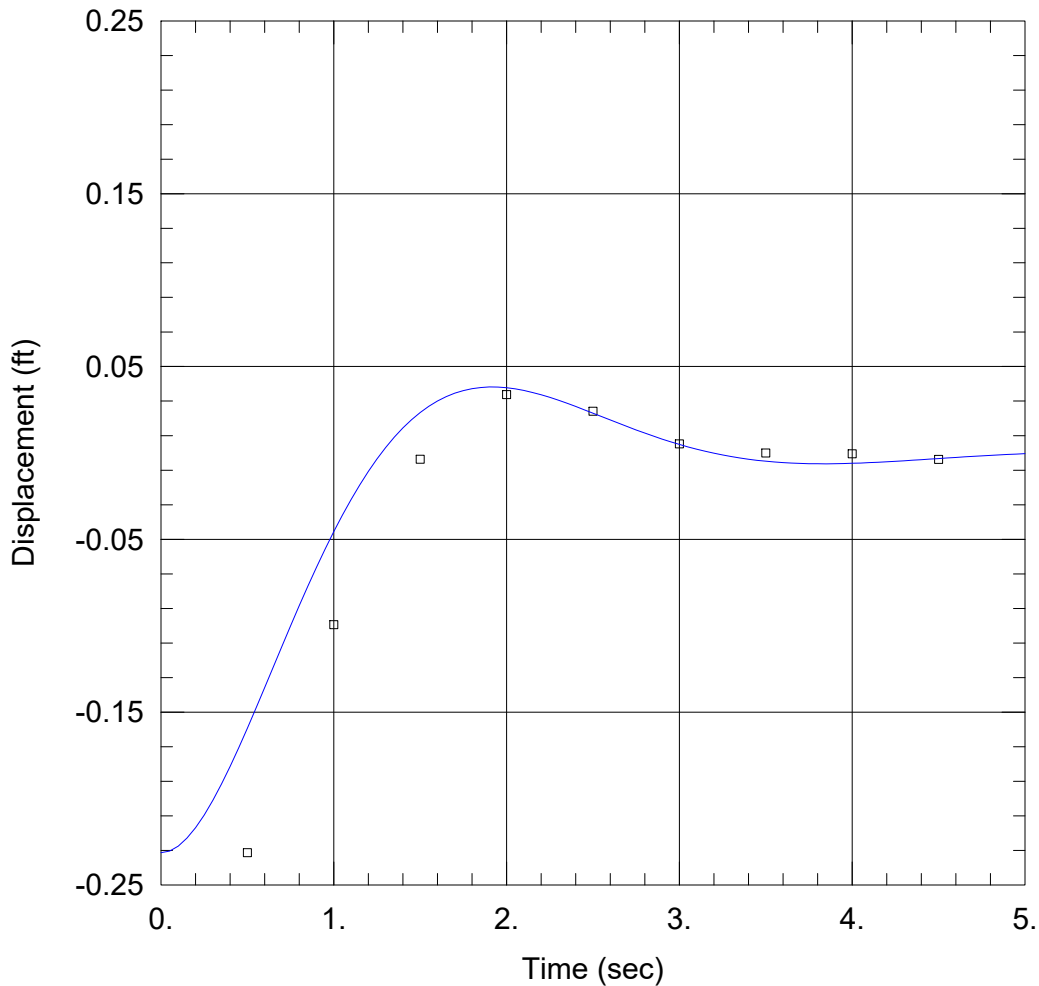
Initial Displacement: -0.217 ft  
 Total Well Penetration Depth: 7.9 ft  
 Casing Radius: 0.166 ft

Static Water Column Height: 7.9 ft  
 Screen Length: 7.9 ft  
 Well Radius: 0.166 ft

### SOLUTION

Aquifer Model: Confined  
 K = 1272.2 ft/day

Solution Method: Butler  
 Le = 13.91 ft



### WELL TEST ANALYSIS

Data Set: K:\...\MW-2 ST-3 UD.aqt  
 Date: 08/08/24

Time: 09:02:47

### PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-2  
 Test Date: 5/9/24

### AQUIFER DATA

Saturated Thickness: 7.9 ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (New Well)

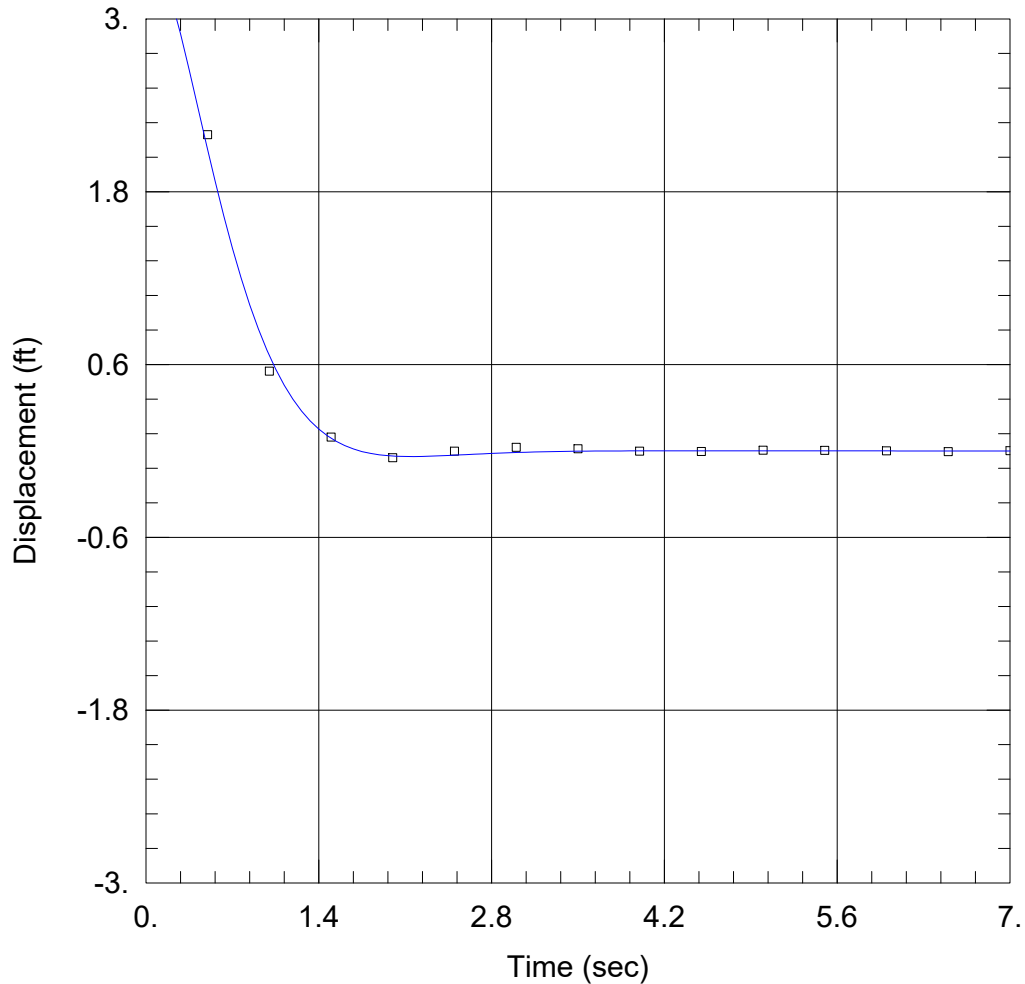
Initial Displacement: -0.2314 ft  
 Total Well Penetration Depth: 7.9 ft  
 Casing Radius: 0.166 ft

Static Water Column Height: 7.9 ft  
 Screen Length: 7.9 ft  
 Well Radius: 0.166 ft

### SOLUTION

Aquifer Model: Confined  
 K = 1517.7 ft/day

Solution Method: Butler  
 Le = 9.009 ft



WELL TEST ANALYSIS

Data Set: K:\...\MW-3 ST-1 UD.aqt  
 Date: 08/08/24

Time: 09:02:59

PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-3  
 Test Date: 5/9/24

AQUIFER DATA

Saturated Thickness: 12.38 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-3)

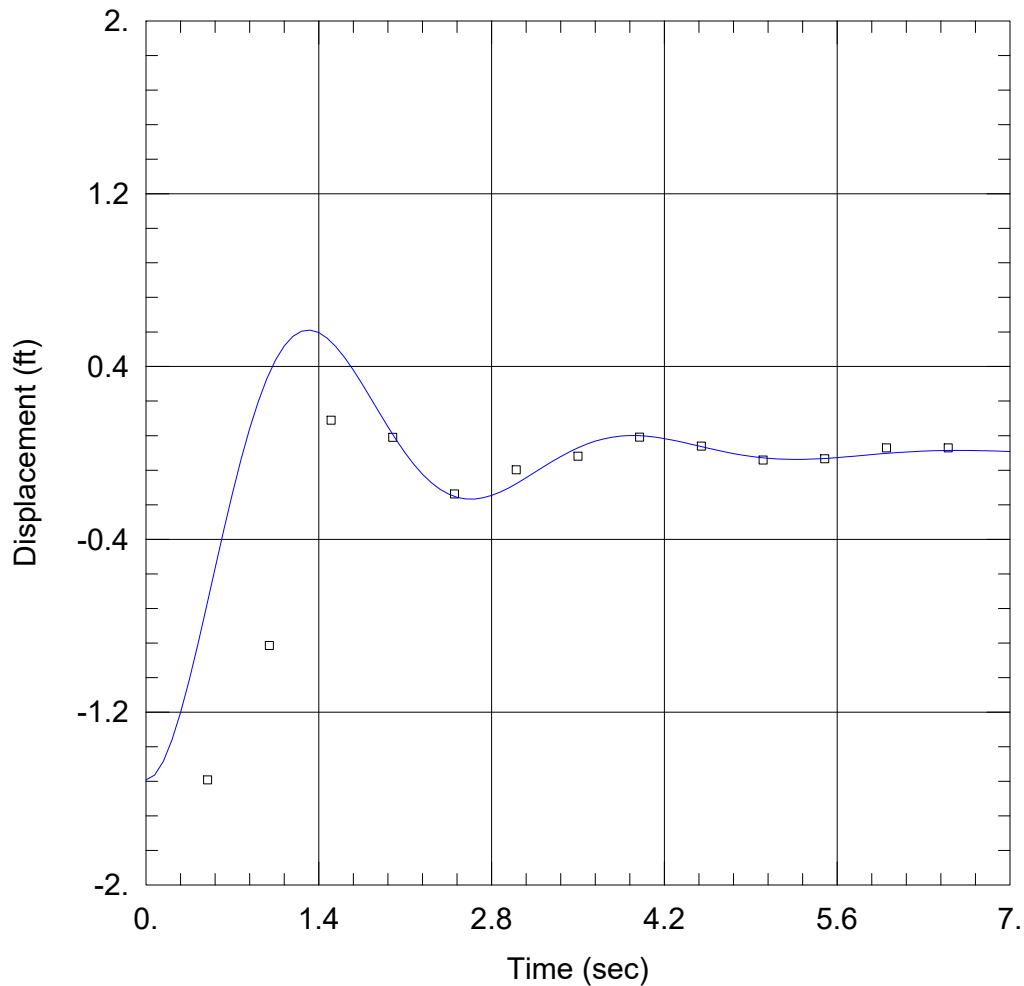
Initial Displacement: 3.5 ft  
 Total Well Penetration Depth: 12.38 ft  
 Casing Radius: 0.166 ft

Static Water Column Height: 12.38 ft  
 Screen Length: 10. ft  
 Well Radius: 0.166 ft

SOLUTION

Aquifer Model: Confined  
 K = 761. ft/day

Solution Method: Butler  
 Le = 4.934 ft



WELL TEST ANALYSIS

Data Set: K:\...\MW-3 ST-2.aqt  
 Date: 08/08/24

Time: 09:03:12

PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-3  
 Test Date: 5/9/24

AQUIFER DATA

Saturated Thickness: 12.38 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-3)

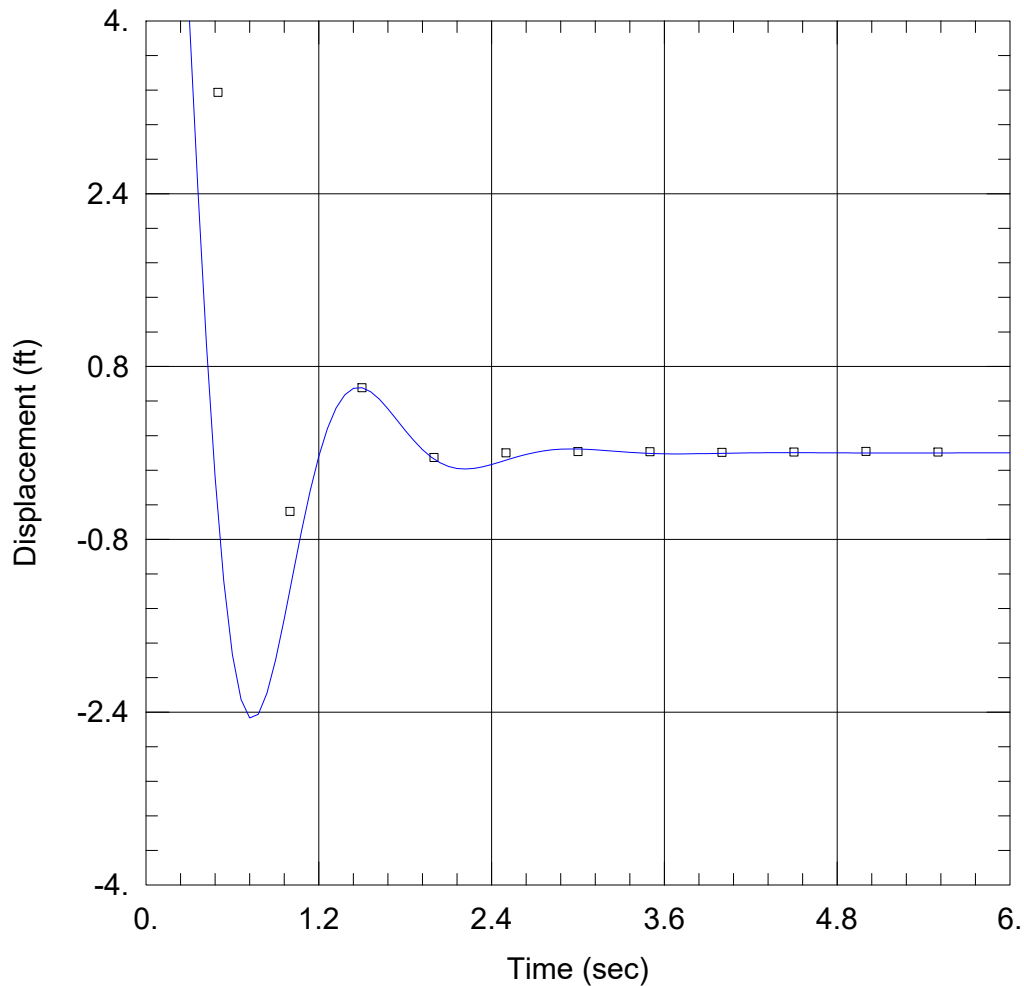
Initial Displacement: -1.514 ft  
 Total Well Penetration Depth: 12.38 ft  
 Casing Radius: 0.166 ft

Static Water Column Height: 12.38 ft  
 Screen Length: 10. ft  
 Well Radius: 0.166 ft

SOLUTION

Aquifer Model: Confined  
 K = 2059.7 ft/day

Solution Method: Butler  
 Le = 5.143 ft



### WELL TEST ANALYSIS

Data Set: K:\...\MW-3 ST-3 UD.aqt  
 Date: 08/08/24

Time: 09:03:28

### PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-3  
 Test Date: 5/9/24

### AQUIFER DATA

Saturated Thickness: 12.38 ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (New Well)

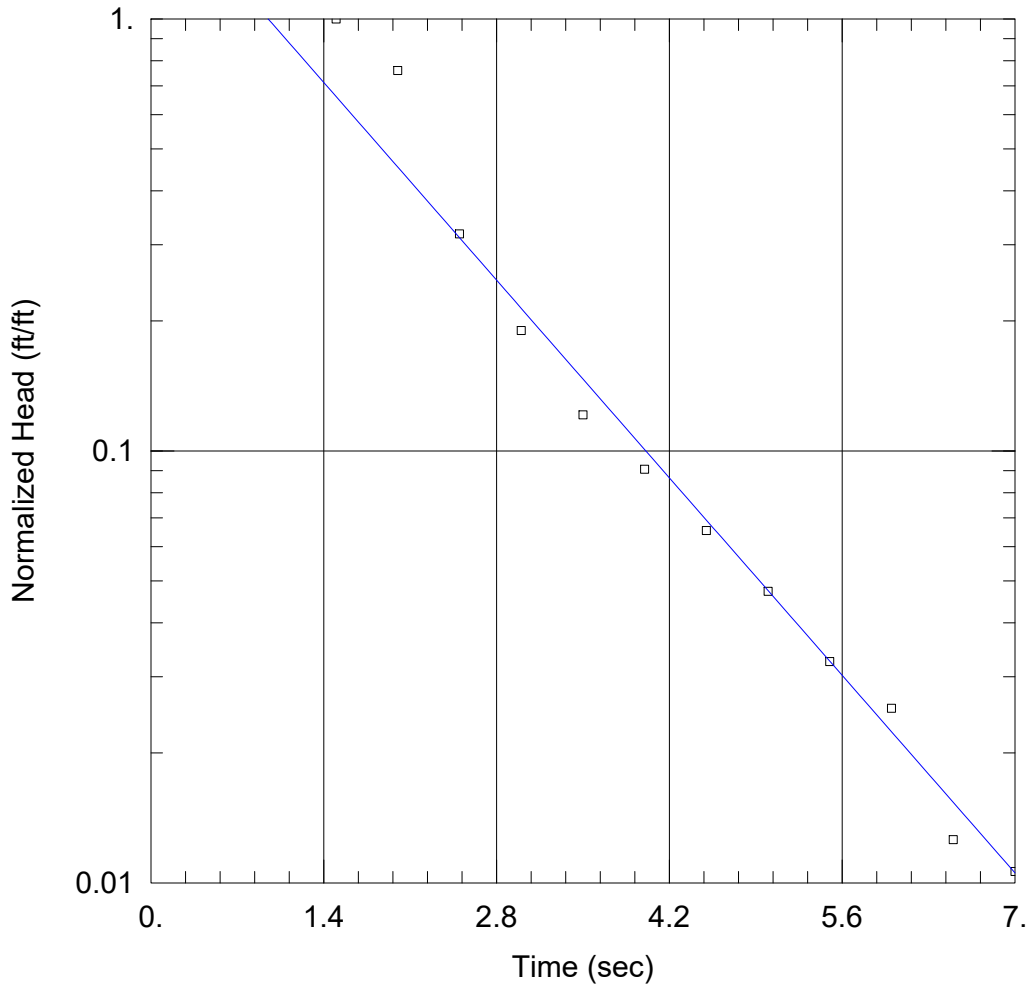
Initial Displacement: 10. ft  
 Total Well Penetration Depth: 12.38 ft  
 Casing Radius: 0.166 ft

Static Water Column Height: 12.38 ft  
 Screen Length: 10. ft  
 Well Radius: 0.166 ft

### SOLUTION

Aquifer Model: Confined  
 K = 2802.8 ft/day

Solution Method: Butler  
 Le = 1.484 ft



WELL TEST ANALYSIS

Data Set: K:\...\MW-4 ST-2.aqt  
 Date: 08/08/24

Time: 08:56:34

PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-4  
 Test Date: 5/9/24

AQUIFER DATA

Saturated Thickness: 8.3 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-4)

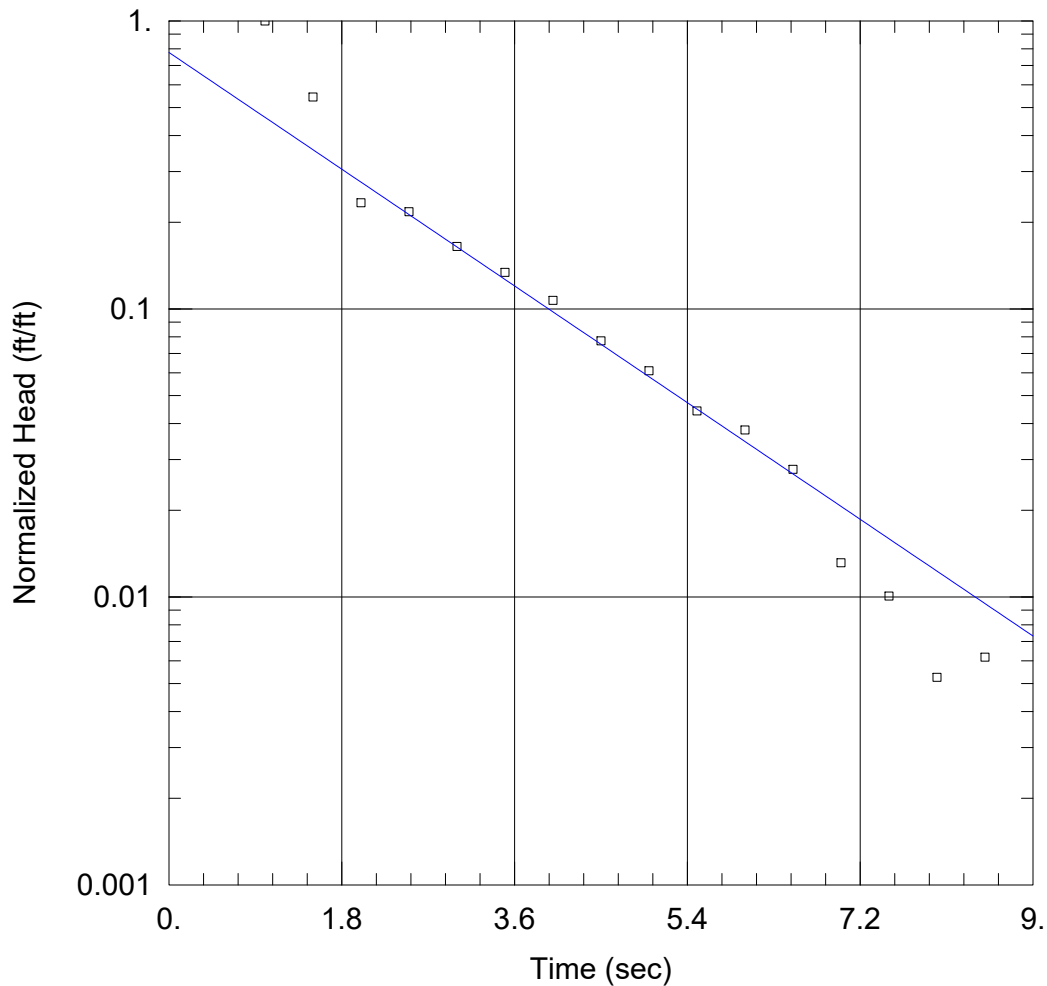
Initial Displacement: -3.987 ft  
 Total Well Penetration Depth: 8.3 ft  
 Casing Radius: 0.333 ft

Static Water Column Height: 8.3 ft  
 Screen Length: 8.3 ft  
 Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined  
 K = 1047.1 ft/day

Solution Method: Bouwer-Rice  
 y0 = -8.146 ft



WELL TEST ANALYSIS

Data Set: K:\...\MW-4 ST-4.aqt  
 Date: 08/08/24

Time: 08:56:50

PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-4  
 Test Date: 5/9/24

AQUIFER DATA

Saturated Thickness: 8.3 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

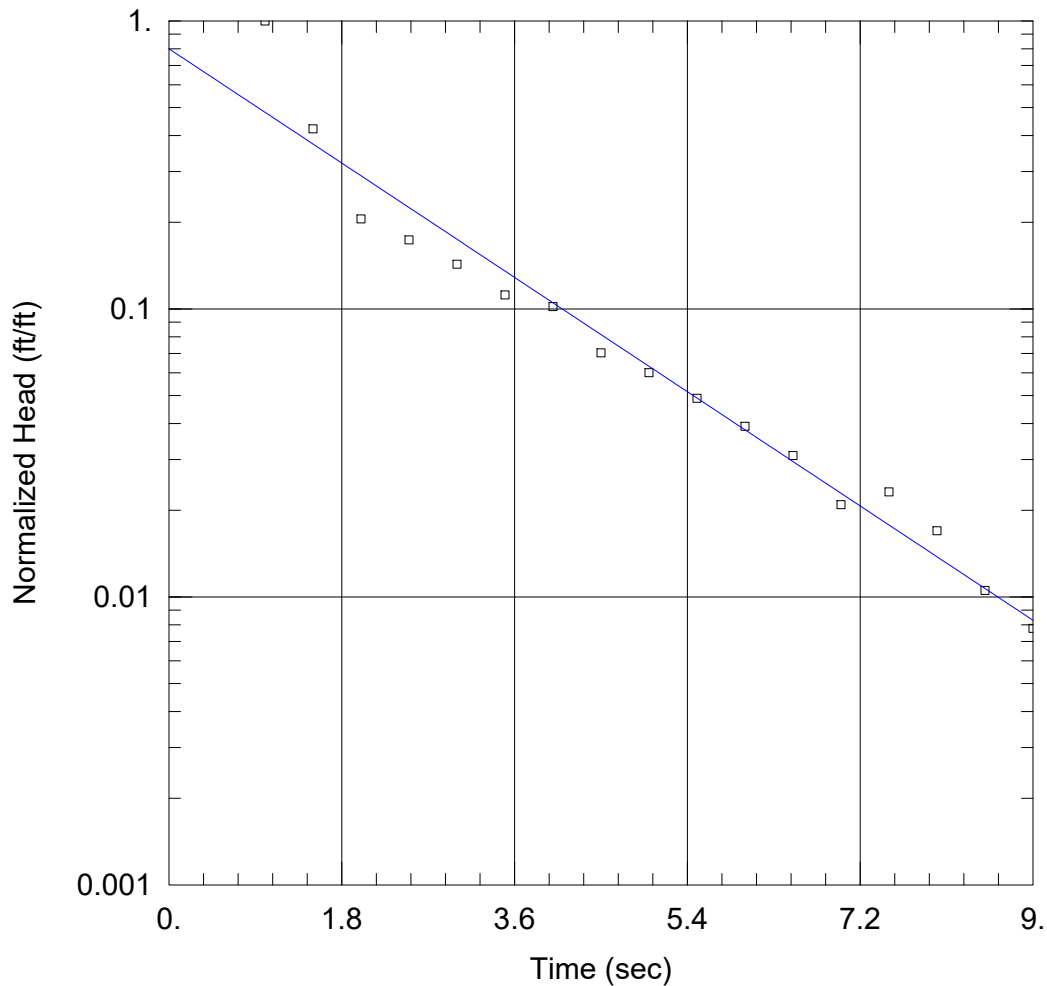
Initial Displacement: -3.581 ft  
 Total Well Penetration Depth: 8.3 ft  
 Casing Radius: 0.333 ft

Static Water Column Height: 8.3 ft  
 Screen Length: 8.3 ft  
 Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined  
 K = 721.2 ft/day

Solution Method: Bower-Rice  
 y0 = -2.782 ft



WELL TEST ANALYSIS

Data Set: K:\...\MW-4 ST-5.aqt  
 Date: 08/08/24

Time: 08:57:23

PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-4  
 Test Date: 5/9/24

AQUIFER DATA

Saturated Thickness: 8.3 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-4)

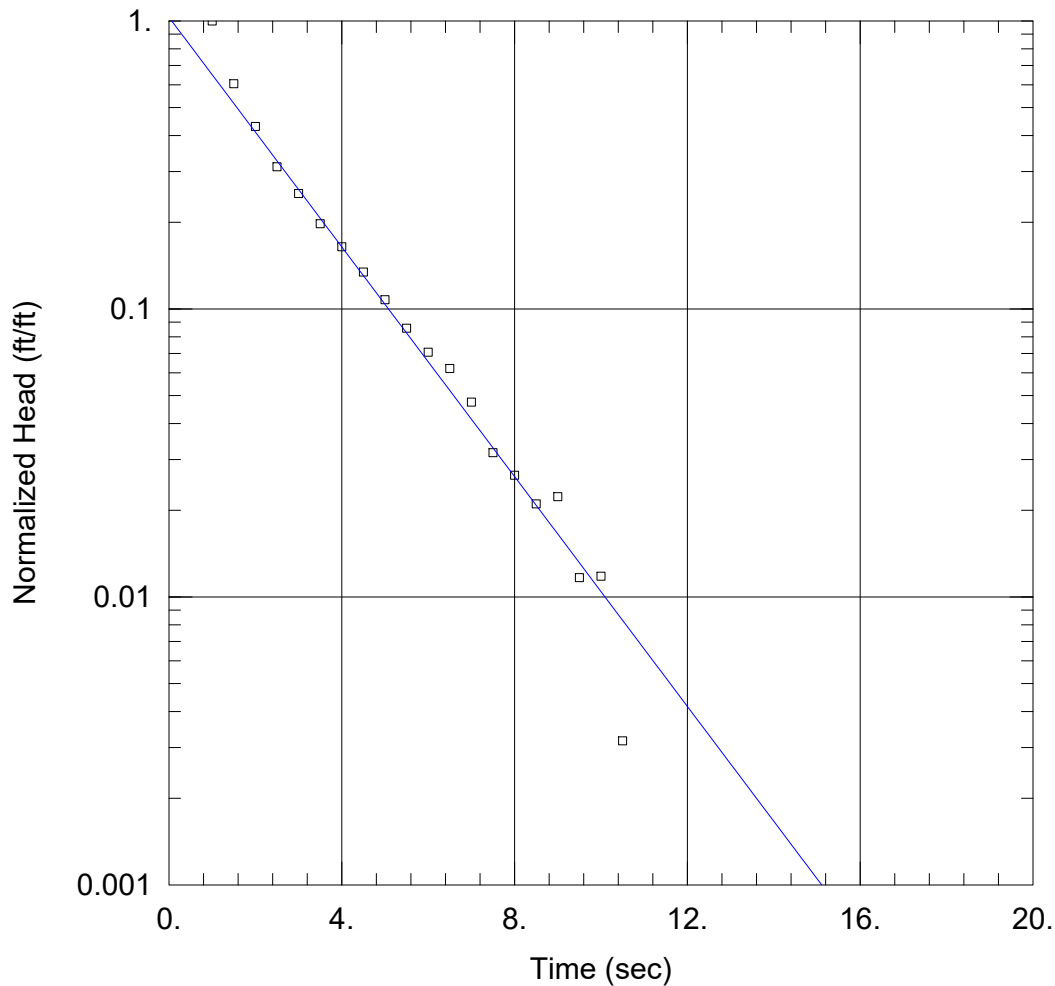
Initial Displacement: -3.856 ft  
 Total Well Penetration Depth: 8.3 ft  
 Casing Radius: 0.333 ft

Static Water Column Height: 8.3 ft  
 Screen Length: 8.3 ft  
 Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined  
 K = 706.3 ft/day

Solution Method: Bower-Rice  
 y0 = -3.085 ft



### WELL TEST ANALYSIS

Data Set: K:\...\MW-4 ST-6.aqt  
 Date: 08/08/24

Time: 08:57:43

### PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-4  
 Test Date: 5/9/24

### AQUIFER DATA

Saturated Thickness: 8.3 ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW-4)

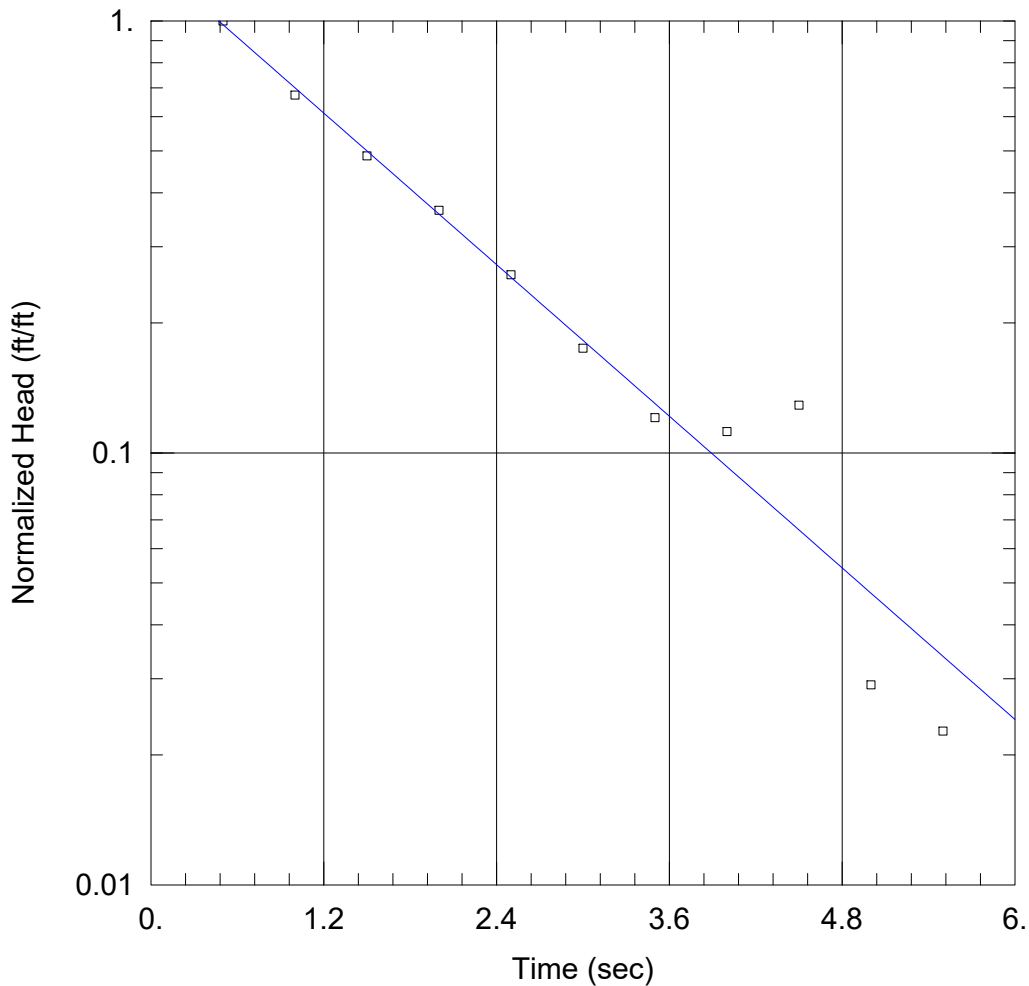
Initial Displacement: -2.914 ft  
 Total Well Penetration Depth: 8.3 ft  
 Casing Radius: 0.333 ft

Static Water Column Height: 8.3 ft  
 Screen Length: 8.3 ft  
 Well Radius: 0.333 ft

### SOLUTION

Aquifer Model: Unconfined  
 K = 638.8 ft/day

Solution Method: Bouwer-Rice  
 y0 = -3. ft



### WELL TEST ANALYSIS

Data Set: K:\...\MW-5 ST-2.aqt  
 Date: 08/08/24

Time: 08:58:12

### PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-5  
 Test Date: 5/9/24

### AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW-5)

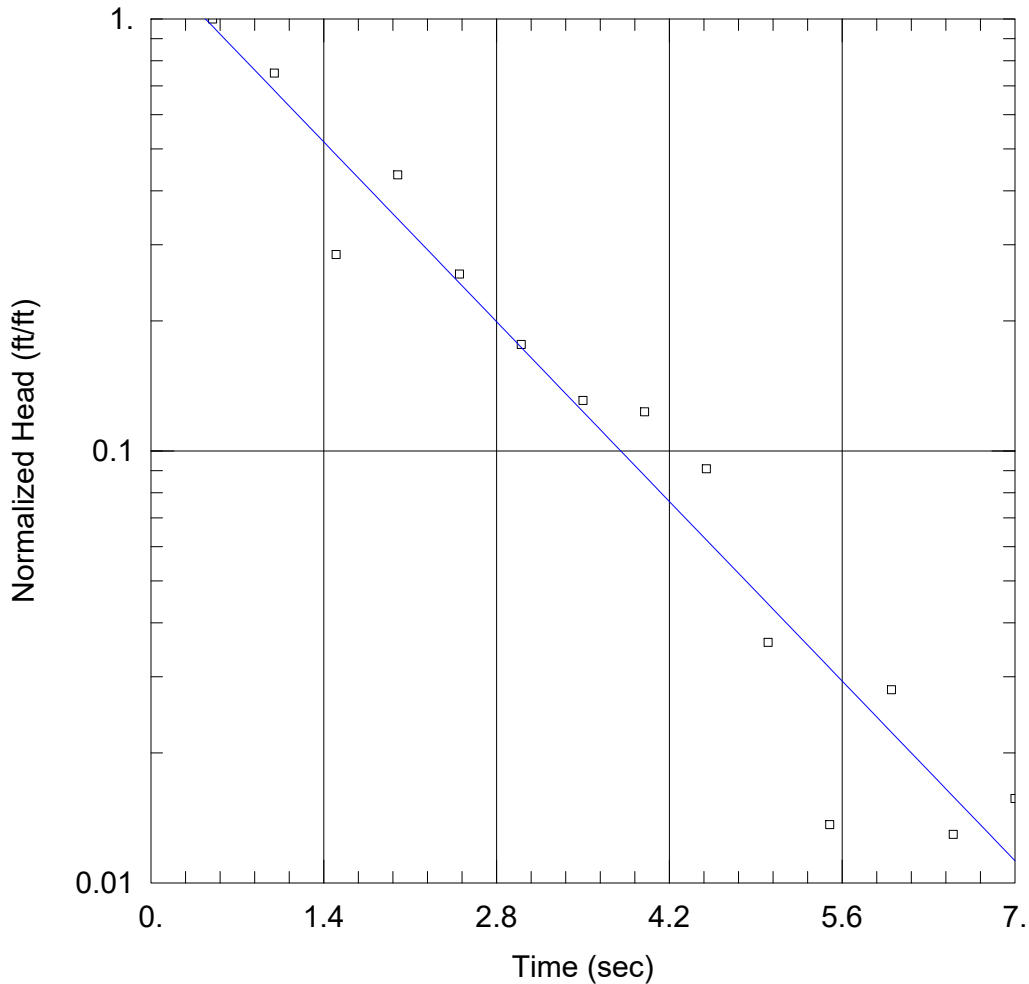
Initial Displacement: -0.4233 ft  
 Total Well Penetration Depth: 8. ft  
 Casing Radius: 0.333 ft

Static Water Column Height: 8. ft  
 Screen Length: 8. ft  
 Well Radius: 0.333 ft

### SOLUTION

Aquifer Model: Unconfined  
 K = 959.3 ft/day

Solution Method: Bouwer-Rice  
 y0 = -0.581 ft



WELL TEST ANALYSIS

Data Set: K:\...\MW-5 ST-4.aqt  
 Date: 08/08/24

Time: 08:58:27

PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-5  
 Test Date: 5/9/24

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-5)

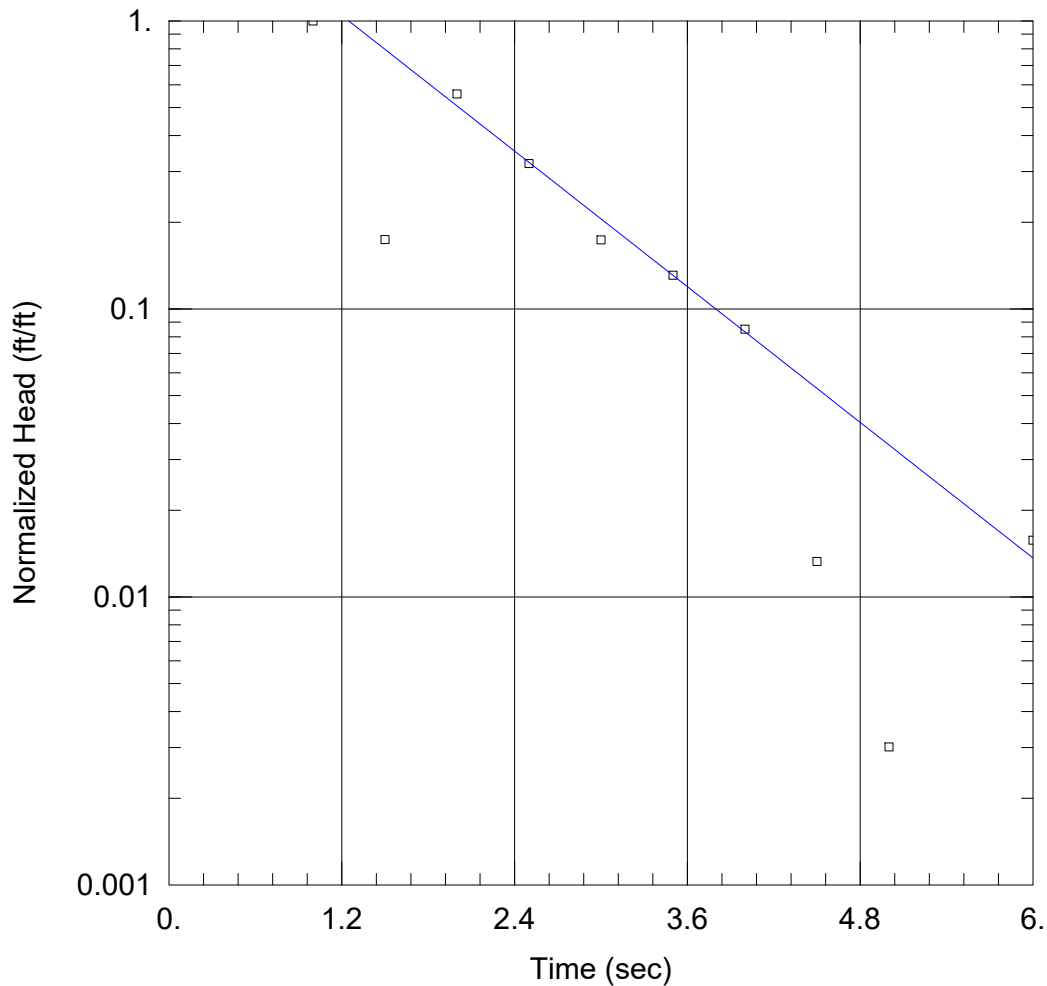
Initial Displacement: -0.7776 ft  
 Total Well Penetration Depth: 8. ft  
 Casing Radius: 0.333 ft

Static Water Column Height: 8. ft  
 Screen Length: 8. ft  
 Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined  
 K = 974.8 ft/day

Solution Method: Bouwer-Rice  
 y0 = -1.052 ft



WELL TEST ANALYSIS

Data Set: K:\...\MW-5 ST-6.aqt  
 Date: 08/08/24

Time: 08:58:50

PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-5  
 Test Date: 5/9/24

AQUIFER DATA

Saturated Thickness: 8. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-5)

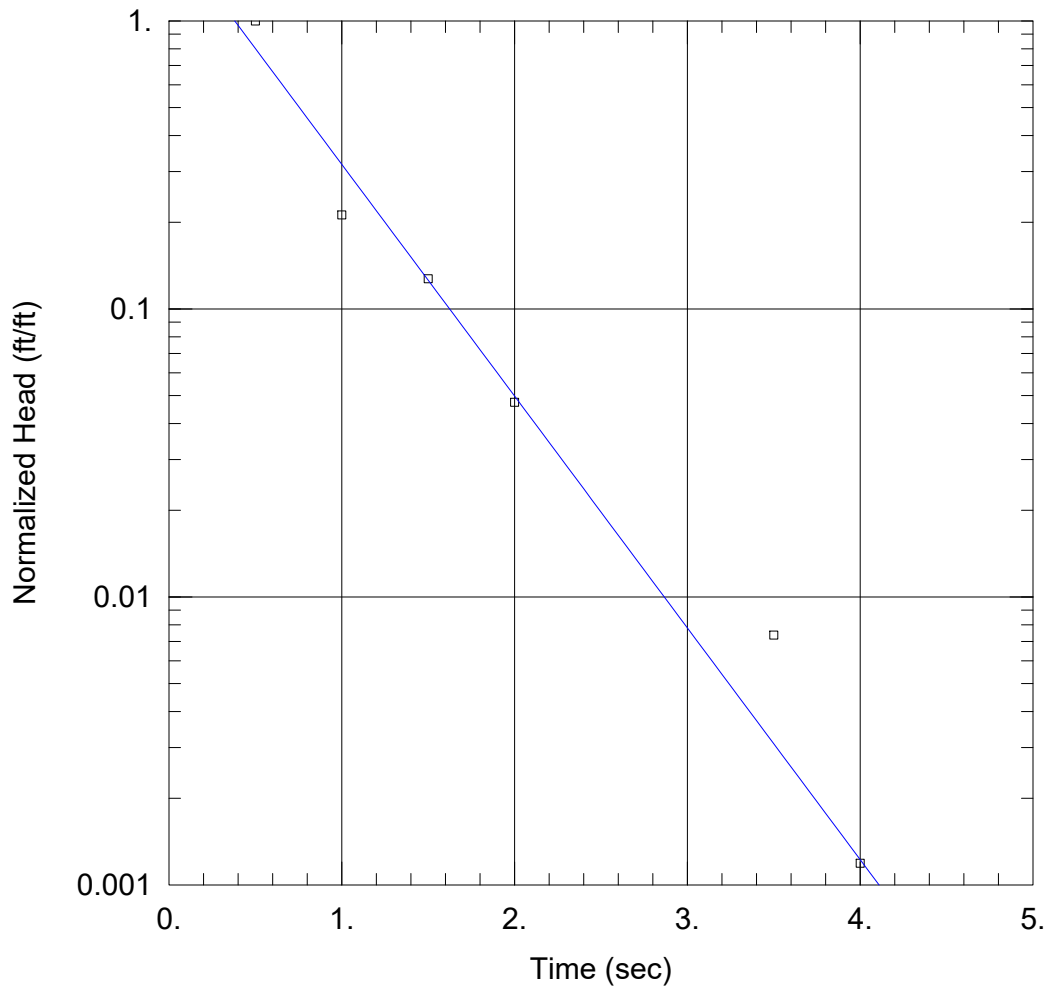
Initial Displacement: -0.5719 ft  
 Total Well Penetration Depth: 8. ft  
 Casing Radius: 0.333 ft

Static Water Column Height: 8. ft  
 Screen Length: 8. ft  
 Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Confined  
 K = 1287.2 ft/day

Solution Method: Bouwer-Rice  
 y0 = -1.766 ft



### WELL TEST ANALYSIS

Data Set: K:\...\MW-6 ST-1.aqt  
 Date: 08/08/24

Time: 08:59:05

### PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-5  
 Test Date: 5/9/24

### AQUIFER DATA

Saturated Thickness: 9.94 ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW-6)

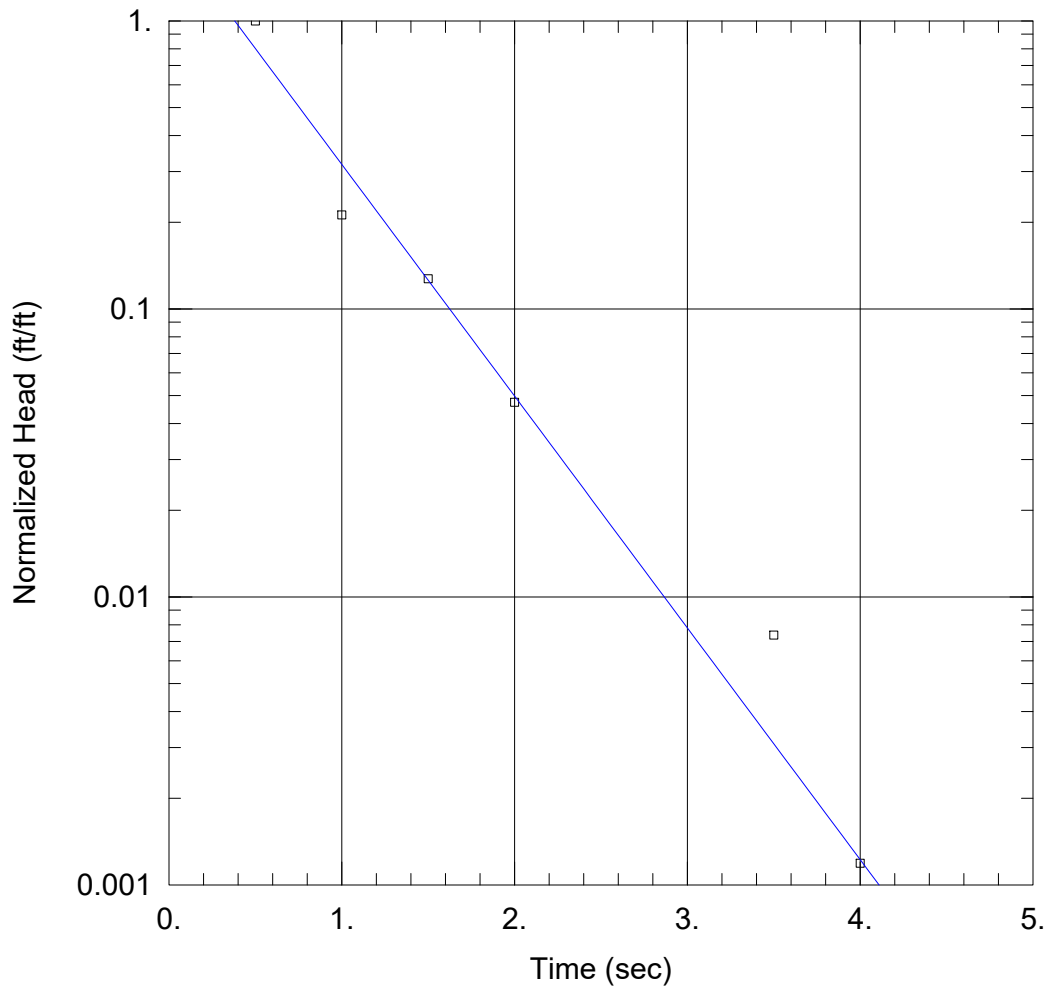
Initial Displacement: -10.36 ft  
 Total Well Penetration Depth: 9.94 ft  
 Casing Radius: 0.166 ft

Static Water Column Height: 9.94 ft  
 Screen Length: 9.94 ft  
 Well Radius: 0.166 ft

### SOLUTION

Aquifer Model: Confined  
 K = 696.2 ft/day

Solution Method: Bower-Rice  
 y0 = -20.97 ft



### WELL TEST ANALYSIS

Data Set: K:\...\MW-6 ST-2.aqt  
 Date: 08/08/24

Time: 08:59:21

### PROJECT INFORMATION

Company: WET  
 Client: Weyerhaeuser  
 Project: 1598  
 Location: Kalispell  
 Test Well: MW-5  
 Test Date: 5/9/24

### AQUIFER DATA

Saturated Thickness: 9.94 ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW-6)

Initial Displacement: -10.36 ft  
 Total Well Penetration Depth: 9.94 ft  
 Casing Radius: 0.166 ft

Static Water Column Height: 9.94 ft  
 Screen Length: 9.94 ft  
 Well Radius: 0.166 ft

### SOLUTION

Aquifer Model: Confined  
 K = 696.2 ft/day

Solution Method: Bowser-Rice  
 y0 = -20.97 ft

## **APPENDIX B: MONITORING WELL INSTALLATION REPORT**



## TECHNICAL MEMORANDUM

To: Zachary Hiatt, Weyerhaeuser

From: Brad Bennett, Senior Hydrogeologist, Water & Environmental Technologies

Copy: Ashley Williams, Weyerhaeuser

Project: WET 1598-23

Date: June 5, 2024

Re: Weyerhaeuser Kalispell Sawmill and Plywood Facility Monitoring Well Completion Memo

---

### INTRODUCTION

Water and Environmental Technologies (WET) is preparing an application for Weyerhaeuser's Kalispell Plywood Plant and Sawmill to obtain a Montana Ground Water Control System (MGWPCS) permit for industrial wastewater discharge from the Department of Environmental Quality (DEQ). The Weyerhaeuser Kalispell facility is located north of Kalispell Montana approximately 0.25 miles west of the intersection of U.S. Highway 2 and West Reserve Drive. The complex encompasses approximately 120 acres and includes a log yard, sawmill, plywood plant, post and dimensional lumber plant and kilns. The property is located in Sections 32 and 33 of Township 29 North, Range 21 West of Flathead County, Montana. A vicinity map is provided as **Figure 1**. The wastewater permitting process requires installation of monitoring wells to facilitate collection of groundwater quality samples to document background conditions and assist with evaluating impacts to the receiving shallow aquifer. This memorandum provides details of the previously existing site monitoring wells that were retained and documentation of the construction of the new monitoring wells.

### WELL LOCATIONS

Three previously installed monitoring wells were present at the facility. Two of these monitoring wells were in good condition and are being utilized as sampling points for the discharge permit application. The third existing monitoring well was damaged beyond repair and was abandoned in place by Boland Construction and Drilling of Great Falls Montana. The two existing monitoring wells which were retained are designated as MW-4 and MW-5. Four additional monitoring wells were constructed to document groundwater conditions at unique locations at the facility, these wells were designated as MW-1, MW-2, MW-3, and MW-6. Well locations are provided in **Figure 2**. The locations of the new monitoring wells were approved by DEQ prior to construction.

## SITE SPECIFIC HYDROGEOLOGY

The shallow unconfined aquifer in the vicinity of the Weyerhaeuser Kalispell Facility is known as the Evergreen Alluvial Aquifer. This unit occupies the area between the Whitefish and Flathead Rivers. In this shallow aquifer, groundwater can occur as shallow as 6 feet bgs and the water table typically displays seasonal fluctuations of approximately 3 feet (Noble & Stanford, 1986, and Konizeski, 1968). The aquifer is 20 to 30 feet thick and is composed of shallow unconsolidated alluvium deposits (primarily sand and gravel) and is underlain by a relatively impermeable clay dominant confining layer (Noble & Stanford, 1986). Although this aquifer is shallow and therefore intrinsically more susceptible to surface contamination, it is utilized for domestic, irrigation, and industrial purposes. The aquifer is highly productive, with a documented transmissivity of 92,000 feet<sup>2</sup>/day (King, 1988). The groundwater flow direction is predominantly from north to south in this area (Noble and Stanford, 1986; and Konizeski, 1968).

## SOIL BORING AND MONITORING WELL INSTALLATION

The four new monitoring wells were drilled and constructed September 5 through 7, 2023. Wells were constructed by Boland Construction and Drilling of Great Falls Montana, a Montana licensed monitoring well constructor utilizing a track-mounted CME-45 equipped with an Overburden Drilling Excentric (ODEX) drilling system. The ODEX system is effective for drilling in unconsolidated formations and consists of utilizing compressed air to drive the down the hole hammer and carry cuttings to the surface. Following construction, wells were developed via airlifting to remove fines and establish a hydraulic connection with the aquifer. Soil cuttings were logged as drilling proceeded and characterized by WET using the Unified Soil Classification System (USCS). Soil boring logs are provided as **Appendix A**. Observations of the water bearing unit recorded in the soil boring logs are predominantly gravel and sand, which is consistent with the lithology anticipated to be encountered in the Evergreen Alluvial Aquifer.

Each new monitoring well was constructed utilizing a 10-foot length of 2-inch diameter 0.020 slot factory screen positioned to ensure that the top of the well screen remains exposed during seasonal groundwater fluctuations. The well was extended to above ground surface utilizing flush-threaded blank PVC casing, and the wells were completed above ground surface with 4-inch diameter steel protective surface casing and a locking aluminum lid. In each well a filter pack was installed extending to at least one foot above the top of the well screen. Well seals were established by filling the annular space with  $\frac{3}{4}$ -bentonite chips to a minimum depth of three feet below ground surface. The annular space between the top of the bentonite and ground surface was subsequently filled with cuttings derived from drilling operations at the well location. Well completion details are provided in **Table I**.

