MONITORING REPORT FOR 2024

CLARK FORK RIVER OPERABLE UNIT

PREPARED FOR
Montana Department of Environmental Quality
Waste Management and Remediation Division
Federal Superfund and Construction Bureau
1225 Cedar St. | P.O. Box 200901
Helena, MT 59620-0901

AND
U.S. Environmental Protection Agency
Federal Building
10 West 15th Street | Helena, MT 59626

JULY 2025

RESPEC

RESPEC.COM

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1.0 SURFACE WATER

1.1 INTRODUCTION

Performance goals were established in the Clark Fork River Operable Unit (CFROU) Record of Decision (ROD) for surface water [EPA, 2004]. The goal for surface water quality is for concentrations of all metal contaminants of concern (COCs; arsenic, cadmium, copper, lead, and zinc) to be below the concentrations identified in the CFROU ROD (Table 2-1). When the remediation activities are completed, surface water quality in the Clark Fork River is expected to fully support the growth and propagation of coldwater fishes (e.g., salmonids) and associated aquatic life. Surface waters will be monitored at specific locations along the Clark Fork River. Performance goals must be met at each location for the remedial actions to be considered successful.

This report evaluates progress toward attainment of surface water performance goals as defined in the CFROU ROD (Table 2-1). Water chemistry data were collected in 2024 to monitor COC concentrations and make direct comparisons to relevant performance standards. In addition to COC concentrations, data were collected to describe other water quality constituents which influence the toxicity of metal contaminants or otherwise influence the ecology of the Clark Fork River. Other water quality constituents described include total suspended sediment, common ion, and nutrient concentrations, and other physical properties of water (e.g., pH).

Table 1-1. Remediation performance goals for surface water in the Clark Fork River Operable Unit [EPA, 2004].

Contaminant of Concern	Performance Goal		
	Aquatic Life Standard[1]		Human Health or Drinking Water Standard (µg/L)
	Chronic (µg/L)	Acute (µg/L)	
Arsenic	150	340	10/18[2]
Cadmium	0.25	2	5
Copper[3]	9	13	1,300
Lead	3.2	81	15
Zinc	119	119	2,100

1.2 METHODS

The purpose of the surface water monitoring program is to collect data describing the temporal and spatial variation of metal and nutrient concentrations, and other physical properties of surface water in the CFROU. These data provide a long-term record of environmental conditions in the CFROU. As of 2024, 15 years of CFROU surface water data (2010-2024) have been collected under this monitoring

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

[2] The performance standard includes both the federal maximum contaminant level (MCL; 10 µg/L; dissolved concentration) and the state of Montana standard (18 µg/L; total recoverable concentration).

[3] Based on the federal ambient water quality criteria (EPA [1986]; dissolved concentration).

program. This long-term record provides a data set to evaluate the effect of remediation on environmental conditions in the CFROU over time.

Some changes to the surface water monitoring program's methods have occurred over time. Generally, the changes to the program have consisted of expanding or contracting the temporal or spatial extent of the sampling program (i.e., certain sample sites were added or removed and additional sample periods were added or removed). Fundamental sample collection, processing, and analysis methods have remained consistent throughout the duration of the monitoring program.[4]

1.2.1 MONITORING LOCATIONS

Surface water was monitored at eight CFROU sites in 2024 (Figure 1-1; Table 1-2). The monitoring network included six sites in the Clark Fork mainstem and two sites on tributary streams.

1.2.1.1 CLARK FORK RIVER MAINSTEM

Each of the mainstem sample site locations were selected for a specific monitoring objective. The six mainstem Clark Fork River monitoring sites in Reach A (Sites CFR-03A, CFR-07D, CFR-11F, CFR-18, CFR-27H, and CFR-34) were included to provide a detailed spatial representation of conditions in Reach A where the remedial work is occurring. Site CFR-18 was added to the monitoring network in 2024 to monitor remedial work in Phases 7 and 8.

1.2.1.2 TRIBUTARIES

Tributary site locations were selected to assess the significance of COC or nutrient loading from the two primary sources upstream from the CFROU. Each tributary has one sample site located immediately above the CFROU.

1.2.1.2.1 Silver Bow Creek

Silver Bow Creek is the upstream-most tributary of the Clark Fork River. Silver Bow Creek historically was the primary source of COCs to the Clark Fork River [DEQ and EPA, 1995] but it has undergone