Table I Well Completion Details			
Well Identification	Well Diameter and Casing Material	Screened Interval (Feet BGS)	Completion Date
MW-1	2-inch PVC	21.9 to 11.9	September 2023
MW-2	2-inch PVC	16.7 to 6.7	September 2023
MW-3	2-inch PVC	25 to 15	September 2023
MW-4	4-inch PVC	19.5 to 9.5	Unknown
MW-5	4-inch PVC	20.2 to 10.2	Unknown
MW-6	2-inch PVC	17.7 to 7.7	September 2023

The two existing monitoring wells (now designated as MW-4 and MW-5) are constructed of 4-inch diameter PVC. The information recorded in the caps of the protective wellhead casings for the two existing wellheads indicates that these wells are constructed with 10-foot lengths of factory screen installed at the base of the boring. Screen slot sizing was not indicated. Both existing wells are finished with an eight-inch diameter steel surface casing with a locking lid. The historical monitoring well located approximately 30 feet southwest of the newly constructed monitoring well MW-2 was abandoned in place by Boland Construction and Drilling on September 6, 2023 due to the poor condition of this historical monitoring well.

#### MONITORING WELL DEVELOPMENT

Following monitoring installation, the new wells were developed using the drill rig via air lifting, a process by which compressed air is utilized to purge water and sediment from the well. All site wells were further developed utilizing a stainless-steel bailer to surge water in the well and mobilize fine grained sediments in the formation followed by further development utilizing a decontaminated 12-volt submersible pump to over-purge the well. The pump was deployed in the monitoring wells and the wells were purged until an improvement in turbidity was observed.

#### MONITORING WELL SURVEY

The monitoring well network was surveyed relative to the Montana State Plane datum and the North American Vertical Datum (NAVD 83). Well locations and elevations are provided in **Table II**. WET completed the well survey on October 18, 2023.

Table II Well Survey Details			
Well Identification	Easting (Feet)	Northing (Feet)	Top of casing elevation (feet)
MW-1	804234.8	1490148	2914.88
MW-2	803017.3	1489048	2913.44
MW-3	801997.7	1486619	2910.52
MW-4	802477.6	1486417	2910.84
MW-5	802617.1	1486031	2911.09
MW-6	802762.1	1485518	2910.41

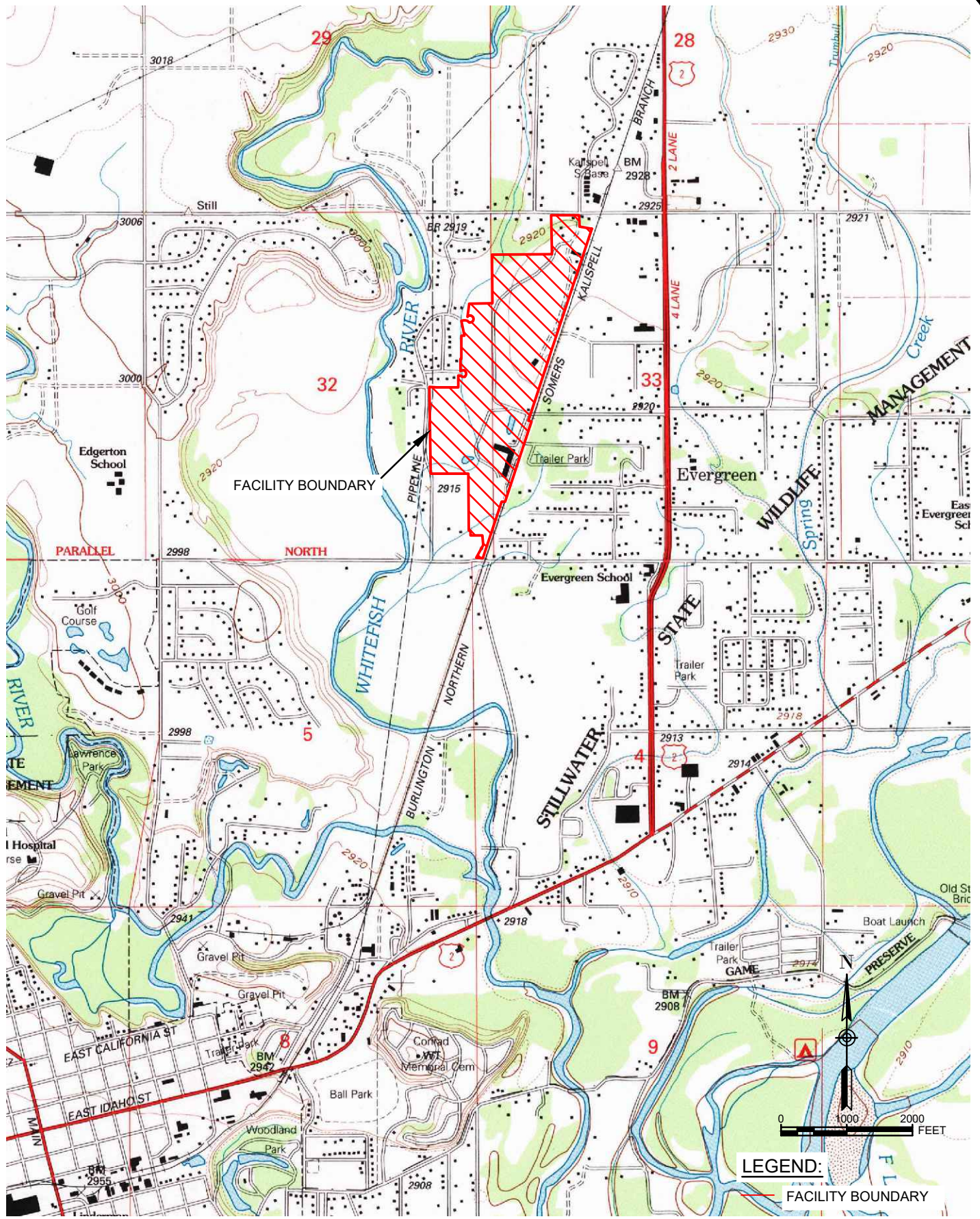
Summaries of hydraulic conductivity analysis, groundwater quality monitoring, and documentation of the facility's industrial waste streams to be permitted are each provided in separate technical memorandums.

## REFERENCES

- King, J.B. (1988) *Hydrogeologic Analysis of Septic System Nutrient Attenuation Efficiencies in the Evergreen Area, Montana; Montana Bureau of Mines and Geology Open-File Report 205*, p.81.
- Konizeski, R.L., Brietkrietz, A., and McMurtrey, R.G., 1968, Geology and ground water resources of the Kalispell Valley, northwestern Montana: Montana Bureau of Mines and Geology Bulletin 68, 42 p., 5 sheets.
- Noble, R.A. & J.A. Stanford. (1986) *Groundwater Resources and Water-Quality of the Unconfined Aquifers in the Kalispell Valley, Montana; Montana Bureau of Mines and Geology Open-File Report 177*, p.106.

# FIGURES

K:\PROJECTS\0 KALISPELL\1598-23 Weyerhaeuser Kalispell Process Water Permitting\Monitoring\CAD\Site Map.dwg PLOT DATE: 2024-6-5 09:10 USER: jgramham



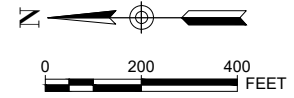
# WEYERHAEUSER PLYWOOD PLANT SITE VICINITY MAP

PROJECT NAME: WEYERHAEUSER PLYWOOD PLANT  
 LOCATION: KALISPELL, MONTANA  
 FILE NO. Site Map.dwg

JOB NO: 1598-22  
 DATE: 6/5/24  
 DRAFTER: JG  
 CHECKED BY: BB

SHEET  
**FIG. 1**

K:\PROJECTS\KALISPELL\1598-23 Weyerhaeuser Kalispell Process Water Permitting\Monitoring\CAD\Site Map.dwg\_PLOT DATE: 2024-6-5 09:03 USER: jgraham



**LEGEND**

- MONITORING WELL
- PROPERTY BOUNDARY
- SURFACE WATER
- BNSF RAILROAD

No.	Description	Date	Drawn By



Water & Environmental  
TECHNOLOGIES  
102 Cooperative Way  
SIE 100 MT 69901  
(408) 756-2530  
WATERENTECH.COM



**WEYERHAUSER KALISPELL  
PLYWOOD PLANT  
FACILITY MAP**

PROJECT NAME: WEYERHAUSER PLYWOOD DISCHARGE  
LOCATION: KALISPELL, MT  
FILE NO.: Site Map.dwg

JOB NO.: 1598-23  
DATE: 6/5/24  
DRAFTER: JG  
CHECKED BY: BB

SHEET  
**FIG. 2**

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The information contained herein is the property of Weyerhaeuser and is confidential. It is to be used only for the project and site for which it was prepared. It is not to be used for any other project or site without express written authorization.

# **Appendix A**

## **Soil Boring Logs**



PROJECT NUMBER 1598-23	WELL ID MW-1
<b>WELL LOG</b>	

PROJECT Weyerhaeuser Kalispell Water Permitting LOCATION North Log Yard Entrance - in grass  
 ELEVATION 2928 Feet AMSL CONTRACTOR Boland Construction & Drilling  
 EXCAVATION EQUIPMENT CME 45 - ODEX - Air Rotary DATE EXCAVATED 9/7/2023  
 WATER LEVELS 9.51' BGS Total Depth Borehole - 20' BGS, set well 19' BGS START 8:00 FINISH 11:00 LOGGER J. Graham

DEPTH BELOW SURFACE (FEET)	INTERVAL (FEET)	SOIL DESCRIPTION  SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS  DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TEST AND INSTRUMENTATION
5	0 to 5	Organic Fill - decomposed wood, dark brown, slightly moist	
10	5 to 10	Silt (ML) with ~30% sand (fine) and trace clay, grey, saturated	roots common
15	10 to 12	Silt (ML) with ~30% sand (fine) and trace clay, grey, saturated	
15	12 to 15	Silty Gravel (GM), ~80% gravel pea-sized to ~2-inch plus, matrix grey silt (as above), wet	
15	15 to 19	Gravel (GP) 80% pea-sized to ~1.5-inch, sand matrix (medium to coarse), wet	
20	19 to 20	Drilling like clay (CL) - No returns	
25	<b>COMMENTS:</b> Trip pipe, tag bottom, total borehole depth = 20' BGS, measure depth to water =9.51'BGS Set well at 19' BGS, 2-inch PVC construction, 10' factory screen (0.020 slot), screen from 19 to 9 feet bgs 10-20 silica sand to 7.5' BGS, ¼ bentonite chips to 3' develop well with rig via air lifting (~20 minutes) Stick-up completion, 4-inch outer steel casing with locking aluminum lid		



PROJECT NUMBER 1598-23	WELL ID MW-2
<b>WELL LOG</b>	

PROJECT Weyerhaeuser Kalispell Water Permitting LOCATION Western edge of Log Yard  
 ELEVATION 2924 Feet AMSL CONTRACTOR Boland Construction & Drilling  
 EXCAVATION EQUIPMENT CME 45 - ODEX - Air Rotary DATE EXCAVATED 9/6/2023  
 WATER LEVELS 7.4' BGS Total Depth Borehole - 18' BGS, set well 16' BGS START 15:30 FINISH 18:00 LOGGER J. Graham

DEPTH BELOW SURFACE (FEET)	INTERVAL (FEET)	SOIL DESCRIPTION  SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS  DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TEST AND INSTRUMENTATION
0 to 5	0 to 5	Silty Sand (SM) medium brown, very slightly moist, with gravel (~30%) pea-sized plus	
5 to 10	5 to 10	Sandy Gravel (GP) ~60% gravel, cobbles pea-sized to 2-inch, sand matrix medium brown, (medium to coarse grained) moist	wet at 10' bgs
10 to 15	10 to 15	Sandy Gravel (GP) ~80% gravel, cobbles pea-sized to 2-inch, sand matrix - medium brown, (medium to coarse grained), wet	
15 to 17	15 to 17	Sandy Gravel (GP) ~80% gravel, cobbles pea-sized to 2-inch, sand matrix - medium brown, (medium to coarse grained), wet	
17-18	17-18	Gravelly Sand (SP) ~80% sand, medium brown, medium to coarse grained, wet	
20	<b>COMMENTS:</b> Trip pipe, tag bottom, total borehole depth = 18' BGS, measure depth to water = 7.4' BGS borehole heaved to 16', Set well at 16' BGS, 2-inch PVC construction, 10' factory screen (0.020 slot), screen from 16 to 6 feet bgs 10-20 silica sand to 4.75' BGS, ¼ bentonite chips to 2.3' develop well with rig via air lifting (~20 minutes) Stick-up completion, 4-inch outer steel casing with locking aluminum lid		
25			



PROJECT NUMBER 1598-23	WELL ID MW-3
<b>WELL LOG</b>	

PROJECT Weyerhaeuser Kalispell Water Permitting LOCATION North side of boneyard  
 ELEVATION 2926 Feet AMSL CONTRACTOR Boland Construction & Drilling  
 EXCAVATION EQUIPMENT CME 45 - ODEX - Air Rotary DATE EXCAVATED 9/5/2023 through 9/6/23  
 WATER LEVELS 10.1' BGS Total Depth Borehole - 23' BGS, set well 22.5' BGS START 16:00 FINISH 11:00 LOGGER J. Graham

DEPTH BELOW SURFACE (FEET)	INTERVAL (FEET)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TEST AND INSTRUMENTATION
0 to 5	0 to 5	Organic Fill - decomposed wood, dark brown, slightly moist, contains gravel cobbles 0.5-inches to 0.5-feet (based on surface observations, not cuttings)	low returns
5 to 7	5 to 7	Organic Fill - decomposed wood, dark brown, slightly moist	low returns
7 to 11	7 to 11	Organic Fill - silt (ML-CL) with sand and trace clay, dark brown, organic, with abundant bark and decomposing wood debris, occasional pebbles	
11 to 12	11 to 12	Organic Fill - silt (ML-CL) with sand and trace clay, dark brown, organic, with abundant bark and decomposing wood debris,	
12 to 15	12 to 15	Gravel (GM-GW) poorly graded with sand matrix (medium to coarse grained), medium brown to grey, moist	
15 to 19	15 to 19	Gravel (GM-GW) poorly graded with sand matrix (medium to coarse grained), medium brown to grey, wet	Water interface appears to be at approximately 15'
19 to 22	19 to 22	Gravel (GM-GW) poorly graded with sand matrix (medium to coarse grained), medium brown to grey, wet	
22 to 24	22 to 24	Drilling like sand (SP) medium to very coarse grained, brown, wet	poor returns
25	<b>COMMENTS:</b> Trip pipe, tag bottom, 5' of heave in borehole, tip drill rod and air lift, 5' heave, air lift again, borehole depth = 23' BGS Set well at 22.5' BGS, 2-inch PVC construction, 10' factory screen (0.020 slot), screen from 22.5 to 12.5 feet bgs 10-20 silica sand to 11' BGS, ¾ bentonite chips to 3.5' develop well with rig via air lifting (~20 minutes) Stick-up completion, 4-inch outer steel casing with locking aluminum lid		



PROJECT NUMBER 1598-23	WELL ID MW-6
<b>WELL LOG</b>	

PROJECT	<u>Weyerhaeuser Kalispell Water Permitting</u>	LOCATION	<u>West Side of South Entrance Road</u>
ELEVATION	<u>2921 Feet AMSL</u>	CONTRACTOR	<u>Boland Construction &amp; Drilling</u>
EXCAVATION EQUIPMENT	<u>CME 45 - ODEX - Air Rotary</u>	DATE EXCAVATED	<u>9/6/2023</u>
WATER LEVELS	<u>7.75' BGS</u> Total Depth <u>Borehole - 23' BGS, set well 16' BGS</u>	START	<u>11:45</u> FINISH <u>15:00</u> LOGGER <u>J. Graham</u>

DEPTH BELOW SURFACE (FEET)	INTERVAL (FEET)	SOIL DESCRIPTION	COMMENTS
		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TEST AND INSTRUMENTATION
0 5	0 to 5	Gravel (GP-GM) in a silty sand matrix, grey to brown, cobbles 2-inch plus (60% gravel), green and purple cobbles, sand matrix (fine to coarse-grained), loose structure, dry	
5 10	5 to 10	Gravel (GP-GM) in a silty sand matrix, grey to brown, cobbles 2-inch plus (60% gravel), green and purple cobbles, sand matrix (fine to coarse-grained), loose structure, very moist	Becoming wet at 10'
10 15	10 to 15	Gravel (GP-GM) in a silty sand matrix, grey to brown, cobbles 2-inch plus (40% gravel), green and purple cobbles, sand matrix (fine to coarse-grained), loose structure, very moist	Low recovery, returns being pushed into formation
15 20	15 to 18	Gravel (GP-GM) in a silty sand matrix, grey to brown, cobbles 2-inch plus (30% gravel), green and purple cobbles, sand matrix (fine to coarse-grained), loose structure, very moist	Low recovery, returns being pushed into formation, drilling like sand
20 25	18-20	Sand (SP) medium to coarse grained, brown, very moist	
<b>COMMENTS:</b> Trip pipe, tag bottom, total borehole depth = 23' BGS, measure depth to water =7.75'BGS Set well at 16' BGS, 2-inch PVC construction, 10' factory screen (0.020 slot), screen from 16 to 6 feet bgs 10-20 silica sand to 5' BGS, ¼ bentonite chips to 3.5' develop well with rig via air lifting (~30 minutes) Stick-up completion, 4-inch outer steel casing with locking aluminum lid			

## **APPENDIX C: WASTEWATER QUALITY SUMMARY REPORT**



## TECHNICAL MEMORANDUM

To: Zachary Hiatt, Weyerhaeuser

From: Brad Bennett, Senior Hydrogeologist, Water & Environmental Technologies

Copy: Ashley Williams, Weyerhaeuser

Project: WET 1598-23

Date: July 18, 2024

Re: Weyerhaeuser Kalispell Sawmill and Plywood Facility Waste Stream Memo

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### INTRODUCTION

The Weyerhaeuser Kalispell facility is located north of Kalispell Montana approximately 0.25 miles west of the intersection of U.S. Highway 2 and West Reserve Drive. The complex encompasses approximately 120 acres and includes a log yard, sawmill, plywood plant, post and dimensional lumber plant, and associated kilns. The property is located in Sections 32 and 33 of Township 29 North, Range 21 West of Flathead County, Montana. A site map provided as **Figure 1** and includes the location of site monitoring wells, stormwater and fire ponds, and the origin points of the industrial wastewater streams to be permitted.

Water and Environmental Technologies (WET) is preparing an application for Weyerhaeuser's Kalispell Plywood Plant and Sawmill to obtain a Montana Ground Water Control System (MGWPCS) permit for industrial wastewater discharge from the Department of Environmental Quality (DEQ). The wastewater streams to be permitted include veneer dryer washdown water and boiler condensate water. This memorandum provides a summary of the wastewater parameters for the waste stream sampled (dryer washdown water) and anticipated wastewater parameters for the waste stream that has yet to be sampled (boiler condensate).

### DRYER WASHDOWN

The plywood plant prepares veneer for processing by passing through steam heated veneer dryers to reduce the moisture content to the appropriate specification for plywood assembly. The dryers are washed on a weekly basis to remove accumulation of wood particulate and wood pitch.

Dryer washdown operations are conducted over a six-to-eight-hour period each week with various quick washes during the week as needed. Washing is conducted with water from the facility's water supply system (service provided by Evergreen Water & Sewer District). No amendments are added to the water for dryer washdown. This process generates approximately 50,000 gallons of water on a weekly basis. From the dryer bays, water is

conveyed through drainage channels in the concrete floor of the plywood plant building. The concrete channels terminate at a catchment basin located in an outbuilding. Large solids (2-inch plus) are removed from the catchment basin via a chain conveyor. These particulates are burned at the facility as hog fuel. The remaining water travels through the basin to a buried discharge pipe leading to a storm drain manhole. From the manhole, water travels via a buried pipe to discharge into an unlined pond located approximately 200 feet southwest of the settling tank. Three “grab” samples were collected from the dryer washdown discharge on January 23, 2023, with the intent to characterize this wastewater.

Three samples were collected during the washdown operations, one sample at the beginning of the process, one sample near the middle of the process and one sample towards the end of the process.

## FIELD WATER QUALITY PARAMETERS

Field parameters including temperature, turbidity, dissolved oxygen, pH, oxidation reduction potential (ORP), and specific conductivity were recorded at one-minute intervals from 7:15 through 12:29 on January 23, 2023. Based on field parameter readings, the sonde was not submerged from the intervals of 8:11 through 8:37, 9:40 through 9:54, and 10:28 through 10:54. These data points have been removed from the data plots and the tabulated data summary (provided as **Attachment A**). Graphical displays of each of the field parameters are displayed as **Figures 2, 3, 4, 5, 6** and **7**. As shown, pH ranged from 6.78 to 8.50 for the duration of the monitoring with a median reading of 7.59. pH readings show a decreasing trend for the measurement period. ORP readings ranged from 55 to 141 mV with a median concentration of 125 mV. In general, ORP concentrations increased for the first two hours of the monitoring period and remained relatively stable for the final 2.5 hours of monitoring. Dissolved oxygen concentrations range from 7.39 to 9.75 mg/L with a median concentration of 9.20 mg/L. Dissolved oxygen readings were consistent through the monitoring period. Specific conductivity readings ranged from 246 to 647  $\mu\text{s}/\text{cm}$  with a median concentration of 380  $\mu\text{s}/\text{cm}$ . Specific conductivity readings were relatively consistent for the first three hours of monitoring. From approximately 11:10 to 12:10 specific conductivity values showed a higher degree of variation, after 12:10, specific conductivity readings stabilized at approximately 340  $\mu\text{s}/\text{cm}$  and remained stable for the remainder of the monitoring period. Turbidity ranged from 20 to 247 NTU with a median reading of 48 NTU. Turbidity shows a generally increasing trend throughout the monitoring period, with the highest turbidity recorded at 8:40. Temperature readings ranged from 11.4 to 14.5 °C with a median reading of 12.6 °C and were relatively consistent throughout the monitoring period. Variations in water quality parameters are presumed to be associated with the variations in water flow volume during the washdown process.

## ANALYTICAL RESULTS

The three samples were submitted for analysis of dissolved metals, acidity, alkalinity, fecal coliform bacteria, biochemical oxygen demand, residual chlorine, cyanide, chemical oxygen

demand, conductivity, total organic carbon, mercury, oil and grease, hardness, anions, nitrate (nitrate plus nitrite, ammonia, organic nitrogen, total Kjeldahl nitrogen, total nitrogen), phenolics, phosphorus, total dissolved solids, and total suspended solids. Samples were submitted to Energy Laboratories in Billings, Montana. A full list of the parameters and analytical methods are listed in the laboratory analytical report provided as **Attachment B**. Where applicable WET utilized Montana Department of Environmental Quality (DEQ) Circular 7 numeric water quality standards (DEQ, June 2019) to compare the water sample analytical results. Where Circular 7 standards are not established, secondary maximum contaminant levels (SMCLs) (DEQ, June 2016) were utilized for comparison.

### ***Physical and Biological Analyses***

Physical and biological parameters are summarized in **Table 1**. As shown, fecal coliform results reported concentrations ranging from 33.3 to 44.6 (most probable number) MPN/100mL which is above the acceptable drinking water standard of a reported concentration greater than one. For an additional comparison, Montana DEQ has adopted beach action values (BAV) for full body contact swimming in recreational surface waters (EPA, 2015). The BAV for e. coli is 235 colony forming units (CFU) per 100 mL. It should be noted that MPN and CFU are both units used to document the number of bacteria in a volume of sample. These units are essentially equivalent, with MPN being a statistical prediction of the number of bacterial units viable in a liquid medium and CFU being a physical calculation of the number of bacterial colonies grown on a solid agar plate. Both represent the number of bacteria per unit volume.

Total dissolved solids (TDS) were reported below the 500 mg/L SMCL for all samples with concentrations ranging from 281 to 296 mg/L. pH readings ranged from 7.1 to 7.7 standard units (s.u.) which is within the acceptable range of 6.5 to 8.5 su.

None of the other analytes included in **Table 1** have numeric drinking water standards or SMCLs established.

Oil and grease were reported at a maximum concentration of 35 mg/L in DW-1, with concentrations of 3 and 8 mg/L in DW-2 and DW-3 respectively.

Chemical oxygen demand ranged from 1,190 mg/L in sample DW-1 with lower concentrations reported in samples DW-2 and DW-3 (201 and 200 mg/L).

Total suspended solids (TSS) were reported at a concentration of 389 mg/L in DW-1 while DW-2 and DW-3 reported concentrations of 55 and 40 mg/L respectively.

Laboratory reported conductivity readings ranged from 354 to 400 umhos/cm, with the lowest measurement recorded in sample DW-1 and the highest measurement recorded in DW-3.

Biological oxygen demand ranged from 61 to 90 mg/L with an average concentration of 77 mg/L. The highest concentration was reported in DW-1 and the lowest concentration was reported in DW-2.

Phenolics were detected in one sample (DW-1) at a concentration of 0.06 mg/L. Phenolics were not detected at the laboratory reporting limit of 0.05 mg/L in either DW-2 or DW-3.

### ***Nutrient Analyses***

Nutrient analytical results are summarized in **Table 2**. As shown, none of the nitrogen congeners including nitrogen as ammonia, nitrogen as nitrate plus nitrite, total Kjeldahl nitrogen (TKN), organic nitrogen, and total nitrogen were reported above the DEQ Circular 7 NPP standard of 10 mg/L. Reported concentrations for these congeners range from 0.11 to 2 mg/L for each of the three samples. Concentrations in the initial sample (DW-1) were reported slightly higher than those in samples DW-2 and DW-3.

Phosphorus concentrations ranged from 0.084 mg/L in DW-3 to 0.134 mg/L in DW-1. There is no numerical water quality standard established for phosphorus.

### ***Metals Analyses***

Metals analytical results are summarized in **Table 3**. As shown, no DEQ Circular 7 drinking water standards were exceeded for the three samples. Manganese was reported at concentrations in excess of the SMCL of 0.05 mg/L for samples DW-2 and DW-3 with concentrations of 0.078 and 0.058 mg/L respectively.

### ***Inorganic Analyses***

The three samples were analyzed for inorganic water quality parameters including acidity, alkalinity, bicarbonate, chloride, sulfate, cyanide, residual chlorine, and hardness. These results are summarized in **Table 4**.

As shown, cyanide is the only analyte with an established drinking water MCL of 0.2 mg/L. Cyanide was not detected at the laboratory reporting limit of 0.003mg/L in any of the three samples.

SMCLs are established for chloride and sulfate, both with a maximum concentration of 250 mg/L. Chloride concentrations in samples ranged from 3 to 62 mg/L with "DW-3" reporting the highest concentration, while DW-1 and DW-2 reported concentrations of 3 and 4 mg/L respectively. Sulfate concentrations for the three samples were relatively consistent with concentrations ranging from 5 to 9 mg/L. The inorganic analyses show that the water is a calcium-bicarbonate type.

## **BOILER CONDENSATE**

The Weyerhaeuser plywood plant operates utilizing an industrial hog fuel boiler. Boiler condensate water is discharged to an unlined pond located west of the boiler. Boiler discharge water at the Kalispell facility has not been characterized, however, Weyerhaeuser's MDF plant located in Columbia Falls, Montana also operates utilizing the same hog fuel boiler unit. Condensate from the boiler at the Weyerhaeuser MDF facility is sampled on a quarterly basis as a part of that facilities MPDES discharge permit. The current analytical suite for that discharge

includes the following parameters: alkalinity, biochemical oxygen demand (BOD), chloride, total petroleum hydrocarbons (TPH), nitrogen (as ammonia), total Kjeldahl nitrogen (TKN), nitrogen (nitrate plus nitrite), total nitrogen, pH, total phosphorus, specific conductivity, total dissolved solids (TDS), sulfate, barium, iron, and manganese.

Historical parameters include the above parameter and phenolics, aluminum, arsenic, cadmium, calcium, magnesium, potassium, sodium, zinc, bicarbonate, fluorine, phenolics, oil and grease, formaldehyde, tannins and lignins, and toluene.

A summary of the historical data set for metals analysis for this monitoring point for November 2008 through May 2024 is provided as **Table 5**.

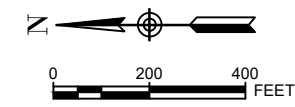
As shown in **Table 5**, historical groundwater metals analytical data from the boiler discharge (at the Columbia Falls Facility) indicates that the above parameters have historically been reported below Department of Environmental Quality (DEQ) Circular 7 Montana Numeric Water Quality Standards where established.

For certain parameters, DEQ has established Secondary Maximum Contaminant Levels (SMCLs) including aluminum for which the SMCL is a range of 0.05 to 0.2 mg/L. Historical results for this parameter range from no detection at the laboratory reporting limit to a maximum of 0.08 mg/L. Manganese has a SMCL of 0.05 mg/L. Historical concentrations have ranged from no detection at the laboratory reporting limit to concentrations in excess of the SMCL up to 0.829 mg/L. It should be noted that SMCLs are considered to be aesthetic parameters and are not enforceable.

As shown in Table 6, historical groundwater concentrations of total nitrogen occasionally exceed the non-priority pollutant limit of 10 mg/L with a maximum historical concentration of 68.2 mg/L.

TDS is occasionally reported above the SMCL of 500 mg/L with historical concentrations ranging from 276 to 1,040 mg/L. Additionally, pH has occasionally reported concentrations above the SMCL range of 6.5 to 8.5 s.u. with a maximum recorded pH of 9.09 s.u.

# FIGURES



- LEGEND**
- ◆ MONITORING WELL
  - PROPERTY BOUNDARY
  - SURFACE WATER
  - BNSF RAILROAD
  - WASTE STREAM

No.	Description	Date	Drawn By

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 WATERMTECH.COM



**WEYERHAUSER KALISPELL  
 PLYWOOD PLANT  
 FACILITY MAP**

PROJECT NAME: WEYERHAUSER PLYWOOD DISCHARGE  
 LOCATION: KALISPELL, MT  
 FILE NO.: Site Map.dwg

JOB NO.:	1598-23
DATE:	7/3/24
DRAFTER:	JG
CHECKED BY:	BB

K:\PROJECTS\1598-23 Weyerhaeuser Kalispell Process Water Permitting\Monitoring\CAD\Site Map.dwg PLOT DATE: 2024-7-3 10:52 USER: jgraham

Figure 2  
Field pH Readings

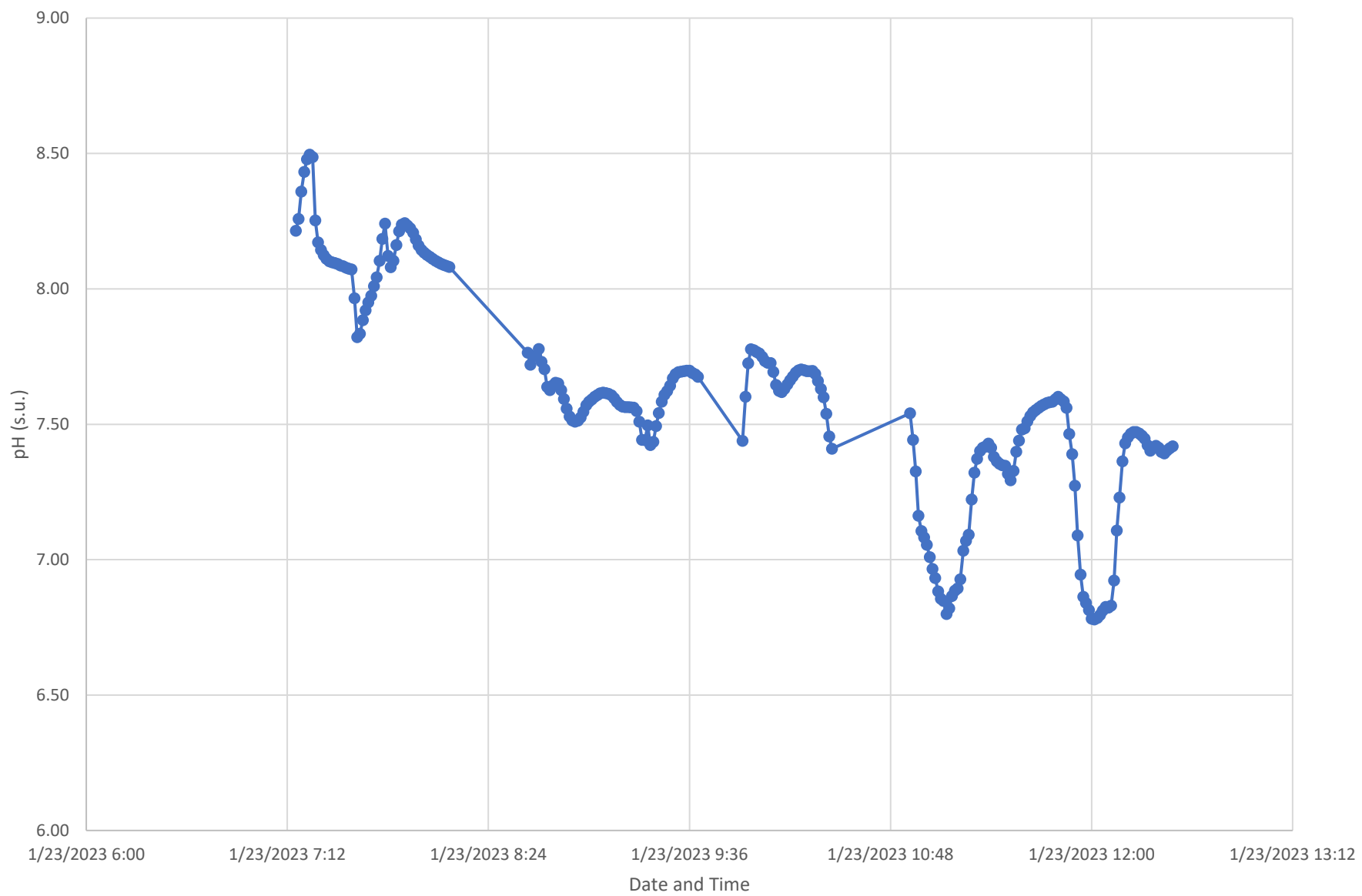


Figure 3  
Field ORP Readings

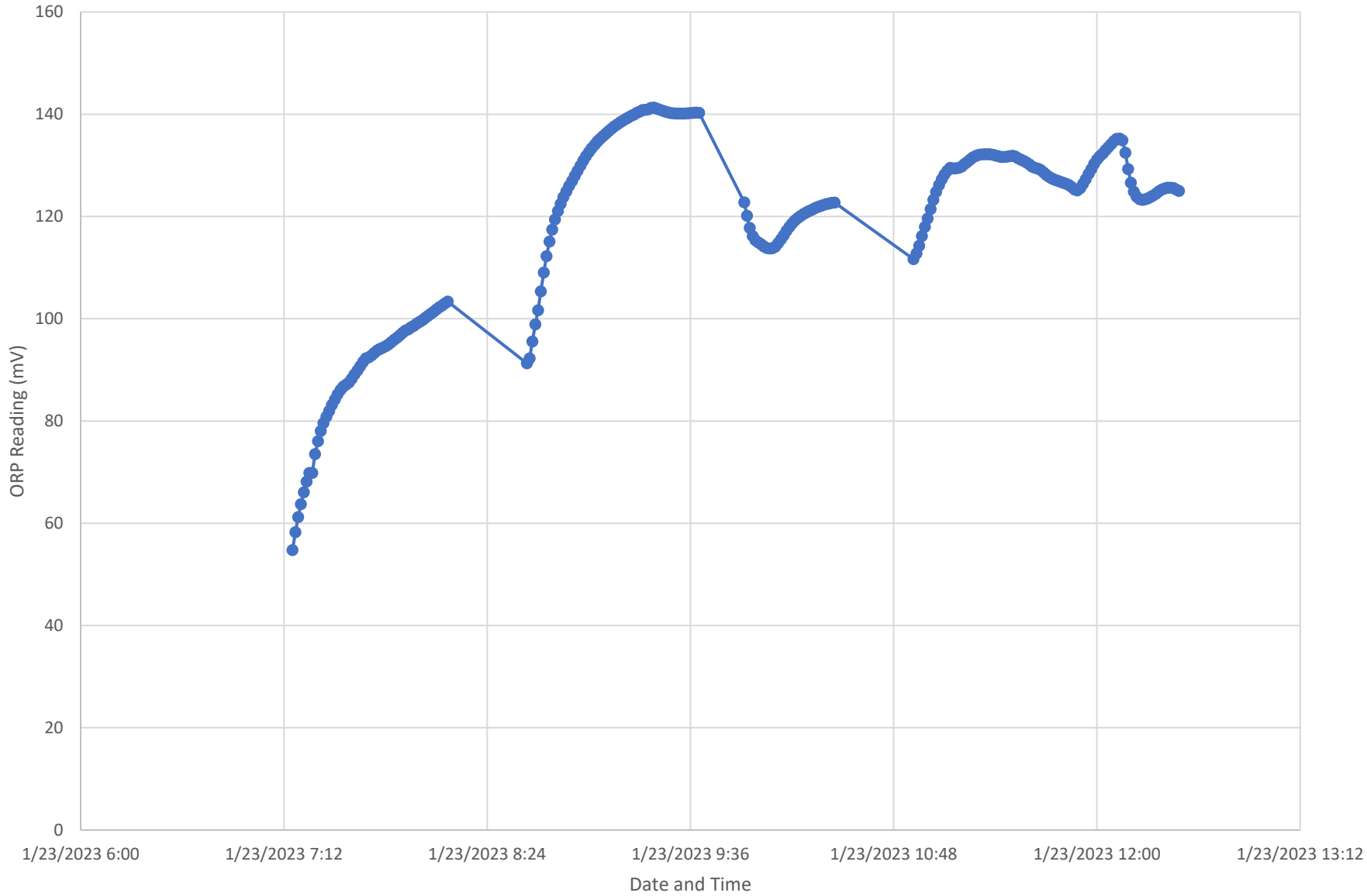


Figure 4  
Field Dissolved Oxygen Readings

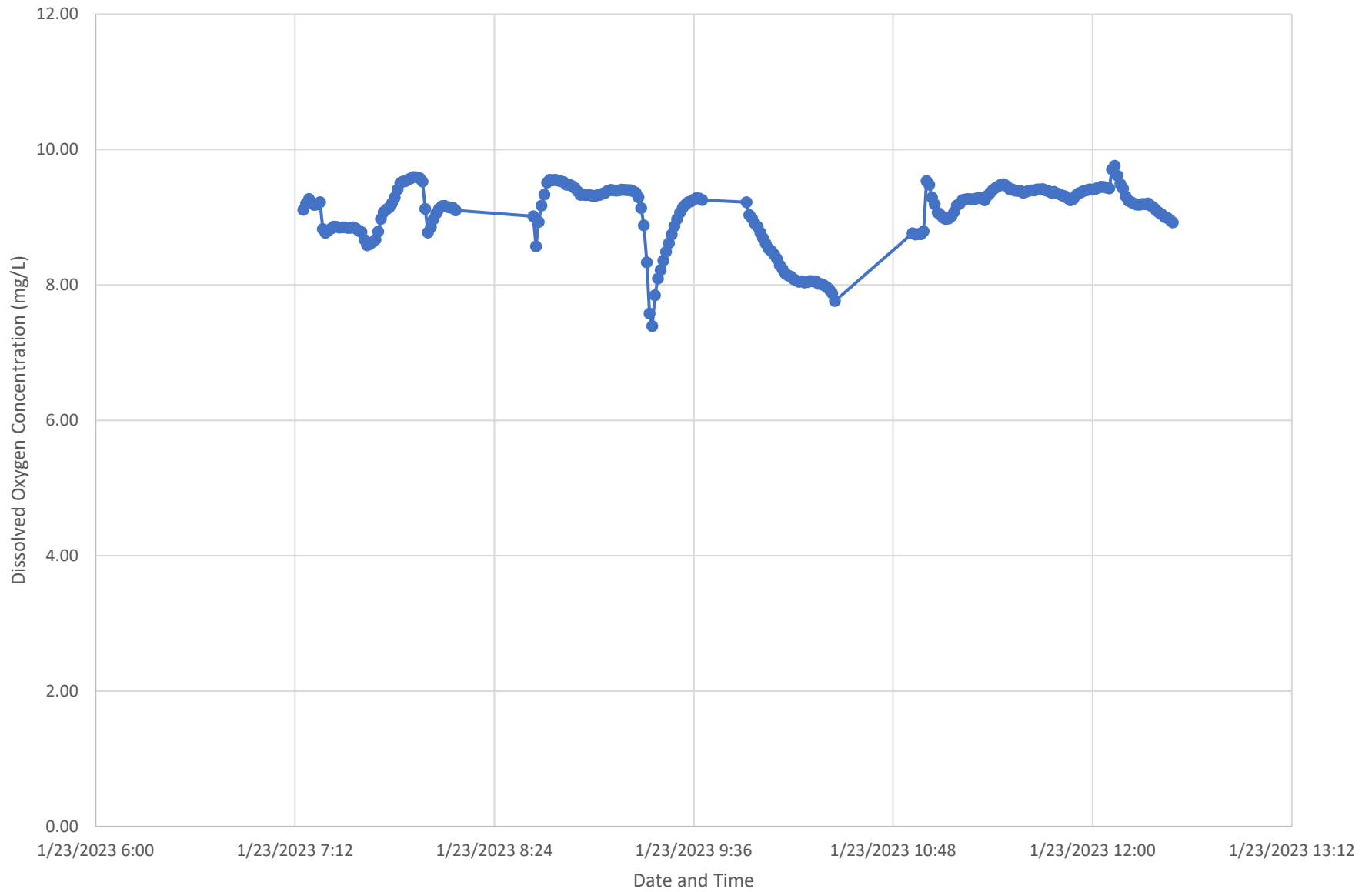


Figure 5  
Field Specific Conductivity Readings

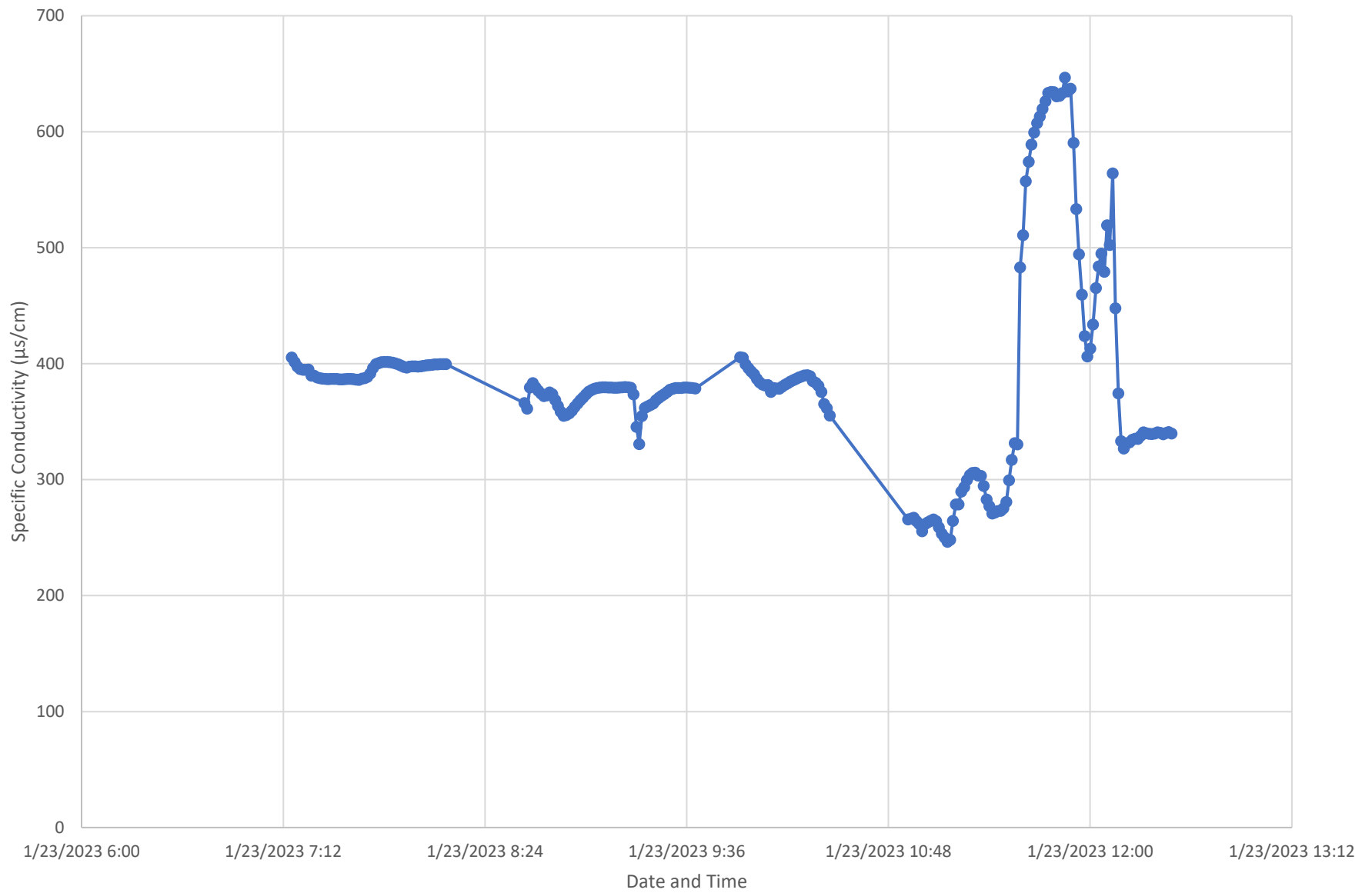


Figure 6  
Field Turbidity Readings

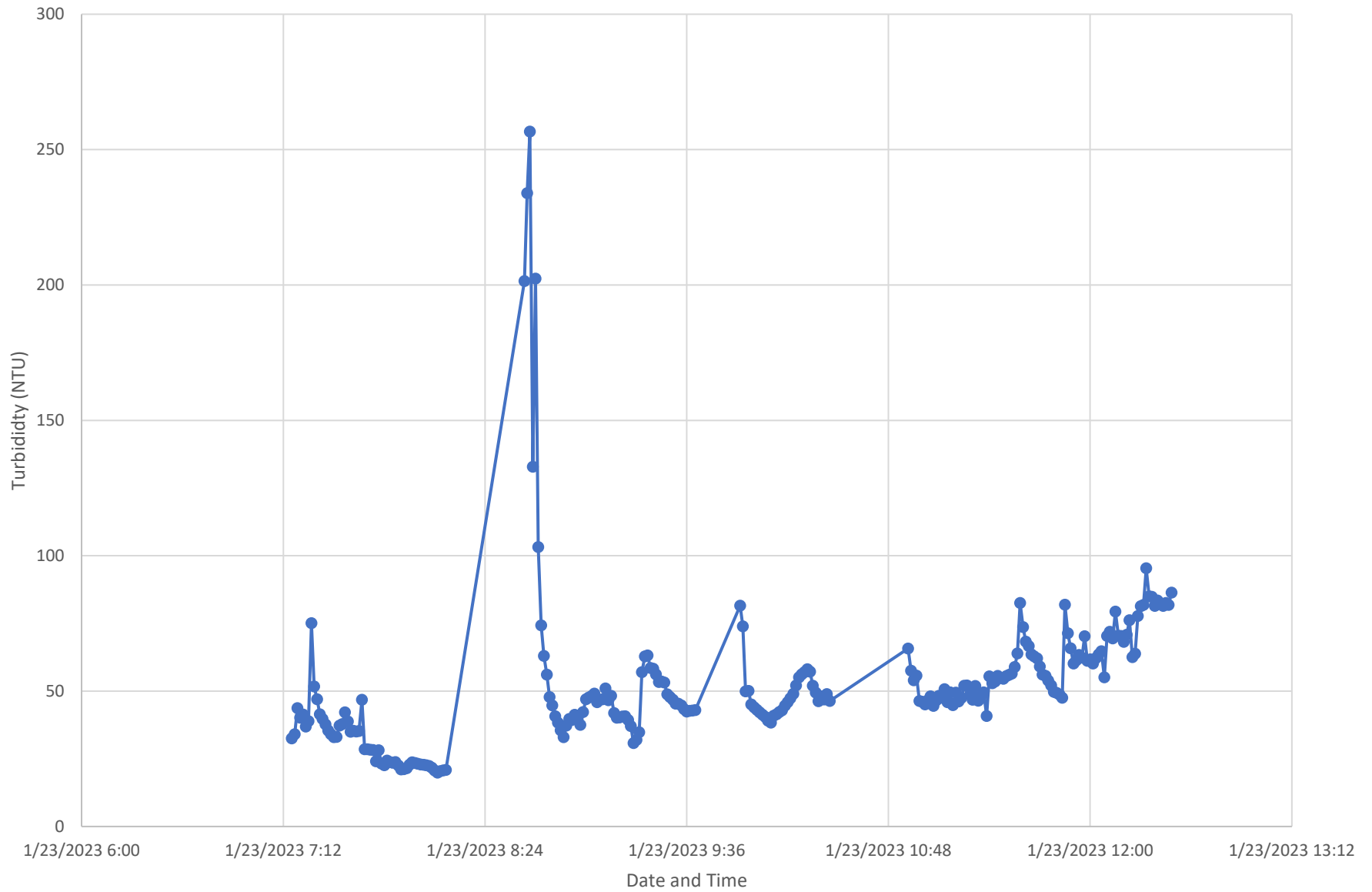
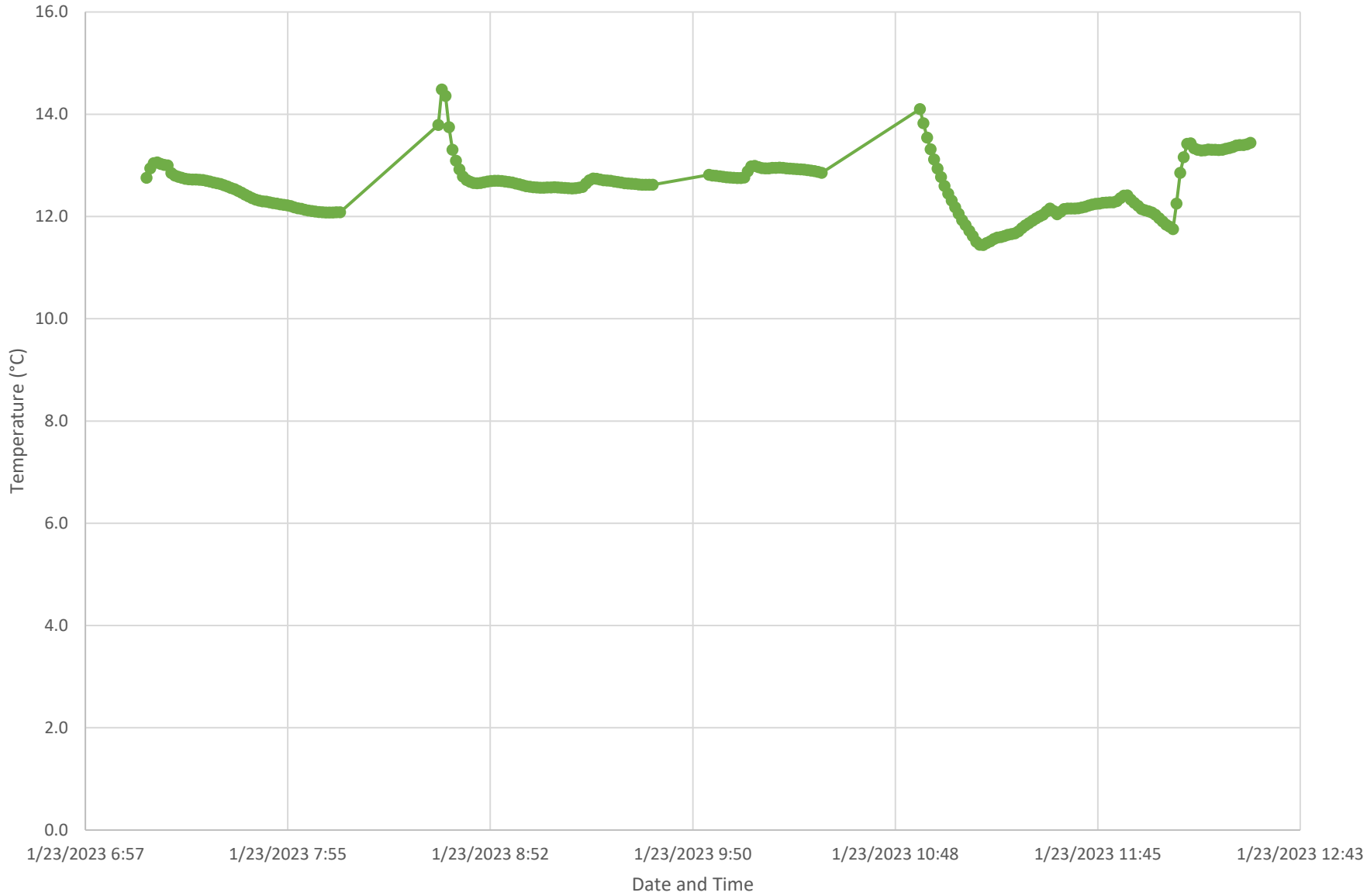


Figure 7  
Field Temperature Readings



# **TABLES**

Table 1

Physical and Biological Analytical Summary							
Parameter	Date Sampled	Sample ID			Average	Circular 7 Drinking Water Standard	Secondary Maximum Contaminant Level
		DW - 1	DW - 2	DW - 3			
Bacteria, Fecal Coliform (mpn/100ml)	1/23/2023	44.6	33.3	44.3	41	less than 1	NA
pH (s.u.)	1/23/2023	7.1	7.7	7.2	7.3	NA	6.5-8.5
Conductivity @ 25 C	1/23/2023	354	376	400	377	NA	NA
Solids, Total Suspended TSS @ 105 C (mg/L)	1/23/2023	389	55	40	161	NA	NA
Solids, Total Dissolved TDS @ 180 C (mg/L)	1/23/2023	281	295	296	291	NA	500
Oxygen Demand, Chemical (COD) (mg/L)	1/23/2023	1,190	201	200	530	NA	NA
Oxygen Demand, Biochemical (BOD) (mg/L)	1/23/2023	90	61	81	77	NA	NA
Organic Carbon, Total (TOC) (mg/L)	1/23/2023	55	80	64	66	NA	NA
Phenolics, Total Recoverable (Distilled) (mg/L)	1/23/2023	0.06	< 0.05	< 0.05	0	NA	NA
Oil & Grease (HEM) (mg/L)	1/23/2023	35	3	8	15	NA	NA
NA - Not Applicable, a drinking water standard has not been established for this analyte							
<b>Light Shaded Cell</b>	Concentration or reporting limit exceeds SMCL						
<b>Dark Shaded Cell</b>	Concentration or reporting limit exceeds drinking water standard						

Table 2

Nutrient Analytical Summary						
Parameter	Date Sampled	Sample ID			Average	DEQ Circular 7 Drinking Water Standards
		DW - 1	DW - 2	DW - 3		
Nitrogen, Ammonia as N (mg/L)	1/23/2023	< 0.05	<0.05	< 0.05	NA	10
Nitrogen, Nitrate + Nitrite as N (mg/L)	1/23/2023	0.22	0.25	0.11	0.19	
Nitrogen, Kjeldahl, Total as N (mg/L)	1/23/2023	1	< 0.5	0.7	1.0	
Nitrogen, Organic (mg/L)	1/23/2023	1	< 0.5	1	1	
Nitrogen, Total (mg/L)	1/23/2023	2	< 0.5	1	1.15	
Phosphorus, total as P (mg/L)	1/23/2023	0.134	0.131	0.084	0.116	NA
NA - Not Applicable, a drinking water standard has not been established for this analyte						
<b>Light Shaded Cell</b>		Concentration or reporting limit exceeds SMCL				
<b>Dark Shaded Cell</b>		Concentration or reporting limit exceeds drinking water standard				

Table 3

Metals Analytical Results							
Parameter	Date Sampled	Sample ID			Average	DEQ Circular 7 Drinking Water Standard (mg/L)	Secondary Maximum Contaminant Level
		DW - 1	DW - 2	DW - 3			
Aluminum (mg/L)	1/23/2023	< 0.009	0.026	< 0.009	NA	NA	<b>0.05-0.2</b>
Arsenic (mg/L)	1/23/2023	< 0.001	< 0.001	< 0.001	NA	<b>0.01</b>	NA
Beryllium (mg/L)	1/23/2023	< 0.0008	< 0.0008	< 0.0008	NA	<b>0.004</b>	NA
Cadmium (mg/L)	1/23/2023	< 0.00003	< 0.00003	< 0.00003	NA	<b>0.005</b>	NA
Calcium (mg/L)	1/23/2023	37	44	18	33	NA	NA
Chromium (mg/L)	1/23/2023	< 0.01	< 0.01	< 0.01	NA	<b>0.1</b>	NA
Copper (mg/L)	1/23/2023	< 0.002	< 0.002	< 0.002	NA	<b>1.3</b>	NA
Iron (mg/L)	1/23/2023	0.16	0.22	0.09	0.16	NA	<b>0.3</b>
Lead (mg/L)	1/23/2023	< 0.0003	< 0.0003	< 0.0003	NA	<b>0.015</b>	NA
Magnesium (mg/L)	1/23/2023	13	13	6	10.67	NA	NA
Manganese (mg/L)	1/23/2023	0.016	<b>0.078</b>	<b>0.058</b>	0.05	NA	<b>0.05</b>
Mercury (µg/L)	1/23/2023	0.038	0.038	0.03	0.04	<b>2</b>	NA
Nickel (mg/L)	1/23/2023	< 0.002	< 0.002	0.003	NA	<b>0.1</b>	NA
Selenium (mg/L)	1/23/2023	< 0.001	< 0.001	< 0.001	NA	<b>0.05</b>	NA
Silver (mg/L)	1/23/2023	< 0.0002	< 0.0002	< 0.0002	NA	<b>0.01</b>	NA
Thorium (mg/L)	1/23/2023	< 0.005	< 0.006	< 0.005	NA	NA	NA
Zinc (mg/L)	1/23/2023	0.016	0.033	0.116	0.06	<b>5</b>	NA
NA - Not Applicable, a drinking water standard has not been established for this analyte							
<b>Light Shaded Cell</b>	Concentration or reporting limit exceeds SMCL						
<b>Dark Shaded Cell</b>	Concentration or reporting limit exceeds drinking water standard						

Table 4

Inorganic Analytical Summary							
Parameter	Date Sampled	Sample ID			Average	DEQ Circular 7 Drinking Water Standards	Secondary Maximum Contaminant Level
		DW - 1	DW - 2	DW - 3			
Acidity, Total as CaCO <sub>3</sub> (mg/L)	1/23/2023	10	5	6	7	NA	NA
Alkalinity, Total as CaCO <sub>3</sub> (mg/L)	1/23/2023	186	186	94	155	NA	NA
Bicarbonate as HCO <sub>3</sub> (mg/L)	1/23/2023	227	226	115	189	NA	NA
Carbonate as CO <sub>3</sub> (mg/L)	1/23/2023	< 4	< 4	< 4	NA	NA	NA
Chloride (mg/L)	1/23/2023	4	3	62	23	NA	250
Sulfate (mg/L)	1/23/2023	8	9	5	7	NA	250
Cyanide, Total (mg/L)	1/23/2023	< 0.003	< 0.003	< 0.003	NA	0.2	NA
Chlorine, Total Residual (mg/L)	1/23/2023	< 0.2	< 0.2	< 0.2	NA	NA	NA
Hardness as CaCO <sub>3</sub> (mg/L)	1/23/2023	146	165	68	126	NA	NA

NA - Not Applicable, a drinking water standard has not been established for this analyte

# **Appendix A**

## **Dryer Blowdown Field Parameter Data**

**Field Water Quality Parameters**

Date and Time	pH (s.u.)	ORP (mV)	DO Concentration (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (°C)
1/23/2023 7:15	8.21	55	9.11	405	33	12.8
1/23/2023 7:16	8.26	58	9.20	401	34	12.9
1/23/2023 7:17	8.36	61	9.27	398	44	13.0
1/23/2023 7:18	8.43	64	9.22	395	40	13.1
1/23/2023 7:19	8.48	66	9.18	395	41	13.0
1/23/2023 7:20	8.50	68	9.19	395	37	13.0
1/23/2023 7:21	8.49	70	9.22	395	39	13.0
1/23/2023 7:22	8.25	70	8.82	390	75	12.8
1/23/2023 7:23	8.17	74	8.77	390	52	12.8
1/23/2023 7:24	8.14	76	8.80	388	47	12.8
1/23/2023 7:25	8.12	78	8.83	387	41	12.8
1/23/2023 7:26	8.11	80	8.86	387	40	12.7
1/23/2023 7:27	8.10	81	8.86	387	38	12.7
1/23/2023 7:28	8.10	82	8.85	387	35	12.7
1/23/2023 7:29	8.10	83	8.85	387	34	12.7
1/23/2023 7:30	8.09	84	8.85	387	33	12.7
1/23/2023 7:31	8.09	85	8.84	387	33	12.7
1/23/2023 7:32	8.08	86	8.84	386	37	12.7
1/23/2023 7:33	8.08	87	8.85	386	38	12.7
1/23/2023 7:34	8.07	87	8.83	387	42	12.7
1/23/2023 7:35	8.07	88	8.80	387	39	12.6
1/23/2023 7:36	7.97	88	8.78	387	35	12.6
1/23/2023 7:37	7.82	89	8.67	387	35	12.6
1/23/2023 7:38	7.83	90	8.59	386	35	12.6
1/23/2023 7:39	7.88	91	8.61	386	35	12.6
1/23/2023 7:40	7.92	92	8.63	387	47	12.5
1/23/2023 7:41	7.95	92	8.67	388	28	12.5
1/23/2023 7:42	7.97	92	8.79	389	29	12.5
1/23/2023 7:43	8.01	93	8.97	392	28	12.4
1/23/2023 7:44	8.04	93	9.08	396	28	12.4
1/23/2023 7:45	8.10	94	9.12	400	24	12.4
1/23/2023 7:46	8.18	94	9.15	400	28	12.3
1/23/2023 7:47	8.24	94	9.21	401	23	12.3
1/23/2023 7:48	8.12	95	9.29	401	23	12.3
1/23/2023 7:49	8.08	95	9.41	402	24	12.3
1/23/2023 7:50	8.10	95	9.51	401	24	12.3
1/23/2023 7:51	8.16	96	9.53	401	24	12.3
1/23/2023 7:52	8.21	96	9.54	400	24	12.3
1/23/2023 7:53	8.24	97	9.56	399	23	12.2
1/23/2023 7:54	8.24	97	9.58	398	21	12.2
1/23/2023 7:55	8.23	98	9.59	397	21	12.2
1/23/2023 7:56	8.22	98	9.59	397	22	12.2

**Field Water Quality Parameters Continued**

Date and Time	pH (s.u.)	ORP (mV)	DO Concentration (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (°C)
1/23/2023 7:57	8.21	98	9.57	397	23	12.2
1/23/2023 7:58	8.18	99	9.53	398	24	12.2
1/23/2023 7:59	8.16	99	9.12	398	23	12.1
1/23/2023 8:00	8.14	99	8.77	398	23	12.1
1/23/2023 8:01	8.13	100	8.85	398	23	12.1
1/23/2023 8:02	8.13	100	8.97	398	23	12.1
1/23/2023 8:03	8.12	101	9.06	398	23	12.1
1/23/2023 8:04	8.11	101	9.12	399	22	12.1
1/23/2023 8:05	8.10	101	9.16	399	22	12.1
1/23/2023 8:06	8.10	102	9.17	399	21	12.1
1/23/2023 8:07	8.09	102	9.15	399	20	12.1
1/23/2023 8:08	8.09	103	9.14	400	20	12.1
1/23/2023 8:09	8.08	103	9.14	400	21	12.1
1/23/2023 8:10	8.08	103	9.10	400	21	12.1
1/23/2023 8:38	7.76	91	9.02	366	201	13.8
1/23/2023 8:39	7.72	92	8.57	361	234	14.5
1/23/2023 8:40	7.75	96	8.93	379	257	14.4
1/23/2023 8:41	7.75	99	9.17	383	133	13.7
1/23/2023 8:42	7.78	102	9.34	380	202	13.3
1/23/2023 8:43	7.73	105	9.51	377	103	13.1
1/23/2023 8:44	7.70	109	9.55	374	74	12.9
1/23/2023 8:45	7.64	112	9.55	372	63	12.8
1/23/2023 8:46	7.63	115	9.55	373	56	12.7
1/23/2023 8:47	7.64	117	9.54	375	48	12.7
1/23/2023 8:48	7.65	119	9.53	374	45	12.7
1/23/2023 8:49	7.65	121	9.52	369	41	12.6
1/23/2023 8:50	7.63	122	9.48	363	38	12.7
1/23/2023 8:51	7.59	124	9.48	359	36	12.7
1/23/2023 8:52	7.56	125	9.46	355	33	12.7
1/23/2023 8:53	7.53	126	9.43	356	37	12.7
1/23/2023 8:54	7.51	127	9.38	357	40	12.7
1/23/2023 8:55	7.51	128	9.33	360	39	12.7
1/23/2023 8:56	7.51	129	9.33	363	41	12.7
1/23/2023 8:57	7.53	130	9.33	366	40	12.7
1/23/2023 8:58	7.55	131	9.33	368	38	12.7
1/23/2023 8:59	7.57	132	9.32	371	42	12.7
1/23/2023 9:00	7.58	133	9.31	374	47	12.6
1/23/2023 9:01	7.59	133	9.32	376	48	12.6
1/23/2023 9:02	7.60	134	9.33	377	48	12.6
1/23/2023 9:03	7.61	135	9.35	378	49	12.6
1/23/2023 9:04	7.61	135	9.36	379	46	12.6
1/23/2023 9:05	7.62	136	9.39	379	47	12.6

**Field Water Quality Parameters Continued**

Date and Time	pH (s.u.)	ORP (mV)	DO Concentration (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (°C)
1/23/2023 9:06	7.61	136	9.40	380	47	12.6
1/23/2023 9:07	7.61	137	9.40	380	51	12.6
1/23/2023 9:08	7.61	137	9.39	379	47	12.6
1/23/2023 9:09	7.60	138	9.40	379	48	12.6
1/23/2023 9:10	7.58	138	9.41	379	42	12.6
1/23/2023 9:11	7.57	138	9.40	379	40	12.6
1/23/2023 9:12	7.57	139	9.40	380	40	12.6
1/23/2023 9:13	7.56	139	9.40	380	41	12.6
1/23/2023 9:14	7.56	139	9.38	380	41	12.6
1/23/2023 9:15	7.56	140	9.36	380	39	12.6
1/23/2023 9:16	7.56	140	9.29	379	37	12.6
1/23/2023 9:17	7.55	140	9.14	373	31	12.6
1/23/2023 9:18	7.51	141	8.88	346	32	12.6
1/23/2023 9:19	7.44	141	8.34	331	35	12.6
1/23/2023 9:20	7.44	141	7.58	355	57	12.6
1/23/2023 9:21	7.50	141	7.39	362	63	12.7
1/23/2023 9:22	7.42	141	7.85	363	63	12.7
1/23/2023 9:23	7.43	141	8.09	364	59	12.7
1/23/2023 9:24	7.49	141	8.22	366	58	12.7
1/23/2023 9:25	7.54	141	8.36	368	56	12.7
1/23/2023 9:26	7.58	141	8.49	371	53	12.7
1/23/2023 9:27	7.61	141	8.62	372	54	12.7
1/23/2023 9:28	7.62	140	8.74	374	53	12.7
1/23/2023 9:29	7.64	140	8.87	376	49	12.7
1/23/2023 9:30	7.67	140	8.97	378	48	12.7
1/23/2023 9:31	7.69	140	9.07	378	47	12.7
1/23/2023 9:32	7.69	140	9.14	379	45	12.6
1/23/2023 9:33	7.69	140	9.18	379	45	12.6
1/23/2023 9:34	7.70	140	9.22	379	45	12.6
1/23/2023 9:35	7.70	140	9.24	379	43	12.6
1/23/2023 9:36	7.70	140	9.26	379	42	12.6
1/23/2023 9:37	7.69	140	9.28	379	43	12.6
1/23/2023 9:38	7.68	140	9.28	379	43	12.6
1/23/2023 9:39	7.68	140	9.26	379	43	12.6
1/23/2023 9:55	7.44	123	9.22	406	82	12.8
1/23/2023 9:56	7.60	120	9.03	405	74	12.8
1/23/2023 9:57	7.72	118	8.99	399	50	12.8
1/23/2023 9:58	7.78	116	8.91	396	50	12.8
1/23/2023 9:59	7.77	115	8.86	393	45	12.8
1/23/2023 10:00	7.77	115	8.78	391	44	12.8
1/23/2023 10:01	7.76	115	8.69	387	43	12.8
1/23/2023 10:02	7.75	114	8.61	384	42	12.8

**Field Water Quality Parameters Continued**

Date and Time	pH (s.u.)	ORP (mV)	DO Concentration (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (°C)
1/23/2023 10:03	7.73	114	8.54	382	41	12.8
1/23/2023 10:04	7.73	114	8.50	381	40	12.8
1/23/2023 10:05	7.73	114	8.45	382	39	12.8
1/23/2023 10:06	7.69	114	8.39	376	38	12.9
1/23/2023 10:07	7.64	115	8.29	379	41	13.0
1/23/2023 10:08	7.62	116	8.23	379	41	13.0
1/23/2023 10:09	7.62	116	8.17	378	42	13.0
1/23/2023 10:10	7.63	117	8.14	380	43	12.9
1/23/2023 10:11	7.65	118	8.12	382	45	12.9
1/23/2023 10:12	7.66	119	8.09	383	46	12.9
1/23/2023 10:13	7.68	119	8.06	384	47	12.9
1/23/2023 10:14	7.69	120	8.05	386	49	13.0
1/23/2023 10:15	7.70	120	8.05	387	52	13.0
1/23/2023 10:16	7.70	120	8.04	388	55	12.9
1/23/2023 10:17	7.70	121	8.05	389	56	12.9
1/23/2023 10:18	7.70	121	8.06	390	57	12.9
1/23/2023 10:19	7.70	121	8.05	390	58	12.9
1/23/2023 10:20	7.70	122	8.05	389	57	12.9
1/23/2023 10:21	7.69	122	8.02	385	52	12.9
1/23/2023 10:22	7.66	122	8.01	383	49	12.9
1/23/2023 10:23	7.63	122	8.00	381	46	12.9
1/23/2023 10:24	7.60	122	7.97	376	48	12.9
1/23/2023 10:25	7.54	123	7.93	365	47	12.9
1/23/2023 10:26	7.46	123	7.88	361	49	12.9
1/23/2023 10:27	7.41	123	7.76	355	46	12.9
1/23/2023 10:55	7.54	112	8.76	266	66	14.1
1/23/2023 10:56	7.44	113	8.75	266	58	13.8
1/23/2023 10:57	7.33	114	8.75	267	54	13.5
1/23/2023 10:58	7.16	116	8.75	264	56	13.3
1/23/2023 10:59	7.11	118	8.79	262	46	13.1
1/23/2023 11:00	7.08	120	9.53	255	46	12.9
1/23/2023 11:01	7.05	121	9.48	262	45	12.8
1/23/2023 11:02	7.01	123	9.29	263	47	12.6
1/23/2023 11:03	6.97	125	9.19	264	48	12.4
1/23/2023 11:04	6.93	126	9.07	266	45	12.3
1/23/2023 11:05	6.88	127	9.04	264	47	12.2
1/23/2023 11:06	6.86	128	8.99	259	48	12.1
1/23/2023 11:07	6.85	129	8.97	253	48	11.9
1/23/2023 11:08	6.80	130	8.98	250	51	11.8
1/23/2023 11:09	6.82	129	9.01	246	46	11.7
1/23/2023 11:10	6.87	129	9.08	248	50	11.6
1/23/2023 11:11	6.89	130	9.18	264	45	11.5

**Field Water Quality Parameters Continued**

Date and Time	pH (s.u.)	ORP (mV)	DO Concentration (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (°C)
1/23/2023 11:12	6.89	130	9.20	279	49	11.4
1/23/2023 11:13	6.93	130	9.25	279	46	11.4
1/23/2023 11:14	7.03	131	9.26	290	47	11.5
1/23/2023 11:15	7.07	131	9.27	293	52	11.5
1/23/2023 11:16	7.09	132	9.27	300	52	11.6
1/23/2023 11:17	7.22	132	9.26	304	49	11.6
1/23/2023 11:18	7.32	132	9.28	306	47	11.6
1/23/2023 11:19	7.37	132	9.29	306	52	11.6
1/23/2023 11:20	7.40	132	9.29	303	46	11.6
1/23/2023 11:21	7.41	132	9.25	303	48	11.7
1/23/2023 11:22	7.42	132	9.32	294	50	11.7
1/23/2023 11:23	7.43	132	9.36	283	41	11.7
1/23/2023 11:24	7.41	132	9.40	277	55	11.8
1/23/2023 11:25	7.38	132	9.44	271	53	11.8
1/23/2023 11:26	7.36	132	9.46	271	54	11.9
1/23/2023 11:27	7.35	132	9.48	273	56	11.9
1/23/2023 11:28	7.35	132	9.49	273	55	12.0
1/23/2023 11:29	7.35	132	9.46	275	55	12.0
1/23/2023 11:30	7.32	132	9.41	281	56	12.0
1/23/2023 11:31	7.29	132	9.41	299	56	12.1
1/23/2023 11:32	7.33	131	9.39	317	56	12.2
1/23/2023 11:33	7.40	131	9.39	331	59	12.1
1/23/2023 11:34	7.44	131	9.39	330	64	12.0
1/23/2023 11:35	7.48	131	9.36	483	83	12.1
1/23/2023 11:36	7.49	130	9.37	511	74	12.1
1/23/2023 11:37	7.51	130	9.39	557	68	12.2
1/23/2023 11:38	7.53	130	9.40	574	67	12.2
1/23/2023 11:39	7.54	129	9.40	589	64	12.2
1/23/2023 11:40	7.55	129	9.41	599	63	12.2
1/23/2023 11:41	7.56	129	9.41	607	62	12.2
1/23/2023 11:42	7.57	128	9.42	613	59	12.2
1/23/2023 11:43	7.57	128	9.40	620	56	12.2
1/23/2023 11:44	7.58	127	9.39	626	56	12.2
1/23/2023 11:45	7.58	127	9.36	634	54	12.2
1/23/2023 11:46	7.58	127	9.38	634	52	12.3
1/23/2023 11:47	7.59	127	9.35	634	50	12.3
1/23/2023 11:48	7.60	127	9.34	631	49	12.3
1/23/2023 11:49	7.59	126	9.32	631	49	12.3
1/23/2023 11:50	7.58	126	9.31	633	48	12.3
1/23/2023 11:51	7.56	126	9.28	647	82	12.3
1/23/2023 11:52	7.46	125	9.25	635	71	12.4
1/23/2023 11:53	7.39	125	9.27	637	66	12.4

**Field Water Quality Parameters Continued**

Date and Time	pH (s.u.)	ORP (mV)	DO Concentration (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (°C)
1/23/2023 11:54	7.27	126	9.32	590	60	12.4
1/23/2023 11:55	7.09	126	9.35	533	61	12.3
1/23/2023 11:56	6.94	127	9.37	494	63	12.3
1/23/2023 11:57	6.86	128	9.39	459	62	12.2
1/23/2023 11:58	6.84	129	9.40	424	70	12.1
1/23/2023 11:59	6.81	130	9.41	406	61	12.1
1/23/2023 12:00	6.78	131	9.41	413	62	12.1
1/23/2023 12:01	6.78	132	9.42	434	60	12.1
1/23/2023 12:02	6.78	132	9.44	465	62	12.0
1/23/2023 12:03	6.80	133	9.45	484	64	12.0
1/23/2023 12:04	6.81	134	9.45	495	65	11.9
1/23/2023 12:05	6.83	134	9.44	479	55	11.8
1/23/2023 12:06	6.82	135	9.43	519	70	11.8
1/23/2023 12:07	6.83	135	9.71	502	72	11.8
1/23/2023 12:08	6.92	135	9.76	564	69	12.3
1/23/2023 12:09	7.11	135	9.61	448	79	12.9
1/23/2023 12:10	7.23	132	9.49	374	70	13.2
1/23/2023 12:11	7.36	129	9.42	333	70	13.4
1/23/2023 12:12	7.43	127	9.31	327	68	13.4
1/23/2023 12:13	7.45	125	9.24	331	71	13.3
1/23/2023 12:14	7.46	124	9.22	332	76	13.3
1/23/2023 12:15	7.47	123	9.20	334	63	13.3
1/23/2023 12:16	7.47	123	9.19	335	64	13.3
1/23/2023 12:17	7.47	123	9.19	335	78	13.3
1/23/2023 12:18	7.46	124	9.20	338	81	13.3
1/23/2023 12:19	7.45	124	9.19	341	82	13.3
1/23/2023 12:20	7.42	124	9.20	340	95	13.3
1/23/2023 12:21	7.40	125	9.17	340	85	13.3
1/23/2023 12:22	7.41	125	9.14	339	85	13.3
1/23/2023 12:23	7.42	125	9.10	340	81	13.3
1/23/2023 12:24	7.41	125	9.07	341	84	13.4
1/23/2023 12:25	7.40	126	9.04	340	82	13.4
1/23/2023 12:26	7.39	126	9.00	339	81	13.4
1/23/2023 12:27	7.40	126	8.99	340	83	13.4
1/23/2023 12:28	7.41	125	8.96	341	82	13.4
1/23/2023 12:29	7.42	125	8.92	340	86	13.4

**Field Water Quality Parameter Statistical Summary**

Minimum	6.78	55	7.39	246	20	11.4
Maximum	8.50	141	9.76	647	257	14.5
Median	7.59	125	9.20	380	48	12.6

## **APPENDIX D: GROUND WATER QUALITY SUMMARY REPORT**



## TECHNICAL MEMORANDUM

To: Zachary Hiatt, Weyerhaeuser

From: Brad Bennett, Senior Hydrogeologist, Water & Environmental Technologies

Copy: Ashley Williams, Weyerhaeuser

Project: WET 1598-23

Date: June 14, 2024

Re: Weyerhaeuser Kalispell Sawmill and Plywood Facility Groundwater Monitoring Memo

---

### INTRODUCTION

Water and Environmental Technologies (WET) is preparing an application for Weyerhaeuser's Kalispell Plywood Plant and Sawmill to obtain a Montana Ground Water Control System (MGWPCS) permit for industrial wastewater discharge from the Department of Environmental Quality (DEQ). The Weyerhaeuser Kalispell facility is located north of Kalispell Montana approximately 0.25 miles west of the intersection of U.S. Highway 2 and West Reserve Drive. The complex encompasses approximately 120 acres and includes a log yard, sawmill, plywood plant, post and dimensional lumber plant, and associated kilns. The property is located in Sections 32 and 33 of Township 29 North, Range 21 West of Flathead County, Montana. The industrial wastewater permitting process requires groundwater monitoring, which includes measurement of water levels and collection of groundwater samples for laboratory analysis from facility monitoring wells. A site map with well locations provided as **Figure 1**. This memorandum documents groundwater monitoring and provides a summary of groundwater analytical results.

### MONITORING WELL NETWORK

There are six monitoring wells at the facility. Two previously installed monitoring wells of unknown vintage were retained for utilization as sampling points and four additional monitoring wells were drilled and constructed in September 2023 to comply with the requirements for permitting. The two existing monitoring wells were designated as MW-4 and MW-5 and are constructed of 4-inch diameter polyvinyl chloride (PVC) casing with a ten-foot length factory screen. The four new wells are designated as MW-1, MW-2, MW-3, and MW-6 and are constructed of 2-inch PVC with ten-foot lengths of factory screen. The locations of the new monitoring wells were approved by DEQ prior to construction.

## GROUNDWATER FLOW DIRECTION

The Whitefish River flows north-south through the center of the Kalispell Valley and is located approximately 720 feet west of the site. Facility monitoring wells are completed in the Evergreen Aquifer, the shallowest groundwater source in the area. The aquifer is typically 28 to 30 feet thick and is underlain by a relatively impermeable clay layer. The aquifer is highly transmissive, with the groundwater flow direction generally being north to south (Konizeski, 1968 and Noble 1986). Stages of the Whitefish and Flathead Rivers and groundwater elevations in the Evergreen Aquifer are directly related; Koneziski documented a lag in peak discharge to corresponding groundwater level peak of approximately two days at a well located approximately 2,000 feet from the Flathead River.

Since monitoring well installation, water levels have been measured periodically. **Table 1** provides a summary of water level data recorded in site monitoring wells. **Figure 2** provides the facility monitoring well hydrographs with hydrograph stage data from the United States Geological Survey (USGS) Whitefish River gauge station no. 12366000. This gauge station is located near the Whitefish River bridge crossing on Tetrault Road approximately 5.5 miles north of the Weyerhaeuser Kalispell Facility. As shown in **Figure 2**, water levels in the monitoring wells generally follow a similar trend to that of the river.

Groundwater monitoring was conducted on September 21, 2023, December 18, 2023, and May 15, 2024. Water table maps were created utilizing the water table measurements on each of the above sampling dates. These water table maps are presented as **Figures 3, 4 and 5**. As shown, the groundwater flow direction is consistently to the south, with gradients ranging from 0.00089 to 0.0011 ft/ft. Monitoring well MW-1 represents upgradient conditions and monitoring well MW-6 represents downgradient conditions.

## GROUNDWATER MONITORING

As previously stated, groundwater monitoring was conducted in September 2023, December 2023, and May 2024. Typically, the MGWPCS permitting process requires that groundwater monitoring be conducted over a period of three consecutive quarters. However, based on groundwater elevation data, monitoring in quarter one of 2024 was foregone to allow collection of a third set of quarterly samples during quarter two of 2024 to represent seasonally unique conditions near high groundwater. Three monitoring wells were sampled during each of the monitoring events though the individual monitoring wells sampled during each event varied and a minimum of one sample was collected from each monitoring well over the course of the monitoring period. Groundwater sampling forms are provided as **Attachment A**.

Groundwater samples were submitted for analysis of total suspended solids (TSS), total dissolved solids (TDS), conductivity, alkalinity, bicarbonate, carbonate, chloride, sulfate, cyanide, hardness, chemical oxygen demand (COD), biochemical oxygen demand (BOD), phenolics, nitrogen as ammonia, nitrogen (as nitrate plus nitrite) total Kjeldahl Nitrogen (TKN), total nitrogen, phosphorus, and dissolved metals. These parameters were submitted for analysis at Energy Laboratories in Billings, Montana. Groundwater samples were also collected for analysis of total

coliform and fecal coliform at Montana Environmental Laboratories in Kalispell, MT. Complete copies of the laboratory analytical reports for the three sampling events are provided as **Attachment B**.

### ***Physical & Biological Analytical Results***

Groundwater samples were analyzed for pH, conductivity, TSS, TDS, total coliform, and fecal coliform. These parameters are summarized in **Table 2**. As shown, pH values range from 7.0 to 7.6 in site monitoring wells. Conductivity typically ranged from 559 to 842 umhos/cm, with monitoring well MW-3 reporting a significantly higher concentration of 2,390 umhos/cm. For bacterial analysis, total coliform samples were reported as “present” for seven of nine individual samples, however fecal coliform was not detected in any of the groundwater samples collected from the facility monitoring wells.

### ***Nutrient Analytical Results***

Groundwater samples were submitted for nutrient analysis including ammonia as nitrogen, nitrogen as nitrate plus nitrite, Total Kjeldahl Nitrogen (TKN), total nitrogen, and total phosphorus. These results are summarized in **Table 3**. Total nitrogen concentrations ranged from no detection at the laboratory reporting limit to 1.90 mg/L with a median concentration of 1.2 mg/L. In monitoring wells MW-1, MW-2, MW-4, MW-5, and MW-6, the nitrogen constituents are primarily composed of nitrate plus nitrite (oxygen bound nitrogen), while in MW-3 consists primarily of TKN (organically bound nitrogen). Monitoring well MW-3 was located in a fill area which contained decomposing lumber as fill. This is the likely source of the organically bound nitrogen. Nitrogen in all samples were reported below the numeric water quality limit of 10 mg/L. Total phosphorus concentrations ranged from no detection at the laboratory limit (of 0.005 mg/L) to 0.426 mg/L.

### ***Metals Analytical Results***

Groundwater samples were submitted for analysis of dissolved metals including aluminum, arsenic, barium, cadmium, calcium, chromium, copper, iron, magnesium, manganese, mercury, nickel, potassium, selenium, silver, and zinc.

Groundwater samples did not report concentration at the laboratory reporting limit for aluminum, cadmium, chromium, copper, mercury, nickel, selenium, silver, and zinc for any of the monitoring wells in any of the monitoring events.

Arsenic was reported in MW-3 above the numeric water quality standard of 0.01 mg/L with a concentration of 0.014 mg/L. Arsenic was reported in the sample collected from MW-4 with a concentration of 0.002 mg/L. Barium was reported above the reporting limit in samples collected from all of the site monitoring wells, however all concentrations were reported below the 1.0 mg/L numerical water quality standards with the exception of the sample collected from MW-3 which reported a concentration of 1.29 mg/L. Calcium was relatively consistent across site wells and monitoring events with concentrations ranging from 79 mg/L to 97 mg/L. Iron was reported in groundwater samples collected from monitoring wells MW-3 and MW-4 above the secondary maximum contaminant level (SMCL) of 0.3 mg/L with concentrations of 5.96 and 1.41 mg/L respectively. Magnesium was reported at similar concentrations across wells and monitoring

events with a reported range of 24 mg/L to 29 mg/L. Manganese was reported above the SMCL of 0.05 gm/L in samples collected from monitoring wells MW-2, MW-3, and MW-4 with concentrations ranging from 0.5 to 0.96 mg/L. Potassium was detected in all monitoring wells during all events concentrations ranged from 2 to 15 mg/L.

### ***Inorganic Analytical Results***

Groundwater samples were submitted for inorganic analysis including total alkalinity, bicarbonate, carbonate, chloride, sulfate, cyanide and hardness. These results are summarized in **Table 5**. As shown, carbonate and cyanide were not reported at the laboratory reporting limit. Total alkalinity ranged from 284 mg/L to 466 mg/L. Bicarbonate ranged from 315 mg/L to 569 mg/L. Chloride concentrations generally ranged from 22 mg/L to 75 mg/L with the exception of monitoring well MW-3 which reported a concentration of 513 mg/L. Sulfate concentrations were generally low compared to the SMCL of 250 mg/L with a maximum reported concentration of 14 mg/L. Hardness values in site monitoring wells ranged from 296 mg/L to 364 mg/L. Water with a hardness concentration of 180 mg/L or greater is classified as very hard. Site groundwater is considered to be very hard by this metric.

### ***Aggregate Organics and Organic Characteristics Analytical Results***

Groundwater samples were submitted for aggregate organic and organic characteristic analysis including chemical oxygen demand (COD), biochemical oxygen demand (BOD), total organic carbon (TOC), total recoverable Phenolics, and Oil and grease. BOD and oil and grease did not report detection at the laboratory reporting limit for any of the wells during any of the monitoring events. TOC concentrations ranged from 0.8 mg/L (MW-1) to 8 mg/L (MW-3).

## **CONCLUSIONS**

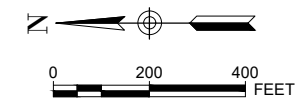
Water quality in the upgradient (MW-1) and downgradient (MW-5 and MW-6) monitoring wells is of high quality and groundwater analytical results for these wells did not exceed drinking water standards or aesthetic parameters. Monitoring wells MW-2 and MW-4 both reported exceedances of one or more SMCLs. Monitoring well MW-3 reported exceedances of drinking water standards including arsenic and barium. Additionally, this well reported the exceedances of SMCLs including TDS, iron, manganese, and chloride. Monitoring well MW-3 was installed in an area that had been backfilled with decomposing lumber. The decomposing lumber in the vicinity of monitoring well MW-3 is the presumed source for these parameters.

## REFERNCES

- Konizeski, R.L., Brietkrietz, A., & McMurtrey, R.G. (1968) *Geology and Ground Water Resources of the Kalispell Valley, Northwestern Montana; Montana Bureau of Mines and Geology Bulletin No. 68*, p.36, 42.
- Noble, R.A. & Stanford, J.A. (1986) *Groundwater Resources and Water-Quality of the Unconfined Aquifers in the Kalispell Valley, Montana; Montana Bureau of Mines and Geology Open-File Report 177*, p.106.

# FIGURES

K:\PROJECTS\KALISPELL\1598-23 Weyerhaeuser Kalispell Process Water Permitting\Monitoring\CAD\Site Map.dwg PLOT DATE 2024-6-11 13:22 USER: jgraham



- LEGEND**
- MONITORING WELL
  - PROPERTY BOUNDARY
  - SURFACE WATER
  - BNSF RAILROAD

No.	Description	Date	Drawn By

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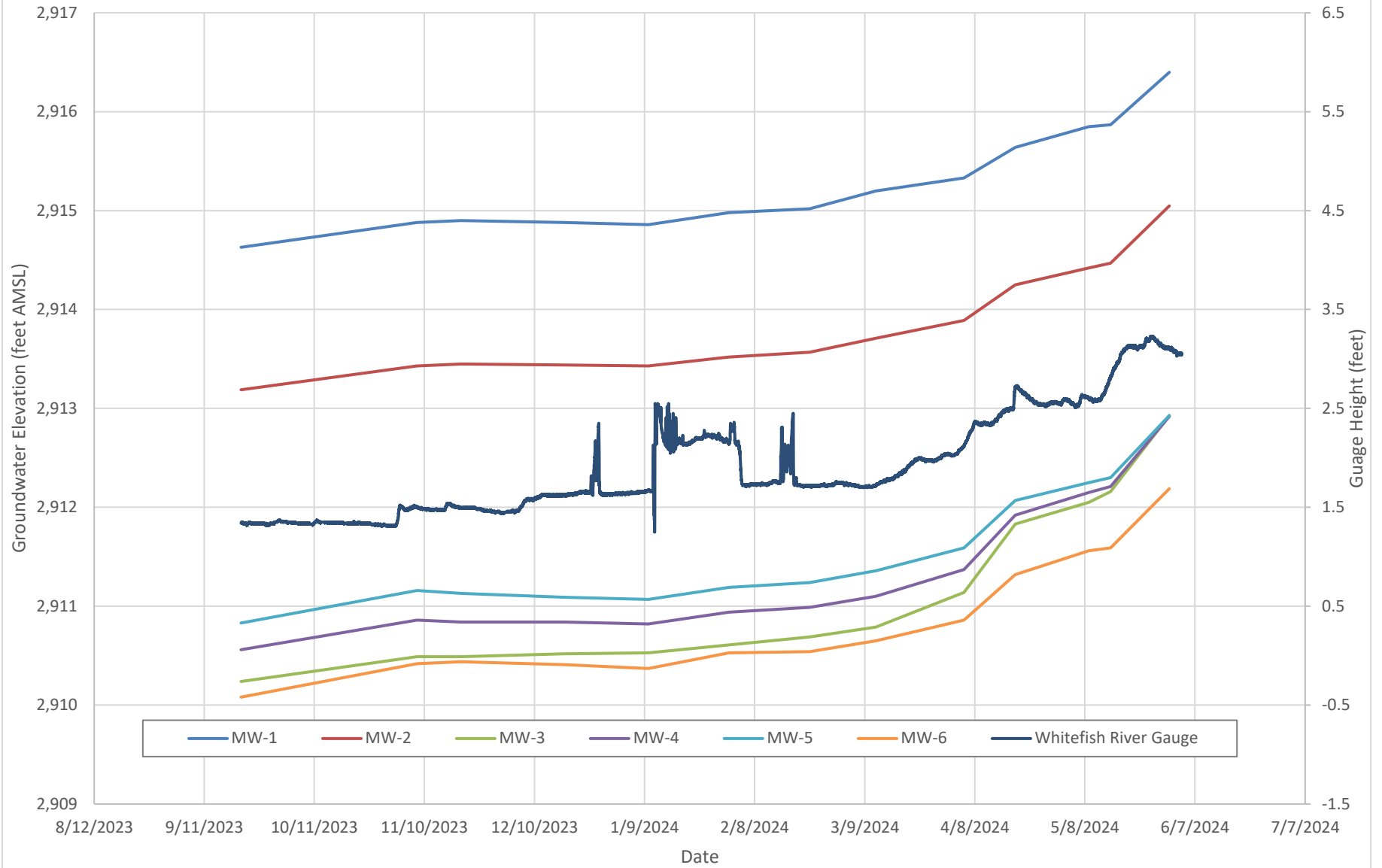
**WEYERHAUSER KALISPELL  
 PLYWOOD PLANT  
 FACILITY MAP**

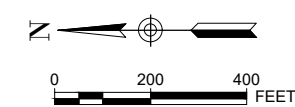
PROJECT NAME: WEYERHAUSER PLYWOOD DISCHARGE  
 LOCATION: KALISPELL, MT  
 FILE NO.: Site Map.dwg

JOB NO:	1598-23
DATE:	6/11/24
DRAFTER:	JG
CHECKED BY:	BB

SHEET  
**FIG. 1**

Figure 2  
Weyerhaeuser Kalispell  
Monitoring Well & Whitefish River Hydrographs





- LEGEND**
- ◆ MONITORING WELL
  - PROPERTY BOUNDARY
  - NATIONAL HYDROGRAPHY DATASET
  - GROUNDWATER CONTOUR
  - BNSF RAILROAD

K:\PROJECTS\0 KALISPELL\1598-23 Weyerhaeuser Kalispell Process Water Permitting\Monitoring\CAD\Site Map.dwg\_PLOT DATE 2024-6-11 12:04 USER: jgraham

No.	Description	Date	Drawn By



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 TECHNOLOGIES  
 102 Cooperative Way  
 STE 100 MT 69601  
 (406) 766-2530  
 WATER@TECH.COM

**WEYERHAUSER KALISPELL PLYWOOD  
 PLANT WATER TABLE MAP**  
 SEPTEMBER 21, 2023  
 PROJECT NAME: WEYERHAUSER PLYWOOD DISCHARGE  
 LOCATION: KALISPELL, MT  
 FILE NO.: Site Map.dwg

JOB NO:	1598-23
DATE:	6/11/24
DRAFTER:	BIC
CHECKED BY:	BB

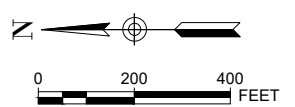
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**LEGEND**

- ◆ MONITORING WELL
- PROPERTY BOUNDARY
- NATIONAL HYDROGRAPHY DATASET
- GROUNDWATER CONTOUR
- BNSF RAILROAD



No.	Description	Date	Drawn By

**Weyerhaeuser**

Water & Environmental  
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102 Cooperative Way  
SIE 100 MT 69001  
(408) 756-2550  
WATERENTECH.COM

**WEYERHAUSER KALISPELL PLYWOOD  
PLANT WATER TABLE MAP  
DECEMBER 18, 2023**

PROJECT NAME: WEYERHAUSER PLYWOOD DISCHARGE  
LOCATION: KALISPELL, MT  
FILE NO.: Site Map.dwg

JOB NO:	1598-23
DATE:	6/11/24
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**FIG. 4**

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**LEGEND**

- ◆ MONITORING WELL
- PROPERTY BOUNDARY
- NATIONAL HYDROGRAPHY DATASET
- GROUNDWATER CONTOUR
- ▨ BNSF RAILROAD

N

0 200 400 FEET

No.	Description	Date	Drawn By



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Kalispell, MT 59801  
(406) 756-2550  
WATERENTECH.COM

**WEYERHAUSER KALISPELL PLYWOOD  
PLANT WATER TABLE MAP**  
MAY 15, 2024

PROJECT NAME: WEYERHAUSER PLYWOOD DISCHARGE  
LOCATION: KALISPELL, MT  
FILE NO.: Site Map.dwg

JOB NO:	1598-23
DATE:	6/11/24
DRAFTER:	JC
CHECKED BY:	BB

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**FIG. 5**

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# TABLES

Table 1				
Water Level Data				
Monitoring Well ID	Date	Top of Casing Elevation (feet)	Depth To Water (feet BTOC)	Groundwater Elevation (feet AMSL)
MW-1	9/21/2023	2,926.83	12.20	2,914.63
	11/8/2023		11.95	2,914.88
	11/20/2023		11.93	2,914.90
	12/18/2023		11.95	2,914.88
	1/10/2024		11.97	2,914.86
	2/1/2024		11.85	2,914.98
	2/23/2024		11.81	2,915.02
	3/12/2024		11.63	2,915.20
	4/5/2024		11.50	2,915.33
	4/19/2024		11.19	2,915.64
	5/9/2024		10.98	2,915.85
	5/15/2024		10.96	2,915.87
	5/31/2024		10.43	2,916.40
MW-2	9/21/2023	2,923.21	10.02	2,913.19
	11/8/2023		9.78	2,913.43
	11/20/2023		9.76	2,913.45
	12/18/2023		9.77	2,913.44
	1/10/2024		9.78	2,913.43
	2/1/2024		9.69	2,913.52
	2/23/2024		9.64	2,913.57
	3/12/2024		9.50	2,913.71
	4/5/2024		9.32	2,913.89
	4/19/2024		8.96	2,914.25
	5/9/2024		8.79	2,914.42
	5/15/2024		8.74	2,914.47
	5/31/2024		8.16	2,915.05
MW-3	9/21/2023	2,924.71	14.47	2,910.24
	11/8/2023		14.22	2,910.49
	11/20/2023		14.22	2,910.49
	12/18/2023		14.19	2,910.52
	1/10/2024		14.18	2,910.53
	2/1/2024		14.10	2,910.61
	2/23/2024		14.02	2,910.69
	3/12/2024		13.92	2,910.79
	4/5/2024		13.57	2,911.14
	4/19/2024		12.88	2,911.83
	5/9/2024		12.66	2,912.05
	5/15/2024		12.55	2,912.16
	5/31/2024		11.78	2,912.93
MW-4	9/21/2023	2,923.35	12.79	2,910.56
	11/8/2023		12.49	2,910.86
	11/20/2023		12.51	2,910.84
	12/18/2023		12.51	2,910.84
	1/10/2024		12.53	2,910.82
	2/1/2024		12.41	2,910.94
	2/23/2024		12.36	2,910.99
	3/12/2024		12.25	2,911.10
	4/5/2024		11.98	2,911.37
	4/19/2024		11.43	2,911.92
	5/9/2024		11.20	2,912.15
	5/15/2024		11.14	2,912.21
	5/31/2024		10.43	2,912.92
MW-5	9/21/2023	2,924.50	13.67	2,910.83
	11/8/2023		13.34	2,911.16
	11/20/2023		13.37	2,911.13
	12/18/2023		13.41	2,911.09
	1/10/2024		13.43	2,911.07
	2/1/2024		13.31	2,911.19
	2/23/2024		13.26	2,911.24
	3/12/2024		13.14	2,911.36
	4/5/2024		12.91	2,911.59
	4/19/2024		12.43	2,912.07
	5/9/2024		12.25	2,912.25
	5/15/2024		12.20	2,912.30
	5/31/2024		11.57	2,912.93
MW-6	9/21/2023	2,919.34	9.26	2,910.08
	11/8/2023		8.92	2,910.42
	11/20/2023		8.90	2,910.44
	12/18/2023		8.93	2,910.41
	1/10/2024		8.97	2,910.37
	2/1/2024		8.81	2,910.53
	2/23/2024		8.80	2,910.54
	3/12/2024		8.69	2,910.65
	4/5/2024		8.48	2,910.86
	4/19/2024		8.02	2,911.32
	5/9/2024		7.78	2,911.56
	5/15/2024		7.75	2,911.59
	5/31/2024		7.15	2,912.19

**Table 2**

**Physical and Biological Analytical Summary**

Sample ID	Date Sampled	pH (s.u.)	Conductivity (umhos/cm)	Total Suspended Solids (mg/L)	Total Dissolved Solids (mg/L)	Total Coliform (present/absent)	Fecal Coliform (present/absent)
MW-1	9/21/2023	7.3	608	<10	336	present	absent
	5/15/2024	7.6	559	<10	320	absent	absent
MW-2	12/18/2023	7.3	789	<10	422	present	absent
MW-3	9/21/2023	7.0	2,390	28	<b>1,290</b>	present	absent
MW-4	12/18/2023	7.3	726	<10	410	present	absent
MW-5	5/15/2024	7.5	602	<10	394	present	absent
MW-6	9/21/2023	7.3	842	<10	466	present	absent
	12/18/2023	7.3	791	<10	460	present	absent
	5/15/2024	7.4	777	<10	458	absent	absent
Circular 7 Drinking Water Standard		NA	NA	NA	NA	NA	<b>present</b>
Secondary Maximum Contaminant Level		6.5-8.8	NA	NA	<b>500</b>	NA	NA

NA - Not Applicable, a drinking water standard has not been established for this analyte

**Dark Shaded Cell** Concentration exceeds drinking water standard

Table 3						
Nutrient Analytical Summary						
Sample ID	Date Sampled	Nitrogen, Ammonia as N (mg/L)	Nitrogen, Nitrate + Nitrite as N (mg/L)	Nitrogen, Kjeldahl, Total as N (mg/L)	Nitrogen, Total (mg/L)	Phosphorus, total as P (mg/L)
MW-1	9/21/2023	<0.05	1.90	<0.5	1.9	0.006
	5/15/2024	<0.05	<0.01	<0.5	<0.5	<0.005
MW-2	12/18/2023	<0.05	0.24	<0.5	<0.5	0.013
MW-3	9/21/2023	0.62	0.01	1.20	1.2	0.426
MW-4	12/18/2023	<0.05	<0.01	<0.5	<0.5	0.420
MW-5	5/15/2024	<0.05	<0.02	<0.5	1.6	0.008
MW-6	9/21/2023	<0.05	1.16	<0.5	1.2	0.011
	12/18/2023	<0.05	1.48	<0.5	1.5	0.009
	5/15/2024	<0.05	1.74	<0.5	1.7	0.007
Circular 7 Drinking Water Standard		10				NA
NA - Not Applicable, a drinking water standard has not been established for this analyte						

Table 4

## Metals Analytical Results

Monitoring Well ID	Date Sampled	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (µg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silver (mg/L)	Zinc (mg/L)
MW-1	9/21/2023	<0.03	<0.001	0.5	<0.001	84	<0.005	<0.005	<0.02	24	<0.001	<0.0001	<0.005	2	<0.001	<0.001	<0.01
	5/15/2024	<0.03	<0.001	<0.05	<0.001	79	<0.005	<0.005	<0.02	24	<0.001	<0.0001	<0.005	2	<0.001	<0.001	<0.01
MW-2	12/18/2023	<0.03	<0.001	0.8	<0.001	88	<0.005	<0.005	0.08	28	<b>0.96</b>	<0.001	<0.005	12	<0.001	<0.001	<0.01
MW-3	9/21/2023	<0.03	<b>0.014</b>	<b>1.29</b>	<0.001	97	<0.005	<0.005	<b>5.96</b>	25	<b>0.957</b>	<0.0001	<0.005	15	<0.001	<0.001	<0.01
MW-4	12/18/2023	<0.03	0.002	0.49	<0.001	84	<0.005	<0.005	<b>1.41</b>	24	<b>0.5</b>	<0.0001	<0.005	4	<0.001	<0.001	<0.01
MW-5	5/15/2024	<0.03	<0.001	0.53	<0.001	88	<0.005	<0.005	<0.02	27	0.006	<0.0001	<0.005	4	<0.001	<0.001	<0.01
MW-6	9/21/2023	<0.03	<0.001	0.68	<0.001	97	<0.005	<0.005	<0.02	29	0.012	<0.0001	<0.005	7	<0.001	<0.001	<0.01
	12/18/2023	<0.03	<0.001	0.6	<0.001	85	<0.005	<0.005	<0.02	27	0.022	<0.0001	<0.005	7	<0.001	<0.001	<0.01
	5/15/2024	<0.03	<0.001	0.56	<0.001	89	<0.005	<0.005	<0.02	28	0.027	<0.0001	<0.005	7	<0.001	<0.001	<0.01
DEQ Circular 7 Drinking Water Standard		NA	<b>0.01</b>	<b>1.0</b>	<b>0.005</b>	NA	<b>0.1</b>	<b>1.3</b>	NA	NA	NA	<b>2</b>	<b>0.1</b>	NA	<b>0.05</b>	<b>0.01</b>	<b>5</b>
Secondary Maximum Contaminant Level		<b>0.05-0.2</b>	NA	NA	NA	NA	NA	NA	<b>0.3</b>	NA	<b>0.05</b>	NA	NA	NA	NA	NA	NA
NA - Not Applicable, a drinking water standard has not been established for this analyte																	
<b>Shaded Cell</b>	Concentration Exceeds Water Quality Standard																

Table 5

## Inorganic Analytical Summary

Monitoring Well ID	Date Sampled	Total Alkalinity (CaCO <sub>3</sub> ) (mg/L)	Bicarbonate as HCO <sub>3</sub> (mg/L)	Carbonate as CaCO <sub>3</sub> (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Cyanide (mg/L)	Hardness as CaCO <sub>3</sub> (mg/L)
MW-1	9/21/2023	284	346	<4	22	6	<0.005	309
	5/15/2024	259	315	<4	27	<1	<0.005	296
MW-2	12/18/2023	360	439	<4	41	8	<0.005	337
MW-3	9/21/2023	466	569	<4	513	<2	<0.005	348
MW-4	12/18/2023	321	391	<4	59	11	<0.005	308
MW-5	5/15/2024	300	366	<4	42	<1	<0.005	331
MW-6	9/21/2023	321	391	<4	75	14	<0.005	364
	12/18/2023	329	401	<4	75	13	<0.005	322
	5/15/2024	321	392	<4	63	<1	<0.005	336
DEQ Circular 7 Drinking Water Standards		NA	NA	NA	NA	NA	0.2	NA
Secondary Maximum Contaminant Level		NA	NA	NA	250	250	NA	NA
NA - Not Applicable, a drinking water standard has not been established for this analyte								

Table 6

## Agregate Organics and Organic Characteristics Analytical Summary

Monitoring Well ID	Date Sampled	Chemical Oxygen Demand (mg/L)	Biochemical Oxygen Demand (mg/L)	Total Organic Carbon (mg/L)	Total Recoverable Phenolics (Distilled) (mg/L)	Oil and Grease (mg/L)
MW-1	9/21/2023	9	<2	0.8	0.01	<1
	5/15/2024	<5	<2	6.0	0.01	<5
MW-2	12/18/2023	8	<1	1.8	0.02	<1
MW-3	9/21/2023	32	<21	8	0.17	<1
MW-4	12/18/2023	11	<1	2	0.01	<1
MW-5	5/15/2024	7	<2	<4	<0.01	<5
MW-6	9/21/2023	12	<2	3.1	<0.01	<1
	12/18/2023	11	<1	3.9	0.01	<1
	5/15/2024	17	<2	<4	<0.01	<5
DEQ Circular 7 Drinking Water Standards		NA	NA	NA	NA	NA
Secondary Maximum Contaminant Level		NA	NA	NA	NA	NA

NA - Not Applicable, a drinking water standard has not been established for this analyte

# **Appendix A**

## **Groundwater Sampling Forms**



# ANALYTICAL SUMMARY REPORT

October 17, 2023

Water and Environmental Technologies

480 E Park St Ste 200  
Butte, MT 59701-1923

Work Order: B23091937      Quote ID: B16755

Project Name: Weyerhaeuser (1598)

Energy Laboratories Inc Billings MT received the following 3 samples for Water and Environmental Technologies on 9/22/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B23091937-001	MW-1	09/21/23 12:20	09/22/23	Aqueous	Metals by ICP/ICPMS, Dissolved Alkalinity to pH 4.5 Biochemical Oxygen Demand, 5 Day Cyanide, Total Chemical Oxygen Demand Conductivity Carbon, Total Organic Mercury, Dissolved Oil & Grease, Gravimetric Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Kjeldahl Nitrogen, Total (TKN+NO3+NO2) Phenolics, Total Recoverable (Distilled) Phenol Distillation E420.4 pH Preparation for COD testing HACH 8000 Mercury Digestion by E245.1 E365.1 Digestion, Total P Preparation for TDS A2540 C TKN preparation E351.2 Preparation for TSS A2540 D Phosphorus, Total Solids, Total Dissolved Solids, Total Suspended
B23091937-002	MW-3	09/21/23 10:30	09/22/23	Aqueous	Same As Above
B23091937-003	MW-6	09/21/23 9:00	09/22/23	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:



**CLIENT:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Work Order:** B23091937

**Report Date:** 10/17/23

## **CASE NARRATIVE**

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Tests associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, PO Box 247, Casper, WY, EPA Number WY00002.

Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W Boxelder Rd, Gillette, WY, EPA Number WY00006.



## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23091937-001  
**Client Sample ID:** MW-1

**Report Date:** 10/17/23  
**Collection Date:** 09/21/23 12:20  
**Date Received:** 09/22/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.3	s.u.	H	0.1		A4500-H B	09/22/23 12:39 / ctb
pH Measurement Temp	14.2	°C		1.0		A4500-H B	09/22/23 12:39 / ctb
Conductivity @ 25 C	608	umhos/cm		5		A2510 B	09/22/23 12:39 / ctb
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	09/26/23 12:13 / pjw
Solids, Total Dissolved TDS @ 180 C	336	mg/L		20		A2540 C	09/23/23 14:11 / idg
<b>INORGANICS</b>							
Alkalinity, Total as CaCO3	284	mg/L		4		A2320 B	09/26/23 19:33 / spb
Bicarbonate as HCO3	346	mg/L		4		A2320 B	09/26/23 19:33 / spb
Carbonate as CO3	ND	mg/L		4		A2320 B	09/26/23 19:33 / spb
Chloride	22	mg/L		1		E300.0	09/24/23 03:46 / caa
Sulfate	6	mg/L		1		E300.0	09/24/23 03:46 / caa
Cyanide, Total	ND	mg/L		0.005		Kelada-01	09/22/23 14:05 / mas
Hardness as CaCO3	309	mg/L		1		A2340 B	10/07/23 13:58 / bap
<b>AGGREGATE ORGANICS</b>							
Oxygen Demand, Chemical (COD)	9	mg/L		5		E410.4	09/25/23 13:53 / mas
Oxygen Demand, Biochemical (BOD)	<2	mg/L		2.0		A5210 B	09/22/23 13:19 / ctb
Organic Carbon, Total (TOC)	0.8	mg/L		0.5		A5310 C	09/27/23 19:43 / eli-ca
Phenolics, Total Recoverable (Distilled)	0.01	mg/L		0.01		E420.4	09/25/23 13:53 / mas
No BOD dilution depleted greater than 2.0 mg/L DO.							
<b>NUTRIENTS</b>							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	10/06/23 13:45 / krt
Nitrogen, Nitrate+Nitrite as N	1.90	mg/L		0.01		E353.2	10/05/23 13:57 / krt
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	09/29/23 16:05 / jaw
Nitrogen, Total	1.9	mg/L		0.5		Calculation	10/09/23 08:31 / bap
Phosphorus, Total as P	0.006	mg/L		0.005		E365.1	09/26/23 15:44 / jaw
<b>METALS, DISSOLVED</b>							
Aluminum	ND	mg/L		0.03		E200.8	10/12/23 05:11 / jks
Arsenic	ND	mg/L		0.001		E200.8	10/12/23 05:11 / jks
Barium	0.48	mg/L		0.05		E200.7	10/07/23 13:58 / enb
Cadmium	ND	mg/L		0.001		E200.8	10/12/23 05:11 / jks
Calcium	84	mg/L		1		E200.7	10/07/23 13:58 / enb
Chromium	ND	mg/L		0.005		E200.8	10/12/23 05:11 / jks
Copper	ND	mg/L		0.005		E200.8	10/12/23 05:11 / jks
Iron	ND	mg/L		0.02		E200.8	10/12/23 05:11 / jks
Magnesium	24	mg/L		1		E200.7	10/07/23 13:58 / enb
Manganese	ND	mg/L		0.001		E200.8	10/12/23 05:11 / jks
Mercury	ND	mg/L		0.0001		E245.1	09/29/23 14:22 / nrb
Nickel	ND	mg/L		0.005		E200.8	10/12/23 05:11 / jks
Potassium	2	mg/L		1		E200.7	10/07/23 13:58 / enb
Selenium	ND	mg/L		0.001		E200.8	10/12/23 05:11 / jks

**Report** RL - Analyte Reporting Limit

**Definitions:** QCL - Quality Control Limit

H - Analysis performed past the method holding time

MCL - Maximum Contaminant Level

ND - Not detected at the Reporting Limit (RL)



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23091937-001  
**Client Sample ID:** MW-1

**Report Date:** 10/17/23  
**Collection Date:** 09/21/23 12:20  
**DateReceived:** 09/22/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS, DISSOLVED</b>							
Silver	ND	mg/L		0.001		E200.8	10/12/23 05:11 / jks
Zinc	ND	mg/L		0.01		E200.7	10/07/23 13:58 / enb
<b>ORGANIC CHARACTERISTICS</b>							
Oil & Grease (HEM)	ND	mg/L		1		E1664A	09/29/23 10:32 / eli-g

**Report Definitions:** RL - Analyte Reporting Limit  
QCL - Quality Control Limit

MCL - Maximum Contaminant Level  
ND - Not detected at the Reporting Limit (RL)



## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23091937-002  
**Client Sample ID:** MW-3

**Report Date:** 10/17/23  
**Collection Date:** 09/21/23 10:30  
**Date Received:** 09/22/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.0	s.u.	H	0.1		A4500-H B	09/22/23 12:42 / ctb
pH Measurement Temp	14.5	°C		1.0		A4500-H B	09/22/23 12:42 / ctb
Conductivity @ 25 C	2390	umhos/cm		5		A2510 B	09/22/23 12:42 / ctb
Solids, Total Suspended TSS @ 105 C	28	mg/L		10		A2540 D	09/26/23 12:13 / pjw
Solids, Total Dissolved TDS @ 180 C	1290	mg/L		50		A2540 C	09/23/23 14:11 / idg
<b>INORGANICS</b>							
Alkalinity, Total as CaCO3	466	mg/L		4		A2320 B	09/26/23 19:40 / spb
Bicarbonate as HCO3	569	mg/L		4		A2320 B	09/26/23 19:40 / spb
Carbonate as CO3	ND	mg/L		4		A2320 B	09/26/23 19:40 / spb
Chloride	513	mg/L		1		E300.0	09/24/23 04:03 / caa
Sulfate	ND	mg/L	D	2		E300.0	09/25/23 17:12 / caa
Cyanide, Total	ND	mg/L		0.005		Kelada-01	09/22/23 14:07 / mas
Hardness as CaCO3	348	mg/L		1		A2340 B	10/07/23 14:22 / bap
<b>AGGREGATE ORGANICS</b>							
Oxygen Demand, Chemical (COD)	32	mg/L		5		E410.4	09/25/23 13:53 / mas
Oxygen Demand, Biochemical (BOD)	<21	mg/L		21		A5210 B	09/22/23 13:21 / ctb
Organic Carbon, Total (TOC)	8.1	mg/L		0.5		A5310 C	09/27/23 20:39 / eli-ca
Phenolics, Total Recoverable (Distilled)	0.17	mg/L		0.01		E420.4	09/25/23 14:01 / mas
No BOD dilution depleted greater than 2.0 mg/L DO.							
<b>NUTRIENTS</b>							
Nitrogen, Ammonia as N	0.62	mg/L		0.05		E350.1	10/06/23 13:46 / krt
Nitrogen, Nitrate+Nitrite as N	0.01	mg/L		0.01		E353.2	10/05/23 13:58 / krt
Nitrogen, Kjeldahl, Total as N	1.2	mg/L		0.5		E351.2	09/29/23 16:10 / jaw
Nitrogen, Total	1.2	mg/L		0.5		Calculation	10/09/23 08:31 / bap
Phosphorus, Total as P	0.426	mg/L		0.005		E365.1	09/26/23 15:46 / jaw
<b>METALS, DISSOLVED</b>							
Aluminum	ND	mg/L		0.03		E200.8	10/12/23 05:17 / jks
Arsenic	0.014	mg/L		0.001		E200.8	10/12/23 05:17 / jks
Barium	1.29	mg/L		0.05		E200.7	10/07/23 14:22 / enb
Cadmium	ND	mg/L		0.001		E200.8	10/12/23 05:17 / jks
Calcium	97	mg/L		2		E200.7	10/07/23 14:22 / enb
Chromium	ND	mg/L		0.005		E200.8	10/12/23 05:17 / jks
Copper	ND	mg/L		0.005		E200.8	10/12/23 05:17 / jks
Iron	5.96	mg/L		0.02		E200.8	10/16/23 17:39 / aem
Magnesium	25	mg/L		1		E200.8	10/13/23 21:45 / aem
Manganese	0.957	mg/L		0.001		E200.8	10/16/23 17:39 / aem
Mercury	ND	mg/L		0.0001		E245.1	09/29/23 14:23 / nrb
Nickel	ND	mg/L		0.005		E200.8	10/12/23 05:17 / jks
Potassium	15	mg/L		1		E200.8	10/12/23 05:17 / jks
Selenium	ND	mg/L		0.001		E200.8	10/12/23 05:17 / jks

<b>Report</b>	RL - Analyte Reporting Limit	MCL - Maximum Contaminant Level
<b>Definitions:</b>	QCL - Quality Control Limit	ND - Not detected at the Reporting Limit (RL)
	D - Reporting Limit (RL) increased due to sample matrix	H - Analysis performed past the method holding time



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23091937-002  
**Client Sample ID:** MW-3

**Report Date:** 10/17/23  
**Collection Date:** 09/21/23 10:30  
**DateReceived:** 09/22/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS, DISSOLVED</b>							
Silver	ND	mg/L		0.001		E200.8	10/12/23 05:17 / jks
Zinc	ND	mg/L		0.01		E200.8	10/12/23 05:17 / jks
<b>ORGANIC CHARACTERISTICS</b>							
Oil & Grease (HEM)	ND	mg/L		1		E1664A	09/29/23 10:32 / eli-g

**Report Definitions:** RL - Analyte Reporting Limit  
QCL - Quality Control Limit

MCL - Maximum Contaminant Level  
ND - Not detected at the Reporting Limit (RL)



## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23091937-003  
**Client Sample ID:** MW-6

**Report Date:** 10/17/23  
**Collection Date:** 09/21/23 09:00  
**Date Received:** 09/22/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.3	s.u.	H	0.1		A4500-H B	09/22/23 12:53 / ctb
pH Measurement Temp	14.5	°C		1.0		A4500-H B	09/22/23 12:53 / ctb
Conductivity @ 25 C	842	umhos/cm		5		A2510 B	09/22/23 12:53 / ctb
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	09/26/23 12:13 / pjw
Solids, Total Dissolved TDS @ 180 C	466	mg/L		20		A2540 C	09/23/23 16:02 / idg
<b>INORGANICS</b>							
Alkalinity, Total as CaCO3	321	mg/L		4		A2320 B	09/26/23 19:46 / spb
Bicarbonate as HCO3	391	mg/L		4		A2320 B	09/26/23 19:46 / spb
Carbonate as CO3	ND	mg/L		4		A2320 B	09/26/23 19:46 / spb
Chloride	75	mg/L		1		E300.0	09/24/23 04:19 / caa
Sulfate	14	mg/L		1		E300.0	09/24/23 04:19 / caa
Cyanide, Total	ND	mg/L		0.005		Kelada-01	09/22/23 14:09 / mas
Hardness as CaCO3	364	mg/L		1		A2340 B	10/07/23 14:26 / bap
<b>AGGREGATE ORGANICS</b>							
Oxygen Demand, Chemical (COD)	12	mg/L		5		E410.4	09/25/23 13:53 / mas
Oxygen Demand, Biochemical (BOD)	<2	mg/L		2.0		A5210 B	09/22/23 13:23 / ctb
Organic Carbon, Total (TOC)	3.1	mg/L		0.5		A5310 C	09/27/23 20:58 / eli-ca
Phenolics, Total Recoverable (Distilled)	ND	mg/L		0.01		E420.4	09/25/23 14:51 / mas
No BOD dilution depleted greater than 2.0 mg/L DO.							
<b>NUTRIENTS</b>							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	10/06/23 13:47 / krt
Nitrogen, Nitrate+Nitrite as N	1.16	mg/L		0.01		E353.2	10/05/23 13:59 / krt
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	09/29/23 16:11 / jaw
Nitrogen, Total	1.2	mg/L		0.5		Calculation	10/09/23 08:31 / bap
Phosphorus, Total as P	0.011	mg/L		0.005		E365.1	09/26/23 15:48 / jaw
<b>METALS, DISSOLVED</b>							
Aluminum	ND	mg/L		0.03		E200.8	10/12/23 05:24 / jks
Arsenic	ND	mg/L		0.001		E200.8	10/12/23 05:24 / jks
Barium	0.68	mg/L		0.05		E200.7	10/07/23 14:26 / enb
Cadmium	ND	mg/L		0.001		E200.8	10/12/23 05:24 / jks
Calcium	97	mg/L		1		E200.7	10/07/23 14:26 / enb
Chromium	ND	mg/L		0.005		E200.8	10/12/23 05:24 / jks
Copper	ND	mg/L		0.005		E200.8	10/12/23 05:24 / jks
Iron	ND	mg/L		0.02		E200.8	10/12/23 05:24 / jks
Magnesium	29	mg/L		1		E200.7	10/07/23 14:26 / enb
Manganese	0.012	mg/L		0.001		E200.8	10/12/23 05:24 / jks
Mercury	ND	mg/L		0.0001		E245.1	09/29/23 14:24 / nrb
Nickel	ND	mg/L		0.005		E200.8	10/12/23 05:24 / jks
Potassium	7	mg/L		1		E200.7	10/07/23 14:26 / enb
Selenium	ND	mg/L		0.001		E200.8	10/12/23 05:24 / jks

**Report** RL - Analyte Reporting Limit

**Definitions:** QCL - Quality Control Limit

H - Analysis performed past the method holding time

MCL - Maximum Contaminant Level

ND - Not detected at the Reporting Limit (RL)



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23091937-003  
**Client Sample ID:** MW-6

**Report Date:** 10/17/23  
**Collection Date:** 09/21/23 09:00  
**DateReceived:** 09/22/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS, DISSOLVED</b>							
Silver	ND	mg/L		0.001		E200.8	10/12/23 05:24 / jks
Zinc	ND	mg/L		0.01		E200.7	10/07/23 14:26 / enb
<b>ORGANIC CHARACTERISTICS</b>							
Oil & Grease (HEM)	ND	mg/L		1		E1664A	09/29/23 10:33 / eli-g

**Report Definitions:** RL - Analyte Reporting Limit  
QCL - Quality Control Limit

MCL - Maximum Contaminant Level  
ND - Not detected at the Reporting Limit (RL)



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> E245.1										Analytical Run: HGCV203-B_230929B
<b>Lab ID:</b> ICV-183242		Initial Calibration Verification Standard								09/29/23 13:28
Mercury		0.00194	mg/L	0.00010	97	90	110			
<b>Lab ID:</b> CCV		Continuing Calibration Verification Standard								09/29/23 14:20
Mercury		0.00246	mg/L	0.00010	98	90	110			
<b>Method:</b> E245.1										Batch: 183320
<b>Lab ID:</b> MB-183320		Method Blank								Run: HGCV203-B_230929B 09/29/23 14:03
Mercury		ND	mg/L	0.00003						
<b>Lab ID:</b> LCS-183320		Laboratory Control Sample								Run: HGCV203-B_230929B 09/29/23 14:04
Mercury		0.00209	mg/L	0.00010	104	85	115			
<b>Lab ID:</b> B23091923-002BMS		Sample Matrix Spike								Run: HGCV203-B_230929B 09/29/23 14:13
Mercury		0.00210	mg/L	0.00010	102	70	130			
<b>Lab ID:</b> B23091923-002BMSD		Sample Matrix Spike Duplicate								Run: HGCV203-B_230929B 09/29/23 14:14
Mercury		0.00219	mg/L	0.00010	107	70	130	4.4	30	
<b>Lab ID:</b> B23092001-002BMS		Sample Matrix Spike								Run: HGCV203-B_230929B 09/29/23 14:31
Mercury		0.00218	mg/L	0.00010	107	70	130			
<b>Lab ID:</b> B23092001-002BMSD		Sample Matrix Spike Duplicate								Run: HGCV203-B_230929B 09/29/23 14:32
Mercury		0.00221	mg/L	0.00010	108	70	130	1.4	30	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/03/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A5310 C</b> Analytical Run: TOC3-C_230927A										
<b>Lab ID: CCV-11940</b> Continuing Calibration Verification Standard 09/27/23 17:26										
Organic Carbon, Total (TOC)		5.04	mg/L	0.50	101	90	110			
<b>Method: A5310 C</b> Batch: R299252										
<b>Lab ID: MBLK</b> Method Blank Run: TOC3-C_230927A 09/27/23 13:10										
Organic Carbon, Total (TOC)		ND	mg/L	0.1						
<b>Lab ID: LCS</b> Laboratory Control Sample Run: TOC3-C_230927A 09/27/23 13:29										
Organic Carbon, Total (TOC)		5.02	mg/L	0.50	100	90	111			
<b>Lab ID: B23091937-001HMS</b> Sample Matrix Spike Run: TOC3-C_230927A 09/27/23 20:03										
Organic Carbon, Total (TOC)		5.78	mg/L	0.50	99	90	111			
<b>Lab ID: B23091937-001HMSD</b> Sample Matrix Spike Duplicate Run: TOC3-C_230927A 09/27/23 20:19										
Organic Carbon, Total (TOC)		5.80	mg/L	0.50	100	90	111	0.4	20	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Gillette, WY Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/02/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E1664A</b>										
Batch: 230929A										
<b>Lab ID: MBLK2309291006</b>		Method Blank								
Oil & Grease (HEM)		ND	mg/L	0.8						
Run: BAL-ACCU-124_230929A										
09/29/23 10:29										
<b>Lab ID: LCS2309291006</b>		Laboratory Control Sample								
Oil & Grease (HEM)	32	mg/L		5.0	80	78	114			
Run: BAL-ACCU-124_230929A										
09/29/23 10:30										
<b>Lab ID: LCSD2309291006</b>		Laboratory Control Sample Duplicate								
Oil & Grease (HEM)	33	mg/L		5.0	83	78	114	3.7	18	
Run: BAL-ACCU-124_230929A										
09/29/23 10:30										
<b>Lab ID: G23090456-002BMS</b>		Sample Matrix Spike								
Oil & Grease (HEM)	28	mg/L		5.0	67	78	114			S
Run: BAL-ACCU-124_230929A										
09/29/23 10:30										

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A2320 B</b> <span style="float: right;">Batch: R409407</span>										
<b>Lab ID: MBLK</b> <span style="float: right;">Run: METROHM 2_230926A</span>										
Alkalinity, Total as CaCO3		Method Blank								09/26/23 18:39
		ND	mg/L	4						
<b>Lab ID: LCS</b> <span style="float: right;">Run: METROHM 2_230926A</span>										
Alkalinity, Total as CaCO3		Laboratory Control Sample								09/26/23 18:44
		103	mg/L	4.0	103	90	110			
<b>Lab ID: B23091922-002ADUP</b> <span style="float: right;">Run: METROHM 2_230926A</span>										
Alkalinity, Total as CaCO3	3	Sample Duplicate								09/26/23 18:52
		47.3	mg/L	4.0				0.5	10	
Bicarbonate as HCO3		57.7	mg/L	4.0				0.5	10	
Carbonate as CO3		ND	mg/L	4.0					10	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A2510 B</b>								Analytical Run: PHSC_101-B_230922A		
<b>Lab ID: CCV - SC 1413</b>		Continuing Calibration Verification Standard								09/22/23 11:09
Conductivity @ 25 C		1430	umhos/cm	5.0	101	90	110			
<b>Lab ID: CCV - SC 1413</b>		Continuing Calibration Verification Standard								09/22/23 12:47
Conductivity @ 25 C		1430	umhos/cm	5.0	101	90	110			
<b>Method: A2510 B</b>								Batch: R409230		
<b>Lab ID: SC 2nd 1413</b>		Laboratory Control Sample								09/22/23 08:58
Conductivity @ 25 C		1430	umhos/cm	5.0	101	90	110			
<b>Lab ID: MBLK</b>		Method Blank								09/22/23 09:03
Conductivity @ 25 C		ND	umhos/cm	5						
<b>Lab ID: B23091937-003BDUP</b>		Sample Duplicate								09/22/23 12:55
Conductivity @ 25 C		841	umhos/cm	5.0				0.1	10	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Water and Environmental Technologies

Work Order: B23091937

Report Date: 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A2540 C</b> <span style="float: right;">Batch: TDS20230923B</span>										
<b>Lab ID: MBLK</b>		Method Blank								
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	20						Run: BAL #30_230923A 09/23/23 16:02
<b>Lab ID: LCS</b>		Laboratory Control Sample								
Solids, Total Dissolved TDS @ 180 C		972	mg/L	25	97	90	110			Run: BAL #30_230923A 09/23/23 16:02
<b>Lab ID: B23091937-003BDUP</b>		Sample Duplicate								
Solids, Total Dissolved TDS @ 180 C		464	mg/L	25				0.4	10	Run: BAL #30_230923A 09/23/23 16:02
<b>Method: A2540 C</b> <span style="float: right;">Batch: TDS20230923A</span>										
<b>Lab ID: MBLK</b>		Method Blank								
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	20						Run: BAL #30_230923C 09/23/23 14:11
<b>Lab ID: LCS</b>		Laboratory Control Sample								
Solids, Total Dissolved TDS @ 180 C		975	mg/L	25	97	90	110			Run: BAL #30_230923C 09/23/23 14:11
<b>Lab ID: B23091937-002BDUP</b>		Sample Duplicate								
Solids, Total Dissolved TDS @ 180 C		1270	mg/L	49				1.0	10	Run: BAL #30_230923C 09/23/23 14:11

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A2540 D</b> <span style="float: right;">Batch: 183298</span>										
<b>Lab ID: MB-183298</b>		Method Blank								
Solids, Total Suspended TSS @ 105 C		ND	mg/L	0.6						Run: BAL #30_230926B 09/26/23 12:12
<b>Lab ID: LCS-183298</b> <span style="float: right;">Run: BAL #30_230926B 09/26/23 12:12</span>										
Solids, Total Suspended TSS @ 105 C		101	mg/L	25	101	80	120			
<b>Lab ID: B23091937-002DDUP</b> <span style="float: right;">Run: BAL #30_230926B 09/26/23 12:13</span>										
Solids, Total Suspended TSS @ 105 C		29.4	mg/L	10				6.3	10	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A4500-H B</b>								Analytical Run: PHSC_101-B_230922A		
<b>Lab ID: pH 8</b>	2	Initial Calibration Verification Standard								09/22/23 08:45
pH		8.0	s.u.	0.1	100	98	102			
pH Measurement Temp		20.1	°C	1.0						
<b>Lab ID: CCV - pH 7</b>	2	Continuing Calibration Verification Standard								09/22/23 11:06
pH		7.0	s.u.	0.1	101	98	102			
pH Measurement Temp		19.4	°C	1.0		0	0			
<b>Lab ID: CCV - pH 7</b>	2	Continuing Calibration Verification Standard								09/22/23 12:45
pH		7.0	s.u.	0.1	101	98	102			
pH Measurement Temp		19.9	°C	1.0		0	0			
<b>Method: A4500-H B</b>								Batch: R409230		
<b>Lab ID: B23091937-003BDUP</b>	2	Sample Duplicate								09/22/23 12:55
pH		7.3	s.u.	0.1				0.7	3	H
pH Measurement Temp		14.4	°C	1.0						

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

H - Analysis performed past the method holding time



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A5210 B</b>								Batch: 230922_1_BOD5-W		
<b>Lab ID: Dil-H201_230922</b>		Dilution Water Blank				Run: BOD-SP2000_230922A		09/22/23 09:59		
Oxygen Demand, Biochemical (BOD)		0.2	mg/L	0.2		0	0.2			
<b>Lab ID: GGA1_230922</b>		Laboratory Control Sample				Run: BOD-SP2000_230922A		09/22/23 10:08		
Oxygen Demand, Biochemical (BOD)		210	mg/L	71	104	85	115			
<b>Lab ID: B23091809-001ADUP</b>		Sample Duplicate				Run: BOD-SP2000_230922A		09/22/23 10:14		
Oxygen Demand, Biochemical (BOD)		140	mg/L	61				3.7	15	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E300.0</b>		Analytical Run: IC METROHM 1_230922A								
<b>Lab ID: ICV</b>	2	Initial Calibration Verification Standard								09/22/23 11:32
Chloride		24.6	mg/L	1.0	98	90	110			
Sulfate		104	mg/L	1.0	104	90	110			
<b>Lab ID: CCV</b>	2	Continuing Calibration Verification Standard								09/24/23 02:41
Chloride		25.5	mg/L	1.0	102	90	110			
Sulfate		108	mg/L	1.0	108	90	110			
<b>Method: E300.0</b>		Batch: R409355								
<b>Lab ID: ICB</b>	2	Method Blank								Run: IC METROHM 1_230922A 09/22/23 11:49
Chloride		ND	mg/L	0.1						
Sulfate		ND	mg/L	0.5						
<b>Lab ID: LFB</b>	2	Laboratory Fortified Blank								Run: IC METROHM 1_230922A 09/22/23 12:05
Chloride		25.6	mg/L	1.0	102	90	110			
Sulfate		110	mg/L	1.1	110	90	110			
<b>Lab ID: B23091903-001AMS</b>	2	Sample Matrix Spike								Run: IC METROHM 1_230922A 09/23/23 23:24
Chloride		54.1	mg/L	1.0	104	90	110			
Sulfate		469	mg/L	2.1	105	90	110			
<b>Lab ID: B23091903-001AMSD</b>	2	Sample Matrix Spike Duplicate								Run: IC METROHM 1_230922A 09/23/23 23:40
Chloride		54.0	mg/L	1.0	104	90	110	0.2	20	
Sulfate		470	mg/L	2.1	105	90	110	0.1	20	
<b>Lab ID: B23091923-006AMS</b>	2	Sample Matrix Spike								Run: IC METROHM 1_230922A 09/24/23 03:14
Chloride		33.8	mg/L	1.0	104	90	110			
Sulfate		121	mg/L	1.1	108	90	110			
<b>Lab ID: B23091923-006AMSD</b>	2	Sample Matrix Spike Duplicate								Run: IC METROHM 1_230922A 09/24/23 03:30
Chloride		34.7	mg/L	1.0	107	90	110	2.8	20	
Sulfate		125	mg/L	1.1	113	90	110	3.3	20	S

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method:</b> E300.0										Analytical Run: IC METROHM 2_230925A	
<b>Lab ID:</b> ICV		Initial Calibration Verification Standard								09/25/23 13:16	
Sulfate	101	mg/L	1.0	101	90	110					
<b>Lab ID:</b> CCV		Continuing Calibration Verification Standard								09/25/23 14:06	
Sulfate	102	mg/L	1.0	102	90	110					
<b>Method:</b> E300.0										Batch: R409411	
<b>Lab ID:</b> ICB		Method Blank								Run: IC METROHM 2_230925A	09/25/23 13:32
Sulfate	ND	mg/L	0.5								
<b>Lab ID:</b> LFB		Laboratory Fortified Blank								Run: IC METROHM 2_230925A	09/25/23 13:49
Sulfate	103	mg/L	1.1	103	90	110					
<b>Lab ID:</b> B23091966-002AMS		Sample Matrix Spike								Run: IC METROHM 2_230925A	09/25/23 18:36
Sulfate	142	mg/L	1.1	101	90	110					
<b>Lab ID:</b> B23091966-002AMSD		Sample Matrix Spike Duplicate								Run: IC METROHM 2_230925A	09/25/23 18:53
Sulfate	143	mg/L	1.1	103	90	110	0.9	20			

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



## QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Water and Environmental Technologies

Work Order: B23091937

Report Date: 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E350.1</b>								Analytical Run: FIA203-B_231006A			
<b>Lab ID: ICV</b>		Initial Calibration Verification Standard								10/06/23 12:57	
Nitrogen, Ammonia as N		2.17	mg/L	0.050	106	90	110				
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard								10/06/23 13:36	
Nitrogen, Ammonia as N		1.01	mg/L	0.050	101	90	110				
<b>Method: E350.1</b>								Batch: R410108			
<b>Lab ID: MBLK</b>		Method Blank								10/06/23 12:58	
Nitrogen, Ammonia as N		ND	mg/L	0.02							
<b>Lab ID: LFB</b>		Laboratory Fortified Blank								10/06/23 13:01	
Nitrogen, Ammonia as N		1.03	mg/L	0.050	103	90	110				
<b>Lab ID: FILTERLFB</b>		Laboratory Fortified Blank								10/06/23 13:02	
Nitrogen, Ammonia as N		1.03	mg/L	0.050	103	90	110				
<b>Lab ID: B23091924-001AMS</b>		Sample Matrix Spike								10/06/23 13:39	
Nitrogen, Ammonia as N		1.02	mg/L	0.050	99	90	110				
<b>Lab ID: B23091924-001AMSD</b>		Sample Matrix Spike Duplicate								10/06/23 13:41	
Nitrogen, Ammonia as N		1.05	mg/L	0.050	102	90	110	3.0	10		
<b>Lab ID: B23091950-001CMS</b>		Sample Matrix Spike								10/06/23 13:55	
Nitrogen, Ammonia as N		1.09	mg/L	0.050	109	90	110				
<b>Lab ID: B23091950-001CMSD</b>		Sample Matrix Spike Duplicate								10/06/23 13:56	
Nitrogen, Ammonia as N		1.09	mg/L	0.050	109	90	110	0.4	10		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



## QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Water and Environmental Technologies

Work Order: B23091937

Report Date: 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E351.2</b>								Analytical Run: FIA204-B_230929A			
<b>Lab ID: ICV-183018</b>		Initial Calibration Verification Standard								09/29/23 13:09	
Nitrogen, Kjeldahl, Total as N		10.8	mg/L	0.50	108	90	110				
<b>Lab ID: CCV-183018</b>		Continuing Calibration Verification Standard								09/29/23 15:59	
Nitrogen, Kjeldahl, Total as N		10.4	mg/L	0.50	104	90	110				
<b>Method: E351.2</b>								Batch: 183377			
<b>Lab ID: MB-183377</b>		Method Blank						Run: FIA204-B_230929A		09/29/23 15:36	
Nitrogen, Kjeldahl, Total as N		ND	mg/L	0.4							
<b>Lab ID: LCS-183377</b>		Laboratory Control Sample						Run: FIA204-B_230929A		09/29/23 15:38	
Nitrogen, Kjeldahl, Total as N		10.5	mg/L	0.50	105	90	110				
<b>Lab ID: B23091884-001AMS</b>		Sample Matrix Spike						Run: FIA204-B_230929A		09/29/23 15:42	
Nitrogen, Kjeldahl, Total as N		12.2	mg/L	0.50	106	90	110				
<b>Lab ID: B23091884-001AMSD</b>		Sample Matrix Spike Duplicate						Run: FIA204-B_230929A		09/29/23 15:44	
Nitrogen, Kjeldahl, Total as N		11.7	mg/L	0.50	101	90	110	4.2	10		
<b>Lab ID: B23091937-001EMS</b>		Sample Matrix Spike						Run: FIA204-B_230929A		09/29/23 16:07	
Nitrogen, Kjeldahl, Total as N		11.5	mg/L	0.50	115	90	110			S	
<b>Lab ID: B23091937-001EMSD</b>		Sample Matrix Spike Duplicate						Run: FIA204-B_230929A		09/29/23 16:08	
Nitrogen, Kjeldahl, Total as N		10.8	mg/L	0.50	108	90	110	6.3	10		

**Qualifiers:**

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ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E353.2</b>								Analytical Run: FIA203-B_231005B			
<b>Lab ID: ICV</b>		Initial Calibration Verification Standard								10/05/23 13:27	
Nitrogen, Nitrate+Nitrite as N		0.570	mg/L	0.010	101	90	110				
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard								10/05/23 13:46	
Nitrogen, Nitrate+Nitrite as N		1.02	mg/L	0.010	102	90	110				
<b>Method: E353.2</b>								Batch: R410030			
<b>Lab ID: MBLK</b>		Method Blank								10/05/23 13:28	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.008							
<b>Lab ID: LFB</b>		Laboratory Fortified Blank								10/05/23 13:30	
Nitrogen, Nitrate+Nitrite as N		1.03	mg/L	0.010	103	90	110				
<b>Lab ID: FILTERLFB</b>		Laboratory Fortified Blank								10/05/23 13:31	
Nitrogen, Nitrate+Nitrite as N		1.04	mg/L	0.010	104	90	110				
<b>Lab ID: B23091821-001DMS</b>		Sample Matrix Spike								10/05/23 13:49	
Nitrogen, Nitrate+Nitrite as N		0.276	mg/L	0.010	28	90	110			S	
<b>Lab ID: B23091821-001DMSD</b>		Sample Matrix Spike Duplicate								10/05/23 13:50	
Nitrogen, Nitrate+Nitrite as N		0.276	mg/L	0.010	28	90	110	0.0	10	S	
<b>Lab ID: B23091943-002EMS</b>		Sample Matrix Spike								10/05/23 14:04	
Nitrogen, Nitrate+Nitrite as N		1.09	mg/L	0.010	106	90	110				
<b>Lab ID: B23091943-002EMSD</b>		Sample Matrix Spike Duplicate								10/05/23 14:06	
Nitrogen, Nitrate+Nitrite as N		1.10	mg/L	0.010	107	90	110	0.9	10		

**Qualifiers:**

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S - Spike recovery outside of advisory limits



## QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Water and Environmental Technologies

Work Order: B23091937

Report Date: 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E365.1</b>										Analytical Run: FIA202-B_230926A
<b>Lab ID: ICV-182774</b>		Initial Calibration Verification Standard								09/26/23 14:59
Phosphorus, Total as P		0.511	mg/L	0.0050	102	90	110			
<b>Lab ID: CCV-182774</b>		Continuing Calibration Verification Standard								09/26/23 15:33
Phosphorus, Total as P		0.509	mg/L	0.0050	102	90	110			
<b>Method: E365.1</b>										Batch: 183286
<b>Lab ID: MB-183286</b>		Method Blank								Run: FIA202-B_230926A 09/26/23 15:03
Phosphorus, Total as P		ND	mg/L	0.004						
<b>Lab ID: LCS-183286</b>		Laboratory Control Sample								Run: FIA202-B_230926A 09/26/23 15:06
Phosphorus, Total as P		0.216	mg/L	0.0050	108	90	110			
<b>Lab ID: B23091919-001CMS</b>		Sample Matrix Spike								Run: FIA202-B_230926A 09/26/23 15:40
Phosphorus, Total as P		5.21	mg/L	0.050	95	90	110			
<b>Lab ID: B23091919-001CMSD</b>		Sample Matrix Spike Duplicate								Run: FIA202-B_230926A 09/26/23 15:42
Phosphorus, Total as P		5.29	mg/L	0.050	99	90	110	1.5	10	

**Qualifiers:**

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## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E410.4</b> Analytical Run: SPEC3_230925A										
<b>Lab ID: CCV</b> Continuing Calibration Verification Standard 09/25/23 13:53										
Oxygen Demand, Chemical (COD)		52.6	mg/L	5.0	105	90	110			
<b>Method: E410.4</b> Batch: 183229										
<b>Lab ID: MB-183229</b> Method Blank Run: SPEC3_230925A 09/25/23 13:53										
Oxygen Demand, Chemical (COD)		ND	mg/L	3						
<b>Lab ID: LCS-183229</b> Laboratory Control Sample Run: SPEC3_230925A 09/25/23 13:53										
Oxygen Demand, Chemical (COD)		25.5	mg/L	5.0	104	90	110			
<b>Lab ID: B23091937-001EMS</b> Sample Matrix Spike Run: SPEC3_230925A 09/25/23 13:53										
Oxygen Demand, Chemical (COD)		33.8	mg/L	5.0	103	90	110			
<b>Lab ID: B23091937-001EMSD</b> Sample Matrix Spike Duplicate Run: SPEC3_230925A 09/25/23 13:53										
Oxygen Demand, Chemical (COD)		33.8	mg/L	5.0	103	90	110	0.0	10	
<b>Lab ID: B23091937-002EMS</b> Sample Matrix Spike Run: SPEC3_230925A 09/25/23 13:53										
Oxygen Demand, Chemical (COD)		56.9	mg/L	5.0	104	90	110			
<b>Lab ID: B23091937-002EMSD</b> Sample Matrix Spike Duplicate Run: SPEC3_230925A 09/25/23 13:53										
Oxygen Demand, Chemical (COD)		56.7	mg/L	5.0	103	90	110	0.3	10	

**Qualifiers:**

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## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E420.4</b>								Analytical Run: SFA-201-B_230925B			
<b>Lab ID: ICV</b>	Initial Calibration Verification Standard									09/25/23 13:38	
Phenolics, Total Recoverable (Distilled)		0.102	mg/L	0.010	102	90	110				
<b>Method: E420.4</b>								Batch: 183199			
<b>Lab ID: MB-183199</b>	Method Blank									09/25/23 13:48	
Phenolics, Total Recoverable (Distilled)		ND	mg/L	0.009							
<b>Lab ID: LCS-183199</b>	Laboratory Control Sample									09/25/23 13:49	
Phenolics, Total Recoverable (Distilled)		0.522	mg/L	0.010	104	90	110				
<b>Lab ID: B23091937-001GMS</b>	Sample Matrix Spike									09/25/23 13:55	
Phenolics, Total Recoverable (Distilled)		0.499	mg/L	0.010	97	90	110				
<b>Lab ID: B23091937-001GMSD</b>	Sample Matrix Spike Duplicate									09/25/23 13:57	
Phenolics, Total Recoverable (Distilled)		0.536	mg/L	0.010	105	90	110	7.2	10		

**Qualifiers:**

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## QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Water and Environmental Technologies

Work Order: B23091937

Report Date: 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: Kelada-01</b>								Analytical Run: SFA-201-B_230922A		
<b>Lab ID: ICB</b>		Initial Calibration Verification Standard								09/22/23 10:18
Cyanide, Total		0.103	mg/L	0.0050	103	90	110			
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard								09/22/23 13:49
Cyanide, Total		0.105	mg/L	0.0050	105	90	110			
<b>Method: Kelada-01</b>								Batch: R409303		
<b>Lab ID: ICB</b>		Method Blank					Run: SFA-201-B_230922A			09/22/23 10:20
Cyanide, Total		ND	mg/L	0.002						
<b>Lab ID: LFB</b>		Laboratory Fortified Blank					Run: SFA-201-B_230922A			09/22/23 10:22
Cyanide, Total		0.106	mg/L	0.0050	106	90	110			
<b>Lab ID: LCS1-K4Fe(CN)6</b>		Laboratory Control Sample					Run: SFA-201-B_230922A			09/22/23 10:24
Cyanide, Total		0.218	mg/L	0.0050	109	90	110			
<b>Lab ID: B23091926-005DMS</b>		Sample Matrix Spike					Run: SFA-201-B_230922A			09/22/23 13:25
Cyanide, Total		0.104	mg/L	0.0050	104	90	110			
<b>Lab ID: B23091926-005DMSD</b>		Sample Matrix Spike Duplicate					Run: SFA-201-B_230922A			09/22/23 13:27
Cyanide, Total		0.102	mg/L	0.0050	102	90	110	2.2	10	
<b>Lab ID: B23091926-015DMS</b>		Sample Matrix Spike					Run: SFA-201-B_230922A			09/22/23 13:59
Cyanide, Total		0.142	mg/L	0.0050	105	90	110			
<b>Lab ID: B23091926-015DMSD</b>		Sample Matrix Spike Duplicate					Run: SFA-201-B_230922A			09/22/23 14:01
Cyanide, Total		0.148	mg/L	0.0050	111	90	110	4.0	10	S

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## QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Water and Environmental Technologies

Work Order: B23091937

Report Date: 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E200.7</b> Analytical Run: ICP204-B_231007A											
<b>Lab ID: ICV</b>	5	Continuing Calibration Verification Standard								10/07/23 13:01	
Barium		2.48	mg/L	0.10	99	95	105				
Calcium		25.5	mg/L	1.0	102	95	105				
Magnesium		25.5	mg/L	1.0	102	95	105				
Potassium		25.4	mg/L	1.0	102	95	105				
Zinc		2.40	mg/L	0.010	96	95	105				
<b>Lab ID: CCV</b>	5	Continuing Calibration Verification Standard								10/07/23 14:06	
Barium		2.66	mg/L	0.10	106	90	110				
Calcium		27.0	mg/L	1.0	108	90	110				
Magnesium		27.1	mg/L	1.0	109	90	110				
Potassium		26.8	mg/L	1.0	107	90	110				
Zinc		2.52	mg/L	0.010	101	90	110				
<b>Method: E200.7</b> Batch: R410142											
<b>Lab ID: MB-7400DIS231007A</b>	5	Method Blank								Run: ICP204-B_231007A	10/07/23 13:24
Barium		ND	mg/L	0.001							
Calcium		ND	mg/L	0.1							
Magnesium		0.05	mg/L	0.03							
Potassium		ND	mg/L	0.1							
Zinc		ND	mg/L	0.004							
<b>Lab ID: LFB-7400DIS231007A</b>	5	Laboratory Fortified Blank								Run: ICP204-B_231007A	10/07/23 13:28
Barium		1.01	mg/L	0.10	101	85	115				
Calcium		52.0	mg/L	1.0	104	85	115				
Magnesium		52.0	mg/L	1.0	104	85	115				
Potassium		51.5	mg/L	1.0	103	85	115				
Zinc		0.968	mg/L	0.010	97	85	115				
<b>Lab ID: B23091937-001CMS2</b>	5	Sample Matrix Spike								Run: ICP204-B_231007A	10/07/23 14:15
Barium		1.52	mg/L	0.050	105	70	130				
Calcium		135	mg/L	1.0	102	70	130				
Magnesium		77.8	mg/L	1.0	107	70	130				
Potassium		56.4	mg/L	1.0	109	70	130				
Zinc		1.02	mg/L	0.010	102	70	130				
<b>Lab ID: B23091937-001CMSD2</b>	5	Sample Matrix Spike Duplicate								Run: ICP204-B_231007A	10/07/23 14:18
Barium		1.57	mg/L	0.050	109	70	130	2.9	20		
Calcium		135	mg/L	1.0	103	70	130	0.3	20		
Magnesium		80.5	mg/L	1.0	112	70	130	3.4	20		
Potassium		58.2	mg/L	1.0	113	70	130	3.2	20		
Zinc		0.997	mg/L	0.010	100	70	130	1.8	20		

**Qualifiers:**

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ND - Not detected at the Reporting Limit (RL)



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method:</b> E200.8										Analytical Run: ICPMS207-B_231013A	
<b>Lab ID:</b> QCS		Initial Calibration Verification Standard								10/13/23 19:57	
Magnesium		2.59	mg/L	0.50	104	90	110				
<b>Lab ID:</b> CCV		Continuing Calibration Verification Standard								10/13/23 21:27	
Magnesium		12.5	mg/L	0.50	100	90	110				
<b>Method:</b> E200.8										Batch: R410514	
<b>Lab ID:</b> LRB		Method Blank								Run: ICPMS207-B_231013A	10/13/23 20:15
Magnesium		ND	mg/L	0.02							
<b>Lab ID:</b> LFB		Laboratory Fortified Blank								Run: ICPMS207-B_231013A	10/13/23 20:21
Magnesium		50.1	mg/L	0.50	100	85	115				
<b>Lab ID:</b> B23091922-001CMS		Sample Matrix Spike								Run: ICPMS207-B_231013A	10/13/23 20:39
Magnesium		54.3	mg/L	1.0	104	70	130			E	
<b>Lab ID:</b> B23091922-001CMSD		Sample Matrix Spike Duplicate								Run: ICPMS207-B_231013A	10/13/23 20:45
Magnesium		53.3	mg/L	1.0	102	70	130	1.7	20	E	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

E - Estimated value - result exceeds the instrument upper quantitation limit

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method:</b> E200.8		Analytical Run: ICPMS208-B_231011B									
<b>Lab ID:</b> QCS	12	Initial Calibration Verification Standard							10/11/23 22:53		
Aluminum		0.257	mg/L	0.020	103	90	110				
Arsenic		0.0520	mg/L	0.0050	104	90	110				
Cadmium		0.0262	mg/L	0.0010	105	90	110				
Chromium		0.0516	mg/L	0.010	103	90	110				
Copper		0.0529	mg/L	0.010	106	90	110				
Iron		0.266	mg/L	0.020	106	90	110				
Manganese		0.260	mg/L	0.0050	104	90	110				
Nickel		0.0520	mg/L	0.0050	104	90	110				
Potassium		2.70	mg/L	0.50	108	90	110				
Selenium		0.0523	mg/L	0.0050	105	90	110				
Silver		0.0256	mg/L	0.0050	103	90	110				
Zinc		0.0526	mg/L	0.0050	105	90	110				
<b>Lab ID:</b> CCV	12	Continuing Calibration Verification Standard							10/12/23 04:27		
Aluminum		0.0488	mg/L	0.020	98	90	110				
Arsenic		0.0505	mg/L	0.0050	101	90	110				
Cadmium		0.0511	mg/L	0.0010	102	90	110				
Chromium		0.0506	mg/L	0.010	101	90	110				
Copper		0.0515	mg/L	0.010	103	90	110				
Iron		1.33	mg/L	0.020	102	90	110				
Manganese		0.0513	mg/L	0.0050	103	90	110				
Nickel		0.0508	mg/L	0.0050	102	90	110				
Potassium		12.9	mg/L	0.50	103	90	110				
Selenium		0.0509	mg/L	0.0050	102	90	110				
Silver		0.0206	mg/L	0.0050	103	90	110				
Zinc		0.0515	mg/L	0.0050	103	90	110				
<b>Method:</b> E200.8		Batch: R410402									
<b>Lab ID:</b> LRB	12	Method Blank							Run: ICPMS208-B_231011B		10/11/23 15:30
Aluminum		ND	mg/L	0.0008							
Arsenic		0.00005	mg/L	0.00004							
Cadmium		0.00002	mg/L	0.00002							
Chromium		ND	mg/L	0.0002							
Copper		ND	mg/L	0.0002							
Iron		ND	mg/L	0.002							
Manganese		ND	mg/L	0.00008							
Nickel		ND	mg/L	0.0005							
Potassium		ND	mg/L	0.06							
Selenium		ND	mg/L	0.00006							
Silver		ND	mg/L	0.00002							
Zinc		0.003	mg/L	0.001							
<b>Lab ID:</b> LFB	12	Laboratory Fortified Blank							Run: ICPMS208-B_231011B		10/11/23 15:43
Aluminum		0.0560	mg/L	0.020	112	85	115				
Arsenic		0.0526	mg/L	0.0050	105	85	115				
Cadmium		0.0537	mg/L	0.0010	107	85	115				

**Qualifiers:**

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# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23091937

**Report Date:** 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E200.8</b>										
Batch: R410402										
<b>Lab ID: LFB</b>	12	Laboratory Fortified Blank			Run: ICPMS208-B_231011B			10/11/23 15:43		
Chromium		0.0533	mg/L	0.010	107	85	115			
Copper		0.0528	mg/L	0.010	106	85	115			
Iron		5.10	mg/L	0.020	102	85	115			
Manganese		0.0522	mg/L	0.0050	104	85	115			
Nickel		0.0527	mg/L	0.0050	105	85	115			
Potassium		51.7	mg/L	0.50	103	85	115			
Selenium		0.0521	mg/L	0.0050	104	85	115			
Silver		0.0213	mg/L	0.0050	106	85	115			
Zinc		0.0522	mg/L	0.0050	104	85	115			
<b>Lab ID: B23091937-003CMS</b>	12	Sample Matrix Spike			Run: ICPMS208-B_231011B			10/12/23 05:30		
Aluminum		0.0562	mg/L	0.030	109	70	130			
Arsenic		0.0521	mg/L	0.0010	104	70	130			
Cadmium		0.0527	mg/L	0.0010	105	70	130			
Chromium		0.0536	mg/L	0.0050	107	70	130			
Copper		0.0552	mg/L	0.0050	106	70	130			
Iron		5.37	mg/L	0.020	107	70	130			
Manganese		0.0655	mg/L	0.0010	107	70	130			
Nickel		0.0528	mg/L	0.0050	106	70	130			
Potassium		61.3	mg/L	1.0	108	70	130			E
Selenium		0.0510	mg/L	0.0010	102	70	130			
Silver		0.0203	mg/L	0.0010	101	70	130			
Zinc		0.0542	mg/L	0.010	108	70	130			
<b>Lab ID: B23091937-003CMSD</b>	12	Sample Matrix Spike Duplicate			Run: ICPMS208-B_231011B			10/12/23 05:36		
Aluminum		0.0547	mg/L	0.030	106	70	130	2.7	20	
Arsenic		0.0539	mg/L	0.0010	108	70	130	3.4	20	
Cadmium		0.0539	mg/L	0.0010	108	70	130	2.3	20	
Chromium		0.0566	mg/L	0.0050	113	70	130	5.4	20	
Copper		0.0546	mg/L	0.0050	105	70	130	1.1	20	
Iron		5.21	mg/L	0.020	104	70	130	2.9	20	
Manganese		0.0650	mg/L	0.0010	106	70	130	0.7	20	
Nickel		0.0541	mg/L	0.0050	108	70	130	2.5	20	
Potassium		59.1	mg/L	1.0	104	70	130	3.6	20	E
Selenium		0.0526	mg/L	0.0010	105	70	130	3.1	20	
Silver		0.0212	mg/L	0.0010	106	70	130	4.4	20	
Zinc		0.0535	mg/L	0.010	107	70	130	1.4	20	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

E - Estimated value - result exceeds the instrument upper quantitation limit



## QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Water and Environmental Technologies

Work Order: B23091937

Report Date: 10/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E200.8</b>		Analytical Run: ICPMS208-B_231016A								
<b>Lab ID: QCS</b>	2	Initial Calibration Verification Standard								10/16/23 12:10
Iron		0.255	mg/L	0.020	102	90	110			
Manganese		0.255	mg/L	0.0050	102	90	110			
<b>Lab ID: CCV</b>	2	Continuing Calibration Verification Standard								10/16/23 16:29
Iron		1.29	mg/L	0.020	99	90	110			
Manganese		0.0506	mg/L	0.0050	101	90	110			
<b>Method: E200.8</b>		Batch: R410602								
<b>Lab ID: LRB</b>	2	Method Blank								Run: ICPMS208-B_231016A 10/16/23 12:42
Iron		ND	mg/L	0.002						
Manganese		0.0001	mg/L	0.00008						
<b>Lab ID: LFB</b>	2	Laboratory Fortified Blank								Run: ICPMS208-B_231016A 10/16/23 12:55
Iron		5.23	mg/L	0.020	105	85	115			
Manganese		0.0518	mg/L	0.0050	104	85	115			
<b>Lab ID: B23092169-013CMS</b>	2	Sample Matrix Spike								Run: ICPMS208-B_231016A 10/16/23 18:10
Iron		100	mg/L	0.26	100	70	130			
Manganese		1.16	mg/L	0.010	102	70	130			
<b>Lab ID: B23092169-013CMSD</b>	2	Sample Matrix Spike Duplicate								Run: ICPMS208-B_231016A 10/16/23 18:17
Iron		100	mg/L	0.26	100	70	130	0	20	
Manganese		1.16	mg/L	0.010	102	70	130	0.2	20	
<b>Lab ID: B23092312-006BMS</b>	2	Sample Matrix Spike								Run: ICPMS208-B_231016A 10/17/23 11:29
Iron		24.7	mg/L	0.064	99	70	130			
Manganese		1.52	mg/L	0.0026		70	130			A
<b>Lab ID: B23092312-006BMSD</b>	2	Sample Matrix Spike Duplicate								Run: ICPMS208-B_231016A 10/17/23 11:36
Iron		25.7	mg/L	0.064	103	70	130	4.0	20	
Manganese		1.52	mg/L	0.0026		70	130	0.3	20	A

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated



# Work Order Receipt Checklist

## Water and Environmental Technologies

## B23091937

Login completed by: Lyndsi E. LeProwse

Date Received: 9/22/2023

Reviewed by: tjones

Received by: dnh

Reviewed Date: 9/27/2023

Carrier name: Return-FedEx Ground

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all 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 in all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	2.7°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	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"/>

### 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.

Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

### Contact and Corrective Action Comments:

The Temperature Blank temperature for shipping container 1 was 2.3°C, shipping container 2 was 2.7°C, and shipping container 3 was 2.1°C.

Quote 16755 lists the analyses of Total Phosphorus and Mercury. These analyses were not requested on the Chain of Custody. Analyze for both Total Phosphorus and Mercury per phone conversation with Jamie Graham on 9/27/23.



Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 1

**Account Information (Billing information)**

Company/Name: WET  
 Contact: Lish Johnson  
 Phone: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 City, State, Zip: Kalispell MT 59901  
 Email: Ljohnson@waterenvtech.com  
 Receive Invoice  Hard Copy  Email  Hard Copy  Email   
 Purchase Order: \_\_\_\_\_  
 Quote: 177669

**Report Information (if different than Account Information)**

Company/Name: \_\_\_\_\_  
 Contact: Jennie Graham  
 Phone: (406) 471-1205  
 Mailing Address: \_\_\_\_\_  
 City, State, Zip: \_\_\_\_\_  
 Email: jgraham@waterenvtech.com  
 Receive Report  Hard Copy  Email   
 Special Report/Formats:  LEVEL IV  NELAC  EDD/EDT (contact laboratory)  Other: \_\_\_\_\_

**Comments**  
3 coolers

**Project Information**

Project Name, PWSID, Permit, etc.: Weyerhaeuser (1598)  
 Sampler Name: J. Graham Sampler Phone: (406) 471-1205  
 EPA/State Compliance  Yes  No  
 Sample Origin State: MT  
**URANIUM MINING CLIENTS MUST indicate sample type**  
 Unprocessed Ore  
 Processed Ore (Ground or Refined) \*\*CALL BEFORE SENDING  
 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Sample Identification (Name, Location, Interval, etc.)	Collection		Matrix (See Codes Above)	Analysis Requested	See Attached	ELI LAB ID Laboratory Use Only
	Date	Time				
1 MW-1	9/21/23	12:20	W	TKN, Total N, Nitrogen, Nitrate + Nitrite, Nitrogen (Ammonia), COD, Cyanide		B2309/937
2 MW-3	9/21/23	10:30	W	TKN, Total N, Nitrogen, Nitrate + Nitrite, Nitrogen (Ammonia), COD, Cyanide		
3 MW-6	9/21/23	9:00	W	TKN, Total N, Nitrogen, Nitrate + Nitrite, Nitrogen (Ammonia), COD, Cyanide		
4						
5						
6						
7						
8						
9						

**ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.**

Custody Record MUST be signed  
 Relinquished by (print): Janice Graham Date/Time: 9/21/23 15:00 Signature: \_\_\_\_\_  
 Relinquished by (print): \_\_\_\_\_ Date/Time: \_\_\_\_\_ Signature: \_\_\_\_\_

**LABORATORY USE ONLY**

Shipped By: \_\_\_\_\_ Cooler ID(s): \_\_\_\_\_ Custody Seals: Y N C B Intact: Y N Receipt Temp: \_\_\_\_\_ °C Temp Blank: Y N On Ice: Y N Payment Type: CC Cash Check Amount: \$ \_\_\_\_\_ Receipt Number (cash/check only): \_\_\_\_\_

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.



# ANALYTICAL REPORT

## Montana Environmental Laboratory LLC

1170 N. Meridian Rd., P.O. Box 8900, Kalispell, MT 59904-1900

Phone: 406-755-2131 Fax: 406-257-5359 www.melab.us

Water & Environmental Tech  
Water & Environmental Technologies  
102 Cooperative Way, Ste 100  
Kalispell, MT 59901

PWS ID:  
Project: Weyerhaeuser (1598-23)

**Client Sample ID:** MW-1 **Lab ID:** 2309956-01  
**Matrix:** ENVIRO WATER **Collected:** 09/21/2023 12:20 **Received:** 09/21/2023 14:35

<u>Coliform</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Coliform Bacteria	<b>Present</b>	P/A	1	1	SM9223B	09/22/2023 13:00	09/23/2023 10:25	BSB
Coliform, Escherichia - P/A	<b>Absent</b>	P/A	1	1	SM9223B	09/22/2023 13:00	09/23/2023 10:25	BSB

**Client Sample ID:** MW-3 **Lab ID:** 2309956-02  
**Matrix:** ENVIRO WATER **Collected:** 09/21/2023 10:30 **Received:** 09/21/2023 14:35

<u>Coliform</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Coliform Bacteria	<b>Present</b>	P/A	1	1	SM9223B	09/22/2023 13:00	09/23/2023 10:25	BSB
Coliform, Escherichia - P/A	<b>Absent</b>	P/A	1	1	SM9223B	09/22/2023 13:00	09/23/2023 10:25	BSB

**Client Sample ID:** MW-6 **Lab ID:** 2309956-03  
**Matrix:** ENVIRO WATER **Collected:** 09/21/2023 9:00 **Received:** 09/21/2023 14:35

<u>Coliform</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Coliform Bacteria	<b>Present</b>	P/A	1	1	SM9223B	09/22/2023 13:00	09/23/2023 10:25	BSB
Coliform, Escherichia - P/A	<b>Absent</b>	P/A	1	1	SM9223B	09/22/2023 13:00	09/23/2023 10:25	BSB



# ANALYTICAL REPORT

## Montana Environmental Laboratory LLC

1170 N. Meridian Rd., P.O. Box 8900, Kalispell, MT 59904-1900  
 Phone: 406-755-2131 Fax: 406-257-5359 www.melab.us

Water & Environmental Tech  
 Water & Environmental Technologies  
 102 Cooperative Way, Ste 100  
 Kalispell, MT 59901

PWS ID:  
 Project: Weyerhaeuser (1598-23)



MONTANA ENVIRONMENTAL LAB, LLC  
 P.O. BOX 8900, KALISPELL, MT 59904  
 VOICE: (406) 755-2131 · FAX: (406) 257-5359  
 www.melab.us · info@melab.us

### Chain Of Custody and Analytical Reques

Please Print. Provide as much information as possibl

**9956**  
 Page 1 of 1

Company Name: <u>WET</u> Report Address: <u>102 Cooperative Way Ste 100</u> <u>Kalispell MT 59901</u> Invoice Address: <u>email to:</u> <u>Ljohnson@waterentech.com</u> SAMPLER PRINTED NAME AND SIGNATURE: <u>Jamie Graham</u> <i>[Signature]</i>	Project Name, PWSID #, Permit #, Etc. <u>Weyerhaeuser (1598-23)</u> Contact Name, Phone, Fax: <u>Jamie Graham (406) 471-1205</u> Invoice Contact & Phone #: <u>Liza Johnson</u>
--	--

**TURN AROUND TIME REQUIRED**

STANDARD 10 WORKING DAYS

5 WORKING DAYS (50% SURCHARGE)

1-2 WORKING DAYS (100% SURCHARGE)

OTHER \_\_\_\_\_

SITE NAME or LOCATION	SAMPLE DATE	SAMPLE TIME	MATRIX	# Bottles	Analysis Requested		COMMENTS
					Total Coliform	Fecal Coliform (E-coli)	
MW-1	9/2/23	12:20	W	1	X	X	<i>EMAIL ALL</i>
MW-3	9/2/23	10:30	W	1	X	X	
MW-6	9/2/23	9:00	W	1	X	X	

<b>Custody Record MUST be Signed</b>	Relinquished by: <i>[Signature]</i>	Date/Time: <u>9/2/23 14:35</u>	Shipped by:	Received by: <i>[Signature]</i>	Date/Time: <u>9-21-23 14:35</u>
	Relinquished by:	Date/Time:	Shipped by:	Received by:	Date/Time:
	Relinquished by:	Date/Time:	Shipped by:	Received by:	Date/Time:

NET 30 DAYS: 1.5% PER MONTH INTEREST CHARGE (18% A.P.R.) CUSTOMER AGREES TO PAY COLLECTION COSTS AND ATTORNEY'S FEES.

- INSTRUCTIONS**
- USE ONE LINE PER SAMPLE.
  - BE SPECIFIC IN TEST REQUESTS
  - CHECK OFF TESTS TO BE PERFORMED FOR EACH SAMPLE

**LAB USE ONLY:**

LOGIN COMMENTS: \_\_\_\_\_

SAMPLES CHECKED/LOGGED IN BY: \_\_\_\_\_

SAMPLE TEMP, RECEIPT AT LAB: \_\_\_\_\_ (Compliance: 4 +/- 2°C)

SAMPLES RECEIVED DAY OF COLLECTION?  (check for yes)

BLUE ICE: FROZEN PARTIALLY FROZEN THAWED



ANALYTICAL SUMMARY REPORT

January 04, 2024

Water and Environmental Technologies
480 E Park St Ste 200
Butte, MT 59701-1923

Work Order: B23121276 Quote ID: B15199

Project Name: Weyerhaeuser (1598)

Energy Laboratories Inc Billings MT received the following 3 samples for Water and Environmental Technologies on 12/19/2023 for analysis.

Table with 6 columns: Lab ID, Client Sample ID, Collect Date, Receive Date, Matrix, Test. It contains three rows of sample data with detailed test lists for each.

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:



**CLIENT:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Work Order:** B23121276

**Report Date:** 01/04/24

## **CASE NARRATIVE**

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Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W Boxelder Rd, Gillette, WY, EPA Number WY00006.

Tests associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, PO Box 247, Casper, WY, EPA Number WY00002.



## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23121276-001  
**Client Sample ID:** MW-2

**Report Date:** 01/04/24  
**Collection Date:** 12/18/23 09:50  
**Date Received:** 12/19/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.3	s.u.	H	0.1		A4500-H B	12/19/23 13:40 / njp
pH Measurement Temp	13.6	°C		1.0		A4500-H B	12/19/23 13:40 / njp
Conductivity @ 25 C	789	umhos/cm		5		A2510 B	12/19/23 13:40 / njp
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/19/23 14:48 / pjw
Solids, Total Dissolved TDS @ 180 C	422	mg/L		20		A2540 C	12/20/23 15:20 / pmw
<b>INORGANICS</b>							
Alkalinity, Total as CaCO3	360	mg/L		4		A2320 B	12/19/23 14:36 / spb
Bicarbonate as HCO3	439	mg/L		4		A2320 B	12/19/23 14:36 / spb
Carbonate as CO3	ND	mg/L		4		A2320 B	12/19/23 14:36 / spb
Chloride	41	mg/L		1		E300.0	12/21/23 04:43 / caa
Sulfate	8	mg/L		1		E300.0	12/21/23 04:43 / caa
Cyanide, Total	ND	mg/L		0.005		Kelada-01	12/22/23 11:15 / jpv
Hardness as CaCO3	337	mg/L		1		A2340 B	12/21/23 15:21 / rs4
<b>AGGREGATE ORGANICS</b>							
Oxygen Demand, Chemical (COD)	8	mg/L		5		E410.4	12/27/23 14:32 / jaw
Oxygen Demand, Biochemical (BOD)	<1	mg/L		1.0		A5210 B	12/20/23 09:36 / mml
Organic Carbon, Total (TOC)	1.8	mg/L		0.5		A5310 C	12/20/23 23:41 / eli-ca
Phenolics, Total Recoverable (Distilled)	0.02	mg/L		0.01		E420.4	12/20/23 14:53 / jpv
No BOD dilution depleted greater than 2.0 mg/L DO.							
<b>NUTRIENTS</b>							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/19/23 16:56 / krt
Nitrogen, Nitrate+Nitrite as N	0.24	mg/L		0.01		E353.2	12/20/23 15:21 / krt
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	12/26/23 11:27 / jaw
Nitrogen, Total	ND	mg/L		0.5		Calculation	12/27/23 08:09 / bap
Phosphorus, Total as P	0.013	mg/L		0.005		E365.1	12/20/23 15:09 / jaw
<b>METALS, DISSOLVED</b>							
Aluminum	ND	mg/L		0.03		E200.8	12/22/23 09:26 / jks
Arsenic	ND	mg/L		0.001		E200.8	12/22/23 09:26 / jks
Barium	0.8	mg/L		0.05		E200.7	12/21/23 15:21 / enb
Cadmium	ND	mg/L		0.001		E200.8	12/22/23 09:26 / jks
Calcium	88	mg/L		1		E200.7	12/21/23 15:21 / enb
Chromium	ND	mg/L		0.005		E200.8	12/22/23 09:26 / jks
Copper	ND	mg/L		0.005		E200.8	12/22/23 09:26 / jks
Iron	0.08	mg/L		0.02		E200.8	12/22/23 09:26 / jks
Magnesium	28	mg/L		1		E200.7	12/21/23 15:21 / enb
Manganese	0.96	mg/L		0.003		E200.7	12/21/23 15:21 / enb
Mercury	ND	mg/L		0.0001		E245.1	12/21/23 16:17 / nrb
Nickel	ND	mg/L		0.005		E200.8	12/22/23 09:26 / jks
Potassium	12	mg/L		1		E200.7	12/21/23 15:21 / enb
Selenium	ND	mg/L		0.001		E200.8	12/22/23 09:26 / jks

**Report** RL - Analyte Reporting Limit

MCL - Maximum Contaminant Level

**Definitions:** QCL - Quality Control Limit

ND - Not detected at the Reporting Limit (RL)

H - Analysis performed past the method holding time



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23121276-001  
**Client Sample ID:** MW-2

**Report Date:** 01/04/24  
**Collection Date:** 12/18/23 09:50  
**Date Received:** 12/19/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS, DISSOLVED</b>							
Silver	ND	mg/L		0.001		E200.8	12/22/23 09:26 / jks
Zinc	ND	mg/L		0.01		E200.7	12/21/23 15:21 / enb
<b>ORGANIC CHARACTERISTICS</b>							
Oil & Grease (HEM)	ND	mg/L		1		E1664A	01/02/24 08:47 / eli-g

**Report Definitions:** RL - Analyte Reporting Limit  
QCL - Quality Control Limit

MCL - Maximum Contaminant Level  
ND - Not detected at the Reporting Limit (RL)



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23121276-002  
**Client Sample ID:** MW-4

**Report Date:** 01/04/24  
**Collection Date:** 12/18/23 11:00  
**Date Received:** 12/19/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.3	s.u.	H	0.1		A4500-H B	12/19/23 13:43 / njp
pH Measurement Temp	12.6	°C		1.0		A4500-H B	12/19/23 13:43 / njp
Conductivity @ 25 C	726	umhos/cm		5		A2510 B	12/19/23 13:43 / njp
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/19/23 14:48 / pjw
Solids, Total Dissolved TDS @ 180 C	410	mg/L		20		A2540 C	12/20/23 15:20 / pmw
<b>INORGANICS</b>							
Alkalinity, Total as CaCO3	321	mg/L		4		A2320 B	12/19/23 14:49 / spb
Bicarbonate as HCO3	391	mg/L		4		A2320 B	12/19/23 14:49 / spb
Carbonate as CO3	ND	mg/L		4		A2320 B	12/19/23 14:49 / spb
Chloride	59	mg/L		1		E300.0	12/21/23 05:00 / caa
Sulfate	11	mg/L		1		E300.0	12/21/23 05:00 / caa
Cyanide, Total	ND	mg/L		0.005		Kelada-01	12/22/23 11:17 / jpv
Hardness as CaCO3	308	mg/L		1		A2340 B	12/21/23 15:26 / bap
<b>AGGREGATE ORGANICS</b>							
Oxygen Demand, Chemical (COD)	11	mg/L		5		E410.4	12/20/23 14:28 / jaw
Oxygen Demand, Biochemical (BOD)	<1	mg/L		1.0		A5210 B	12/20/23 09:39 / mml
Organic Carbon, Total (TOC)	1.6	mg/L		0.5		A5310 C	12/21/23 00:02 / eli-ca
Phenolics, Total Recoverable (Distilled)	0.01	mg/L		0.01		E420.4	12/20/23 14:55 / jpv
No BOD dilution depleted greater than 2.0 mg/L DO.							
<b>NUTRIENTS</b>							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/19/23 16:57 / krt
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	12/21/23 14:27 / krt
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	12/26/23 11:28 / jaw
Nitrogen, Total	ND	mg/L		0.5		Calculation	12/27/23 08:09 / bap
Phosphorus, Total as P	0.042	mg/L		0.005		E365.1	12/20/23 15:11 / jaw
<b>METALS, DISSOLVED</b>							
Aluminum	ND	mg/L		0.03		E200.8	12/22/23 09:32 / jks
Arsenic	0.002	mg/L		0.001		E200.8	12/22/23 09:32 / jks
Barium	0.49	mg/L		0.05		E200.7	12/21/23 15:26 / enb
Cadmium	ND	mg/L		0.001		E200.8	12/22/23 09:32 / jks
Calcium	84	mg/L		1		E200.7	12/21/23 15:26 / enb
Chromium	ND	mg/L		0.005		E200.8	12/22/23 09:32 / jks
Copper	ND	mg/L		0.005		E200.8	12/22/23 09:32 / jks
Iron	1.41	mg/L		0.02		E200.8	12/22/23 09:32 / jks
Magnesium	24	mg/L		1		E200.7	12/21/23 15:26 / enb
Manganese	0.5	mg/L		0.001		E200.8	12/22/23 09:32 / jks
Mercury	ND	mg/L		0.0001		E245.1	12/21/23 16:18 / nrb
Nickel	ND	mg/L		0.005		E200.8	12/22/23 09:32 / jks
Potassium	4	mg/L		1		E200.7	12/21/23 15:26 / enb
Selenium	ND	mg/L		0.001		E200.8	12/22/23 09:32 / jks

**Report Definitions:**  
 RL - Analyte Reporting Limit  
 QCL - Quality Control Limit  
 H - Analysis performed past the method holding time

MCL - Maximum Contaminant Level  
 ND - Not detected at the Reporting Limit (RL)



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23121276-002  
**Client Sample ID:** MW-4

**Report Date:** 01/04/24  
**Collection Date:** 12/18/23 11:00  
**Date Received:** 12/19/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS, DISSOLVED</b>							
Silver	ND	mg/L		0.001		E200.8	12/22/23 09:32 / jks
Zinc	ND	mg/L		0.01		E200.7	12/21/23 15:26 / enb
<b>ORGANIC CHARACTERISTICS</b>							
Oil & Grease (HEM)	ND	mg/L		1		E1664A	01/02/24 08:47 / eli-g

**Report Definitions:** RL - Analyte Reporting Limit  
QCL - Quality Control Limit

MCL - Maximum Contaminant Level  
ND - Not detected at the Reporting Limit (RL)



## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23121276-003  
**Client Sample ID:** MW-6

**Report Date:** 01/04/24  
**Collection Date:** 12/18/23 08:40  
**Date Received:** 12/19/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.3	s.u.	H	0.1		A4500-H B	12/19/23 13:46 / njp
pH Measurement Temp	12.8	°C		1.0		A4500-H B	12/19/23 13:46 / njp
Conductivity @ 25 C	791	umhos/cm		5		A2510 B	12/19/23 13:46 / njp
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	12/19/23 14:48 / pjw
Solids, Total Dissolved TDS @ 180 C	460	mg/L		20		A2540 C	12/20/23 15:20 / pmw
<b>INORGANICS</b>							
Alkalinity, Total as CaCO3	329	mg/L		4		A2320 B	12/19/23 14:56 / spb
Bicarbonate as HCO3	401	mg/L		4		A2320 B	12/19/23 14:56 / spb
Carbonate as CO3	ND	mg/L		4		A2320 B	12/19/23 14:56 / spb
Chloride	75	mg/L		1		E300.0	12/21/23 05:17 / caa
Sulfate	13	mg/L		1		E300.0	12/21/23 05:17 / caa
Cyanide, Total	ND	mg/L		0.005		Kelada-01	12/22/23 11:19 / jpv
Hardness as CaCO3	322	mg/L		1		A2340 B	12/21/23 15:42 / bap
<b>AGGREGATE ORGANICS</b>							
Oxygen Demand, Chemical (COD)	11	mg/L		5		E410.4	12/20/23 14:28 / jaw
Oxygen Demand, Biochemical (BOD)	<1	mg/L	H	1.0		A5210 B	12/20/23 09:33 / mml
Organic Carbon, Total (TOC)	3.9	mg/L		0.5		A5310 C	12/21/23 00:24 / eli-ca
Phenolics, Total Recoverable (Distilled)	0.01	mg/L		0.01		E420.4	12/20/23 15:37 / jpv
No BOD dilution depleted greater than 2.0 mg/L DO.							
<b>NUTRIENTS</b>							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/19/23 16:58 / krt
Nitrogen, Nitrate+Nitrite as N	1.48	mg/L		0.01		E353.2	12/20/23 15:25 / krt
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	12/26/23 11:30 / jaw
Nitrogen, Total	1.5	mg/L		0.5		Calculation	12/27/23 08:09 / bap
Phosphorus, Total as P	0.009	mg/L		0.005		E365.1	12/20/23 15:13 / jaw
<b>METALS, DISSOLVED</b>							
Aluminum	ND	mg/L		0.03		E200.8	12/22/23 09:38 / jks
Arsenic	ND	mg/L		0.001		E200.8	12/22/23 09:38 / jks
Barium	0.6	mg/L		0.05		E200.7	12/21/23 15:42 / enb
Cadmium	ND	mg/L		0.001		E200.8	12/22/23 09:38 / jks
Calcium	85	mg/L		1		E200.7	12/21/23 15:42 / enb
Chromium	ND	mg/L		0.005		E200.8	12/22/23 09:38 / jks
Copper	ND	mg/L		0.005		E200.8	12/22/23 09:38 / jks
Iron	ND	mg/L		0.02		E200.8	12/22/23 09:38 / jks
Magnesium	27	mg/L		1		E200.7	12/21/23 15:42 / enb
Manganese	0.022	mg/L		0.001		E200.8	12/22/23 09:38 / jks
Mercury	ND	mg/L		0.0001		E245.1	12/21/23 16:19 / nrb
Nickel	ND	mg/L		0.005		E200.8	12/22/23 09:38 / jks
Potassium	7	mg/L		1		E200.7	12/21/23 15:42 / enb
Selenium	ND	mg/L		0.001		E200.8	12/22/23 09:38 / jks

**Report Definitions:**  
 RL - Analyte Reporting Limit  
 QCL - Quality Control Limit  
 H - Analysis performed past the method holding time

MCL - Maximum Contaminant Level  
 ND - Not detected at the Reporting Limit (RL)



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser (1598)  
**Lab ID:** B23121276-003  
**Client Sample ID:** MW-6

**Report Date:** 01/04/24  
**Collection Date:** 12/18/23 08:40  
**Date Received:** 12/19/23  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS, DISSOLVED</b>							
Silver	ND	mg/L		0.001		E200.8	12/22/23 09:38 / jks
Zinc	ND	mg/L		0.01		E200.7	12/21/23 15:42 / enb
<b>ORGANIC CHARACTERISTICS</b>							
Oil & Grease (HEM)	ND	mg/L		1		E1664A	01/02/24 08:47 / eli-g

**Report Definitions:** RL - Analyte Reporting Limit  
QCL - Quality Control Limit

MCL - Maximum Contaminant Level  
ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 12/28/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A5310 C</b> <span style="float: right;">Analytical Run: TOC3-C_231220A</span>										
<b>Lab ID: CCV-11940</b>	Continuing Calibration Verification Standard <span style="float: right;">12/20/23 21:53</span>									
Organic Carbon, Total (TOC)		5.09	mg/L	0.50	102	90	110			
<b>Method: A5310 C</b> <span style="float: right;">Batch: R302218</span>										
<b>Lab ID: MBLK</b>	Method Blank <span style="float: right;">Run: TOC3-C_231220A 12/20/23 17:37</span>									
Organic Carbon, Total (TOC)		ND	mg/L	0.1						
<b>Lab ID: LCS</b>	Laboratory Control Sample <span style="float: right;">Run: TOC3-C_231220A 12/20/23 17:56</span>									
Organic Carbon, Total (TOC)		5.10	mg/L	0.50	102	90	111			
<b>Lab ID: C23120587-001BMS</b>	Sample Matrix Spike <span style="float: right;">Run: TOC3-C_231220A 12/20/23 22:48</span>									
Organic Carbon, Total (TOC)		6.42	mg/L	0.50	100	90	111			
<b>Lab ID: C23120587-001BMSD</b>	Sample Matrix Spike Duplicate <span style="float: right;">Run: TOC3-C_231220A 12/20/23 23:05</span>									
Organic Carbon, Total (TOC)		6.43	mg/L	0.50	101	90	111	0.2	20	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Gillette, WY Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/02/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> E1664A										Batch: 240102A
<b>Lab ID:</b> MBLK2401020805		Method Blank								Run: BAL-ACCU-124_240102A 01/02/24 08:44
Oil & Grease (HEM)		ND	mg/L	0.7						
<b>Lab ID:</b> LCS2401020805		Laboratory Control Sample								Run: BAL-ACCU-124_240102A 01/02/24 08:44
Oil & Grease (HEM)		34	mg/L	5.0	85	78	114			
<b>Lab ID:</b> LCSD2401020805		Laboratory Control Sample Duplicate								Run: BAL-ACCU-124_240102A 01/02/24 08:44
Oil & Grease (HEM)		35	mg/L	5.0	88	78	114	3.5	18	
<b>Lab ID:</b> G23120313-003GMS		Sample Matrix Spike								Run: BAL-ACCU-124_240102A 01/02/24 08:45
Oil & Grease (HEM)		35	mg/L	5.0	87	78	114			

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> A2320 B										Batch: R413991
<b>Lab ID:</b> LCS		Laboratory Control Sample					Run: METROHM 2_231219A			12/19/23 13:18
Alkalinity, Total as CaCO3		108	mg/L	4.0	108	90	110			
<b>Lab ID:</b> MBLK		Method Blank					Run: METROHM 2_231219A			12/19/23 13:23
Alkalinity, Total as CaCO3		ND	mg/L	4						
<b>Lab ID:</b> B23121276-001ADUP	3	Sample Duplicate					Run: METROHM 2_231219A			12/19/23 14:43
Alkalinity, Total as CaCO3		361	mg/L	4.0				0.2	10	
Bicarbonate as HCO3		440	mg/L	4.0				0.2	10	
Carbonate as CO3		ND	mg/L	4.0					10	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> A2510 B										Batch: R413984
<b>Lab ID:</b> SC 2nd 1413		Laboratory Control Sample					Run: PHSC_101-B_231219A			12/19/23 09:09
Conductivity @ 25 C		1420	umhos/cm	5.0	101	90	110			
<b>Lab ID:</b> MBLK		Method Blank					Run: PHSC_101-B_231219A			12/19/23 09:15
Conductivity @ 25 C		ND	umhos/cm	5						
<b>Lab ID:</b> B23121276-003ADUP		Sample Duplicate					Run: PHSC_101-B_231219A			12/19/23 13:49
Conductivity @ 25 C		801	umhos/cm	5.0				1.3	10	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A2540 C</b>								Batch: TDS20231220A		
<b>Lab ID: MBLK</b>		Method Blank				Run: Bal #30_231220C			12/20/23 15:19	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	20						
<b>Lab ID: LCS</b>		Laboratory Control Sample				Run: Bal #30_231220C			12/20/23 15:19	
Solids, Total Dissolved TDS @ 180 C		990	mg/L	25	99	90	110			
<b>Lab ID: B23121392-003BDUP</b>		Sample Duplicate				Run: Bal #30_231220C			12/20/23 15:24	
Solids, Total Dissolved TDS @ 180 C		268	mg/L	25				1.0	10	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A2540 D</b>										Batch: 185810
<b>Lab ID: MB-185810</b>		Method Blank								
Solids, Total Suspended TSS @ 105 C		ND	mg/L	0.6						
										Run: BAL #30_231219A 12/19/23 08:54
<b>Lab ID: LCS-185810</b>		Laboratory Control Sample								
Solids, Total Suspended TSS @ 105 C		91.0	mg/L	25	91	80	120			12/19/23 08:55
<b>Lab ID: B23121223-001B DUP</b>		Sample Duplicate								
Solids, Total Suspended TSS @ 105 C		6.00	mg/L	10						Run: BAL #30_231219A 12/19/23 08:55 10
<b>Lab ID: B23121280-001B DUP</b>		Sample Duplicate								
Solids, Total Suspended TSS @ 105 C		29.4	mg/L	10				4.7	10	Run: BAL #30_231219A 12/19/23 14:49

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> A4500-H B		Analytical Run: PHSC_101-B_231219A								
<b>Lab ID:</b> pH 8	2	Initial Calibration Verification Standard								12/19/23 08:55
pH		8.0	s.u.	0.10	100	98	102			
pH Measurement Temp		20	°C	1.0						
<b>Method:</b> A4500-H B		Batch: R413984								
<b>Lab ID:</b> B23121276-003ADUP	2	Sample Duplicate								12/19/23 13:49
pH		7.4	s.u.	0.1				0.3	3	H
pH Measurement Temp		13.3	°C	1.0						

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

H - Analysis performed past the method holding time



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A5210 B</b>								Batch: 231220_1_BOD5-W		
<b>Lab ID: Dil-H201_231220</b>		Dilution Water Blank				Run: BOD-SP2000_231220A		12/20/23 09:21		
Oxygen Demand, Biochemical (BOD)		0.2	mg/L	0.2		0	0.2			
<b>Lab ID: GGA1_231220</b>		Laboratory Control Sample				Run: BOD-SP2000_231220A		12/20/23 09:28		
Oxygen Demand, Biochemical (BOD)		210	mg/L	47	105	85	115			
<b>Lab ID: B23121222-001ADUP</b>		Sample Duplicate				Run: BOD-SP2000_231220A		12/20/23 09:48		
Oxygen Demand, Biochemical (BOD)		260	mg/L	40				12	15	
BOD test replicates show more than 30% difference between high and low values.										

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E200.7</b>											
Analytical Run: ICP204-B_231221A											
<b>Lab ID: ICV</b>	6	Continuing Calibration Verification Standard								12/21/23 12:10	
Barium		2.42	mg/L	0.10	97	95	105				
Calcium		24.9	mg/L	1.0	100	95	105				
Magnesium		24.3	mg/L	1.0	97	95	105				
Manganese		2.43	mg/L	0.010	97	95	105				
Potassium		24.4	mg/L	1.0	97	95	105				
Zinc		2.44	mg/L	0.010	98	95	105				
<b>Lab ID: CCV</b>	6	Continuing Calibration Verification Standard								12/21/23 14:56	
Barium		2.46	mg/L	0.10	99	90	110				
Calcium		24.5	mg/L	1.0	98	90	110				
Magnesium		25.1	mg/L	1.0	100	90	110				
Manganese		2.41	mg/L	0.010	96	90	110				
Potassium		24.1	mg/L	1.0	96	90	110				
Zinc		2.42	mg/L	0.010	97	90	110				
<b>Method: E200.7</b>											
Batch: R414180											
<b>Lab ID: MB-7400DIS231221A</b>	6	Method Blank								Run: ICP204-B_231221A	12/21/23 12:33
Barium		ND	mg/L	0.001							
Calcium		ND	mg/L	0.1							
Magnesium		0.04	mg/L	0.03							
Manganese		ND	mg/L	0.001							
Potassium		ND	mg/L	0.1							
Zinc		ND	mg/L	0.004							
<b>Lab ID: LFB-7400DIS231221A</b>	6	Laboratory Fortified Blank								Run: ICP204-B_231221A	12/21/23 12:37
Barium		0.968	mg/L	0.10	97	85	115				
Calcium		49.4	mg/L	1.0	99	85	115				
Magnesium		48.6	mg/L	1.0	97	85	115				
Manganese		4.82	mg/L	0.010	96	85	115				
Potassium		48.7	mg/L	1.0	97	85	115				
Zinc		0.972	mg/L	0.010	97	85	115				
<b>Lab ID: B23121276-002DMS2</b>	6	Sample Matrix Spike								Run: ICP204-B_231221A	12/21/23 15:34
Barium		1.52	mg/L	0.050	103	70	130				
Calcium		132	mg/L	1.0	97	70	130				
Magnesium		76.3	mg/L	1.0	105	70	130				
Manganese		5.51	mg/L	0.0031	100	70	130				
Potassium		55.4	mg/L	1.0	102	70	130				
Zinc		0.995	mg/L	0.010	99	70	130				
<b>Lab ID: B23121276-002DMSD2</b>	6	Sample Matrix Spike Duplicate								Run: ICP204-B_231221A	12/21/23 15:38
Barium		1.52	mg/L	0.050	102	70	130	0.4	20		
Calcium		132	mg/L	1.0	97	70	130	0.2	20		
Magnesium		75.9	mg/L	1.0	104	70	130	0.6	20		
Manganese		5.50	mg/L	0.0031	100	70	130	0.2	20		
Potassium		55.3	mg/L	1.0	102	70	130	0.2	20		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> E200.7										
<b>Lab ID:</b> B23121276-002DMSD2 6 Sample Matrix Spike Duplicate										
Zinc										
		0.992	mg/L	0.010	99	70	130	0.3	20	

Batch: R414180

Run: ICP204-B\_231221A

12/21/23 15:38

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E200.8</b>		Analytical Run: ICPMS208-B_231220A								
<b>Lab ID: QCS</b>	10	Initial Calibration Verification Standard							12/22/23 03:52	
Aluminum		0.246	mg/L	0.020	98	90	110			
Arsenic		0.0502	mg/L	0.0050	100	90	110			
Cadmium		0.0245	mg/L	0.0010	98	90	110			
Chromium		0.0509	mg/L	0.010	102	90	110			
Copper		0.0514	mg/L	0.010	103	90	110			
Iron		0.243	mg/L	0.020	97	90	110			
Manganese		0.255	mg/L	0.0050	102	90	110			
Nickel		0.0516	mg/L	0.0050	103	90	110			
Selenium		0.0507	mg/L	0.0050	101	90	110			
Silver		0.0245	mg/L	0.0050	98	90	110			
<b>Lab ID: CCV</b>	10	Continuing Calibration Verification Standard							12/22/23 08:29	
Aluminum		0.0463	mg/L	0.020	93	90	110			
Arsenic		0.0476	mg/L	0.0050	95	90	110			
Cadmium		0.0467	mg/L	0.0010	93	90	110			
Chromium		0.0479	mg/L	0.010	96	90	110			
Copper		0.0488	mg/L	0.010	97	90	110			
Iron		1.18	mg/L	0.020	91	90	110			
Manganese		0.0475	mg/L	0.0050	95	90	110			
Nickel		0.0493	mg/L	0.0050	99	90	110			
Selenium		0.0478	mg/L	0.0050	96	90	110			
Silver		0.0188	mg/L	0.0050	94	90	110			
<b>Method: E200.8</b>		Batch: R414142								
<b>Lab ID: LRB</b>	10	Method Blank							Run: ICPMS208-B_231220A 12/20/23 12:37	
Aluminum		ND	mg/L	0.0008						
Arsenic		ND	mg/L	0.00004						
Cadmium		ND	mg/L	0.00002						
Chromium		ND	mg/L	0.0002						
Copper		ND	mg/L	0.0002						
Iron		ND	mg/L	0.002						
Manganese		ND	mg/L	0.00008						
Nickel		ND	mg/L	0.0005						
Selenium		ND	mg/L	0.00006						
Silver		ND	mg/L	0.00002						
<b>Lab ID: LFB</b>	10	Laboratory Fortified Blank							Run: ICPMS208-B_231220A 12/20/23 12:50	
Aluminum		0.0522	mg/L	0.020	104	85	115			
Arsenic		0.0495	mg/L	0.0050	99	85	115			
Cadmium		0.0513	mg/L	0.0010	103	85	115			
Chromium		0.0524	mg/L	0.010	105	85	115			
Copper		0.0532	mg/L	0.010	106	85	115			
Iron		4.89	mg/L	0.020	98	85	115			
Manganese		0.0530	mg/L	0.0050	106	85	115			
Nickel		0.0522	mg/L	0.0050	104	85	115			
Selenium		0.0505	mg/L	0.0050	101	85	115			

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E200.8</b>										
Batch: R414142										
<b>Lab ID: LFB</b>	10	Laboratory Fortified Blank								
						Run: ICPMS208-B_231220A 12/20/23 12:50				
Silver		0.0204	mg/L	0.0050	102	85	115			
<b>Lab ID: B23121280-001CMS</b>	10	Sample Matrix Spike								
						Run: ICPMS208-B_231220A 12/22/23 10:10				
Aluminum		0.957	mg/L	0.041	93	70	130			
Arsenic		15.9	mg/L	0.0021		70	130			A
Cadmium		0.964	mg/L	0.0010	96	70	130			
Chromium		1.02	mg/L	0.010	102	70	130			
Copper		1.02	mg/L	0.010	102	70	130			
Iron		382	mg/L	0.26	94	70	130			
Manganese		7.45	mg/L	0.010		70	130			A
Nickel		1.16	mg/L	0.021	101	70	130			
Selenium		0.868	mg/L	0.0021	86	70	130			
Silver		0.372	mg/L	0.0010	93	70	130			
<b>Lab ID: B23121280-001CMSD</b>	10	Sample Matrix Spike Duplicate								
						Run: ICPMS208-B_231220A 12/22/23 10:16				
Aluminum		0.926	mg/L	0.041	90	70	130	3.4	20	
Arsenic		15.9	mg/L	0.0021		70	130	0.4	20	A
Cadmium		0.929	mg/L	0.0010	93	70	130	3.6	20	
Chromium		0.951	mg/L	0.010	95	70	130	7.0	20	
Copper		0.950	mg/L	0.010	95	70	130	6.6	20	
Iron		459	mg/L	0.26	171	70	130	18	20	S
Manganese		7.37	mg/L	0.010		70	130	1.1	20	A
Nickel		1.11	mg/L	0.021	96	70	130	4.3	20	
Selenium		0.976	mg/L	0.0021	97	70	130	12	20	
Silver		0.363	mg/L	0.0010	91	70	130	2.6	20	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

S - Spike recovery outside of advisory limits



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method:</b> E245.1										Analytical Run: HGCV203-B_231221A	
<b>Lab ID:</b> ICV-185881		Initial Calibration Verification Standard								12/21/23 16:11	
Mercury		0.00213	mg/L	0.00010	106	90	110				
<b>Method:</b> E245.1										Batch: 185881	
<b>Lab ID:</b> MB-185881		Method Blank								Run: HGCV203-B_231221A	12/21/23 16:14
Mercury		ND	mg/L	0.00003							
<b>Lab ID:</b> LCS-185881		Laboratory Control Sample								Run: HGCV203-B_231221A	12/21/23 16:16
Mercury		0.00218	mg/L	0.00010	109	85	115				
<b>Lab ID:</b> B23121332-006BMS		Sample Matrix Spike								Run: HGCV203-B_231221A	12/21/23 16:27
Mercury		0.00214	mg/L	0.00010	107	70	130				
<b>Lab ID:</b> B23121332-006BMSD		Sample Matrix Spike Duplicate								Run: HGCV203-B_231221A	12/21/23 16:28
Mercury		0.00219	mg/L	0.00010	109	70	130	2.3	30		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E300.0</b>		Analytical Run: IC METROHM 2_231220A									
<b>Lab ID: ICV</b>	2	Initial Calibration Verification Standard								12/20/23 10:42	
Chloride		25.9	mg/L	1.0	103	90	110				
Sulfate		105	mg/L	1.0	105	90	110				
<b>Lab ID: CCV</b>	2	Continuing Calibration Verification Standard								12/21/23 03:18	
Chloride		25.8	mg/L	1.0	103	90	110				
Sulfate		105	mg/L	1.0	105	90	110				
<b>Method: E300.0</b>		Batch: R414147									
<b>Lab ID: ICB</b>	2	Method Blank								Run: IC METROHM 2_231220A	12/20/23 10:59
Chloride		ND	mg/L	0.1							
Sulfate		ND	mg/L	0.5							
<b>Lab ID: LFB</b>	2	Laboratory Fortified Blank								Run: IC METROHM 2_231220A	12/20/23 11:16
Chloride		26.1	mg/L	1.0	104	90	110				
Sulfate		107	mg/L	1.1	107	90	110				
<b>Lab ID: B23121268-003AMS</b>	2	Sample Matrix Spike								Run: IC METROHM 2_231220A	12/21/23 03:52
Chloride		31.0	mg/L	1.0	111	90	110			S	
Sulfate		132	mg/L	1.1	112	90	110			S	
<b>Lab ID: B23121268-003AMSD</b>	2	Sample Matrix Spike Duplicate								Run: IC METROHM 2_231220A	12/21/23 04:09
Chloride		30.9	mg/L	1.0	110	90	110	0.2	20		
Sulfate		132	mg/L	1.1	111	90	110	0.1	20	S	
<b>Lab ID: B23121354-001AMS</b>	2	Sample Matrix Spike								Run: IC METROHM 2_231220A	12/21/23 07:49
Chloride		31.2	mg/L	1.0	109	90	110				
Sulfate		199	mg/L	1.1	109	90	110				
<b>Lab ID: B23121354-001AMSD</b>	2	Sample Matrix Spike Duplicate								Run: IC METROHM 2_231220A	12/21/23 08:06
Chloride		31.4	mg/L	1.0	110	90	110	0.6	20		
Sulfate		200	mg/L	1.1	110	90	110	0.4	20		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E350.1</b>											
Analytical Run: FIA203-B_231219C											
<b>Lab ID: ICV</b>		Initial Calibration Verification Standard									12/19/23 16:25
Nitrogen, Ammonia as N		2.14	mg/L	0.050	104	90	110				
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard									12/19/23 16:44
Nitrogen, Ammonia as N		0.989	mg/L	0.050	99	90	110				
<b>Method: E350.1</b>											
Batch: R414036											
<b>Lab ID: MBLK</b>		Method Blank									12/19/23 16:26
Nitrogen, Ammonia as N		ND	mg/L	0.02							
<b>Lab ID: LFB</b>		Laboratory Fortified Blank									12/19/23 16:29
Nitrogen, Ammonia as N		1.03	mg/L	0.050	103	90	110				
<b>Lab ID: FILTERLFB</b>		Laboratory Fortified Blank									12/19/23 16:30
Nitrogen, Ammonia as N		1.04	mg/L	0.050	104	90	110				
<b>Lab ID: B23121283-001CMS</b>		Sample Matrix Spike									12/19/23 17:03
Nitrogen, Ammonia as N		16.9	mg/L	0.25	107	90	110				
<b>Lab ID: B23121283-001CMSD</b>		Sample Matrix Spike Duplicate									12/19/23 17:04
Nitrogen, Ammonia as N		16.6	mg/L	0.25	102	90	110	1.7	10		

**Qualifiers:**

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# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E351.2</b> Analytical Run: FIA204-B_231226A										
<b>Lab ID: ICV-185578</b> Initial Calibration Verification Standard 12/26/23 11:16										
Nitrogen, Kjeldahl, Total as N		10.1	mg/L	0.50	101	90	110			
<b>Method: E351.2</b> Batch: 185833										
<b>Lab ID: MB-185833</b> Method Blank Run: FIA204-B_231226A 12/26/23 11:19										
Nitrogen, Kjeldahl, Total as N		ND	mg/L	0.4						
<b>Lab ID: LCS-185833</b> Laboratory Control Sample Run: FIA204-B_231226A 12/26/23 11:20										
Nitrogen, Kjeldahl, Total as N		10.1	mg/L	0.50	101	90	110			
<b>Lab ID: B23121272-001EMS</b> Sample Matrix Spike Run: FIA204-B_231226A 12/26/23 11:24										
Nitrogen, Kjeldahl, Total as N		24.2	mg/L	0.50	99	90	110			
<b>Lab ID: B23121272-001EMSD</b> Sample Matrix Spike Duplicate Run: FIA204-B_231226A 12/26/23 11:25										
Nitrogen, Kjeldahl, Total as N		23.7	mg/L	0.50	94	90	110	2.1	10	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E353.2</b> Analytical Run: FIA203-B_231220B											
<b>Lab ID: ICV</b>		Initial Calibration Verification Standard									12/20/23 15:04
Nitrogen, Nitrate+Nitrite as N		0.581	mg/L	0.010	103	90	110				
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard									12/20/23 15:23
Nitrogen, Nitrate+Nitrite as N		1.05	mg/L	0.010	105	90	110				
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard									12/20/23 16:09
Nitrogen, Nitrate+Nitrite as N		1.04	mg/L	0.010	104	90	110				
<b>Method: E353.2</b> Batch: R414114											
<b>Lab ID: MBLK</b>		Method Blank									Run: FIA203-B_231220B 12/20/23 15:05
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.008							
<b>Lab ID: LFB</b>		Laboratory Fortified Blank									Run: FIA203-B_231220B 12/20/23 15:08
Nitrogen, Nitrate+Nitrite as N		1.08	mg/L	0.010	108	90	110				
<b>Lab ID: FILTERLFB</b>		Laboratory Fortified Blank									Run: FIA203-B_231220B 12/20/23 15:09
Nitrogen, Nitrate+Nitrite as N		1.07	mg/L	0.010	107	90	110				
<b>Lab ID: B23121276-003EMS</b>		Sample Matrix Spike									Run: FIA203-B_231220B 12/20/23 15:26
Nitrogen, Nitrate+Nitrite as N		2.68	mg/L	0.010	120	90	110			S	
<b>Lab ID: B23121276-003EMSD</b>		Sample Matrix Spike Duplicate									Run: FIA203-B_231220B 12/20/23 15:28
Nitrogen, Nitrate+Nitrite as N		2.68	mg/L	0.010	120	90	110	0.2	10	S	
<b>Method: E353.2</b> Analytical Run: FIA203-B_231221A											
<b>Lab ID: ICV</b>		Initial Calibration Verification Standard									12/21/23 14:17
Nitrogen, Nitrate+Nitrite as N		0.579	mg/L	0.010	102	90	110				
<b>Method: E353.2</b> Batch: R414206											
<b>Lab ID: MBLK</b>		Method Blank									Run: FIA203-B_231221A 12/21/23 14:18
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.008							
<b>Lab ID: LFB</b>		Laboratory Fortified Blank									Run: FIA203-B_231221A 12/21/23 14:20
Nitrogen, Nitrate+Nitrite as N		1.07	mg/L	0.010	107	90	110				
<b>Lab ID: FILTERLFB</b>		Laboratory Fortified Blank									Run: FIA203-B_231221A 12/21/23 14:21
Nitrogen, Nitrate+Nitrite as N		1.08	mg/L	0.010	108	90	110				
<b>Lab ID: B23121395-001FMS</b>		Sample Matrix Spike									Run: FIA203-B_231221A 12/21/23 14:23
Nitrogen, Nitrate+Nitrite as N		1.26	mg/L	0.010	111	90	110			S	
<b>Lab ID: B23121395-001FMSD</b>		Sample Matrix Spike Duplicate									Run: FIA203-B_231221A 12/21/23 14:24
Nitrogen, Nitrate+Nitrite as N		1.27	mg/L	0.010	112	90	110	0.9	10	S	
<b>Lab ID: B23121391-008CMS</b>		Sample Matrix Spike									Run: FIA203-B_231221A 12/21/23 15:10
Nitrogen, Nitrate+Nitrite as N		4.71	mg/L	0.010	107	90	110				
<b>Lab ID: B23121391-008CMSD</b>		Sample Matrix Spike Duplicate									Run: FIA203-B_231221A 12/21/23 15:11
Nitrogen, Nitrate+Nitrite as N		4.73	mg/L	0.010	109	90	110	0.6	10		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> E365.1 <span style="float: right;">Analytical Run: FIA202-B_231220A</span>										
<b>Lab ID:</b> ICV-185083		Initial Calibration Verification Standard								12/20/23 14:50
Phosphorus, Total as P		0.507	mg/L	0.0050	101	90	110			
<b>Method:</b> E365.1 <span style="float: right;">Batch: 185834</span>										
<b>Lab ID:</b> MB-185834		Method Blank								12/20/23 14:54
Phosphorus, Total as P		ND	mg/L	0.004						
<b>Lab ID:</b> LCS-185834		Laboratory Control Sample								12/20/23 14:56
Phosphorus, Total as P		0.202	mg/L	0.0050	101	90	110			
<b>Lab ID:</b> B23121272-001EMS		Sample Matrix Spike								12/20/23 15:05
Phosphorus, Total as P		0.753	mg/L	0.0050	100	90	110			
<b>Lab ID:</b> B23121272-001EMSD		Sample Matrix Spike Duplicate								12/20/23 15:07
Phosphorus, Total as P		0.726	mg/L	0.0050	87	90	110	3.7	10	S

**Qualifiers:**

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S - Spike recovery outside of advisory limits



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E410.4</b> Analytical Run: SPEC3_231220C											
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard									12/20/23 14:27
Oxygen Demand, Chemical (COD)		51.8	mg/L	5.0	104	90	110				
<b>Method: E410.4</b> Batch: 185832											
<b>Lab ID: MB-185832</b>		Method Blank									12/20/23 14:28
Oxygen Demand, Chemical (COD)		ND	mg/L	3						Run: SPEC3_231220C	
<b>Lab ID: LCS-185832</b> Laboratory Control Sample Run: SPEC3_231220C 12/20/23 14:28											
Oxygen Demand, Chemical (COD)		25.1	mg/L	5.0	103	90	110				
<b>Lab ID: B23121276-003EMS</b> Sample Matrix Spike Run: SPEC3_231220C 12/20/23 14:28											
Oxygen Demand, Chemical (COD)		35.0	mg/L	5.0	98	90	110				
<b>Lab ID: B23121276-003EMSD</b> Sample Matrix Spike Duplicate Run: SPEC3_231220C 12/20/23 14:28											
Oxygen Demand, Chemical (COD)		35.0	mg/L	5.0	98	90	110	0.0	10		
<b>Method: E410.4</b> Analytical Run: SPEC3_231227A											
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard									12/27/23 14:32
Oxygen Demand, Chemical (COD)		48.9	mg/L	5.0	98	90	110				
<b>Method: E410.4</b> Batch: 185960											
<b>Lab ID: MB-185960</b>		Method Blank									12/27/23 14:32
Oxygen Demand, Chemical (COD)		ND	mg/L	3						Run: SPEC3_231227A	
<b>Lab ID: LCS-185960</b> Laboratory Control Sample Run: SPEC3_231227A 12/27/23 14:32											
Oxygen Demand, Chemical (COD)		25.8	mg/L	5.0	106	90	110				
<b>Lab ID: B23121276-001EMS</b> Sample Matrix Spike Run: SPEC3_231227A 12/27/23 14:32											
Oxygen Demand, Chemical (COD)		31.5	mg/L	5.0	95	90	110				
<b>Lab ID: B23121276-001EMSD</b> Sample Matrix Spike Duplicate Run: SPEC3_231227A 12/27/23 14:32											
Oxygen Demand, Chemical (COD)		30.4	mg/L	5.0	90	90	110	3.6	10		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E420.4</b>								Analytical Run: SFA-201-B_231220A			
<b>Lab ID: ICV</b>	Initial Calibration Verification Standard			12/20/23 09:47							
Phenolics, Total Recoverable (Distilled)		0.0947	mg/L	0.010	95	90	110				
<b>Method: E420.4</b>								Batch: 185840			
<b>Lab ID: MB-185840</b>	Method Blank			Run: SFA-201-B_231220A 12/20/23 14:29							
Phenolics, Total Recoverable (Distilled)		ND	mg/L	0.009							
<b>Lab ID: LCS-185840</b>	Laboratory Control Sample			Run: SFA-201-B_231220A 12/20/23 14:31							
Phenolics, Total Recoverable (Distilled)		0.507	mg/L	0.010	101	90	110				
<b>Lab ID: B23121272-001GMS</b>	Sample Matrix Spike			Run: SFA-201-B_231220A 12/20/23 14:43							
Phenolics, Total Recoverable (Distilled)		0.688	mg/L	0.010	96	90	110				
<b>Lab ID: B23121272-001GMSD</b>	Sample Matrix Spike Duplicate			Run: SFA-201-B_231220A 12/20/23 14:45							
Phenolics, Total Recoverable (Distilled)		0.752	mg/L	0.010	109	90	110	8.8	10		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B23121276

**Report Date:** 01/04/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: Kelada-01</b>								Analytical Run: SFA-201-B_231222A		
<b>Lab ID: ICV</b>		Initial Calibration Verification Standard								12/22/23 09:45
Cyanide, Total		0.102	mg/L	0.0050	102	90	110			
<b>Lab ID: CCV</b>								Continuing Calibration Verification Standard		
Cyanide, Total		0.106	mg/L	0.0050	106	90	110			12/22/23 11:01
<b>Method: Kelada-01</b>								Batch: R414246		
<b>Lab ID: ICB</b>		Method Blank					Run: SFA-201-B_231222A			12/22/23 09:47
Cyanide, Total		ND	mg/L	0.002						
<b>Lab ID: LFB</b>		Laboratory Fortified Blank					Run: SFA-201-B_231222A			12/22/23 09:49
Cyanide, Total		0.104	mg/L	0.0050	104	90	110			
<b>Lab ID: LCS1-K4Fe(CN)6</b>		Laboratory Control Sample					Run: SFA-201-B_231222A			12/22/23 10:57
Cyanide, Total		0.192	mg/L	0.0050	96	90	110			
<b>Lab ID: B23121216-001CMS</b>		Sample Matrix Spike					Run: SFA-201-B_231222A			12/22/23 11:11
Cyanide, Total		0.106	mg/L	0.0050	106	90	110			
<b>Lab ID: B23121216-001CMSD</b>		Sample Matrix Spike Duplicate					Run: SFA-201-B_231222A			12/22/23 11:13
Cyanide, Total		0.108	mg/L	0.0050	108	90	110	2.3	20	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



Work Order Receipt Checklist

Water and Environmental Technologies

B23121276

Login completed by: Addison A. Gilbert

Date Received: 12/19/2023

Reviewed by: gmccartney

Received by: CMJ

Reviewed Date: 12/21/2023

Carrier name: Return-FedEx Ground

Shipping container/cooler in good condition? Yes [checked] No [ ] Not Present [ ]
Custody seals intact on all shipping container(s)/cooler(s)? Yes [checked] No [ ] Not Present [ ]
Custody seals intact on all sample bottles? Yes [ ] No [ ] Not Present [checked]
Chain of custody present? Yes [checked] No [ ]
Chain of custody signed when relinquished and received? Yes [checked] No [ ]
Chain of custody agrees with sample labels? Yes [checked] No [ ]
Samples in proper container/bottle? Yes [checked] No [ ]
Sample containers intact? Yes [checked] No [ ]
Sufficient sample volume for indicated test? Yes [checked] No [ ]
All samples received within holding time? Yes [checked] No [ ]
Temp Blank received in all shipping container(s)/cooler(s)? Yes [checked] No [ ] Not Applicable [ ]
Container/Temp Blank temperature: 0.6°C On Ice
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). Yes [ ] No [ ] No VOA vials submitted [checked]
Water - pH acceptable upon receipt? Yes [checked] No [ ] Not Applicable [ ]

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

The Temperature Blank temperature for shipping container 1 was 0.4°C, shipping container 2 was 0.6°C, shipping container 3 was 0.5°C

The following issues were resolved per phone conversation with Jamie Graham on 12/19/23:



## Work Order Receipt Checklist - Continued

### Water and Environmental Technologies      B23121276

The analysis requested on the Chain of Custody does not match the attached document. Proceed with the analysis on the attached document.

Total Metals was requested on the attached document but only filtered nitric preserved containers were received. Proceed with Dissolved Metals analysis.

The 48 hour holding time for Biochemical Oxygen Demand for sample MW-6 was missed due to instrument issues. Proceed with analysis per email from Lisa Johnson on 12/20/23.



Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

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Page 1 of 1

## Account Information (Billing information)

Company/Name: **WET**  
 Contact: **Lisa Johnson**  
 Phone: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 City, State, Zip: **Kalispell MT 59901**  
 Email: **Ljohnson@waterentech.com**  
 Receive Invoice:  Hard Copy  Email  
 Purchase Order: \_\_\_\_\_  
 Quote: \_\_\_\_\_  
 Bottle Order: \_\_\_\_\_

## Report Information (if different than Account Information)

Company/Name: \_\_\_\_\_  
 Contact: **Jamie Graham**  
 Phone: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 City, State, Zip: \_\_\_\_\_  
 Email: **Jgraham@waterentech.com**  
 Receive Report:  Hard Copy  Email  
 Special Report/Formats: \_\_\_\_\_  
 LEVEL IV  NELAC  EDD/EDT (contact laboratory)  Other

## Comments

**3 cookers**

## Project Information

Project Name, PWSID, Permit, etc.: **Weyshaener (1598)**  
 Sampler Name: **J. Graham** Sampler Phone: **(406) 471-1205**  
 Sample Origin State: **MT** EPA/State Compliance:  Yes  No  
 Lab provided preservatives were used:  Yes  No  
 MINING CLIENTS, please indicate sample type.  
 Byproduct 11 (e)2 material  Unprocessed ore (NOT ground or refined)\*

## Matrix Codes

- A - Air
- W - Water
- S - Solids
- V - Vegetation
- B - Bioassay
- O - Other
- DW - Drinking Water

## Analysis Requested

Analysis Requested:  
 Alkalinity & pH  
 Chloride, Sulfate, BOD  
 Phenolics  
 Hardness, Calcium, Magnesium  
 Oil + grease  
 Total Nitrogen  
 Nitrogen (Ammonia)  
 COD  
 Cyanide

## Sample Identification

Number of Containers	Matrix (See Codes Above)	Collection	
		Date	Time
1	MW-2	12/18/23	9:50
2	MW-4	12/18/23	11:00
3	MW-6	12/18/23	8:40
4			
5			
6			
7			
8			
9			
10			

See Attached

RUSH TAT: **ELI LAB ID Laboratory Use Only**  
**823121276**

All turnaround times are standard unless marked as RUSH.  
 Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling - See Instructions Page

Custody Record MUST be signed  
 Relinquished by (print): **Jamie Graham**  
 Relinquished by (print): \_\_\_\_\_  
 Date/Time: **12/18/23 16:00**  
 Signature: \_\_\_\_\_

Received by (print): \_\_\_\_\_  
 Received by Laboratory (print): **Crystal Jones**  
 Date/Time: **12/19/23 0910**  
 Signature: \_\_\_\_\_

Shipped By: \_\_\_\_\_  
 Cooler ID(s): \_\_\_\_\_  
 Custody Seals: Y  N  C  B   
 Intact: Y  N   
 Receipt Temp: \_\_\_\_\_ °C  
 Temp Blank: Y  N   
 On Ice: Y  N   
 Payment Type: \_\_\_\_\_  
 CC: \_\_\_\_\_ Cash: \_\_\_\_\_ Check: \_\_\_\_\_  
 Amount: \$ \_\_\_\_\_  
 Receipt Number (cash/check only): \_\_\_\_\_

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.



Trust our People. Trust our Data.  
www.energylab.com

Billings, MT 406.252.6325 • Casper, WY 307.235.0515 • Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

## BOTTLE ORDER 177669



**SHIPPED TO:** Water and Environmental Technologies

To report an issue with this order, view Safety Data Sheets, or let us know how we are doing, scan here or go to [energylab.com/contact-us](http://energylab.com/contact-us)



**Contact:** Jamie Graham  
102 Cooperative Way Unit 100  
Kalispell MT 59901-  
**Phone:** (406) 309-6084  
**Project:** Weyerhaeuser Plywood Plant (1598-23)

Order Created by: Leslie S. Cadreau  
Shipped From: Billings, MT  
Ship Date: 9/18/2023  
VIA: FedEx Ground Service

Bottle Size/Type	Bottles Per Samp	Method	Tests	Critical Hold Time	Preservative	Notes	Num of Samp
<b>( 8 Sets )</b>							
1 Liter Plastic	2	A2320 B E300.0 A2540 C A5210 B A4500-H B A2510 B	Alkalinity to pH 4.5 Anions by Ion Chromatography Solids, Total Dissolved Biochemical Oxygen Demand, 5 Day pH Conductivity	48.00 hrs 0.25 hrs		Cl, SO4	1
1 Liter Plastic Wide Mouth	1	A2540 D	Solids, Total Suspended			Fill to the neck of the container.	1
250 mL Amber Glass	1	A5310 C	Carbon, Total Organic		<input type="checkbox"/> H3PO4		1
250 mL Clear Glass Narrow Mouth	1	E420.4	Phenolics, Total Recoverable (Distilled)		<input checked="" type="checkbox"/> H2SO4		1
250 mL Plastic	1	A2340 B E200.7_8 E245.1	Hardness Metals by ICP/ICPMS, Total Mercury, Total		<input checked="" type="checkbox"/> HNO3	Al, As, Ba, Ca, Cd, Cr, Cu, Fe, Mg, Mn, Ni, K, Se, Ag, Zn	1
1 Liter Clear Glass Narrow Mouth	2	E1664A	Oil & Grease, Gravimetric		<input checked="" type="checkbox"/> H2SO4		1

BO#: 177669

500 mL Plastic	1	E351.2	Nitrogen, Total Kjeldahl				1
		Calculation	Nitrogen, Total (TKN+NO3+NO2)			H2SO4	
		E353.2	Nitrogen, Nitrate + Nitrite				
		E365.1	Phosphorus, Total				
		E350.1	Nitrogen, Ammonia				
		E410.4	Chemical Oxygen Demand				
500 mL Amber Plastic	1	Kelada-01	Cyanide, Total			NaOH	1

Comments

■ HNO3 - Nitric Acid   
 ■ H2SO4 - Sulfuric Acid   
 ■ NaOH - Sodium Hydroxide   
 **We strongly suggest that the samples are shipped the same day as they are collected.**

■ ZnAc - Zinc Acetate   
 ■ HCl - Hydrochloric Acid   
  H3PO4 - Phosphoric Acid

**Material Safety Data Sheets(MSDS) Available @ EnergyLab.com ->Services -> MSDS Sheets**

**Corrosive Chemicals:** Nitric, Sulfuric, Phosphoric, Hydrochloric Acids and Sodium Hydroxide. Zinc Acetate is a skin irritant.

Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.



# ANALYTICAL REPORT

## Montana Environmental Laboratory LLC

1170 N. Meridian Rd., P.O. Box 8900, Kalispell, MT 59904-1900

Phone: 406-755-2131 Fax: 406-257-5359 www.melab.us

Water & Environmental Tech  
Water & Environmental Technologies  
102 Cooperative Way, Ste 100  
Kalispell, MT 59901

PWS ID:  
Project: Weyerhaeuser (1598)

**Client Sample ID:** MW-2 **Lab ID:** 2312954-01  
**Matrix:** ENVIRO WATER **Collected:** 12/18/2023 9:50 **Received:** 12/18/2023 13:00

<u>Coliform</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Coliform Bacteria	<b>Present</b>	P/A	1	1	SM9223B	12/18/2023 14:30	12/19/2023 11:00	BSB
Coliform, Escherichia - P/A	<b>Absent</b>	P/A	1	1	SM9223B	12/18/2023 14:30	12/19/2023 11:00	BSB

**Client Sample ID:** MW-4 **Lab ID:** 2312954-02  
**Matrix:** ENVIRO WATER **Collected:** 12/18/2023 11:00 **Received:** 12/18/2023 13:00

<u>Coliform</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Coliform Bacteria	<b>Present</b>	P/A	1	1	SM9223B	12/18/2023 14:30	12/19/2023 11:00	BSB
Coliform, Escherichia - P/A	<b>Absent</b>	P/A	1	1	SM9223B	12/18/2023 14:30	12/19/2023 11:00	BSB

**Client Sample ID:** MW-6 **Lab ID:** 2312954-03  
**Matrix:** ENVIRO WATER **Collected:** 12/18/2023 8:40 **Received:** 12/18/2023 13:00

<u>Coliform</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Coliform Bacteria	<b>Present</b>	P/A	1	1	SM9223B	12/18/2023 14:30	12/19/2023 11:00	BSB
Coliform, Escherichia - P/A	<b>Absent</b>	P/A	1	1	SM9223B	12/18/2023 14:30	12/19/2023 11:00	BSB



# ANALYTICAL REPORT

## Montana Environmental Laboratory LLC

1170 N. Meridian Rd., P.O. Box 8900, Kalispell, MT 59904-1900  
 Phone: 406-755-2131 Fax: 406-257-5359 www.melab.us

Water & Environmental Tech  
 Water & Environmental Technologies  
 102 Cooperative Way, Ste 100  
 Kalispell, MT 59901

PWS ID:  
 Project: Weyerhaeuser (1598)



MONTANA ENVIRONMENTAL LAB, LLC  
 P.O. BOX 8900, KALISPELL, MT 59904  
 VOICE: (406) 755-2131 • FAX: (406) 257-5359  
 www.melab.us • info@melab.us

### Chain Of Custody and Analytical Request

Please Print. Provide as much information as possible

12954

Page 1 of 1

Company Name: <b>WET</b> Report Address: <b>jgraham@waterenvtech.com</b> Invoice Address: <b>Ljohnson@waterenvtech.com</b> Purchase Order #: SAMPLER PRINTED NAME AND SIGNATURE: <b>Jamie Graham</b> <i>[Signature]</i>	Project Name, PWSID #, Permit #, Etc.: <b>Weyerhaeuser (1598)</b> Contact Name, Phone, Fax: <b>Jamie Graham (406) 471-1205</b> Invoice Contact & Phone #: <b>Liz Johnson (406) 309-6085</b> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <b>TURN AROUND TIME REQUIRED</b>  <input checked="" type="checkbox"/> STANDARD 10 WORKING DAYS  <input type="checkbox"/> 5 WORKING DAYS (50% SURCHARGE)  <input type="checkbox"/> 1-2 WORKING DAYS (100% SURCHARGE)  <input type="checkbox"/> OTHER         </div>
--	---

SITE NAME or LOCATION	SAMPLE DATE	SAMPLE TIME	MATRIX*	# Bottles	Totals (Confirm)	Analysis Requested	COMMENTS
MW-2	12/19/23	9:50	W	1	X	X	<b>EMAIL ALL</b>
MW-4	12/19/23	11:00	W	1	X	X	
MW-6	12/19/23	8:40	W	1	X	X	

<b>Custody Record MUST be Signed</b>	Relinquished by:	Date/Time:	Shipped by:	Received by: <b>JG</b>	Date/Time: <b>12-19-23 13:00</b>
	Relinquished by:	Date/Time:	Shipped by:	Received by:	Date/Time:
	Relinquished by:	Date/Time:	Shipped by:	Received by:	Date/Time:

NET 30 DAYS: 1.5% PER MONTH INTEREST CHARGE (18% A.P.R.) CUSTOMER AGREES TO PAY COLLECTION COSTS AND ATTORNEY'S FEES.

- INSTRUCTIONS**
- USE ONE LINE PER SAMPLE.
  - BE SPECIFIC IN TEST REQUESTS
  - CHECK OFF TESTS TO BE PERFORMED FOR EACH SAMPLE

**LAB USE ONLY:**

LOGIN COMMENTS: _____ _____ _____	SAMPLES CHECKED/LOGGED IN BY: _____ SAMPLE TEMP, RECEIPT AT LAB: _____ (Compliance: 4 +/- 2°C) SAMPLES RECEIVED DAY OF COLLECTION? <input type="checkbox"/> (check for yes) BLUE ICE: FROZEN PARTIALLY FROZEN THAWED
---	---



# ANALYTICAL SUMMARY REPORT

June 05, 2024

Water and Environmental Technologies

480 E Park St Ste 200  
Butte, MT 59701-1923

Work Order: B24051572                      Quote ID: B16755

Project Name: Weyerhaeuser Kalispell (1598)

Energy Laboratories Inc Billings MT received the following 3 samples for Water and Environmental Technologies on 5/16/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B24051572-001	MW-1	05/15/24 08:30	05/16/24	Aqueous	Metals by ICP/ICPMS, Dissolved Alkalinity to pH 4.5 Biochemical Oxygen Demand, 5 Day Cyanide, Total Chemical Oxygen Demand Conductivity Carbon, Total Organic Mercury, Dissolved E1664A Oil & Grease Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Kjeldahl Nitrogen, Total (TKN+NO3+NO2) Phenolics, Total Recoverable (Distilled) pH Preparation for COD testing HACH 8000 Mercury Digestion by E245.1 E365.1 Digestion, Total P TKN preparation E351.2 Phosphorus, Total Solids, Total Dissolved Solids, Total Suspended
B24051572-002	MW-5	05/15/24 10:10	05/16/24	Aqueous	Same As Above
B24051572-003	MW-6	05/15/24 09:25	05/16/24	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

Energy Laboratories, Inc. verifies the reported results for the analysis has been technically reviewed and approved for release.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

**CLIENT:** Water and Environmental Technologies  
**Project:** Weyerhaeuser Kalispell (1598)  
**Work Order:** B24051572

**Report Date:** 06/05/24

## CASE NARRATIVE

Tests associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, PO Box 247, Casper, WY, EPA Number WY00002.

We want to alert you on a change which will affect the reporting limit for Oil and Grease and Total Petroleum Hydrocarbon analysis by EPA method 1664A. This method was recently implemented in our Billings laboratory and during implementation, it was recognized the method has very specific language regarding minimum detection limits allowable for the method.

EPA Method 1664A, section 9.2.1 states: "An MDL less than or equal to the MDL in section 1.6 or less than 1/3 the regulatory compliance limit must be achieved prior to the practice of this method." The laboratory initially interpreted this section of the method to allow reporting to a limit of 1 mg/L because the calculated MDL was less than the MDL in section 1.6 (1.4 mg/L) and lower than 1.0 mg/L. The MDL has historically been 0.7 mg/L  $\pm$  0.2 mg/L. After further evaluation of the method and consultation with several auditors we have concluded the method does not allow a laboratory to report to 1.0 mg/L. Section 1.6 states: "For HEM and SGT-HEM in this method, the method detection limit (MDL) is 1.4 mg/L, and the minimum level of quantitation (ML) is 5.0 mg/L."

The Billings laboratory MDL is 1.2 mg/L, which meets the method requirement in section 9.2.1 (1.4 mg/L). The MDL in the Gillette laboratory is 0.7 mg/L. To meet the second requirement of 1/3 the regulatory limit the required MDL would need to be 0.33 mg/L. After consulting with several TNI auditors, it was determined this is chemically unachievable, and they have not audited a laboratory which can meet that limit.

Recognizing the current regulatory requirement for Oil and Grease is 1 mg/L, we are implementing a reporting limit of 5 mg/L, as defined in the method, and J flagging any result between this limit and the MDL (1.2 mg/L). This approach is utilized in other methods where the regulatory limit is lower than the quantitative limit of the method.

We have initiated communication with the DEQ about this issue and will continue to work with them to minimize any impact this change may have.

Please don't hesitate to contact your project manager with any questions you may have.



## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser Kalispell (1598)  
**Lab ID:** B24051572-001  
**Client Sample ID:** MW-1

**Report Date:** 06/05/24  
**Collection Date:** 05/15/24 08:30  
**Date Received:** 05/16/24  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.6	s.u.	H	0.1		A4500-H B	05/16/24 19:16 / njp
pH Measurement Temp	19.7	°C		1.0		A4500-H B	05/16/24 19:16 / njp
Conductivity @ 25 C	559	umhos/cm		5		A2510 B	05/16/24 19:16 / njp
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/20/24 13:10 / jpv
Solids, Total Dissolved TDS @ 180 C	320	mg/L		20		A2540 C	05/21/24 10:57 / bmm
<b>INORGANICS</b>							
Alkalinity, Total as CaCO3	259	mg/L		4		A2320 B	05/17/24 17:38 / spb
Bicarbonate as HCO3	315	mg/L		4		A2320 B	05/17/24 17:38 / spb
Carbonate as CO3	ND	mg/L		4		A2320 B	05/17/24 17:38 / spb
Chloride	27	mg/L		1		E300.0	05/20/24 12:28 / spb
Sulfate	ND	mg/L		1		E300.0	05/20/24 12:28 / spb
Cyanide, Total	ND	mg/L		0.005		Kelada-01	05/17/24 12:53 / fap
Hardness as CaCO3	296	mg/L		1		A2340 B	05/28/24 22:04 / bap
<b>AGGREGATE ORGANICS</b>							
Oxygen Demand, Chemical (COD)	ND	mg/L		5		E410.4	06/04/24 16:04 / fap
Oxygen Demand, Biochemical (BOD)	<2	mg/L		2.4		A5210 B	05/17/24 08:16 / mbs
Organic Carbon, Total (TOC)	6	mg/L		4		A5310 C	05/24/24 16:10 / eli-ca
Phenolics, Total Recoverable (Distilled)	ND	mg/L		0.01		E420.4	05/23/24 11:54 / fap
No BOD dilution depleted greater than 2.0 mg/L DO.							
<b>NUTRIENTS</b>							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/17/24 15:37 / krt
Nitrogen, Nitrate+Nitrite as N	2.18	mg/L		0.01		E353.2	05/17/24 15:45 / krt
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	05/21/24 10:47 / jaw
Nitrogen, Total	2.2	mg/L		0.5		Calculation	05/21/24 15:06 / bap
Phosphorus, Total as P	0.006	mg/L		0.005		E365.1	05/17/24 15:34 / jaw
<b>METALS, DISSOLVED</b>							
Aluminum	ND	mg/L		0.03		E200.8	05/18/24 08:08 / aem
Arsenic	ND	mg/L		0.001		E200.8	05/18/24 08:08 / aem
Barium	0.41	mg/L		0.05		E200.8	05/18/24 08:08 / aem
Cadmium	ND	mg/L		0.001		E200.8	05/18/24 08:08 / aem
Calcium	79	mg/L		1		E200.7	05/28/24 22:04 / enb
Chromium	ND	mg/L		0.005		E200.8	05/18/24 08:08 / aem
Copper	ND	mg/L		0.005		E200.8	05/18/24 08:08 / aem
Iron	ND	mg/L		0.02		E200.8	05/18/24 08:08 / aem
Magnesium	24	mg/L		1		E200.7	05/28/24 22:04 / enb
Manganese	ND	mg/L		0.001		E200.8	05/18/24 08:08 / aem
Mercury	ND	mg/L		0.0001		E245.1	05/21/24 14:28 / nrb
Nickel	ND	mg/L		0.005		E200.8	05/18/24 08:08 / aem
Potassium	2	mg/L		1		E200.8	05/18/24 08:08 / aem
Selenium	ND	mg/L		0.001		E200.8	05/18/24 08:08 / aem

**Report Definitions:**  
 RL - Analyte Reporting Limit  
 QCL - Quality Control Limit  
 H - Analysis performed past the method holding time

MCL - Maximum Contaminant Level  
 ND - Not detected at the Reporting Limit (RL)



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser Kalispell (1598)  
**Lab ID:** B24051572-001  
**Client Sample ID:** MW-1

**Report Date:** 06/05/24  
**Collection Date:** 05/15/24 08:30  
**Date Received:** 05/16/24  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS, DISSOLVED</b>							
Silver	ND	mg/L		0.001		E200.8	05/18/24 08:08 / aem
Zinc	ND	mg/L		0.01		E200.8	05/18/24 08:08 / aem
<b>ORGANIC CHARACTERISTICS</b>							
Oil & Grease (HEM)	ND	mg/L	L	5		E1664A	05/21/24 10:51 / ikc
- The reporting limit for Oil and Grease by E1664 was increased due to EPA method requirements.							

**Report  
Definitions:**

RL - Analyte Reporting Limit  
QCL - Quality Control Limit  
L -Lowest available reporting limit for the analytical method used and/or volume submitted

MCL - Maximum Contaminant Level  
ND - Not detected at the Reporting Limit (RL)



## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser Kalispell (1598)  
**Lab ID:** B24051572-002  
**Client Sample ID:** MW-5

**Report Date:** 06/05/24  
**Collection Date:** 05/15/24 10:10  
**Date Received:** 05/16/24  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.5	s.u.	H	0.1		A4500-H B	05/16/24 19:21 / njp
pH Measurement Temp	19.7	°C		1.0		A4500-H B	05/16/24 19:21 / njp
Conductivity @ 25 C	602	umhos/cm		5		A2510 B	05/16/24 19:21 / njp
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/20/24 13:12 / jpv
Solids, Total Dissolved TDS @ 180 C	394	mg/L		20		A2540 C	05/21/24 10:57 / bmm
<b>INORGANICS</b>							
Alkalinity, Total as CaCO3	300	mg/L		4		A2320 B	05/17/24 17:50 / spb
Bicarbonate as HCO3	366	mg/L		4		A2320 B	05/17/24 17:50 / spb
Carbonate as CO3	ND	mg/L		4		A2320 B	05/17/24 17:50 / spb
Chloride	42	mg/L		1		E300.0	05/20/24 13:19 / spb
Sulfate	ND	mg/L		1		E300.0	05/20/24 13:19 / spb
Cyanide, Total	ND	mg/L		0.005		Kelada-01	05/17/24 12:56 / fap
Hardness as CaCO3	331	mg/L		1		A2340 B	05/28/24 22:24 / bap
<b>AGGREGATE ORGANICS</b>							
Oxygen Demand, Chemical (COD)	7	mg/L		5		E410.4	05/28/24 17:50 / jaw
Oxygen Demand, Biochemical (BOD)	<2	mg/L		2.4		A5210 B	05/17/24 08:35 / mbs
Organic Carbon, Total (TOC)	12	mg/L		4		A5310 C	05/24/24 16:50 / eli-ca
Phenolics, Total Recoverable (Distilled)	ND	mg/L		0.01		E420.4	05/23/24 12:04 / fap
No BOD dilution depleted greater than 2.0 mg/L DO.							
<b>NUTRIENTS</b>							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/17/24 15:38 / krt
Nitrogen, Nitrate+Nitrite as N	1.55	mg/L		0.02		E353.2	05/17/24 15:46 / krt
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	05/21/24 10:52 / jaw
Nitrogen, Total	1.6	mg/L		0.5		Calculation	05/21/24 15:06 / bap
Phosphorus, Total as P	0.008	mg/L		0.005		E365.1	05/17/24 15:37 / jaw
<b>METALS, DISSOLVED</b>							
Aluminum	ND	mg/L		0.03		E200.8	05/18/24 08:43 / aem
Arsenic	ND	mg/L		0.001		E200.8	05/18/24 08:43 / aem
Barium	0.53	mg/L		0.05		E200.8	05/18/24 08:43 / aem
Cadmium	ND	mg/L		0.001		E200.8	05/18/24 08:43 / aem
Calcium	88	mg/L		1		E200.7	05/28/24 22:24 / enb
Chromium	ND	mg/L		0.005		E200.8	05/18/24 08:43 / aem
Copper	ND	mg/L		0.005		E200.8	05/18/24 08:43 / aem
Iron	ND	mg/L		0.02		E200.8	05/18/24 08:43 / aem
Magnesium	27	mg/L		1		E200.7	05/28/24 22:24 / enb
Manganese	0.006	mg/L		0.001		E200.8	05/18/24 08:43 / aem
Mercury	ND	mg/L		0.0001		E245.1	05/21/24 14:29 / nrb
Nickel	ND	mg/L		0.005		E200.8	05/18/24 08:43 / aem
Potassium	4	mg/L		1		E200.8	05/18/24 08:43 / aem
Selenium	ND	mg/L		0.001		E200.8	05/18/24 08:43 / aem

**Report Definitions:**  
 RL - Analyte Reporting Limit  
 QCL - Quality Control Limit  
 H - Analysis performed past the method holding time

MCL - Maximum Contaminant Level  
 ND - Not detected at the Reporting Limit (RL)



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser Kalispell (1598)  
**Lab ID:** B24051572-002  
**Client Sample ID:** MW-5

**Report Date:** 06/05/24  
**Collection Date:** 05/15/24 10:10  
**Date Received:** 05/16/24  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS, DISSOLVED</b>							
Silver	ND	mg/L		0.001		E200.8	05/18/24 08:43 / aem
Zinc	ND	mg/L		0.01		E200.8	05/18/24 08:43 / aem
<b>ORGANIC CHARACTERISTICS</b>							
Oil & Grease (HEM)	ND	mg/L	L	5		E1664A	05/21/24 10:53 / ikc
- The reporting limit for Oil and Grease by E1664 was increased due to EPA method requirements.							

**Report  
Definitions:**

RL - Analyte Reporting Limit  
QCL - Quality Control Limit  
L -Lowest available reporting limit for the analytical method used and/or volume submitted

MCL - Maximum Contaminant Level  
ND - Not detected at the Reporting Limit (RL)



## LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser Kalispell (1598)  
**Lab ID:** B24051572-003  
**Client Sample ID:** MW-6

**Report Date:** 06/05/24  
**Collection Date:** 05/15/24 09:25  
**Date Received:** 05/16/24  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.4	s.u.	H	0.1		A4500-H B	05/16/24 19:24 / njp
pH Measurement Temp	19.8	°C		1.0		A4500-H B	05/16/24 19:24 / njp
Conductivity @ 25 C	777	umhos/cm		5		A2510 B	05/16/24 19:24 / njp
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	05/20/24 13:12 / jpv
Solids, Total Dissolved TDS @ 180 C	458	mg/L		20		A2540 C	05/21/24 10:58 / bmm
<b>INORGANICS</b>							
Alkalinity, Total as CaCO3	321	mg/L		4		A2320 B	05/17/24 17:57 / spb
Bicarbonate as HCO3	392	mg/L		4		A2320 B	05/17/24 17:57 / spb
Carbonate as CO3	ND	mg/L		4		A2320 B	05/17/24 17:57 / spb
Chloride	63	mg/L		1		E300.0	05/20/24 13:36 / spb
Sulfate	ND	mg/L		1		E300.0	05/20/24 13:36 / spb
Cyanide, Total	ND	mg/L		0.005		Kelada-01	05/17/24 13:10 / fap
Hardness as CaCO3	336	mg/L		1		A2340 B	05/28/24 22:28 / bap
<b>AGGREGATE ORGANICS</b>							
Oxygen Demand, Chemical (COD)	17	mg/L		5		E410.4	05/28/24 17:50 / jaw
Oxygen Demand, Biochemical (BOD)	<2	mg/L		2.4		A5210 B	05/17/24 08:33 / mbs
Organic Carbon, Total (TOC)	27	mg/L		4		A5310 C	05/24/24 17:17 / eli-ca
Phenolics, Total Recoverable (Distilled)	ND	mg/L		0.01		E420.4	05/23/24 12:07 / fap
No BOD dilution depleted greater than 2.0 mg/L DO.							
<b>NUTRIENTS</b>							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/17/24 15:43 / krt
Nitrogen, Nitrate+Nitrite as N	1.74	mg/L		0.02		E353.2	05/17/24 15:48 / krt
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	05/21/24 10:54 / jaw
Nitrogen, Total	1.7	mg/L		0.5		Calculation	05/21/24 15:06 / bap
Phosphorus, Total as P	0.007	mg/L		0.005		E365.1	05/17/24 15:39 / jaw
<b>METALS, DISSOLVED</b>							
Aluminum	ND	mg/L		0.03		E200.8	05/18/24 08:49 / aem
Arsenic	ND	mg/L		0.001		E200.8	05/18/24 08:49 / aem
Barium	0.56	mg/L		0.05		E200.8	05/18/24 08:49 / aem
Cadmium	ND	mg/L		0.001		E200.8	05/18/24 08:49 / aem
Calcium	89	mg/L		1		E200.7	05/28/24 22:28 / enb
Chromium	ND	mg/L		0.005		E200.8	05/18/24 08:49 / aem
Copper	ND	mg/L		0.005		E200.8	05/18/24 08:49 / aem
Iron	ND	mg/L		0.02		E200.8	05/18/24 08:49 / aem
Magnesium	28	mg/L		1		E200.7	05/28/24 22:28 / enb
Manganese	0.027	mg/L		0.001		E200.8	05/18/24 08:49 / aem
Mercury	ND	mg/L		0.0001		E245.1	05/21/24 14:30 / nrb
Nickel	ND	mg/L		0.005		E200.8	05/18/24 08:49 / aem
Potassium	7	mg/L		1		E200.8	05/18/24 08:49 / aem
Selenium	ND	mg/L		0.001		E200.8	05/18/24 08:49 / aem

**Report** RL - Analyte Reporting Limit

MCL - Maximum Contaminant Level

**Definitions:** QCL - Quality Control Limit

ND - Not detected at the Reporting Limit (RL)

H - Analysis performed past the method holding time



### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies  
**Project:** Weyerhaeuser Kalispell (1598)  
**Lab ID:** B24051572-003  
**Client Sample ID:** MW-6

**Report Date:** 06/05/24  
**Collection Date:** 05/15/24 09:25  
**Date Received:** 05/16/24  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>METALS, DISSOLVED</b>							
Silver	ND	mg/L		0.001		E200.8	05/18/24 08:49 / aem
Zinc	ND	mg/L		0.01		E200.8	05/18/24 08:49 / aem
<b>ORGANIC CHARACTERISTICS</b>							
Oil & Grease (HEM)	ND	mg/L	L	5		E1664A	05/21/24 10:55 / ikc
- The reporting limit for Oil and Grease by E1664 was increased due to EPA method requirements.							

**Report  
Definitions:**

RL - Analyte Reporting Limit  
QCL - Quality Control Limit  
L -Lowest available reporting limit for the analytical method used and/or volume submitted

MCL - Maximum Contaminant Level  
ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 05/28/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A5310 C</b>								Analytical Run: TOC3-C_240524A		
<b>Lab ID: CCV</b>	Continuing Calibration Verification Standard									
Organic Carbon, Total (TOC)		4.97	mg/L	0.50	99	90	110			05/24/24 11:42
<b>Method: A5310 C</b>								Batch: R306703		
<b>Lab ID: MBLK</b>	Method Blank									
Organic Carbon, Total (TOC)		ND	mg/L	0.1						Run: TOC3-C_240524A 05/24/24 10:58
<b>Lab ID: LCS</b>	Laboratory Control Sample									
Organic Carbon, Total (TOC)		4.86	mg/L	0.50	97	90	111			Run: TOC3-C_240524A 05/24/24 11:22
<b>Lab ID: C24050698-011FMS</b>	Sample Matrix Spike									
Organic Carbon, Total (TOC)		22.9	mg/L	0.50	111	90	111			Run: TOC3-C_240524A 05/24/24 12:33 E
<b>Lab ID: C24050698-011FMSD</b>	Sample Matrix Spike Duplicate									
Organic Carbon, Total (TOC)		22.9	mg/L	0.50	112	90	111	0.2	20	Run: TOC3-C_240524A 05/24/24 13:02 SE

### Qualifiers:

RL - Analyte Reporting Limit

E - Estimated value - result exceeds the instrument upper quantitation limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: A2320 B</b>										Batch: R421431	
<b>Lab ID: MBLK</b>											
		Method Blank							Run: METROHM 2_240517A		05/17/24 17:24
Alkalinity, Total as CaCO3		ND	mg/L	4							
<b>Lab ID: LCS</b>											
		Laboratory Control Sample							Run: METROHM 2_240517A		05/17/24 17:28
Alkalinity, Total as CaCO3		102	mg/L	4.0	102	90	110				
<b>Lab ID: B24051572-001BDUP</b>											
		3 Sample Duplicate							Run: METROHM 2_240517A		05/17/24 17:44
Alkalinity, Total as CaCO3		259	mg/L	4.0				0.1	10		
Bicarbonate as HCO3		316	mg/L	4.0				0.1	10		
Carbonate as CO3		ND	mg/L	4.0					10		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method:</b> A2510 B							Analytical Run: PHSC_101-B_240516A				
<b>Lab ID:</b> CCV - SC 1413	Continuing Calibration Verification Standard										
Conductivity @ 25 C		1420	umhos/cm	5.0	100	90	110			05/16/24 19:00	
<b>Method:</b> A2510 B							Batch: R421364				
<b>Lab ID:</b> SC 2nd 1413	Laboratory Control Sample										
Conductivity @ 25 C		1440	umhos/cm	5.0	102	90	110			05/16/24 09:27	
<b>Lab ID:</b> MBLK	Method Blank										
Conductivity @ 25 C		ND	umhos/cm	5						05/16/24 19:03	
<b>Lab ID:</b> B24051572-001BDUP	Sample Duplicate										
Conductivity @ 25 C		557	umhos/cm	5.0				0.4	10	05/16/24 19:18	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A2540 C</b>								Batch: TDS20240521B		
<b>Lab ID: MBLK_20240521-3</b>		Method Blank								
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	20						
										Run: Bal #30_240521C 05/21/24 10:56
<b>Lab ID: LCS_20240521-3</b>		Laboratory Control Sample								
Solids, Total Dissolved TDS @ 180 C		976	mg/L	25	98	90	110			05/21/24 10:56
<b>Lab ID: B24051572-001BDUP</b>		Sample Duplicate								
Solids, Total Dissolved TDS @ 180 C		321	mg/L	25				0.2	10	Run: Bal #30_240521C 05/21/24 10:57

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A2540 D</b>								Batch: TSS20240520A		
<b>Lab ID: MBLK_20240520-1</b>	Method Blank					Run: BAL #30_240520A		05/20/24 13:09		
Solids, Total Suspended TSS @ 105 C		ND	mg/L	0.6						
<b>Lab ID: LCS_20240520-1</b>	Laboratory Control Sample					Run: BAL #30_240520A		05/20/24 13:09		
Solids, Total Suspended TSS @ 105 C		105	mg/L	25	105	80	120			
<b>Lab ID: B24051619-001CDUP</b>	Sample Duplicate					Run: BAL #30_240520A		05/20/24 13:12		
Solids, Total Suspended TSS @ 105 C		40.0	mg/L	25				29	10	R

Since the difference between the analytical result for the sample and its duplicate is less than the reporting limit, the RPD variance is not considered significant.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> A4500-H B		Analytical Run: PHSC_101-B_240516A								
<b>Lab ID:</b> pH 8	2	Initial Calibration Verification Standard								
pH		8.0	s.u.	0.1	100	98	102			05/16/24 09:13
pH Measurement Temp		20.6	°C	1.0						
<b>Lab ID:</b> CCV - pH 7		2 Continuing Calibration Verification Standard								
pH		7.1	s.u.	0.1	101	98	102			05/16/24 18:57
pH Measurement Temp		20.5	°C	1.0		0	0			
<b>Method:</b> A4500-H B		Batch: R421364								
<b>Lab ID:</b> B24051572-001BDUP	2	Sample Duplicate								
		Run: PHSC_101-B_240516A								
pH		7.6	s.u.	0.1				0.3	3	H
pH Measurement Temp		19.6	°C	1.0						

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

H - Analysis performed past the method holding time



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A5210 B</b>										
<b>Lab ID: MB</b>		Method Blank								Batch: R421705
Oxygen Demand, Biochemical (BOD)		ND	mg/L							Run: BOD-SP2000_240517A 05/17/24 08:18
<b>Lab ID: G-GA</b>		Laboratory Control Sample								Run: BOD-SP2000_240517A 05/17/24 08:29
Oxygen Demand, Biochemical (BOD)	210	mg/L		79	106	85	115			
<b>Lab ID: B24051556-001CDUP</b>		Sample Duplicate								Run: BOD-SP2000_240517A 05/17/24 08:50
Oxygen Demand, Biochemical (BOD)	10000	mg/L		4700				3.1	15	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E200.7</b> Analytical Run: ICP204-B_240528A											
<b>Lab ID: CCV</b>	2	Continuing Calibration Verification Standard									05/28/24 20:31
Calcium		25.2	mg/L	1.0	101	90	110				
Magnesium		25.1	mg/L	1.0	100	90	110				
<b>Lab ID: ICV</b>	2	Continuing Calibration Verification Standard									05/28/24 21:04
Calcium		25.0	mg/L	1.0	100	95	105				
Magnesium		25.0	mg/L	1.0	100	95	105				
<b>Lab ID: CCV</b>	2	Continuing Calibration Verification Standard									05/28/24 22:08
Calcium		26.3	mg/L	1.0	105	90	110				
Magnesium		26.3	mg/L	1.0	105	90	110				
<b>Method: E200.7</b> Batch: R421997											
<b>Lab ID: MB-7400DIS240528A</b>	2	Method Blank									Run: ICP204-B_240528A 05/28/24 16:58
Calcium		ND	mg/L	0.1							
Magnesium		ND	mg/L	0.03							
<b>Lab ID: LFB-7400DIS240528A</b>	2	Laboratory Fortified Blank									Run: ICP204-B_240528A 05/28/24 17:02
Calcium		53.9	mg/L	1.0	108	85	115				
Magnesium		54.0	mg/L	1.0	108	85	115				
<b>Lab ID: B24051572-001CMS2</b>	2	Sample Matrix Spike									Run: ICP204-B_240528A 05/28/24 22:16
Calcium		128	mg/L	1.0	99	70	130				
Magnesium		78.2	mg/L	1.0	108	70	130				
<b>Lab ID: B24051572-001CMSD2</b>	2	Sample Matrix Spike Duplicate									Run: ICP204-B_240528A 05/28/24 22:20
Calcium		134	mg/L	1.0	110	70	130	4.2	20		
Magnesium		82.1	mg/L	1.0	116	70	130	4.9	20		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Water and Environmental Technologies

Work Order: B24051572

Report Date: 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E200.8</b>		Analytical Run: ICPMS207-B_240517A								
<b>Lab ID: QCS</b>	13 Initial Calibration Verification Standard									05/18/24 04:02
Aluminum		0.254	mg/L	0.020	102	90	110			
Arsenic		0.0496	mg/L	0.0050	99	90	110			
Barium		0.0490	mg/L	0.010	98	90	110			
Cadmium		0.0249	mg/L	0.0010	99	90	110			
Chromium		0.0499	mg/L	0.010	100	90	110			
Copper		0.0508	mg/L	0.010	102	90	110			
Iron		0.249	mg/L	0.020	99	90	110			
Manganese		0.250	mg/L	0.0050	100	90	110			
Nickel		0.0502	mg/L	0.0050	100	90	110			
Potassium		2.51	mg/L	0.50	100	90	110			
Selenium		0.0495	mg/L	0.0050	99	90	110			
Silver		0.0244	mg/L	0.0050	98	90	110			
Zinc		0.0504	mg/L	0.0050	101	90	110			
<b>Lab ID: CCV</b>	13 Continuing Calibration Verification Standard									05/18/24 06:58
Aluminum		0.0479	mg/L	0.020	96	90	110			
Arsenic		0.0489	mg/L	0.0050	98	90	110			
Barium		0.0502	mg/L	0.010	100	90	110			
Cadmium		0.0498	mg/L	0.0010	100	90	110			
Chromium		0.0494	mg/L	0.010	99	90	110			
Copper		0.0506	mg/L	0.010	101	90	110			
Iron		1.27	mg/L	0.020	98	90	110			
Manganese		0.0493	mg/L	0.0050	99	90	110			
Nickel		0.0500	mg/L	0.0050	100	90	110			
Potassium		12.2	mg/L	0.50	97	90	110			
Selenium		0.0493	mg/L	0.0050	99	90	110			
Silver		0.0194	mg/L	0.0050	97	90	110			
Zinc		0.0493	mg/L	0.0050	99	90	110			
<b>Lab ID: CCV</b>	13 Continuing Calibration Verification Standard									05/18/24 08:14
Aluminum		0.0490	mg/L	0.020	98	90	110			
Arsenic		0.0498	mg/L	0.0050	100	90	110			
Barium		0.0491	mg/L	0.010	98	90	110			
Cadmium		0.0499	mg/L	0.0010	100	90	110			
Chromium		0.0492	mg/L	0.010	98	90	110			
Copper		0.0502	mg/L	0.010	100	90	110			
Iron		1.29	mg/L	0.020	99	90	110			
Manganese		0.0494	mg/L	0.0050	99	90	110			
Nickel		0.0499	mg/L	0.0050	100	90	110			
Potassium		12.1	mg/L	0.50	97	90	110			
Selenium		0.0498	mg/L	0.0050	100	90	110			
Silver		0.0193	mg/L	0.0050	96	90	110			
Zinc		0.0494	mg/L	0.0050	99	90	110			

**Method: E200.8** Batch: R421491

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E200.8</b>											
Batch: R421491											
<b>Lab ID: LRB</b>	13 Method Blank			Run: ICPMS207-B_240517A				05/17/24 11:47			
Aluminum		ND	mg/L	0.002							
Arsenic		ND	mg/L	0.00008							
Barium		ND	mg/L	0.00007							
Cadmium		ND	mg/L	0.00002							
Chromium		ND	mg/L	0.0003							
Copper		ND	mg/L	0.0002							
Iron		ND	mg/L	0.002							
Manganese		ND	mg/L	0.00007							
Nickel		ND	mg/L	0.0002							
Potassium		ND	mg/L	0.02							
Selenium		ND	mg/L	0.00007							
Silver		ND	mg/L	0.00003							
Zinc		ND	mg/L	0.001							
<b>Lab ID: LFB</b>	13 Laboratory Fortified Blank			Run: ICPMS207-B_240517A				05/17/24 20:28			
Aluminum		0.0527	mg/L	0.020	105	85	115				
Arsenic		0.0506	mg/L	0.0050	101	85	115				
Barium		0.0512	mg/L	0.010	102	85	115				
Cadmium		0.0503	mg/L	0.0010	101	85	115				
Chromium		0.0495	mg/L	0.010	99	85	115				
Copper		0.0500	mg/L	0.010	100	85	115				
Iron		5.46	mg/L	0.020	109	85	115				
Manganese		0.0501	mg/L	0.0050	100	85	115				
Nickel		0.0494	mg/L	0.0050	99	85	115				
Potassium		51.4	mg/L	0.50	103	85	115				
Selenium		0.0524	mg/L	0.0050	105	85	115				
Silver		0.0199	mg/L	0.0050	99	85	115				
Zinc		0.0530	mg/L	0.0050	106	85	115				
<b>Lab ID: B24051572-001CMS</b>	13 Sample Matrix Spike			Run: ICPMS207-B_240517A				05/18/24 08:26			
Aluminum		0.0509	mg/L	0.030	102	70	130				
Arsenic		0.0537	mg/L	0.0010	107	70	130				
Barium		0.442	mg/L	0.050		70	130			A	
Cadmium		0.0490	mg/L	0.0010	98	70	130				
Chromium		0.0525	mg/L	0.0050	105	70	130				
Copper		0.0526	mg/L	0.0050	104	70	130				
Iron		5.12	mg/L	0.020	102	70	130				
Manganese		0.0524	mg/L	0.0010	105	70	130				
Nickel		0.0523	mg/L	0.0050	105	70	130				
Potassium		53.3	mg/L	1.0	103	70	130			E	
Selenium		0.0520	mg/L	0.0010	104	70	130				
Silver		0.0198	mg/L	0.0010	99	70	130				
Zinc		0.0520	mg/L	0.010	104	70	130				
<b>Lab ID: B24051572-001CMSD</b>	13 Sample Matrix Spike Duplicate			Run: ICPMS207-B_240517A				05/18/24 08:32			
Aluminum		0.0549	mg/L	0.030	110	70	130	7.5	20		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated  
E - Estimated value - result exceeds the instrument upper quantitation limit



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> E200.8										Batch: R421491
<b>Lab ID:</b> B24051572-001CMSD	13	Sample Matrix Spike Duplicate			Run: ICPMS207-B_240517A				05/18/24 08:32	
Arsenic		0.0516	mg/L	0.0010	103	70	130	4.0	20	
Barium		0.471	mg/L	0.050		70	130	6.2	20	A
Cadmium		0.0521	mg/L	0.0010	104	70	130	6.1	20	
Chromium		0.0505	mg/L	0.0050	101	70	130	3.8	20	
Copper		0.0506	mg/L	0.0050	100	70	130	3.8	20	
Iron		5.27	mg/L	0.020	105	70	130	2.8	20	
Manganese		0.0504	mg/L	0.0010	101	70	130	3.8	20	
Nickel		0.0495	mg/L	0.0050	99	70	130	5.4	20	
Potassium		53.0	mg/L	1.0	103	70	130	0.5	20	E
Selenium		0.0513	mg/L	0.0010	102	70	130	1.3	20	
Silver		0.0209	mg/L	0.0010	104	70	130	5.2	20	
Zinc		0.0498	mg/L	0.010	100	70	130	4.5	20	

### Qualifiers:

RL - Analyte Reporting Limit

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A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated  
E - Estimated value - result exceeds the instrument upper quantitation limit



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> E245.1										Analytical Run: HGCV203-B_240521A
<b>Lab ID:</b> ICV-189673		Initial Calibration Verification Standard								05/21/24 11:02
Mercury		0.00199	mg/L	0.00010	100	90	110			
<b>Lab ID:</b> CCV		Continuing Calibration Verification Standard								05/21/24 14:19
Mercury		0.00242	mg/L	0.00010	97	90	110			
<b>Method:</b> E245.1										Batch: 189672
<b>Lab ID:</b> MB-189672		Method Blank								Run: HGCV203-B_240521A 05/21/24 14:03
Mercury		ND	mg/L	0.00006						
<b>Lab ID:</b> LCS-189672		Laboratory Control Sample								Run: HGCV203-B_240521A 05/21/24 14:04
Mercury		0.00186	mg/L	0.00010	93	85	115			
<b>Lab ID:</b> B24051580-001AMS		Sample Matrix Spike								Run: HGCV203-B_240521A 05/21/24 14:32
Mercury		0.00179	mg/L	0.00010	89	70	130			
<b>Lab ID:</b> B24051580-001AMSD		Sample Matrix Spike Duplicate								Run: HGCV203-B_240521A 05/21/24 14:34
Mercury		0.00189	mg/L	0.00010	94	70	130	5.4	30	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E300.0</b>		Analytical Run: IC METROHM 2_240520A									
<b>Lab ID: ICV</b>	2	Initial Calibration Verification Standard								05/20/24 11:21	
Chloride		24.7	mg/L	1.0	99	90	110				
Sulfate		100	mg/L	1.0	100	90	110				
<b>Lab ID: CCV</b>	2	Continuing Calibration Verification Standard								05/20/24 12:11	
Chloride		24.9	mg/L	1.0	99	90	110				
Sulfate		101	mg/L	1.0	101	90	110				
<b>Method: E300.0</b>		Batch: R421600									
<b>Lab ID: ICB</b>	2	Method Blank								Run: IC METROHM 2_240520A	05/20/24 11:38
Chloride		ND	mg/L	0.1							
Sulfate		ND	mg/L	0.7							
<b>Lab ID: LFB</b>	2	Laboratory Fortified Blank								Run: IC METROHM 2_240520A	05/20/24 11:55
Chloride		23.6	mg/L	1.0	94	90	110				
Sulfate		96.3	mg/L	1.1	96	90	110				
<b>Lab ID: B24051572-001BMS</b>	2	Sample Matrix Spike								Run: IC METROHM 2_240520A	05/20/24 12:45
Chloride		53.3	mg/L	1.0	106	90	110				
Sulfate		112	mg/L	1.1	112	90	110			S	
<b>Lab ID: B24051572-001BMSD</b>	2	Sample Matrix Spike Duplicate								Run: IC METROHM 2_240520A	05/20/24 13:02
Chloride		51.0	mg/L	1.0	97	90	110	4.4	20		
Sulfate		107	mg/L	1.1	107	90	110	3.8	20		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E350.1</b> Analytical Run: FIA203-B_240517B											
<b>Lab ID: ICV</b>		Initial Calibration Verification Standard									05/17/24 14:34
Nitrogen, Ammonia as N		2.17	mg/L	0.050	105	90	110				
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard									05/17/24 15:24
Nitrogen, Ammonia as N		0.992	mg/L	0.050	99	90	110				
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard									05/17/24 15:39
Nitrogen, Ammonia as N		0.991	mg/L	0.050	99	90	110				
<b>Lab ID: ICV-TEST</b>		Initial Calibration Verification Standard									05/17/24 15:42
Nitrogen, Ammonia as N		2.15	mg/L	0.050	105	90	110				
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard									05/17/24 16:59
Nitrogen, Ammonia as N		1.01	mg/L	0.050	101	90	110				
<b>Method: E350.1</b> Batch: R421509											
<b>Lab ID: FilterMBLK</b>		Method Blank									Run: FIA203-B_240517B 05/17/24 14:35
Nitrogen, Ammonia as N		ND	mg/L	0.03							
<b>Lab ID: MBLK</b>		Method Blank									Run: FIA203-B_240517B 05/17/24 14:36
Nitrogen, Ammonia as N		ND	mg/L	0.03							
<b>Lab ID: FilterLFB</b>		Laboratory Fortified Blank									Run: FIA203-B_240517B 05/17/24 14:37
Nitrogen, Ammonia as N		1.04	mg/L	0.050	104	90	110				
<b>Lab ID: LFB</b>		Laboratory Fortified Blank									Run: FIA203-B_240517B 05/17/24 14:39
Nitrogen, Ammonia as N		1.04	mg/L	0.050	104	90	110				
<b>Lab ID: B24051572-003EMS</b>		Sample Matrix Spike									Run: FIA203-B_240517B 05/17/24 15:44
Nitrogen, Ammonia as N		0.844	mg/L	0.050	84	90	110			S	
<b>Lab ID: B24051572-003EMSD</b>		Sample Matrix Spike Duplicate									Run: FIA203-B_240517B 05/17/24 15:45
Nitrogen, Ammonia as N		0.846	mg/L	0.050	85	90	110	0.2	10	S	
<b>Lab ID: B24051497-003EMS</b>		Sample Matrix Spike									Run: FIA203-B_240517B 05/17/24 17:03
Nitrogen, Ammonia as N		48.1	mg/L	1.0	105	90	110				
<b>Lab ID: B24051497-003EMSD</b>		Sample Matrix Spike Duplicate									Run: FIA203-B_240517B 05/17/24 17:04
Nitrogen, Ammonia as N		48.2	mg/L	1.0	106	90	110	0.3	10		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E351.2</b> Analytical Run: FIA204-B_240521A										
<b>Lab ID: ICV-189224</b> Initial Calibration Verification Standard 05/21/24 10:41										
Nitrogen, Kjeldahl, Total as N		10.3	mg/L	0.50	103	90	110			
<b>Method: E351.2</b> Batch: 189682										
<b>Lab ID: MB-189682</b> Method Blank Run: FIA204-B_240521A 05/21/24 10:44										
Nitrogen, Kjeldahl, Total as N		ND	mg/L	0.3						
<b>Lab ID: LCS-189682</b> Laboratory Control Sample Run: FIA204-B_240521A 05/21/24 10:46										
Nitrogen, Kjeldahl, Total as N		10.5	mg/L	0.50	105	90	110			
<b>Lab ID: B24051572-001EMS</b> Sample Matrix Spike Run: FIA204-B_240521A 05/21/24 10:49										
Nitrogen, Kjeldahl, Total as N		10.5	mg/L	0.50	105	90	110			
<b>Lab ID: B24051572-001EMSD</b> Sample Matrix Spike Duplicate Run: FIA204-B_240521A 05/21/24 10:51										
Nitrogen, Kjeldahl, Total as N		10.3	mg/L	0.50	103	90	110	1.9	10	

**Qualifiers:**

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# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
<b>Method: E353.2</b> Analytical Run: FIA203-B_240517A											
<b>Lab ID: ICV</b>		Initial Calibration Verification Standard									05/17/24 14:21
Nitrogen, Nitrate+Nitrite as N		0.576	mg/L	0.010	102	90	110				
<b>Lab ID: ICV-TEST</b>		Initial Calibration Verification Standard									05/17/24 15:39
Nitrogen, Nitrate+Nitrite as N		0.573	mg/L	0.010	101	90	110				
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard									05/17/24 15:40
Nitrogen, Nitrate+Nitrite as N		1.01	mg/L	0.010	101	90	110				
<b>Method: E353.2</b> Batch: R421508											
<b>Lab ID: FilterMBLK</b>		Method Blank									Run: FIA203-B_240517A 05/17/24 14:22
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.008							
<b>Lab ID: MBLK</b>		Method Blank									Run: FIA203-B_240517A 05/17/24 14:23
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.008							
<b>Lab ID: FilterLFB</b>		Laboratory Fortified Blank									Run: FIA203-B_240517A 05/17/24 14:24
Nitrogen, Nitrate+Nitrite as N		1.04	mg/L	0.010	104	90	110				
<b>Lab ID: LFB</b>		Laboratory Fortified Blank									Run: FIA203-B_240517A 05/17/24 14:25
Nitrogen, Nitrate+Nitrite as N		1.05	mg/L	0.010	105	90	110				
<b>Lab ID: B24051563-005DMS</b>		Sample Matrix Spike									Run: FIA203-B_240517A 05/17/24 15:36
Nitrogen, Nitrate+Nitrite as N		1.17	mg/L	0.010	108	90	110				
<b>Lab ID: B24051563-005DMSD</b>		Sample Matrix Spike Duplicate									Run: FIA203-B_240517A 05/17/24 15:38
Nitrogen, Nitrate+Nitrite as N		1.17	mg/L	0.010	109	90	110	0.4	10		
<b>Lab ID: B24051621-002CMS</b>		Sample Matrix Spike									Run: FIA203-B_240517A 05/17/24 15:55
Nitrogen, Nitrate+Nitrite as N		1.29	mg/L	0.010	107	90	110				
<b>Lab ID: B24051621-002CMSD</b>		Sample Matrix Spike Duplicate									Run: FIA203-B_240517A 05/17/24 15:56
Nitrogen, Nitrate+Nitrite as N		1.32	mg/L	0.010	109	90	110	2.1	10		

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E365.1</b> Analytical Run: FIA202-B_240517A										
<b>Lab ID: ICV-188977</b>		Initial Calibration Verification Standard								05/17/24 14:04
Phosphorus, Total as P		0.491	mg/L	0.0050	98	90	110			
<b>Lab ID: CCV-188977</b> Continuing Calibration Verification Standard 05/17/24 15:09										
Phosphorus, Total as P		0.490	mg/L	0.0050	98	90	110			
<b>Method: E365.1</b> Batch: 189636										
<b>Lab ID: MB-189636</b>		Method Blank					Run: FIA202-B_240517A			05/17/24 15:13
Phosphorus, Total as P		ND	mg/L	0.004						
<b>Lab ID: LCS-189636</b> Laboratory Control Sample Run: FIA202-B_240517A 05/17/24 15:15										
Phosphorus, Total as P		0.197	mg/L	0.0050	98	90	110			
<b>Lab ID: B24051553-001AMS</b> Sample Matrix Spike Run: FIA202-B_240517A 05/17/24 15:26										
Phosphorus, Total as P		1.14	mg/L	0.025	110	90	110			
<b>Lab ID: B24051553-001AMSD</b> Sample Matrix Spike Duplicate Run: FIA202-B_240517A 05/17/24 15:28										
Phosphorus, Total as P		1.13	mg/L	0.025	108	90	110	1.3	10	

**Qualifiers:**

RL - Analyte Reporting Limit

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## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E420.4</b>								Analytical Run: SFA-201-B_240523A		
<b>Lab ID: ICV</b>	Initial Calibration Verification Standard									
Phenolics, Total Recoverable (Distilled)		0.101	mg/L	0.010	101	90	110			05/23/24 11:41
<b>Method: E420.4</b>								Batch: R421768		
<b>Lab ID: ICB</b>	Method Blank									
Phenolics, Total Recoverable (Distilled)		ND	mg/L	0.009						Run: SFA-201-B_240523A 05/23/24 11:43
<b>Lab ID: LFB</b>	Laboratory Fortified Blank									
Phenolics, Total Recoverable (Distilled)		0.0997	mg/L	0.010	100	90	110			Run: SFA-201-B_240523A 05/23/24 11:45
<b>Lab ID: B24051572-001GMS</b>	Sample Matrix Spike									
Phenolics, Total Recoverable (Distilled)		0.105	mg/L	0.010	105	90	110			Run: SFA-201-B_240523A 05/23/24 11:56
<b>Lab ID: B24051572-001GMSD</b>	Sample Matrix Spike Duplicate									
Phenolics, Total Recoverable (Distilled)		0.108	mg/L	0.010	108	90	110	2.5	10	Run: SFA-201-B_240523A 05/23/24 11:59

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/03/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: Kelada-01</b>								Analytical Run: SFA-201-B_240517A		
<b>Lab ID: ICV</b>		Initial Calibration Verification Standard								05/17/24 11:55
Cyanide, Total		0.0992	mg/L	0.0050	99	90	110			
<b>Lab ID: CCV</b>		Continuing Calibration Verification Standard								05/17/24 12:59
Cyanide, Total		0.0971	mg/L	0.0050	97	90	110			
<b>Method: Kelada-01</b>								Batch: R421498		
<b>Lab ID: ICB</b>		Method Blank					Run: SFA-201-B_240517A			05/17/24 11:57
Cyanide, Total		ND	mg/L	0.001						
<b>Lab ID: LFB</b>		Laboratory Fortified Blank					Run: SFA-201-B_240517A			05/17/24 12:00
Cyanide, Total		0.0978	mg/L	0.0050	98	90	110			
<b>Lab ID: LCS1-K4Fe(CN)6</b>		Laboratory Control Sample					Run: SFA-201-B_240517A			05/17/24 12:03
Cyanide, Total		0.187	mg/L	0.0050	93	90	110			
<b>Lab ID: B24051572-003FMS</b>		Sample Matrix Spike					Run: SFA-201-B_240517A			05/17/24 13:12
Cyanide, Total		0.106	mg/L	0.0050	106	90	110			
<b>Lab ID: B24051572-003FMSD</b>		Sample Matrix Spike Duplicate					Run: SFA-201-B_240517A			05/17/24 13:15
Cyanide, Total		0.106	mg/L	0.0050	106	90	110	0.1	10	

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

## QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 06/05/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E410.4</b> <span style="float: right;">Analytical Run: SPEC3_240528B</span>										
<b>Lab ID: CCV-189913</b>		Continuing Calibration Verification Standard <span style="float: right;">05/28/24 17:50</span>								
Oxygen Demand, Chemical (COD)		52.6	mg/L	5.0	105	90	110			
<b>Lab ID: CCV-189913</b>		Continuing Calibration Verification Standard <span style="float: right;">05/28/24 17:50</span>								
Oxygen Demand, Chemical (COD)		52.3	mg/L	5.0	105	90	110			
<b>Method: E410.4</b> <span style="float: right;">Batch: 189913</span>										
<b>Lab ID: MB-189913</b>		Method Blank <span style="float: right;">Run: SPEC3_240528B 05/28/24 17:50</span>								
Oxygen Demand, Chemical (COD)		ND	mg/L	3						
<b>Lab ID: LCS-189913</b>		Laboratory Control Sample <span style="float: right;">Run: SPEC3_240528B 05/28/24 17:50</span>								
Oxygen Demand, Chemical (COD)		24.5	mg/L	5.0	101	90	110			
<b>Lab ID: B24051372-001CMS</b>		Sample Matrix Spike <span style="float: right;">Run: SPEC3_240528B 05/28/24 17:50</span>								
Oxygen Demand, Chemical (COD)		242	mg/L	10	91	90	110			
<b>Lab ID: B24051372-001CMSD</b>		Sample Matrix Spike Duplicate <span style="float: right;">Run: SPEC3_240528B 05/28/24 17:50</span>								
Oxygen Demand, Chemical (COD)		243	mg/L	10	94	90	110	0.5	10	
<b>Lab ID: B24051572-003EMS</b>		Sample Matrix Spike <span style="float: right;">Run: SPEC3_240528B 05/28/24 17:50</span>								
Oxygen Demand, Chemical (COD)		36.2	mg/L	5.0	79	90	110			S
<b>Lab ID: B24051572-003EMSD</b>		Sample Matrix Spike Duplicate <span style="float: right;">Run: SPEC3_240528B 05/28/24 17:50</span>								
Oxygen Demand, Chemical (COD)		36.4	mg/L	5.0	80	90	110	0.4	10	S
<b>Method: E410.4</b> <span style="float: right;">Analytical Run: SPEC3_240604B</span>										
<b>Lab ID: CCV-190068</b>		Continuing Calibration Verification Standard <span style="float: right;">06/04/24 16:04</span>								
Oxygen Demand, Chemical (COD)		49.2	mg/L	5.0	98	90	110			
<b>Method: E410.4</b> <span style="float: right;">Batch: 190068</span>										
<b>Lab ID: MB-190068</b>		Method Blank <span style="float: right;">Run: SPEC3_240604B 06/04/24 16:04</span>								
Oxygen Demand, Chemical (COD)		ND	mg/L	3						
<b>Lab ID: LCS-190068</b>		Laboratory Control Sample <span style="float: right;">Run: SPEC3_240604B 06/04/24 16:04</span>								
Oxygen Demand, Chemical (COD)		23.0	mg/L	5.0	94	90	110			
<b>Lab ID: B24052256-002CMSD</b>		Sample Matrix Spike Duplicate <span style="float: right;">Run: SPEC3_240604B 06/04/24 16:04</span>								
Oxygen Demand, Chemical (COD)		44.8	mg/L	5.0	95	90	110	6.2	10	
<b>Lab ID: B24052256-002CMS</b>		Sample Matrix Spike <span style="float: right;">Run: SPEC3_240604B 06/04/24 16:04</span>								
Oxygen Demand, Chemical (COD)		47.7	mg/L	5.0	107	90	110			

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits



# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** Water and Environmental Technologies

**Work Order:** B24051572

**Report Date:** 05/31/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E1664A</b>										
Batch: 240521A										
<b>Lab ID: MBLK2405210902</b>		Method Blank								
Oil & Grease (HEM)		ND	mg/L	5.0						Run: BAL #31_240521A 05/21/24 09:15
<b>Lab ID: LCS2405210902</b>		Laboratory Control Sample								
Oil & Grease (HEM)	34	mg/L		5.0	86	78	114			Run: BAL #31_240521A 05/21/24 09:17
<b>Lab ID: LCSD2405210902</b>		Laboratory Control Sample Duplicate								
Oil & Grease (HEM)	35	mg/L		5.0	88	78	114	2.1	18	Run: BAL #31_240521A 05/21/24 09:19
<b>Lab ID: B24051361-001GMS-2</b>		Sample Matrix Spike								
Oil & Grease (HEM)	34	mg/L		5.0	84	78	114			Run: BAL #31_240521A 05/21/24 09:25

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



# Work Order Receipt Checklist

## Water and Environmental Technologies

## B24051572

Login completed by: Addison A. Gilbert

Date Received: 5/16/2024

Reviewed by: jmiller

Received by: KOF

Reviewed Date: 5/20/2024

Carrier name: Return-FedEx Ground

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all 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 in all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	4.8°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	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"/>

### Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

### Contact and Corrective Action Comments:

The Temperature Blank temperature for shipping container 1 was 1.3°C and shipping container 2 was 2.0°C. The temperature of the sample for shipping container 3 was 4.8°C. AG 5/16/24

Quote 16755 includes Mercury analysis. Mercury is not requested on the Chain of Custody. Analyze Mercury per phone conversation with Jamie Graham on 5/20/24. AG 5/20/24



## Work Order Receipt Checklist - Continued

Water and Environmental Technologies

B24051572



Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

[www.energylab.com](http://www.energylab.com)

Page 1 of 1

## Account Information (Billing information)

Company/Name Water & Environmental Technologies  
 Contact Jamie Graham  
 Phone (406) 309-6084  
 Mailing Address 102 Cooperative Way, STE 100  
 City, State, Zip Kallispeil, MT 59901  
 Email jgraham@waterenvtech.com  
 Receive Invoice  Hard Copy  Email  Receive Report  Hard Copy  Email  
 Purchase Order 16755 183801

## Report Information (if different than Account information)

Company/Name  
 Contact Lisa Johnson  
 Phone (406)309-6085  
 Mailing Address  
 City, State, Zip  
 Email ljohnson@waterenvtech.com  
 Receive Report  Hard Copy  Email  
 Special Report/Formats:  
 LEVEL IV  NELAC  EDD/EDT (contact laboratory)  Other

## Comments

3 coolers

## Project Information

Project Name, PWSID, Permit, etc. Weyerhaeuser Kallispeil (1598)  
 Sampler Name J. Graham  
 Sampler Phone (406) 471-1205  
 EPA/State Compliance  Yes  No  
 Sample Origin State MT  
**URANIUM MINING CLIENTS MUST indicate sample type**  
 Unprocessed Ore  
 Processed Ore (Ground or Refined) \*\*CALL BEFORE SENDING  
 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

## Matrix Codes

A - Air	W - Water	S - Solids	V - Vegetation	B - Bioassay	O - Oil	DW - Drinking Water
---------	-----------	------------	----------------	--------------	---------	---------------------

## Analysis Requested

Alkalinity, Anions, TDS, BOD, pH, & cond	TSS, TOC, phenolics,	Hardness, dissolved Metals (Al, As, Ba, Ca, Cd, Cr, Cu, Fe, Mg, Mn, Ni, K, Se, Ag, Zn, Oil & Grease	TKN, total nitrogen, Nitrate + nitrite,	phosphorus, ammonia, COD, Cyanide	See Attached
X	X	X	X	X	
X	X	X	X	X	
X	X	X	X	X	

All turnaround times are standard unless marked as RUSH.  
 Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling - See Instructions Page

RUSH TAT  
 ELI LAB ID  
 Laboratory Use Only  
924051572

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this C.O.C.

Custody Record MUST be signed	Relinquished by (print) <u>Jamie Graham</u>	Signature <u>[Signature]</u>	Date/Time <u>5/15/24 13:00</u>						
	Relinquished by (print)	Signature	Date/Time						
Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check	Amount \$	Receipt Number (cash/check only)

LABORATORY USE ONLY

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.



# ANALYTICAL REPORT

## Montana Environmental Laboratory LLC

1170 N. Meridian Rd., P.O. Box 8900, Kalispell, MT 59904-1900  
 Phone: 406-755-2131 Fax: 406-257-5359 www.melab.us

Water & Environmental Tech  
 Water & Environmental Technologies  
 102 Cooperative Way, Ste 100  
 Kalispell, MT 59901

PWS ID:  
 Project: Weyhaeuser

**Client Sample ID:** MW-1 **Lab ID:** 2404628-01  
**Matrix:** ENVIRO WATER **Collected:** 05/15/2024 8:30 **Received:** 05/15/2024 11:05

<u>Coliform</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Coliform Bacteria	<b>Absent</b>	P/A	1	1	SM9223B	05/15/2024 14:00	05/16/2024 9:10	BSB
Coliform, Escherichia - P/A	<b>Absent</b>	P/A	1	1	SM9223B	05/15/2024 14:00	05/16/2024 9:10	BSB

**Client Sample ID:** MW-5 **Lab ID:** 2404628-02  
**Matrix:** ENVIRO WATER **Collected:** 05/15/2024 10:10 **Received:** 05/15/2024 11:05

<u>Coliform</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Coliform Bacteria	<b>Present</b>	P/A	1	1	SM9223B	05/15/2024 14:00	05/16/2024 9:10	BSB
Coliform, Escherichia - P/A	<b>Absent</b>	P/A	1	1	SM9223B	05/15/2024 14:00	05/16/2024 9:10	BSB

**Client Sample ID:** MW-6 **Lab ID:** 2404628-03  
**Matrix:** ENVIRO WATER **Collected:** 05/15/2024 9:25 **Received:** 05/15/2024 11:05

<u>Coliform</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>MCL</u>	<u>Method</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Analyst</u>
Coliform Bacteria	<b>Absent</b>	P/A	1	1	SM9223B	05/15/2024 14:00	05/16/2024 9:10	BSB
Coliform, Escherichia - P/A	<b>Absent</b>	P/A	1	1	SM9223B	05/15/2024 14:00	05/16/2024 9:10	BSB



## **APPENDIX E: SPILL PREVENTION, CONTROL AND COUNTERMEASURES PLAN**

# Spill Prevention, Control, and Countermeasures Plan



Weyerhaeuser

***Weyerhaeuser NR Company, Inc.***  
*Evergreen Facility*  
*75 Sunset Dr*  
*Evergreen, MT, 59901*

*January 2025*

**Prepared By:**  
Water & Environmental  
Technologies  
480 E. Park Street  
Butte, MT 59701  
(406) 782-5220





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## Acronyms and Abbreviations

<b>API</b>	American Petroleum Institute
<b>AST</b>	Aboveground Storage Tank
<b>CFR</b>	Code of Federal Regulations
<b>LEPC</b>	Local Emergency Planning Committee
<b>MDEQ</b>	Montana Department of Environmental Quality
<b>NCP</b>	National Contingency Plan
<b>NRC</b>	National Response Center
<b>PE</b>	Professional Engineer
<b>RA</b>	EPA Regional Administrator
<b>SERC</b>	State Emergency Response Commission
<b>SPCC</b>	Spill Prevention, Control and Countermeasure
<b>STI</b>	Steel Tank Institute
<b>UST</b>	Underground Storage Tank
<b>USEPA</b>	United States Environmental Protection Agency

# 1 Introduction

## 1.1 Purpose and Scope

The purpose of this Plan is to identify sources and location of oil at the facility and outline procedures to prevent the release of oil and oil products to navigable waters of the United States. This plan was prepared in accordance with good engineering practice and details a spill prevention and control capability specifically designed for the referenced facility that minimizes the potential for a discharge of oil and defines the manner of response to any such spill or release incident.

## 1.2 General Applicability: §112.1; LAC33:IX.903.A

The Oil Pollution Prevention Regulations (40 CFR Part 112) require preparation of a Spill Prevention Control and Countermeasures (SPCC) Plan for facilities that have discharged or could reasonably be expected to discharge oil from the facility into or upon navigable waters of the United States or adjoining shorelines. This plan establishes procedures, methods, and equipment requirements to aid in preventing a discharge of oil or other regulated material (collectively being referred to as “oil” or “oil products” for simplicity purposes) from the facility into or upon navigable waters of the United States or adjoining shorelines, or upon the waters of the contiguous zone, or may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States. Specifically, §112.1(d)(2)(ii) requires an SPCC Plan to be developed for facilities where the aggregate storage capacity is greater than 1,320 gallons (considering only containers with a capacity of 55 gallons or greater).

All facilities regulated under 40 CFR Part 112 must also conduct an initial screening to determine whether a discharge of oil from the facility could reasonably be expected to cause “substantial harm” requiring the development of a Facility Response Plan under §112.20. An evaluation was conducted, and it was determined that this facility could be expected to cause substantial harm as that term is defined in the regulations based on volume of oil stored and oil management practices. The Substantial Harm determination checklist in **Appendix A** certifies that the facility does not meet the Substantial Harm criteria, and therefore, the planning provisions of §112.20 do not apply. Submittal of an FRP to the USEPA is not required, and therefore this SPCC Plan provides clear information and procedures for responding to oil discharges.

This facility is not an onshore oil production facility, an onshore oil drilling or work-over facility or an offshore oil drilling, production or work-over facility. Consequently, the provisions in §§112.9, 112.10 or 112.19 do not apply. This facility does not manage animal fats and oils and greases, fish and marine mammal oils, or vegetable oils, and therefore the provisions of §112.12 do not apply.

## 2 Certifications

### 2.1 Management Approval: §112.7(d)

Management approval has been extended at a level with authority to commit the necessary resources to implement this SPCC Plan. Pursuant to §112.7(d) this is the written commitment of Weyerhaeuser to provide the manpower, equipment and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful to human health and the environment. This plan will be implemented as herein described and the Plan will be physically maintained at the Weyerhaeuser, Kalispell Facility, located in Evergreen, Montana.

Signature:	Title: Ops. Supervisor
Name: Chris Woloszyn	Date:

## 2.2 Professional Engineer Certification: §112.3(d)

This SPCC plan is required to be certified by a Professional Engineer because the facility does not qualify as a self-certifying facility as that term is defined in 40 CFR §112.3(g) (*i.e.*, this facility has an aggregate aboveground storage capacity of 10,000 gallons or more).

Pursuant to §112.3(d) and by means of this SPCC certification, I attest that: (i) I am familiar with the requirements of the SPCC rule (40 CFR Part 112); (ii) I or my authorized agent has visited and examined the facility; (iii) the Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of the SPCC rule; (iv) procedures for required inspections and testing have been established, and, (v) the Plan is adequate for the Weyerhaeuser Plywood and Sawmill facility located in Evergreen.

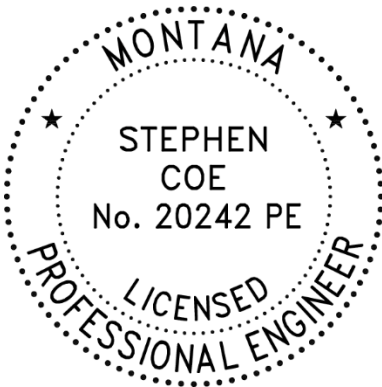
Stephen Coe

\_\_\_\_\_  
Printed Name of Registered Professional Engineer

*Stephen Coe*

\_\_\_\_\_  
Signature of Registered Professional Engineer

Registration No.: 20242 State: MT



Date: 04/03/2024

### **3 SPCC Plan Administration: §112.3, §112.4, and §112.5**

#### **3.1 Requirement to Prepare and Implement: §112.3;**

This SPCC Plan was prepared to comply with the requirements of 40 CFR Part 112.

In accordance with §112.3(e)(1) and (2), a complete, updated copy of this SPCC Plan will be maintained at the facility. During normal working hours at the facility, the Plan will be available to authorized representatives of local, state, or federal governing agencies for on-site review. A copy will be provided if requested.

#### **3.2 Amendment by Administrator: §112.4**

In accordance with §112.4(d), the site must amend its SPCC Plan, if after review by the Regional Administrator of the information submitted following a qualifying discharge (See Section 6.4), or submission of information to EPA by the Montana Department of Environmental Quality (MDEQ), or after on-site review of the Plan, the Regional Administrator requires the site to do so. The Regional Administrator may require the site to amend its Plan if it is found that it does not meet the requirements of this part or that amendment is necessary to prevent and contain discharges from the facility.

In accordance with §112.4(c), copies of the incident report will also be forwarded to the representative/case manager designated by the MDEQ Office of Environmental Assessment.

Upon receipt of the information such State agency or agencies may conduct a review and make recommendations to the Regional Administrator as to further procedures, methods, equipment, and other requirements necessary to prevent and to contain discharges from the facility.

There have been no amendments to this plan as a result of EPA or state/local requirements following a qualifying discharge. Facility personnel have indicated that no qualifying discharge of oil (*i.e.*, 1,000 gallons in a single discharge or more than 42 gallons in each of two discharges in any 12-month period) have occurred; therefore, no plan amendments have been required.

#### **3.3 Amendment by Owner or Operator: §112.5**

In accordance with §112.5(a), when there is a change in facility design, construction, storage capacity, operation, or maintenance that materially affects its potential for a discharge or renders the existing plan inadequate, the facility will amend this SPCC Plan within 6 months, and implemented as soon as possible, but no later than 6 months following preparation of the amendment to the Plan. In accordance with §112.5(b), the facility will also review this SPCC Plan at least once every five years from the date of the last review. As a result of the review, the SPCC Plan will be amended within 6 months of the review if more effective prevention and control technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge. The amended SPCC Plan will be implemented as soon as possible but no later than 6 months following preparation of the amendment. The designated person accountable for oil spill prevention at the facility (the Facility Environmental Manager) will document completion of each five-year review, as to whether the Plan will be amended and record the results in the following table (Table 3-1).



## 4 General Facility Information: §112.4

Facility Name:	Weyerhaeuser Evergreen Facility
Operator of the Facility:	Weyerhaeuser NR Company Mailing
Address and Phone:	75 Sunset Dr Evergreen, MT, 59901 (406) 751-1200
Location of Facility:	The Weyerhaeuser Evergreen facility is located on approximately 125 acres in Kalispell, Flathead County, Montana, in Sections 32 and 33 of Township 29N, Range 21W. The property is bounded on the east by a Railroad and residents, on the north, west and south by residential subdivisions. The whitefish river flows near the property to the west. The UTM coordinates are 701.6 kilometers East and 5,345.6 kilometers North, Zone 11 (latitude 48.232257, and longitude -114.285051) A map showing the geographic location of the site is found as <b>Figure 1, Site Location Map.</b>
Date and Year of Initial Operation:	June 1974
Description of Facility:	The Weyerhaeuser Evergreen Facility manufactures stud grade lumber and plywood. Raw logs are cut and dried at the facility. Some become stud grade lumber. While some are steamed and cut into veneers. The veneers are glued together and bonded into plywood under extreme pressure and heat. A portion of the plywood produced has kraft paper glued to one or both faces of the panels. There is also a scarfing line process, where plywood panels are glued together to form panels longer than the standard 8-foot length. The primary SIC codes for the facility are 2436 and 2421
Receiving Waters:	Whitefish River lies approximately 0.15 miles west of the Evergreen facility and is the nearest named body of water that potentially could be affected by a spill event. Whitefish River is a tributary to the Flathead River.

## **5 SPCC Plan General Requirements for Conformance: §112.7**

### **5.1 Conformance and Deviations: §112.7(a)(1) and (2)**

This Plan has been developed for the Weyerhaeuser – Evergreen facility to ensure that, when properly implemented and maintained, the facility will be in conformance with the applicable requirements established in 40 CFR 112.7. This Plan is prepared in accordance with good engineering practices and has full approval of management at a level of authority to commit resources necessary to fully implement the Plan.

This facility is in conformance with the applicable requirements of 40 CFR 112.

### **5.2 Physical Layout and Facility Diagram: §112.7(a)(3)**

The facility's general information including address, description of location, description of potential receiving waters, and a description of the facility is located in Section 4 of this plan. The facility is not aware of any underground storage tanks and has not installed any underground storage tanks since the construction of the facility. The site has multiple above ground bulk storage containers, 55-gallon drums, and totes, as well as multiple hydraulic oil operating pump and reservoir systems and electrical transformers. The contents within the storage tanks, drums, and totes include gasoline, diesel, and oils.

**Figure 1** is a site location map and **Figure 2** in this Plan is a facility site plan with the physical layout of the facility, marking the location and content of each fixed storage container

### **5.3 Oil Storage Containers and Capacities: §112.7(a)(3)(i)**

An inventory of the storage tanks located at the Evergreen facility is provided in Table 5-1. It contains the substance and capacities of each storage tank as well as the location in its description which correlates to the location found on **Figure 3**, Site Plan – Material Storage and Tank Locations.

**Table 5-1 Inventory of Containers and Capacities**

Area	Description	Type	Volume (gal)
DEBARKER	HYDRAULIC UNIT	AW-68	376
	Lube Res.	UNICAL MAROK 68	375
BLOCKSAW	HYDRAULIC UNIT	UNOCAL UNAX AW-WR 32	200
LATHE	HYDRAULIC UNIT	AW 68	935
	HYDRAULIC UNIT	AW 68	359
	HYDRAULIC UNIT	AW 68	449
	HYDRAULIC UNIT	UNOCAL UNAX AW-WR 32	188
	HYDRAULIC UNIT	AW 68	143
	HYDRAULIC UNIT	AW68	147
	MAIN XFORMER	TRANSFORMER OIL	785
17 DRYER	HYDRAULIC UNIT	AW 68	110
	HYDRAULIC UNIT	AW 68	143
21 DRYER	HYDRAULIC UNIT	AW 68	110
	HYDRAULIC UNIT	AW 68	143
	MAIN XFORMER	TRANSFORMER OIL	756
DRYER SCRUBBER	Scrubber T/R	TRANSFORMER OIL	88
COMPOSER #1	Hydro Unit	AW 68	171
COMPOSER #2	Hydro Unit	AW 68	148
COMPOSER #3	Hydro Unit	AW 68	148
PLUGLINE	Hydro Unit	AW 68	110
PANEL LAYUP	Hydro Unit	AW 68	188
50 PRESS	Hydro Unit	AW 68	1,579
	STACKER	AW 68	271
	PREPRESS	AW 68	171
40 PRESS	Hydro Unit	AW 68	271
	Hydro Unit	AW 68	664
	PREPRESS	AW 68	171
SAW LINE	Hydro Unit	AW 68	83
STRIP SAW	Hydro Unit	AW 68	79
Panel Oiler	NOx Crete Oiler	NOxCrete Oil totes	500
POLYLINE	Hydro Unit	AW 68	164
SANDER	Feeder Hydro Unit	AW 68	58
PANEL OILER	Hydro Unit	AW 68	68
FINISH END	MAIN XFORMER	TRANSFORMER OIL	845
UREA LINE	Hydro Unit	AW 68	110
MDO	Hydro Unit	AW 68	253
2 MAN PATCH	Hydro Unit	AW 68	79
FIRE PUMP HOUSE	Fuel Res.	DIESEL #2	353
VATS	Hydro Unit	AW 68	109
BOILER	Bunker Hydro Unit	AW 68	185

	MAIN XFORMER	TRANSFORMER OIL	490
BOILER ESP	Zone 1 T/R	TRANSFORMER OIL	110
	Zone 2 T/R	TRANSFORMER OIL	110
	Zone 3 T/R	TRANSFORMER OIL	110
FUEL PUMPS	DIESEL RES.	OFF HIGHWAY DIESEL	12,000
	GAS RES.	UNLEADED GASOLINE	570
OIL SHACK	Storage Res.	MOBILE DELVAC 1300	440
	Storage Res.	AW 68	315
	Storage Res.	SHC 634 Open Chain Lube	124
	Storage Res.	HYDRAULIC OIL 13	134
	Storage Res.	DTE LIGHT	105
	Storage Res.	DELVAC 12500	134
	Storage Res.	UNOCAL MULTI. ATF	105
	Storage Res.	WD 40	134
	Storage Res.	MOBILE LUBE 80W-90	105
	Storage Res.	Vactra Z	143
	Storage Res.	Mobile Gear 630	172
	Storage Res.	UNOCAL MP GEAR LUBE 75W90	143
	Portable Oil Res.	AW-WR 32	459
	Portable Oil Res.	AW 68	421
	COMPRESSOR ROOM	Top-Up Barrel	RARUS SHC 1024
#1 Compressor		RARUS SHC 1024	156
#2 Compressor		RARUS SHC 1024	53
#3 Compressor		RARUS SHC 1024	53
#4 Compressor		RARUS SHC 1024	53
MECHANIC SHOP	Storage Res.	MOBILE FLUID 424	323
	Storage Res.	MOBILE LUBE SHC 75W90	134
	Storage Res.	DELVAC 12500	117
	Storage Res.	76- HT/4 10W	113
	Storage Res.	76- SUPER ATF	96
	Storage Res.	TRANS HD30	209
	Storage Res.	MOBILE FLUID 424	213
	Storage Res.	MOBILELUBE HD80W-90	188
	Storage Res.	Excel 32	550
	Storage Res.	DELVAC 1300S 15W40	550
	Storage Res.	HD-50	200
	Used Oil Res.	Used Oil	1,036
	Portable Used Oil Res.	Used Oil	479
	LOGYARD	Diesel Tank	#1 Diesel
LOGYARD	Diesel Tank	#2 Diesel	1000
PLANER	Brake down hoist	AW 68	65
	Planer	AW 68	275
	Stacker #1	AW 68	120

	Package press	AW 68	230
	Strapper	AW 68	100
REMAN	Grecon	AW 68	140
	Walking bins	AW 68	100
	Finger jointer	AW 68	200
	Package press	AW 68	65
	Bander	AW 68	80
	Moulder BDH.	AW 68	50
	SAWMILL LUBE	Debarker ring & gear	Mobil Soluble Oil
Twin 80/90 injection		Mobil Soluble Oil	186
Twin AW100 drip		Mobil Soluble Oil	172
Gang bed chain lube		Mobil Soluble Oil	130
Gang bearing lube		Mobil Soluble Oil	173
Gang sawlube		Mobil Soluble Oil	173
Edger sawlube		Mobil Soluble Oil	225
SAWMILL HYD.	Nicholson Grapple	AW 68	100
	Nicholson Debarker	AW 68	200
	Blocksaw Bins	AW 68	95
	Hz Resaw	AW 68	260
	Edger	AW 68	250
	Sorter	AW 68	250
	Stacker	AW 68	175
	Gang	AW 68	240
	Twin	AW 68	260
SAWMILL OIL Storage	Bulk Tank	Mobil SHC 654	150
	Bulk Tank	Delvac 5W-40	150
	Bulk Tank	Sawmaster 32	150
	Bulk Tank	Automatic Transmission Fluid	150
	Bulk Tank	Delvac 15W-40	150
	Bulk Tank	WD-40	150
	Bulk Tank	Velocite #10	150
	Bulk Tank	Mobilelube 80W-90	150
	Bulk Tank	DTE Oil Light	150
	Bulk Tank	DTE 13M	150
	Bulk Tank	AW 68	150
	Misc. 55 gallon Drums	varies	1650
	Portable Bulk Tank	HYDRAULIC OIL	300

Note: Container locations are shown on Figure 1-4

#### 5.4 Discharge Prevention Measures: §112.7(a)(3)(ii)

The facility relies on a number of measures to aid in the prevention of a discharge. Descriptions of these measures are provided below.

- Inspections of tanks, associated piping, and containment areas are conducted **monthly** and are performed by qualified personnel. The inspections are conducted, and the completed checklist is retained in the environmental files at the facility.

- The site performs systematic preventative maintenance on its equipment, reducing potential for oil leaks, and the risk of oil discharges resulting from equipment failure.
- SPCC and spill prevention briefings are conducted **annually** for employees involved in the handling of products to reinforce awareness regarding spill prevention and control.
- Transfer of new and used oil to and from containers is continuously attended by personnel. Appropriate spill-response equipment (sorbent materials) in appropriate volume to address potential spills is readily available.
- The facility maintains written procedures for the transfer of oil to bulk oil storage and oil filled equipment. The procedures established for tank truck unloading are in accordance with the U.S. Department of Transportation (DOT) requirements and regulations. Employees are trained in these procedures. These procedures are outlined in Section 8.6.
- Large fuel tanks have mechanical level gauges, and the smaller tanks have top submerged fill ports that the vendor fills with an automatic shut off valve.
- Unloading areas and piping are regularly inspected for deficiencies and trucks are inspected for leaks or damage before leaving the Evergreen facility.

### **5.5 Discharge or Drainage Controls: §112.7(a)(3)(iii)**

Secondary containment for the aboveground storage tanks, oil loading and unloading areas, the drums and totes of lubricating fluid and used oil, and other oil containing equipment include concrete retaining walls, containment pits, catch pans and spill response material including wood material in various locations near oil filled containers to contain any spill which may occur.

The primary types of discharge or drainage controls used at the facility are described below:

All fuel tanks are equipped with concrete secondary containment large enough in volume to accommodate the largest container within that containment area plus sufficient freeboard for precipitation. Should a spill occur, the material will be discharged within an enclosed containment area with retaining walls or within the double-walled containment tank. If precipitation accumulates within the secondary containment, the water will be inspected for signs of oil sheen and the tank will be inspected for signs of leakage prior to releasing the precipitation from the containment area.

Most of the oil products on site are associated with hydraulic units in the process. Catch pans are present on most hydraulic units for minor releases. The buildings that the hydraulic units are located in are able to hold most if not all spills due to ruptured hoses.

The Evergreen plant is contained on all sides by means of berms. The Evergreen facility has three ponds that collect all fluids.

Unloading and loading activities will be observed by qualified personnel. Spill kits are located near the area of loading and unloading.

Fuel pumps are equipped with shut off devices to prevent overflow.

The prediction of the direction of flow from a discharge, rate of flow, and quantity of a potential spill from each tank is detailed in Section 7.2 and capacities of containment structures are detailed in Section 9.2.2.

## **5.6 Countermeasures for Discharge Discovery, Response, and Cleanup: §112.7(a)(3)(iv) & §112.7(a)(5)**

In the event of a release, the facility has OSHA trained personnel and equipment available to detect and stop the source of the spill and to contain and clean-up minor volumes of oil. Only those spills that have no potential safety or health hazard or those spills that are incidental releases will be responded to by trained facility personnel. Initial response to a release associated with the ASTs and loading areas will be handled by Evergreen personnel under the direction of the Environmental and Safety Manager or their alternate. Should secondary containment fail, steps must be taken to contain the spill in the smallest possible area and prevent product from entering a body of water or leaving the facility property.

On-site equipment and materials maintained onsite include spill kits, shovels, and sorbent materials (clay oil absorbent, wood chips, sawdust, soil, or other absorbent materials) may be used to absorb released material. Additionally, soil may be used to construct spill containment berms/dikes and to construct berms/ditches to divert upstream run-on water away from the spill.

General guidelines for spill response are outlined in the following numbered items.

1. Stop spillage at the source, if possible, by closing valves, turning off pumps, plugging leaks, etc.
2. Build earthen or wood residue berms or use booms to halt the spread of the spill.
3. Plug appropriate inlets, culverts, and ditches. Consider the use of underflow dams if rainfall is expected.
4. Contact appropriate personnel (**Section 5.8**).
5. Make every reasonable effort to keep spill contained to facility property.
6. Monitor for runoff until one of the persons listed in Table 5-2 (Section 5.8) arrives on the scene to provide further guidance.

In the event additional oil spill response services would be needed, external resources (contractors) have been identified below to assist facility personnel. At a minimum, contractors identified to assist in a spill response will have the capabilities to provide industrial power vacuuming, tank and pipeline cleaning, building decontamination, excavation/ earthmoving, and waste transportation and disposal services.

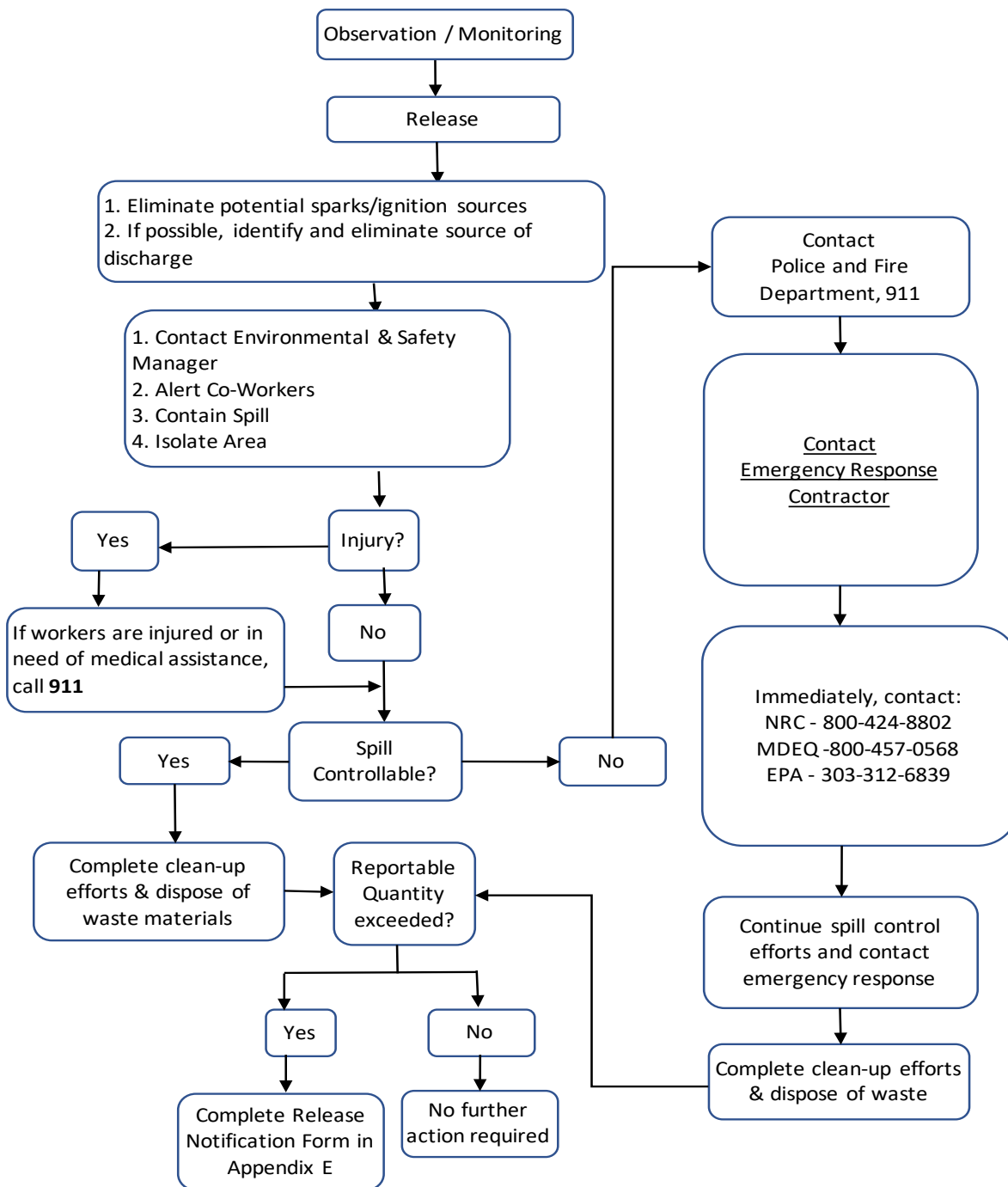
In the event that the response efforts exceed the facility's capabilities, one of the following emergency response contractors may be contacted to assist in cleaning up the spill:

Done Dirty LLC

(406) 314-1616

A flow chart for spill response procedures is provided on the following page.

**Spill Response Procedure  
Weyerhaeuser NR Company  
Evergreen**



### **5.7 Recovered Materials Disposal: §112.7(a)(3)(v)**

Recovered soils and other solids will be properly contained within drums or other suitable containment vessels. Liquids will be placed in drums or will be collected in a tank or vessel using industrial power vacuuming with adequate secondary containment and stored away from electrical, fire, and transportation areas until disposal is arranged. Recovered and accumulated product will be recycled by the facility whenever possible. Other waste material such as spent absorbent materials, personal protective clothing, or other materials that are contaminated during cleanup operations and are not conducive to recycling will be characterized and disposed of in accordance with federal, state, and local waste disposal regulations.

### **5.8 Contact List and Notification Phone Numbers: §112.7(a)(3)(vi);**

A detailed list of emergency contacts for the facility is provided on the following page. It is recommended that the emergency contact information be prominently displayed in locations where spills may occur.

**Table 5-2: EMERGENCY NOTIFICATION PHONE LIST  
Weyerhaeuser NR Company  
Evergreen Facility**

CONTACT	PHONE NO.	AFTER HOURS/ MOBILE NO.
IN THE EVENT OF A RELEASE, NOTIFY IMMEDIATELY IN THE ORDER SHOWN BELOW:		
<b>Evergreen Facility Response Team:</b>		
<b>Les Fenster Ops. Supervisor</b>	406-751-1289	<b>406-253-2980</b>
<b>Brian Henderson Plywood Maintenance Super.</b>	406-751-1252	<b>406-212-1443</b>
<b>Ashley Williams Environmental Manager</b>	406-897-8014	<b>406-539-4362</b>
<b>Jared Richardson Complex Manager</b>	406-751-1975	<b>406-407-5447</b>
<b>Jordan Boyd Safety Manager</b>	406-751-1989	
<b>Federal, State, and Local Agencies:</b>		
<b>Fire/Police / Local Ambulance</b>	911	<b>911</b>
<b>Montana Department of Environmental Quality – Petroleum Release Section</b>	800-457-0568	<b>(406) 324-4777</b>
<b>National Response Center (NRC)</b>	800-424-8802	<b>800-424-8802</b>
<b>U.S. EPA, Region 8</b>	303-312-6839	<b>303-312-6839</b>
<b>Flathead County Health Department</b>		<b>406-751-8130</b>
<b>Emergency Response Contractor(s):</b>		
<b>Done Dirty LLC</b>		406-314-1616

## 6 Reporting and Notification Procedures: §112.7(a)(4)

In accordance with 40 CFR 110.3 and 110.6, any discharge of a “harmful quantity” of petroleum products must be **immediately** reported if it reaches navigable waters of the United States. Petroleum products include lubricating oils, synthetic oils, hydraulic oils, and diesel or jet fuel, as well as various animal and vegetable oils. Harmful quantities are defined as quantities that result in violation of applicable water quality standards or that cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines. In its broadest sense, the requirements of 40 CFR 110 and 112 entail reporting any oil release that results in an oil sheen on any surface water or waterway.

Reportable Quantities (RQs) for petroleum products also are defined at a Federal and State level as follows:

Reportable Quantities For Oil		
Applicable Regulatory Reference		Reportable Quantity
Montana Department of Environmental Quality	MCA §75-10-701	Petroleum releases from regulated aboveground storage tanks (AST), underground storage tanks (UST) or petroleum storage tanks (PST) must be reported to DEQ within 24 hours of being detected as required by ARM 17.56, Subchapter 5. DEQ must be notified of releases of greater than 25 gallons of petroleum from an AST, UST or PST. Petroleum releases less than 25 gallons in volume must be contained and cleaned up within 24 hours. If cleanup cannot be completed within 24 hours, owners and operators must report the release to DEQ.
National Response Center (NRC)	40 CFR Part 110	Immediate reporting to NRC for any amount reaching waters of the United States
United States Environmental Protection Agency (US EPA)	40 CFR Part 112	60-day reporting for greater than 1,000 gallons released in single event, or spill of 42 gallons or more reaching waters of the United States in two spill events occurring within any 12-month period

Incident reporting forms are included in **Appendix B**.

### 6.1 Internal Notification

It is the responsibility of each employee to report releases or threatened releases of oil. When an

employee observes an oil release or a condition which the employee believes may result in an oil release, he/she is to immediately notify the proper personnel.

Contact list and phone numbers for the facility response coordinator (Environmental Manager) and cleanup contractors are provided in Section 5.8.

The Environmental Manager or designee will investigate the situation and evaluate the potential and severity of oil or hazardous materials adversely affecting public health and welfare and/or of a potential magnitude to be considered a safety hazard and/or pollution problem. The Environmental Manager or designee will immediately take corrective actions if warranted.

## 6.2 State Notification

To satisfy the state reporting requirements, the location and quantity of the spill must be determined. Under the Montana Code Annotated ARM 17.56, Subchapter 5 and the USEPA List of Lists, a reportable quantity (RQ) of oil is defined as follows:

1. If spilled on the surface of the land, any quantity 25 gallons or greater of refined crude oil products;
2. If spilled on the surface of the land, any quantity 42 gallons (1 barrel) or greater of crude oil, condensate, or produced water; and
3. If spilled into the waters of the state, any quantity that would produce a visible oil slick, oil solids, or coat aquatic life, habitat, or property with oil.

The RQ of other hazardous materials should each be referenced specifically.

If conditions as described above occur, the Plant Manager, the Environmental Manager, or designee will contact the **Disaster and Emergency Services (406-324-4777)**, immediately.. In addition, the caller will notify the National Response Center (NRC) if necessary.

Additionally, follow the federal reporting requirements described in the following sections.

## 6.3 Federal Emergency Response Requirements (National Response Center)

Any oil release that results in an oil sheen on Navigable Waters of the US (any surface water or waterway) must be immediately reported to **NRC at (800) 424-8802**.

## 6.4 Federal Environmental Requirements (USEPA Reporting)

Federal requirements dictate that if a facility has had a single spill of more than 1,000 gallons of oil or two reportable spill events each with greater than 42 gallons that discharge oil into surface waters within a 12-month period, the facility must submit the following information to the USEPA Regional Administrator within 60 days of triggering this reporting obligation. The report is an Amendment to the SPCC Plan that addresses the spill and defines corrective actions and preventive measures that have been implemented. The information to be collected and a incident report form is included in **Appendix B**.

## 7 Discharge Response and Analysis: §112.7

### 7.1 Discharge Response Procedures: §112.7(a)(5)

See Section 5.6 for discharge response procedures and Section 5.7 for disposal of recovered materials.

### 7.2 Potential Equipment Failure and Discharge Analysis: §112.7(b)

In accordance with regulatory guidance, Table 7-1 addresses the type of equipment failure and discharge pathways without considering any physical systems in place to prevent and contain releases of oil at the facility.

Spills and releases are most likely to result from equipment failure or operator error and can occur at any time. Table 7-1 lists potential sources of 55 gallons or greater and describes their potential spill directions. For structural failures, the release rate can conservatively be assumed to be the total contents of the tank being released in a 15-minute time frame.

The location of the potentially impacted Outfalls is shown in Figure 2-4.

**Table 7-1: Discharge Analysis of Oil Storage Containers and Oil-Filled Equipment**

Description	Volume (gal)	Secondary Containment	Direction of Flow
HYDRAULIC UNIT	376	Pan/Fire Pond	Fire Pond
Lube Res.	375	Pan/Fire Pond	Fire Pond
HYDRAULIC UNIT	200	Pan/Fire Pond	Fire Pond
HYDRAULIC UNIT	935	Pan/Building	Building
HYDRAULIC UNIT	359	Pan/Building	Building
HYDRAULIC UNIT	449	Pan/Building	Building
HYDRAULIC UNIT	188	Pan/Building	Building
HYDRAULIC UNIT	143	Pan/Building	Building
HYDRAULIC UNIT	147	Pan/Building	Building
MAIN XFORMER	785	Pan/Building	Building
HYDRAULIC UNIT	110	Pan/Building	Building
HYDRAULIC UNIT	143	Pan/Building	Building
HYDRAULIC UNIT	110	Pan/Building	Building
HYDRAULIC UNIT	143	Pan/Building	Building
MAIN XFORMER	756	Pan/Building	Building
Scrubber T/R	88	Pan/Building	Building
Hydro Unit	171	Pan/Building	Building
Hydro Unit	148	Pan/Building	Building
Hydro Unit	148	Pan/Building	Building
Hydro Unit	110	Pan/Building	Building
Hydro Unit	188	Pan/Building	Building
Hydro Unit	1,579	Pan/Building	Building
STACKER	271	Pan/Building	Building
PREPRESS	171	Pan/Building	Building
Hydro Unit	271	Pan/Building	Building
Hydro Unit	664	Pan/Building	Building

PREPRESS	171	Pan/Building	Building
Hydro Unit	83	Pan/Building	Building
Hydro Unit	79	Pan/Building	Building
NOx Crete Oiler	500	Building	Building
Hydro Unit	164	Pan/Building	Building
Feeder Hydro Unit	58	Pan/Building	Building
Hydro Unit	68	Pan/Building	Building
MAIN XFORMER	845	Pan/Building	Building
Hydro Unit	110	Pan/Building	Building
Hydro Unit	253	Pan/Building	Building
Hydro Unit	79	Pan/Building	Building
Fuel Res.	353	Pan/Building	Building
Hydro Unit	109	Pan/Building	Building
Bunker Hydro Unit	185	Pan/Building	Building
MAIN XFORMER	490	Pan/Building	Building
Zone 1 T/R	110	Pan/Building	Building
Zone 2 T/R	110	Pan/Building	Building
Zone 3 T/R	110	Pan/Building	Building
DIESEL RES.	12,000	Concrete Containment	Truck Maintenance
GAS RES.	570	Concrete Containment	Truck Maintenance
Storage Res.	440	Pan/Berm	Fire Pond
Storage Res.	315	Pan/Berm	Fire Pond
Storage Res.	124	Pan/Berm	Fire Pond
Storage Res.	134	Pan/Berm	Fire Pond
Storage Res.	105	Pan/Berm	Fire Pond
Storage Res.	134	Pan/Berm	Fire Pond
Storage Res.	105	Pan/Berm	Fire Pond
Storage Res.	134	Pan/Berm	Fire Pond
Storage Res.	105	Pan/Berm	Fire Pond
Storage Res.	143	Pan/Berm	Fire Pond
Storage Res.	172	Pan/Berm	Fire Pond
Storage Res.	143	Pan/Berm	Fire Pond
Portable Oil Res.	459	Pan/Berm	Fire Pond
Portable Oil Res.	421	Pan/Berm	Fire Pond
Top-Up Barrel	55	Pan/Building	Building
#1 Compressor	156	Pan/Building	Building
#2 Compressor	53	Pan/Building	Building
#3 Compressor	53	Pan/Building	Building
#4 Compressor	53	Pan/Building	Building
Storage Res.	323	Pan/Berm	Building
Storage Res.	134	Pan/Berm	Building
Storage Res.	117	Pan/Berm	Building
Storage Res.	113	Pan/Berm	Building
Storage Res.	96	Pan/Berm	Building
Storage Res.	209	Pan/Berm	Building
Storage Res.	213	Pan/Berm	Building
Storage Res.	188	Pan/Berm	Building
Storage Res.	550	Pan/Berm	Building

Storage Res.	550	Pan/Berm	Building
Storage Res.	200	Pan/Berm	Building
Used Oil Res.	1,036	Concrete Berm	Pond
Portable Used Oil Res.	479	Pan/Building	Building
Diesel Tank	300	Concrete Berm	Log yard
Diesel Tank	1000	Concrete Berm	Log yard
Brake down hoist	65	Pan/Building	Building
Planer	275	Pan/Building	Building
Stacker #1	120	Pan/Building	Building
Package press	230	Pan/Building	Building
Strapper	100	Pan/Building	Building
Grecon	140	Pan/Building	Building
Walking bins	100	Pan/Building	Building
Finger jointer	200	Pan/Building	Building
Package press	65	Pan/Building	Building
Bander	80	Pan/Building	Building
Moulder BDH.	50	Pan/Building	Building
Debarker ring & gear	175	Pan/Building	Building
Twin 80/90 injection	186	Pan/Building	Building
Twin AW100 drip	172	Pan/Building	Building
Gang bed chain lube	130	Pan/Building	Building
Gang bearing lube	173	Pan/Building	Building
Gang sawlube	173	Pan/Building	Building
Edger sawlube	225	Pan/Building	Building
Nicholson Grapple	100	Pan/Building	Building
Nicholson Debarker	200	Pan/Building	Building
Blocksaw Bins	95	Pan/Building	Building
Hz Resaw	260	Pan/Building	Building
Edger	250	Pan/Building	Building
Sorter	250	Pan/Building	Building
Stacker	175	Pan/Building	Building
Gang	240	Pan/Building	Building
Twin	260	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Bulk Tank	150	Pan/Building	Building
Misc. 55 gallon Drums	1650	Pan/Building	Building
Portable Bulk Tank	300	Pan/Building	Building

Note 1: Most of the facility drains internally to various process areas or ponds. There is only one area that has the potential to flow offsite.

## 8 Additional SPCC Facility Requirements: §112.7

### 8.1 Discharge Containment or Diversion Structures: §112.7(c)

The Evergreen facility uses the implementation of the following discharge prevention system:

- *Dikes, berms, or retaining walls sufficiently impervious to contain oil*
- *Curbing or drip pans*
- *Weirs, booms, or other barriers*
- *Sorbent materials*
- *Retention ponds*
- *Buildings*
- *Press pits*

Each bulk oil storage container at the facility is equipped with secondary containment. All other oil storage or transfer activities such as oil-filled equipment, loading/unloading areas and piping are designed with appropriate containment and/or diversionary structures to prevent a discharge of oil in quantities that may be harmful. Spill containment at the facility is described below.

To ensure a spill will not leave the Evergreen facility's property boundary, the following equipment, implementations and procedures provide containment and drainage protection:

- All unloading for trucks is conducted in contained areas only. Any spills at the unloading areas will be contained with sorbents or flow to the storm water drainage canals.
- All storage tank dikes at the Evergreen facility are constructed of materials which can contain spilled products.
- No stormwater drainage paths leave the site. All stormwater is retained on site in retention ponds.

### 8.2 Spill Containment Practicability: §112.7(d)

This requirement is not applicable because this SPCC Plan does not deviate from the requirements of §§112.7(c), 112.7(h)(1), 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), 112.12(c)(11), 112.13(c)(2), and 112.14(c).

Evergreen facility personnel will ensure that the structural integrity of the ASTs and other appurtenances is maintained by visually inspecting the above ground tanks on a monthly basis. Formal visual inspections are conducted annually with forms provided in **Appendix C** and will be maintained at the facility for a period of three years. Due to the material and construction of the tanks and the impervious floors, any leaks or spills would be noticed quickly. If personnel note potential structural failures or poor tank conditions, more frequent inspections and/or testing may be required. This facility is equipped with appropriate containment and diversionary structures or equipment to prevent a discharge of petroleum products beyond the borders of the facility. The facility is equipped with the prevention systems listed in Section 8.1. Concrete dikes are designed to contain spills from within the facility. The facility also maintains access to wood chips, sawdust, booms and other absorbent materials to be used as needed to respond to spills.

Tanks are periodically visually inspected as a result of daily operations. The external shell of the ASTs is inspected for cracks, leaks, discoloration, rust, or any other signs of instability or impending malfunction during formal written **monthly** inspections. Inspection forms are included in **Appendix C**.

In addition to the above-mentioned visual and formal inspections, periodic testing of the tanks is performed by an approved contractor. Non-destructive shell testing procedures such as ultrasonic testing or other approved methods described in STI SP001 are conducted on subject tanks. See Section 8.3 for integrity testing requirements.

If a spill occurs, the Environmental Manager or designee will investigate the situation promptly and determine if the quantity of oil or material adversely affecting public health and welfare is of sufficient magnitude to be considered a safety hazard and/or pollution problem. The Environmental Manager or designee will immediately take corrective action if the Evergreen facility is the source of pollution. The following actions will be taken in the event of a spill:

- The person(s) on site at the time of the spill will begin countermeasure actions and commit the company's resources as necessary to contain, mitigate and clean up the spill.
- The source of the spill will be identified and the flow of material stopped if this action poses no danger to personnel. If the release has occurred in an area without secondary containment, absorbent materials will be applied to the spill or the spill will be surrounded by absorbent material. The spent absorbent material will be collected and placed into containers designated for this use. Any free oil will be placed in separate containers. In the event of a large spill that cannot be contained, the emergency response vendors will be called upon to provide assistance to on-site personnel to help contain the spill.
- Subsequent to the facility personnel's actions to stop the source of the spill and prevent or minimize the impact of the spilled material on the environment, proper notifications, as necessary, will be given to the appropriate agencies.
- Once the spill has been controlled and material collected and secured, the person responsible for implementing the plan will inspect the area for cleanliness and will conduct decontamination of spill or personal protective equipment, if necessary. This person will also be responsible for subsequently managing and disposing of the collected material in accordance with applicable federal and state environmental regulations.
- For all spills, this plan shall be implemented and proper records of action shall be kept on site as required.

For additional information, refer to **Section 7**.

### **8.3 Inspections, Tests, and Records: §112.7(e)**

Oil storage containers, oil-filled equipment, and related containment structures at the facility are visually examined (non-documented inspections) routinely (when facility is in normal operations) for signs of deterioration or leaks. The loading and unloading areas are inspected for spills prior to arrival and after departure of transport vehicles. These cursory routine inspections are conducted as part of normal facility operations. Deficiencies noted are brought to the attention of the Environmental Manager, their designee, or Maintenance Manager and into the work order process and corrected in a timely manner. This equipment (containers and containment structures) will be inspected **monthly and annually** according to Section 9.3 of the Plan and the inspection forms in **Appendix C** which will be signed or initialed, documented, and kept onsite at the Evergreen facility for at least **three years**.

Copies of the annual inspection logs, the facility's physical testing program requirements, and bulk storage container testing results will be maintained for at least **three years**. These procedures and records are kept in a maintenance software tracking program called TabWare.

### **8.4 Personnel Training and Discharge Prevention Procedures: §112.7(f)**

Each employee is responsible for recognizing the potential for an occurrence of any spill and for calling this to the attention of appropriate personnel. The training of oil-handling employees addresses the following topics:

- The operation and maintenance of equipment to prevent discharges;
- Discharge procedure protocols (including spill communication and response procedures);
- Applicable pollution control laws, rules and regulations;
- General facility operations; and
- The contents of the SPCC Plan and how to implement the procedures therein.

Personnel receiving annual training at the facility include maintenance and operational personnel that are involved in activities including oil storage, operating equipment using oil, oil transfer operations, and emergency response/spill coordination. At a minimum, discharge prevention briefings will be conducted with oil-handling employees **annually** to assure adequate understanding of the SPCC Plan for the facility. All new personnel will be trained as they assume responsibilities that include the handling of petroleum and hazardous products.

The Environmental Manager is the designated person accountable for spill prevention at the facility and reports to facility management. The Environmental Manager is responsible for the implementation of training programs and will ensure that training activities meet facility management objectives.

Records of the training briefings will be maintained at least **three years** and will include dates of instruction, topics covered and records of attendance. Copies of these training records are documented and kept on file at the facility.

### **8.5 Security: §112.7(g)**

The Evergreen facility has limited access to traffic due to the rail lines on the east side and the general topography. The facility has three entrances, one at the north and south end of the

property and one on the east side of the property from Sunset Drive. The north and south entrances are restricted, and everyone is required to enter the facility from the east entrance. All visitors are required to check in and out of the site at the office building. The site is entirely fenced with 24-hour surveillance and adequate security measures.

The master valves are all closed and/or tagged when unattended. All valves discharge into diked containment areas or retention basins should a leak or spill occur.

Starter controls on oil pumps are locked in the “off position” and are located in areas accessible only by authorized personnel when the pump is in a non-operating or non-standby status.

Access to this equipment is restricted to site personnel whose duties impact the use and/or operations of the oil sources. All pumping is controlled from inside buildings.

The Evergreen facility has an extensive lighting system, which is sufficient for operations personnel or non-operating personnel to detect spills, malfunction of equipment, and acts of vandalism during nighttime hours.

### **8.6 Facility Tank Car and Tank Truck Loading/Unloading Rack: §112.7(h)**

The Evergreen facility does not have a loading/unloading rack. During transfer operations, if a spill were to occur, all bulk loading is designed to flow into a catchment basin with more than sufficient capacity to hold the tank truck. Facility loading/unloading procedures require all hoses to be properly connected and disconnected to avoid spills or leaks. Non-facility delivery personnel cannot load or unload materials without notification to site personnel. The delivery vehicles are required to be temporarily immobilized before hose connections can occur. Departure of delivery vehicles is not allowed until hose connections or drain ports are properly disconnected and capped. The only trucks that load onsite are tank trucks picking up used oil; all other trucks unload. Inspections prior to departure of delivery vehicles are required to identify potential leaks from the drain outlet of an unloading vehicle to avoid leaks while in transit.

The facility implements the following procedures to meet the U.S. Department of Transportation (DOT) requirements:

**Table 8-1: Oil Product Transfer Procedures**

<b>Stage</b>	<b>Tasks</b>
<b>Prior to Off Loading</b>	<p><b>No Smoking and keep fire away</b></p> <p><b>Visually check all hoses for leaks and wet spots.</b></p> <p><b>Verify that sufficient volume is available in the storage tank.</b></p> <p><b>Verify all drainage valves of the secondary containment surface are in the closed position.</b></p> <p><b>Secure the tank vehicle with wheel chocks and interlocks.</b></p> <p><b>Ensure that the vehicle’s parking brakes are set.</b></p> <p><b>Verify proper alignment of valves and proper functioning of the pumping system.</b></p> <p><b>If filling a tank truck, inspect the lowermost drain and all outlets.</b></p> <p><b>Establish adequate bonding/grounding prior to connecting to the product transfer point.</b></p> <p><b>Turn off cell phone.</b></p>
<b>During Off-Loading</b>	<p><b>Driver must stay with the vehicle at all times during off-loading activities.</b></p> <p><b>Periodically inspect all systems, hoses and connections.</b></p> <p><b>When off-loading, keep internal and external valves on the receiving tank open along with the pressure relief valves, if applicable.</b></p> <p><b>When making a connection, shut off the vehicle engine. When transferring, shut off the vehicle engine unless it is used to operate a pump.</b></p> <p><b>Maintain communication with the pumping and receiving stations.</b></p> <p><b>Monitor the liquid level in the receiving tank to prevent overflow.</b></p> <p><b>Monitor flow meters to determine rate of flow.</b></p> <p><b>When topping off the tank, reduce flow rate to prevent overflow.</b></p>
<b>After Off-Loading</b>	<p><b>Make sure the transfer operation is completed and lock valve.</b></p> <p><b>Close all tank and off-loading valves before disconnecting.</b></p> <p><b>Securely close all vehicles internal, external, and dome cover valves before disconnecting.</b></p> <p><b>Secure all hatches.</b></p> <p><b>Disconnect grounding/bonding wires.</b></p> <p><b>Make sure the hoses are drained to remove the remaining product before moving them away from the connection. Use a drip pan.</b></p> <p><b>Cap the end of the hose and other connecting devices before moving them to prevent uncontrolled leakage.</b></p> <p><b>Remove wheel chocks and interlocks.</b></p> <p><b>Inspect the lowermost drain and all outlets on tank truck prior to departure. If necessary, tighten, adjust, or replace caps, valves, or other equipment to prevent oil leaking while in transit.</b></p>

**Table 8-2: Vehicle and Equipment Fueling Procedures**

Stage	Tasks
<b>Prior to Fueling</b>	<p><b>Shut off the vehicle engine.</b>  <b>No Smoking and keep fire away</b>  <b>Visually check all hoses for leaks and wet spots.</b>  <b>Verify that sufficient volume is available in the fuel tank.</b>  <b>Ensure that the vehicle’s parking brakes are set.</b>  <b>Verify proper alignment of valves and proper functioning of the fuel dispensing system.</b>  <b>When fueling a vehicle or plant equipment, inspect for leaks.</b>  <b>Establish adequate bonding/grounding prior to connecting to the fuel transfer point.</b>  <b>Turn off cell phone.</b></p>
<b>During Fueling</b>	<p><b>Driver must stay with the vehicle at all times during fueling activities.</b>  <b>Periodically inspect all systems, hoses and connections.</b>  <b>Monitor the liquid level in the receiving tank to prevent overflow.</b>  <b>Monitor flow meters to determine rate of flow.</b>  <b>When topping off the tank, reduce flow rate to prevent overflow.\</b></p>
<b>After Fueling</b>	<p><b>Make sure the fuel operation is completed.</b>  <b>Return the fueling hose to the dispenser.</b>  <b>Turn off the dispenser.</b>  <b>Secure all hatches.</b>  <b>Place the fuel cap onto the fueling port.</b>  <b>Inspect the vehicle or equipment prior to departure. If necessary, tighten, adjust, or replace caps, valves, or other equipment to prevent fuel leaking while in use.</b>  <b>Cleanup or report spills should they occur following proper procedures.</b></p>

**8.7 Brittle Fracture Analysis: §112.7(i)**

There are currently no field constructed holding tanks on site.

**8.8 Other Applicable Requirements: §112.7(j)**

Montana has no additional requirements.

**8.9 Qualified Oil-filled Operational Equipment: §112.7(k)**

Discharge containment in the form of retention ponds or sorbent materials is provided for all oil-filled operational equipment at the facility in accordance with §112.7(c). A specific listing of oil-filled secondary equipment is found in Section 5.3. Transformers are monitored for leaks. In the event of a leak from a transformer that is not located within secondary containment, release containment measures and cleanup activities would be performed as were previously described for released materials.

## **9 Requirements for Onshore (Non-Production) Facilities: §112.8;**

This Plan has been developed for the Evergreen facility to ensure that, when properly implemented and maintained, the facility will be in conformance with the applicable requirements established in 40 CFR 112.7 and the specific prevention and containment procedures listed in this section. This Plan has full approval of management at a level of authority to commit resources necessary to fully implement the Plan. The Environmental Manager maintains responsibility for the day-to-day administration of the SPCC Plan and all discharge prevention activities at the facility.

### **9.1 Facility Drainage: §112.8(b)**

All bulk oil storage containers are located within secondary containment structures. As indicated in Section 8.1, containment structures at the facility provide adequate protection against the discharge of oil. Most of the outdoor containment has closed valves for draining stormwater. Some of the newer containment systems don't have any means of draining storm water. manually operated valves or portable pumps are used to discharge accumulated precipitation. All drainage eventually flows to the stormwater retention ponds for those areas that can drain. There are no offsite discharges of stormwater.

The accumulated precipitation is inspected, and all releases are supervised. The water is inspected prior to discharge for the presence of a visible sheen or any indication that a spill has occurred. Any product observed in the water is absorbed with oil drip pads or absorbent booms prior to release. Large quantities of product will be reported and properly disposed of in compliance with applicable local, state, and federal regulations. Records are kept of all discharge events. An example report form for recording discharge events is included in **Appendix B**. Drainage waters are not treated; therefore, the requirements of §112.8(b)(5) do not apply.

All drainage eventually flows to the stormwater retention ponds for those areas that can drain. There are no offsite discharges of stormwater. Booms and skimmers will be used to remove oil from the ponds. The facility is not in a 100-year flood plain. Therefore, no preventive controls have been implemented.

### **9.2 Bulk Storage Containers: §112.8(c)**

Because oil-filled electrical and operating equipment are not considered bulk storage containers as defined by §112.2 and are subject only to the general secondary containment requirements of §112.7(c), the containers at the facility subject to the requirements of §112.8(c) are limited to the ASTs, totes and the oil storage drums. The facility-specific details associated with the requirements of §112.8(c) are addressed in Sections 9.2.1 to 9.2.5.

#### **9.2.1 Construction: §112.8(c)(1)**

Oils stored at the facility are compatible with the materials of which the storage containers and containment structures are constructed. Only steel containers are used for storing petroleum products. Piping, valves, and other appurtenances are also constructed of materials compatible with the oils and associated storage conditions with which they are in contact.

Construction of storage and transfer facilities is in accordance with applicable industry standards.

All materials used in construction are compatible with the liquids stored.

### **9.2.2 Secondary Containment: §112.8(c)(2)**

Secondary containment is provided for the facility's above-ground bulk storage containers. The bulk storage containers are either located in sheltered areas with minimal exposure to precipitation or the containment structures provide sufficient discharge control (a minimum of 100% of the volume of the largest bulk storage tank plus sufficient freeboard for a 25-year, 24-hour storm event).

Oil storage drums and totes are located in portions of buildings inaccessible to precipitation.

The secondary containment consists of material impervious to the potentially discharged oil or material. Secondary containment consists of concrete pits and double walled tanks. Table 7-1 provides an inventory of bulk storage tanks and their associated secondary containment.

### **9.2.3 Drainage of Diked Areas: §112.8(c)(3)**

The facility containment dikes require the use of manually activated pumps or valves to discharge accumulated precipitation. The accumulated precipitation is inspected, and all releases are supervised. The water is inspected prior to discharge for the presence of a visible sheen or any indication that a spill has occurred. Any product observed in the water is absorbed with oil drip pads or absorbent booms prior to release or pumped into portable totes and recycled in facility process whenever possible. Large quantities of product will be removed via vacuum, or properly disposed of in compliance with applicable local, state, and federal regulations. Records are kept of all dike discharge events. A sample report form for recording dike discharge events is included in **Appendix B**.

### **9.2.4 Corrosion Protection: §112.8(c)(4)**

The facility has no oil-containing buried metal storage tanks. Therefore, the requirements of §112.8(c)(4) do not apply.

### **9.2.5 Partially Buried and Bunkered Tanks: §112.8(c)(5)**

The facility has no oil-containing partially buried or bunkered metal storage tanks. All bulk tanks are sitting on concrete containment. Therefore, the requirements of §112.8(c)(5) do not apply.

## **9.3 Bulk Storage Inspections and Tests: §112.8(c)(6)**

### **9.3.1 Periodic Inspections: §112.8(c)(6)**

Non-documented visual inspections are conducted on an ongoing basis and any deficiencies will be repaired immediately. Documented visual inspections are performed **monthly** and recorded on a monthly inspection log similar to that attached in **Appendix C**.

Detailed inspections to detect leaks, corrosion, and breakage of the oil storage containers and handling equipment are performed by approved operating personnel. The following information is recorded for each detailed inspection:

- Date of inspection;
- Name/ID of oil source (tank, drum, transfer pump, etc.);
- Type, volume, and appearance of tank;
- Condition of containment system;

- Condition of pipe connection(s) to the tank for evidence of leakage;
- Other comments (including temporary or other mobile sources previously not identified); and
- Inspector's name and signature.

### **9.3.2 Annual Inspections: §112.8(c)(6)**

Detailed inspections to detect leaks, corrosion, and breakage of the oil storage containers and handling equipment are performed by approved operating personnel. The inspection will be performed at least **annually** and a checklist similar to that shown in **Appendix C** will be completed for each detailed inspection. The following information is recorded for each detailed inspection:

- Perform a walk-around inspection annually, checking for proper drainage around the tank area. Proper site maintenance is vital to ensure drainage of surface water. Check for ground settling and standing water near the tank. Correct as necessary. If ground conditions change, or settling occurs, correct the situation by providing drainage or grading to prevent standing water from being in contact with the steel tank and its supports.
- Annually inspect the gaskets of emergency vents for damage or deterioration.
- Inspect the tank supports once per year to determine if damage or deterioration of the supports is evident. The supports shall be inspected for signs of damage from vehicles, misuse, and corrosion. Damage may require replacement of the supports. Contact the tank manufacturer for recommendations. If deterioration has occurred, more frequent inspections may be required. Periodic repainting of the supports may be necessary.
- Inspect the tank foundation once per year for signs of settling, cracking, pitting, and spalling. Contact a qualified contractor for repair of concrete foundations. Observe the condition of the bolts to determine if there has been distortion of the bolts or significant cracking around the bolts. Replace the bolts if deterioration is evident.

### **9.3.3 Integrity Testing: §112.8(c)(6)**

In addition to monthly inspections, certain tanks may be required to be thoroughly integrity tested by qualified individuals on a periodic basis. This testing includes a combination of visual inspection and nondestructive testing methods such as ultrasonic thickness testing. For the Evergreen Facility, the Steel Tank Institute's (STI) SP001 Inspection Standard for the Inspection of Above Ground Storage Tanks was used to develop the integrity testing program. See the table below for Integrity Testing Requirements.

**Table 9-2: Integrity Testing Requirements**

Tank Description	Integrity Testing Requirement
<p><b>12,000 Gallon Diesel Tank</b></p>	<p>Perform owner periodic inspections using the inspection forms in <b>Appendix C</b>. Additionally have a periodic AST inspection including external thickness testing performed every 20 years by a certified inspector or PE familiar with aboveground storage tanks.</p>
<p><b>All other oil “bulk storage containers” onsite. See table 5-1 for a list.</b></p>	<p>Integrity testing consists of monthly and annual inspections performed by the owner using the inspection forms in <b>Appendix C</b>.</p>

**9.4 Bulk Storage Containers – Additional Requirements: §112.8(c)**

**9.4.1 Heating Coils: §112.8(c)(7);**

There are no internal heating coils at the facility, therefore the requirements of §112.8(c)(7) do not apply. Internal heating coils are not utilized at the Evergreen facility.

**9.4.2 Overfill Protection Systems: §112.8(c)(8)**

The facility tank systems are visually monitored during all oil transfer operations. The larger fuel tanks have are equipped with level gages and alarms. Tank oil levels are read using mechanical level gages while filling. Small tanks have a top submerged fill port that is filled with an automatic shutoff fill valve. Facility personnel ensure that sufficient space is available in the ASTs before authorizing the tanker truck driver to unload product. An outside contractor fills the tanks with the available volume determined. Refueling of mobile equipment is by means of an automatic shutoff fill hose and pump. Facility personnel remain with the delivery truck during filling operations to monitor the transfer; inspect outlets, connections, and valves on the oil delivery tank truck before and after the oil delivery; and make adjustments as necessary. The individuals monitoring the tank volume and those attending the tanker pump maintain visual and audible contact during the filling operation.

**9.4.3 Effluent Treatment Facilities: §112.8(c)(9)**

Treatment of storm water effluents is not conducted at the facility, so there will be no discharge of effluent offsite.

**9.4.4 Visible Discharges: §112.8(c)(10)**

Visible oil leaks are reported to plant management immediately upon observation. Upon discovery, measures are taken to minimize and mitigate the leak, and the released oil is cleaned up in accordance with the Oil Spill Response Procedures presented in Section 7.1.

Storage tanks and all ancillary equipment are visually inspected routinely on facility-manned workdays and formally inspected **monthly**. Potential structural failures, housekeeping problems, and general tank conditions resulting in a loss of petroleum product will be promptly corrected.

Any accumulation of visible discharge will be promptly removed.

#### **9.4.5 Mobile and Portable Containers: §112.8(c)(11)**

Oil storage drums and totes are provided with secondary containment pallets with a minimum capacity of 100% of the largest storage container volume when located in portions of buildings inaccessible to precipitation. In areas where the containment is not protected from precipitation, the secondary containment provides a minimum capacity of 100% of the volume of the largest storage container plus sufficient freeboard to contain a 25-year, 24-hour storm event.

Mobile/portable storage tanks are located inside operations buildings, diked areas, or near spill containing material. All portable container have a secondary means of containment.

#### **9.4.6 Transfer Operations, Pumping and In-Plant Processes: §112.8(d)**

The Evergreen facility has no buried oil-containing piping.

When a pipe is not in service or is in standby service for extended lengths of time, valves are kept closed and locked, bull plugged, or blank-flanged and marked as to its origin.

The pipe supports are non-constricting supports, are adequate to support the weight of the pipe and contents and are designed according to good engineering practice to minimize abrasion.

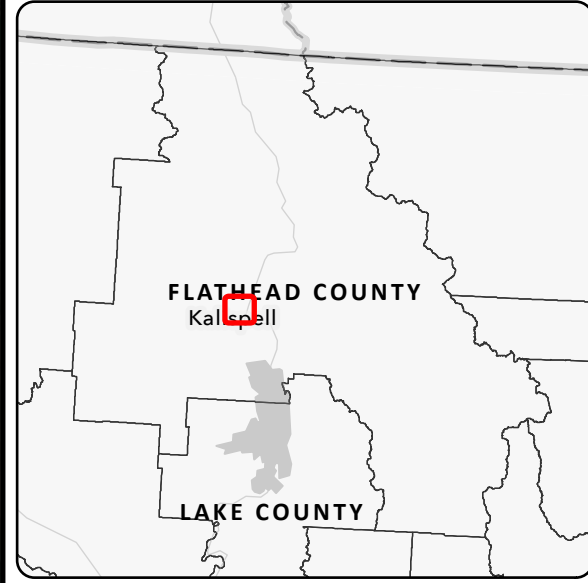
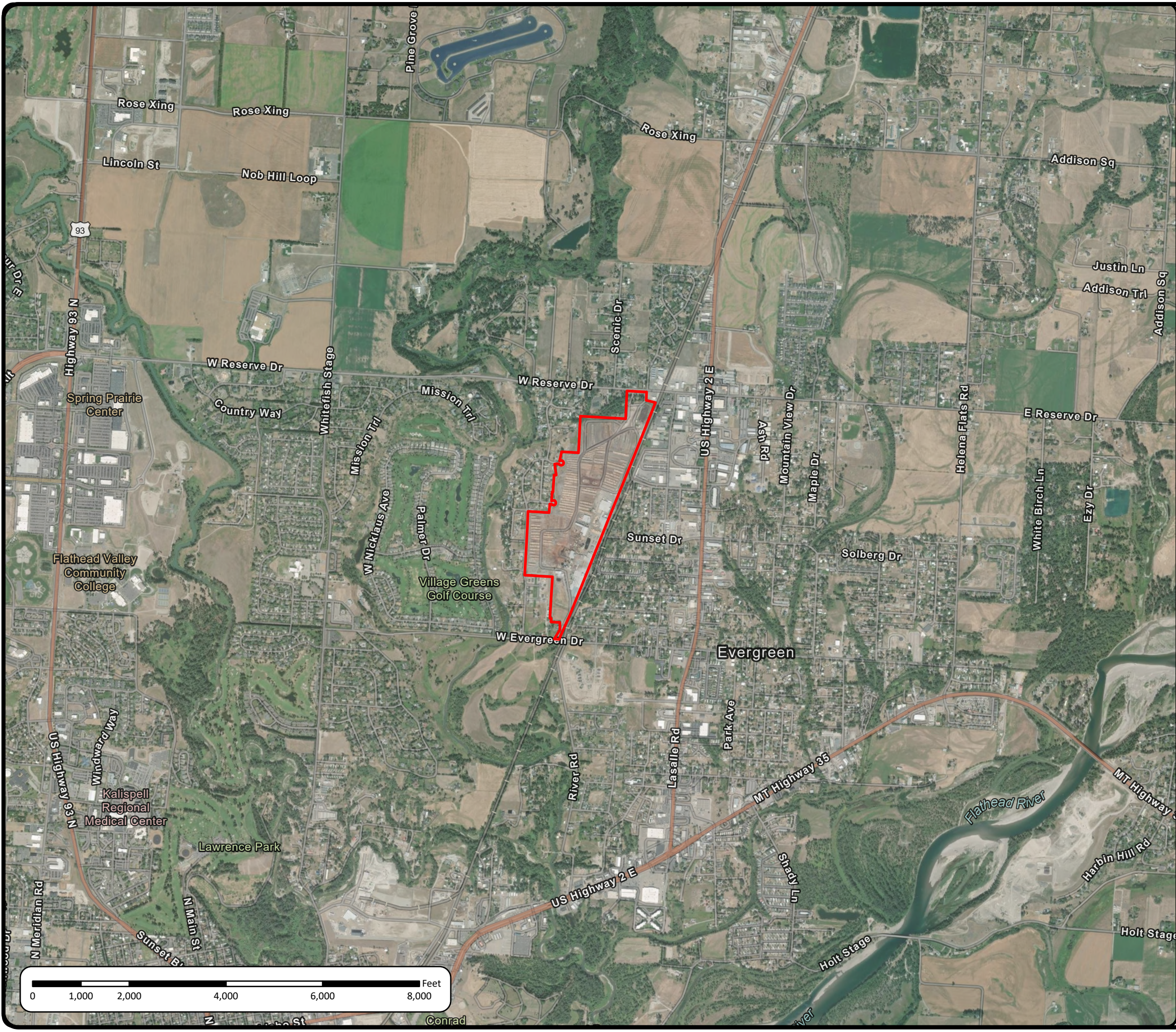
All aboveground piping and appurtenances are formally inspected **monthly**. Potential structural failures, housekeeping problems, and general tank conditions are noted and problems are promptly corrected. Sample inspection forms are included in **Appendix C**, Inspection Forms, and are kept on file at the facility for a minimum of **three years**.


All above ground piping is situated to prevent the possibility of endangerment due to vehicle traffic. Warning is by means of placing Jersey barriers or other such means to protect the piping.

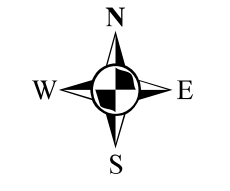
#### **9.5 List of Non-Applicable Sections of §112**

Section 112.9, (relating to onshore oil production facilities), 112.10 (relating to onshore oil drilling and workover facilities), 112.11 (relating to offshore oil drilling, production, or workover facilities), 40 CFR 112 Part C (relating to Animal Fats and Oil and Greases), 40 CFR 112 Part D (relating to Facility Response Plans) do not apply to the Evergreen facility.

# Figures



 Property Boundary

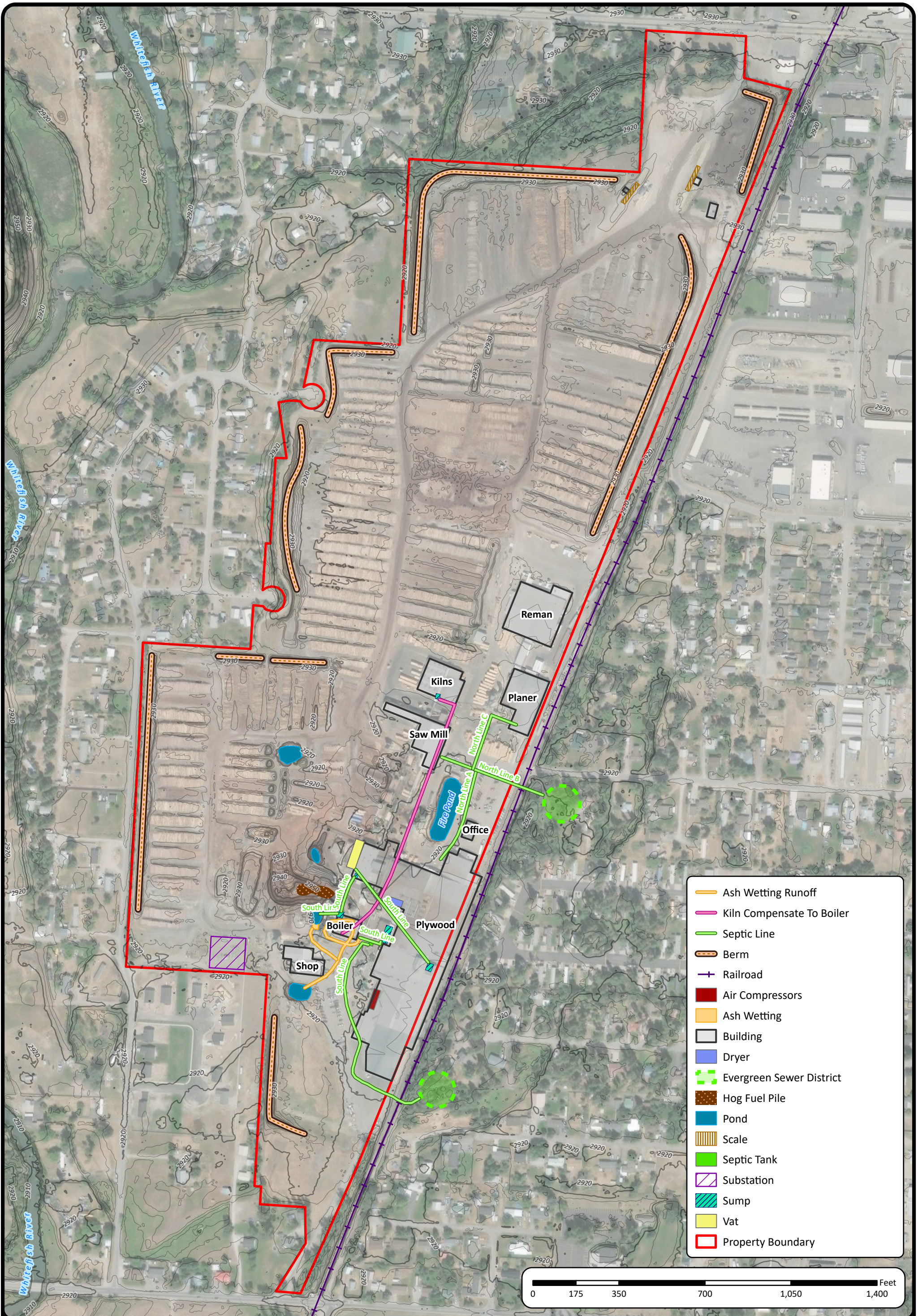


NO.	DESCRIPTION	DATE	DRAFT	REVIEW
1	MAP CREATION	1/23/25	LG	DL
2				
3				
4				
5				

NOTES

**SITE LOCATION**  
 EVERGREEN, MT - FLATHEAD COUNTY  
 JOB#: WEYERHAEUSERM06  
 DATE: 3/24/2025  
**FIGURE 1**  
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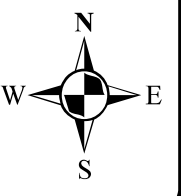


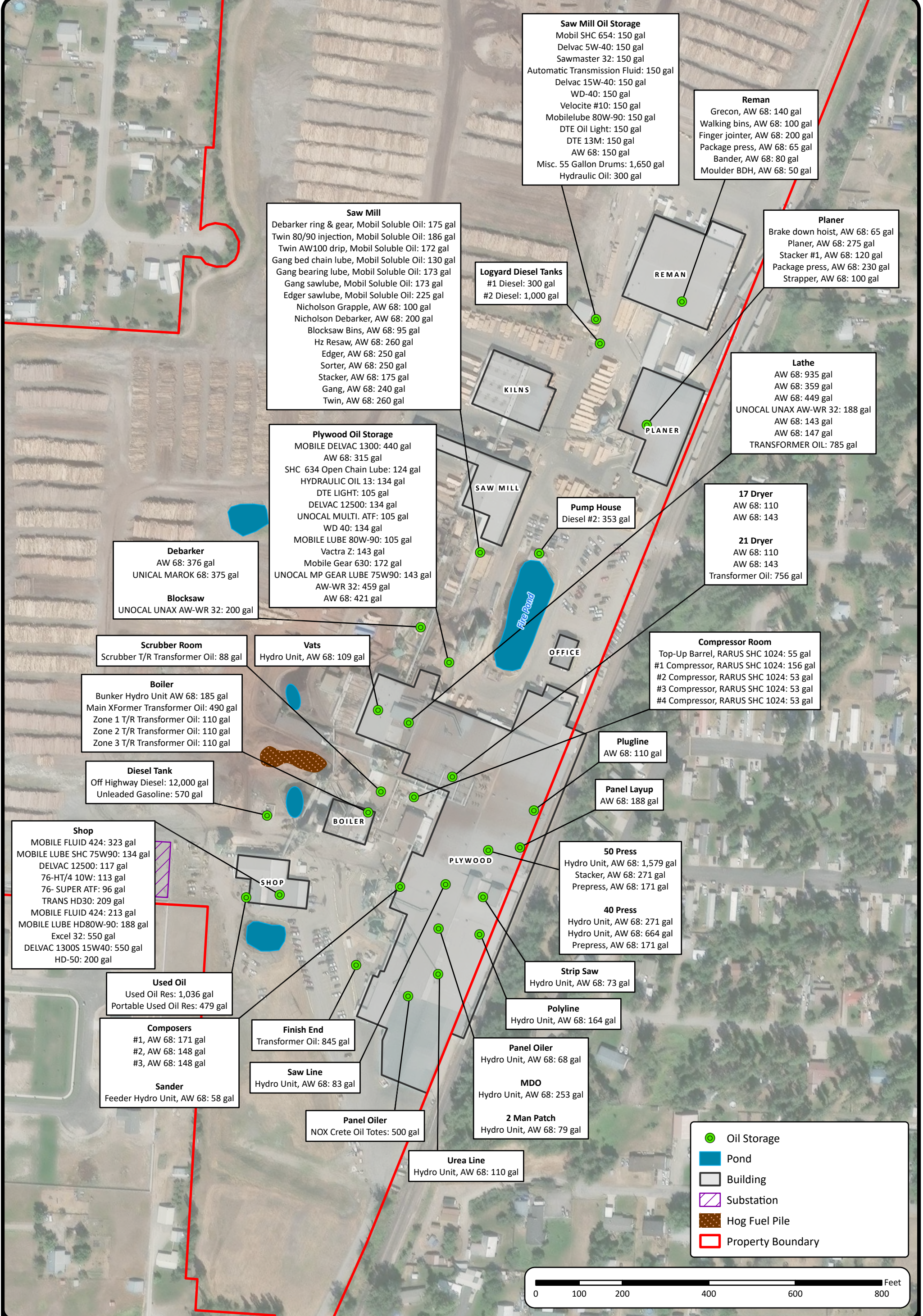


SITE FEATURES	
EVERGREEN, MT - FLATHEAD COUNTY	
<b>FIGURE 2</b>	JOB#: WEYERHAUSERM06
	DATE: 3/24/2025
Path: M:\Weyerhaeuser\WeyerhaeuserM06\GIS\SPCC_Figures\SPCC_Figures.aprx, Author: lgeorge	

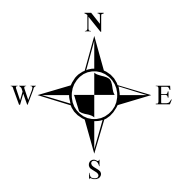
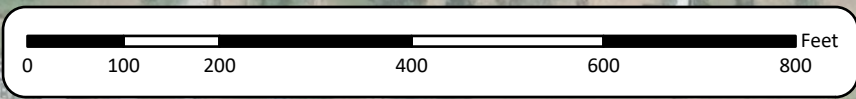
NOTES

NO.	DESCRIPTION	DATE	DRAFT	REVIEW
1	MAP CREATION	1/23/25	LG	DL
2				
3				
4				
5				



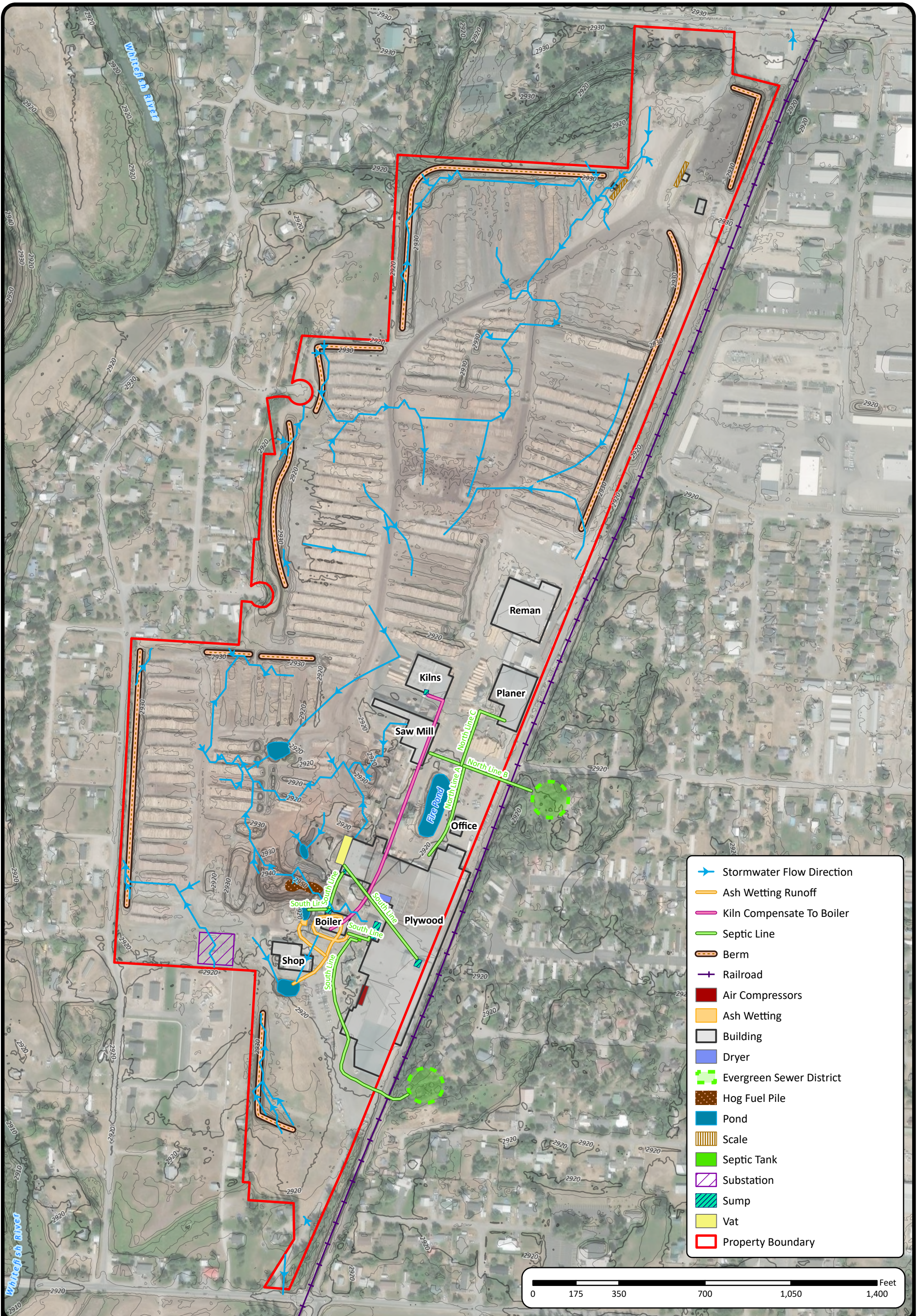


● Oil Storage  
■ Pond  
 Building  
 Substation  
 Hog Fuel Pile  
 Property Boundary

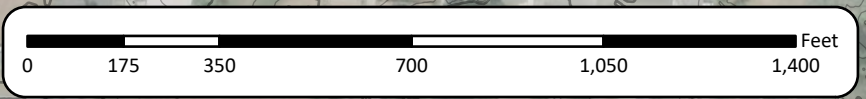


OIL STORAGE	
EVERGREEN, MT - FLATHEAD COUNTY	
<b>FIGURE 3</b>	JOB#: WEYERHAUSERM06
	DATE: 3/24/2025
Path: M:\Weyerhaeuser\WeyerhaeuserM06\GIS\SPCC_Figures\SPCC_Figures.aprx, Author: lgeorge	

NO.	DESCRIPTION	DATE	DRAFT	REVIEW
1	MAP CREATION	3/10/25	LG	DL
2				
3				
4				
5				



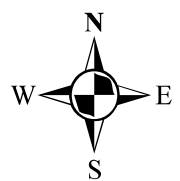
- Stormwater Flow Direction
- Ash Wetting Runoff
- Kiln Compensate To Boiler
- Septic Line
- Berm
- Railroad
- Air Compressors
- Ash Wetting
- Building
- Dryer
- Evergreen Sewer District
- Hog Fuel Pile
- Pond
- Scale
- Septic Tank
- Substation
- Sump
- Vat
- Property Boundary



<b>STORMWATER FLOW</b>	
EVERGREEN, MT - FLATHEAD COUNTY	
<b>FIGURE 4</b>	JOB#: WEYERHAUSERM06
	DATE: 3/24/2025
Path: M:\Weyerhaeuser\WeyerhaeuserM06\GIS\SPCC_Figures\SPCC_Figures.aprx, Author: lgeorge	

<b>NOTES</b>

NO.	DESCRIPTION	DATE	DRAFT	REVIEW
1	MAP CREATION	3/21/25	LG	DL
2				
3				
4				
5				



# Appendix A

## Certification of Substantial Harm Determination

40 CFR 112.20(e), 40 CFR 112.20(f)(1)

Facility Name: Weyerhaeuser Evergreen      Facility Address: 75 Sunset Dr. Evergreen, MT 59901

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?  
Yes  No
2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?  
Yes  No
3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula<sup>1)</sup>) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see appendix E to this part, section 13, for availability) and the applicable Area Contingency Plan.  
Yes  No
4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula<sup>[1]</sup>) such that a discharge from the facility would shut down a public drinking water intake?  
Yes  No
5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the last 5 years?  
Yes  No

### Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name (please type or print)

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

# Appendix B



**INCIDENT REPORTING FORM, CONTINUED**

**Part C: EPA Notification Report for Qualifying Discharge Incident**

Complete this part and submit to EPA Region 8 Regional Administrator within 60 days only if one of the following has occurred:

- 1) Discharge to navigable waters or adjoining shorelines exceeding 1,000 gallons; or
- 2) Second discharge exceeding 42 gallons within a 12-month period

Name: Weyerhaeuser Evergreen Facility

Address: 75 Sunset Dr  
Evergreen, MT 59901

Owner: Weyerhaeuser NR Company, Inc.  
75 Sunset Dr  
Evergreen, MT 59901

Operator: Weyerhaeuser NR Company, Inc.

Name of person submitting report:

Maximum storage capacity: 42,376 gallons

Nature of qualifying incident(s) (circle one):

- 1) Discharge to navigable waters or adjoining shorelines exceeding 1,000 gallons
- 2) Second discharge exceeding 42 gallons within a 12-month period.

Description of facility (attach maps, flow diagrams, and topographical maps as needed):

*The facility is a lumber mill facility and is located in Sections 4 and 9, Township 7 North, Range 9 West, Powell County, Montana. The facility is bounded on the east by the rail road right-of-way. To the north of the facility lies the city of Deer Lodge. The property is bounded on the west by residential areas and pastureland. To the south lies additional pastureland.*

Cause of the discharge(s), including a failure analysis of the system and subsystems in which the failure occurred:

**INCIDENT REPORTING FORM, CONTINUED**

Corrective actions and countermeasures taken, including a description of equipment repairs and replacements:

Additional preventive measures taken or contemplated to minimize possibility of recurrence:

Other pertinent information:

# Appendix C

# STI SP001 AST Record

OWNER INFORMATION	FACILITY INFORMATION	INSTALLER INFORMATION
Name	Name	Name
Number and Street	Number and Street	Number and Street
City, State, Zip Code	City, State, Zip Code	City, State, Zip Code

<b>TANK ID</b>			
<b>SPECIFICATION:</b>			
Design:	<input type="checkbox"/> UL _____	<input type="checkbox"/> SWRI _____	<input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Rectangular
	<input type="checkbox"/> API _____	<input type="checkbox"/> Other _____	
	<input type="checkbox"/> Unknown		
Manufacturer:	Contents:	Construction Date:	Last Repair/Reconstruction Date:
Dimensions:	Capacity:	Last Change of Service Date:	
Construction:	<input type="checkbox"/> Bare Steel <input type="checkbox"/> Cathodically Protected (Check one: A. <input type="checkbox"/> Galvanic or B. <input type="checkbox"/> Impressed Current) Date Installed: _____		
	<input type="checkbox"/> Coated Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Plastic/Fiberglass <input type="checkbox"/> Other		
	<input type="checkbox"/> Double-Bottom <input type="checkbox"/> Double-Wall <input type="checkbox"/> Lined Date Installed: _____		
Containment:	<input type="checkbox"/> Earthen Dike <input type="checkbox"/> Steel Dike <input type="checkbox"/> Concrete <input type="checkbox"/> Synthetic Liner <input type="checkbox"/> Other _____		
CRDM:	<input type="checkbox"/> Date Installed: _____	Type:	_____
Release Prevention Barrier:	<input type="checkbox"/> Date Installed: _____	Type:	_____

<b>TANK ID</b> _____			
<b>SPECIFICATION:</b>			
Design:	<input type="checkbox"/> UL _____	<input type="checkbox"/> SWRI _____	<input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Rectangular
	<input type="checkbox"/> API _____	<input type="checkbox"/> Other _____	
	<input type="checkbox"/> Unknown		
Manufacturer:	Contents:	Construction Date:	Last Repair/Reconstruction Date:
Dimensions:	Capacity:	Last Change of Service Date:	
Construction:	<input type="checkbox"/> Bare Steel <input type="checkbox"/> Cathodically Protected (Check one: A. <input type="checkbox"/> Galvanic or B. <input type="checkbox"/> Impressed Current) Date Installed: _____		
	<input type="checkbox"/> Coated Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Plastic/Fiberglass <input type="checkbox"/> Other		
	<input type="checkbox"/> Double-Bottom <input type="checkbox"/> Double-Wall <input type="checkbox"/> Lined Date Installed: _____		
Containment:	<input type="checkbox"/> Earthen Dike <input type="checkbox"/> Steel Dike <input type="checkbox"/> Concrete <input type="checkbox"/> Synthetic Liner <input type="checkbox"/> Other _____		
CRDM:	<input type="checkbox"/> Date Installed: _____	Type: _____	
Release Prevention Barrier:	<input type="checkbox"/> Date Installed: _____	Type: _____	

<b>TANK ID</b> _____			
<b>SPECIFICATION:</b>			
Design:	<input type="checkbox"/> UL _____	<input type="checkbox"/> SWRI _____	<input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Rectangular
	<input type="checkbox"/> API _____	<input type="checkbox"/> Other _____	
	<input type="checkbox"/> Unknown		
Manufacturer:	Contents:	Construction Date:	Last Repair/Reconstruction Date:
Dimensions:	Capacity:	Last Change of Service Date:	
Construction:	<input type="checkbox"/> Bare Steel <input type="checkbox"/> Cathodically Protected (Check one: A. <input type="checkbox"/> Galvanic or B. <input type="checkbox"/> Impressed Current) Date Installed: _____		
	<input type="checkbox"/> Coated Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Plastic/Fiberglass <input type="checkbox"/> Other		
	<input type="checkbox"/> Double-Bottom <input type="checkbox"/> Double-Wall <input type="checkbox"/> Lined Date Installed: _____		
Containment:	<input type="checkbox"/> Earthen Dike <input type="checkbox"/> Steel Dike <input type="checkbox"/> Concrete <input type="checkbox"/> Synthetic Liner <input type="checkbox"/> Other _____		
CRDM:	<input type="checkbox"/> Date Installed: _____	Type: _____	
Release Prevention Barrier:	<input type="checkbox"/> Date Installed: _____	Type: _____	

<b>TANK ID</b> _____			
<b>SPECIFICATION:</b>			
Design:	<input type="checkbox"/> UL _____	<input type="checkbox"/> SWRI _____	<input type="checkbox"/> Horizontal
	<input type="checkbox"/> API _____		<input type="checkbox"/> Vertical
	<input type="checkbox"/> Unknown	<input type="checkbox"/> Other _____	<input type="checkbox"/> Rectangular
Manufacturer:	Contents:	Construction Date:	Last Repair/Reconstruction Date:
Dimensions:	Capacity:	Last Change of Service Date:	
Construction:	<input type="checkbox"/> Bare Steel		<input type="checkbox"/> Cathodically Protected (Check one: A. <input type="checkbox"/> Galvanic or B. <input type="checkbox"/> Impressed Current) Date Installed: _____
	<input type="checkbox"/> Coated Steel	<input type="checkbox"/> Concrete	<input type="checkbox"/> Plastic/Fiberglass
	<input type="checkbox"/> Double-Bottom	<input type="checkbox"/> Double-Wall	<input type="checkbox"/> Other
		<input type="checkbox"/> Lined Date Installed: _____	
Containment:	<input type="checkbox"/> Earthen Dike	<input type="checkbox"/> Steel Dike	<input type="checkbox"/> Concrete
	<input type="checkbox"/> Synthetic Liner	<input type="checkbox"/> Other _____	
CRDM:	<input type="checkbox"/>	Date Installed: _____	Type: _____
Release Prevention Barrier:	<input type="checkbox"/>	Date Installed: _____	Type: _____

<b>TANK ID</b> _____			
<b>SPECIFICATION:</b>			
Design:	<input type="checkbox"/> UL _____	<input type="checkbox"/> SWRI _____	<input type="checkbox"/> Horizontal
	<input type="checkbox"/> API _____		<input type="checkbox"/> Vertical
	<input type="checkbox"/> Unknown	<input type="checkbox"/> Other _____	<input type="checkbox"/> Rectangular
Manufacturer:	Contents:	Construction Date:	Last Repair/Reconstruction Date:
Dimensions:	Capacity:	Last Change of Service Date:	
Construction:	<input type="checkbox"/> Bare Steel		<input type="checkbox"/> Cathodically Protected (Check one: A. <input type="checkbox"/> Galvanic or B. <input type="checkbox"/> Impressed Current) Date Installed: _____
	<input type="checkbox"/> Coated Steel	<input type="checkbox"/> Concrete	<input type="checkbox"/> Plastic/Fiberglass
	<input type="checkbox"/> Double-Bottom	<input type="checkbox"/> Double-Wall	<input type="checkbox"/> Other
		<input type="checkbox"/> Lined Date Installed: _____	
Containment:	<input type="checkbox"/> Earthen Dike	<input type="checkbox"/> Steel Dike	<input type="checkbox"/> Concrete
	<input type="checkbox"/> Synthetic Liner	<input type="checkbox"/> Other _____	
CRDM:	<input type="checkbox"/>	Date Installed: _____	Type: _____
Release Prevention Barrier:	<input type="checkbox"/>	Date Installed: _____	Type: _____

# STI SP001 Portable Container Monthly Inspection Checklist

## General Inspection Information:

Inspection Date: _____	Retain Until Date: _____ (36 months from inspection date)
Prior Inspection Date: _____	Inspector Name: _____
Containers Inspected (ID #'s): _____	

## Inspection Guidance:

- For equipment not included in this Standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a Certified Inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- (\*) designates an item in a non-conformance status. This indicates that action is required to address a problem.
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a Certified Inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for 36 months.

Item	Area: _____	Area: _____	Area: _____	Area: _____
<b>1.0 AST Containment/Storage Area</b>				
1.1 ASTs within designated storage area?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input type="checkbox"/> No*
1.2 Debris, spills, or other fire hazards in containment or storage area?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No
1.3 Water in outdoor secondary containment?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No
1.4 Drain valves operable and in a closed position?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No
1.5 Egress pathways clear and gates/doors operable?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No



## STI SP001 Monthly Inspection Checklist

### General Inspection Information:

Inspection Date: _____	Retain Until Date: _____ (36 months from inspection date)
Prior Inspection Date: _____	Inspector Name: _____
Tanks Inspected (ID #'s): _____	

### Inspection Guidance:

- For equipment not included in this Standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a Certified Inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- Upon discovery of water in the primary tank, secondary containment area, interstice, or spill container, remove promptly or take other corrective action. Before discharge to the environment, inspect the liquid for regulated products or other contaminants and disposed of it properly.
- (\*) designates an item in a non-conformance status. This indicates that action is required to address a problem.
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a Certified Inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for 36 months.
- **In the event of severe weather (snow, ice, wind storms) or maintenance (such as painting) that could affect the operation of critical components (normal and emergency vents, valves), an inspection of these components is required as soon as the equipment is safely accessible after the event.**

Item	Task	Status	Comments
<b>1.0 Tank Containment</b>			
1.1 Containment structure	Check for water, debris, cracks or fire hazard	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
1.2 Primary tank	Check for water	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
1.3 Containment drain valves	Operable and in a closed position	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
1.4 Pathways and entry	Clear and gates/doors operable	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
<b>2.0 Leak Detection</b>			
2.1 Tank	Visible signs of leakage	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
2.2 Secondary Containment	Visible signs of leakage from tank into secondary containment	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
2.3 Surrounding soil	Visible signs of leakage	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
2.4 Interstice	Visible signs of leakage	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	

Item	Task	Status	Comments
<b>3.0 Tank Equipment</b>			
3.1 Valves	a. Check for leaks.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
	b. Tank drain valves must be kept locked.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
3.2 Spill containment boxes on fill pipe	a. Inspect for debris, residue, and water in the box and remove.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
	b. Drain valves must be operable and closed.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
3.3 Liquid level equipment	a. Both visual and mechanical devices must be inspected for physical damage.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Check that the device is easily readable	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
3.4 Overfill equipment	a. If equipped with a "test" button, activate the audible horn or light to confirm operation. This could be battery powered. Replace the battery if needed	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. If overfill valve is equipped with a mechanical test mechanism, actuate the mechanism to confirm operation.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
3.5 Piping connections	Check for leaks, corrosion and damage	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
<b>4.0 Tank Attachments and Appurtenances</b>			
4.1 Ladder and platform structure	Secure with no sign of severe corrosion or damage?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
<b>5.0 Other Conditions</b>			
5.1	Are there other conditions that should be addressed for continued safe operation or that may affect the site spill prevention plan?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	



# STI SP001 Annual Inspection Checklist

## General Inspection Information:

Inspection Date: _____	Retain Until Date: _____ (36 months from inspection date)
Prior Inspection Date: _____	Inspector Name: _____
Tanks Inspected (ID #'s): _____	

## Inspection Guidance:

- For equipment not included in this Standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a Certified Inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- Remove promptly upon discovery standing water or liquid in the primary tank, secondary containment area, interstice, or spill container. Before discharge to the environment, inspect the liquid for regulated products or other contaminants and disposed of it properly.
- In order to comply with EPA SPCC (Spill Prevention, Control and Countermeasure) rules, a facility must regularly test liquid level sensing devices to ensure proper operation (40 CFR 112.8(c)(8)(v)).
- (\*) designates an item in a non-conformance status. This indicates that action is required to address a problem.
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a Certified Inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for 36 months.
- Complete this checklist on an annual basis supplemental to the owner monthly-performed inspection checklists.
- **Note: If a change has occurred to the tank system or containment that may affect the SPCC plan, the condition should be evaluated against the current plan requirement by a Professional Engineer knowledgeable in SPCC development and implementation.**

Item	Task	Status	Comments
<b>1.0 Tank Containment</b>			
1.1 Containment structure	Check for: <ul style="list-style-type: none"> <li>• Holes or cracks in containment wall or floor</li> <li>• Washout</li> <li>• Liner degradation</li> <li>• Corrosion</li> <li>• Leakage</li> <li>• Paint failure</li> <li>• Tank settling</li> </ul>	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
<b>2.0 Tank Foundation and Supports</b>			
2.1 Foundation	Settlement or foundation washout?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
2.2 Concrete pad or ring wall	Cracking or spalling?	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	

Item	Task	Status	Comments
2.3 Supports	Check for corrosion, paint failure, etc.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
2.4 Water drainage	Water drains away from tank?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
2.5 Tank grounding	Strap secured and in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
<b>3.0 Cathodic Protection</b>			
3.1 Galvanic cathodic protection system	Confirm system is functional, includes the wire connections for galvanic systems	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
3.2 Impressed current system	a. Inspect the operational components (power switch, meters, and alarms).	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Record hour meter, ammeter and voltmeter readings.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
<b>4.0 Tank Shell, Heads, Roof</b>			
4.1 Coating	Check for coating failure	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
4.2 Steel condition	Check for: <ul style="list-style-type: none"> <li>• Dents</li> <li>• Buckling</li> <li>• Bulging</li> <li>• Corrosion</li> <li>• Cracking</li> </ul>	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
4.3 Roof slope	Check for low points and standing water	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
<b>5.0 Tank Equipment</b>			
5.1 Vents	Verify that components are moving freely and vent passageways are not obstructed for: <ul style="list-style-type: none"> <li>• Emergency vent covers</li> <li>• Pressure/vacuum vent poppets</li> <li>• Other moving vent components</li> </ul>	<input type="checkbox"/> Yes* <input type="checkbox"/> No	

Item	Task	Status	Comments
5.2 Valves	Check the condition of all valves for leaks, corrosion and damage.	<input type="checkbox"/> Yes* <input type="checkbox"/> No	
5.2.1 Anti-siphon, check and gate valves	Cycle the valve open and closed and check for proper operation.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.2.2 Pressure regulator valve	Check for proper operation. (Note that there may be small, 1/4 inch drain plugs in the bottom of the valve that are not visible by looking from above only)	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.2.3 Expansion relief valve	Check that the valve is in the proper orientation. (Note that fuel must be discharged back to the tank via a separate pipe or tubing.)	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.2.4 Solenoid valves	Cycle power to valve to check operation. (Electrical solenoids can be verified by listening to the plunger opening and closing. If no audible confirmation, the valve should be inspected for the presence and operation of the plunger.)	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.2.5 Fire and shear valves	a. Manually cycle the valve to ensure components are moving freely and that the valve handle or lever has clearance to allow valve to close completely.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Valves must not be wired in open position.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	

Item	Task	Status	Comments
	c. Make sure fusible element is in place and correctly positioned.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	d. Be sure test ports are sealed with plug after testing is complete and no temporary test fixture or component remains connected to valve.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.3 Interstitial leak detection equipment	Check condition of equipment, including: <ul style="list-style-type: none"> <li>• The window is clean and clear in sight leak gauges.</li> <li>• The wire connections of electronic gauges for tightness and corrosion</li> <li>• Activate the test button, if applicable.</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.4 Spill containment boxes on fill pipe	a. If corrosion, damage, or wear has compromised the ability of the unit to perform spill containment functions, replace the unit.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
	b. Inspect the connections to the AST for tightness, as well as the bolts, nuts, washers for condition and replace if necessary.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
	c. Drain valves must be operable and closed	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
5.5 Strainer	a. Check that the strainer is clean and in good condition.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	

Item	Task	Status	Comments
5.5 Strainer	b. Access strainer basket and check cap and gasket seal as well as bolts.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.6 Filter	a. Check that the filter is in good condition and is within the manufacturer's expected service life. Replace, if necessary.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Check for leaks and decreased fuel flow	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.7 Flame arrestors	Follow manufacturer's instructions. Check for corrosion and blockage of air passages.	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A	
5.8 Leak detector for submersible pump systems	Test according to manufacturer's instructions and authority having jurisdiction (AHJ). Verify leak detectors are suited and properly installed for aboveground use.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.9 Liquid level equipment	a. Has equipment been tested to ensure proper operation?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Does equipment operate as required?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	c. Follow manufacturer's instructions	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
5.10 Overfill equipment	a. Follow manufacturer's instructions and regulatory requirements for inspection and functionality verification.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
	b. Confirm device is suited for above ground use by the manufacturer	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	



# STI SP001 Portable Container Monthly Inspection Checklist

## General Inspection Information:

Inspection Date: _____	Retain Until Date: _____ (36 months from inspection date)
Prior Inspection Date: _____	Inspector Name: _____
Containers Inspected (ID #'s): _____	

## Inspection Guidance:

- For equipment not included in this Standard, follow the manufacturer recommended inspection/testing schedules and procedures.
- The periodic AST Inspection is intended for monitoring the external AST condition and its containment structure. This visual inspection does not require a Certified Inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.
- (\*) designates an item in a non-conformance status. This indicates that action is required to address a problem.
- Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a Certified Inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.
- Retain the completed checklists for 36 months.

Item	Area: _____	Area: _____	Area: _____	Area: _____
<b>1.0 AST Containment/Storage Area</b>				
1.1 ASTs within designated storage area?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes <input type="checkbox"/> No*
1.2 Debris, spills, or other fire hazards in containment or storage area?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No
1.3 Water in outdoor secondary containment?	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No
1.4 Drain valves operable and in a closed position?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No
1.5 Egress pathways clear and gates/doors operable?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No	<input type="checkbox"/> Yes* <input type="checkbox"/> No



# Appendix D

<b>Provision</b>	<b>Plan Section</b>	<b>Page</b>
112.3(d)	Professional Engineer Certification	3
112.3(e)	Location of SPCC Plan	4
	Management Certification and Approval	2
112.5	2 Plan Review and Amendment	4
	Table 3-1 SPCC Plan Revisions	5
112.7	Management Certification Approval	2
112.7	SPCC Cross-Reference Form	Appendix D
112.7(a)(1)	1 Introduction	1
	4 General Facility Information	6
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	Table 5-1 Inventory of Containers and Capacities	8-10
112.7(a)(3)	Figure 1. Site Location	Figure 1
	Figure 4. Site Features and Storm Water Drainage	Figure 4
	Figure 2. Site Features	Figure 2
	Figure 3. O&M Building Oil Storage	Figure 3
	5.6 Countermeasures for Discharge Discovery, Response and Cleanup	12
112.7(a)(4)	6 Reporting and Notification Procedures	16
	Incident Reporting Forms	Appendix B
	Table 5-2 Emergency Notification Phone List	15
112.7(a)(5)	7.1 Discharge Response Procedures	18
112.7(b)	7.2 Potential Equipment failure and Discharge Analysis	18
112.7(c)	8.1 Discharge Containment or Diversion Structures	21
112.7(d)	Not Applicable	
112.7(e)	8.3 Inspections, Tests, and Records	23
112.7(f)	8.4 Personnel Training and Discharge Prevention Procedures	23
	Records of SPCC Training Forms	Appendix E
112.7(g)	8.5 Security	23
112.7(h)	Not Applicable	
112.7(i)	Not Applicable	
112.7(j)	1 Introduction	1
112.7(k)	8.9 Qualified Oil filled Operational Equipment	26
	Management Certification and Approval	2
112.8(b)	9.1 Facility Drainage	27
112.8(c)(1)	9.2 Bulk Storage Containers	27
112.8(c)(2)	9.2 Bulk Storage Containers	27
112.8(c)(3)	9.2 Bulk Storage Containers	27
112.8(c)(4)	Not Applicable	
112.8(c)(5)	Not Applicable	
112.8(c)(6)	9.3 Bulk Storage Inspections and Tests	28
	Aboveground Storage Container Inspection Checklists	Appendix C
112.8(c)(7)	Not Applicable	
112.8(c)(8)	9.4.2 Overfill Protection Systems	30
112.8(c)(9)	Not Applicable	
112.8(c)(10)	9.4.4 Visible Discharges	30
112.8(c)(11)	9.4.5 Mobile and Portable Containers	31
112.8(d)	Not Applicable	
112.9	Not Applicable	
112.10	Not Applicable	
112.11	Not Applicable	
112.12	Not Applicable	
112.20(e)	1.2 General Applicability	1
	Certification of the Applicability of Substantial Harm Criteria	Appendix A

# Appendix E

**Record of SPCC Training**

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Date: \_\_\_\_\_

- Purpose of Training:  Routine Annual Training  
 Change in condition at the facility  
 Personnel identified the need to include more effective control measures

Instructor: \_\_\_\_\_

Employees in Attendance:	Name	Signature
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____

- Topics Covered:  Operation and maintenance procedures to prevent the discharge of oil.  
 Discharge procedure protocols.  
 Applicable pollution control laws, rules, and regulations.  
 General facility operations.  
 The contents of the facility SPCC Plan.  
 Known discharges of oil.  
 Malfunctioning components and other potential discharge sources.  
 New or recently developed precautionary measures.  
 Other topics not identified above:

\_\_\_\_\_  
\_\_\_\_\_

## APPENDIX F: SURFACE WATER DILUTION PROJECTION

<b>MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)</b>	
<b>Montana Ground Water Pollution Control System</b>	
<b>Surface Water Dilution Projection (SWDP) - Reasonable Potential (RP)</b>	
Conservative estimation of parameter concentrations after instantaneous dilution with the nearest downgradient surface water. After dilution, there is no reasonable potential if the projected concentration is not measurable (projected change is less than the required reporting value (RRV)).	
<b>Site Name:</b>	Weyerhaeuser Kalispell Project
<b>Location:</b>	North of Kalispell (Near Evergreen)
<b>Permit #:</b>	MTX000325
<b>Notes:</b>	Combined Chronic Discharge Estimation (all Outfalls over the long term) = 6,000 gpd; 800 ft <sup>3</sup> /d Parameters of Concern = Arsenic, Barium, Total Nitrogen Certain calculations may not credit potential ground water dilution. These calculations do not credit potential ground water dispersion. These calculations do not credit potential losses due to attenuation. These calculations do not credit potential losses due to chemical transformation. These calculations do not credit potential dilution or losses within the hyporheic zone.
<b>Projected Concentration Calculation</b>	
$Cr = \frac{(Qd)(Cd) + (Qs)(Cs)}{Qd + Qs}$	
<b>Arsenic</b>	
<b>SWDP(a) - Reasonable potential scenario: dilution in surface water</b>	
<b>Qd =</b>	800 ft <sup>3</sup> /d Wastewater Treatment System design capacity - average effluent flow rate
<b>Cd =</b>	2.7 µg/L Concentration - effluent
<b>Qs =</b>	18 ft <sup>3</sup> /s Flow rate of surface water (7Q10, Stream Stats)
<b>Cs =</b>	3.9 µg/L Concentration in surface water (STORET)
<b>Cr =</b>	3.9 µg/L Projected concentration after instantaneous dilution
<b>Standard =</b>	*340/150 µg/L Surface Water Aquatic Standard, DEQ Circular -7 *(acute/chronic)
<b>RP?</b>	zero No measurable increase. No impact therefore no reasonable potential.
<b>Barium</b>	
<b>SWDP(a) - Reasonable potential scenario: dilution in surface water</b>	
<b>Qd =</b>	800 ft <sup>3</sup> /d Wastewater Treatment System design capacity - average effluent flow rate
<b>Cd =</b>	0.32 mg/L Concentration - effluent
<b>Qs =</b>	18 ft <sup>3</sup> /s Flow rate of surface water (7Q10, Stream Stats)
<b>Cs =</b>	0.08 mg/L Concentration in surface water (STORET)
<b>Cr =</b>	0.08 mg/L Projected concentration after instantaneous dilution
<b>Standard =</b>	No Std's mg/L Surface Water Aquatic Standard, DEQ Circular -7 *(acute/chronic)
<b>RP?</b>	zero No measurable increase. No impact therefore no reasonable potential.
<b>Total Nitrogen</b>	
<b>SWDP(a) - Reasonable potential scenario: dilution in surface water</b>	
<b>Qd =</b>	800 ft <sup>3</sup> /d Wastewater Treatment System design capacity - average effluent flow rate
<b>Cd =</b>	5.0 mg/L Concentration - effluent
<b>Qs =</b>	18 ft <sup>3</sup> /s Flow rate of surface water (7Q10, Stream Stats)
<b>Cs =</b>	0.11 mg/L Concentration in surface water (DEQ, 2018)
<b>Cr =</b>	0.11 mg/L Projected concentration after instantaneous dilution
<b>Standard =</b>	0.275 mg/L Surface Water Aquatic Standard, Circular 12B (used as a reference)
<b>RP?</b>	zero No measurable increase. No impact therefore no reasonable potential.
Projections performed by C. Boe on February 2026.	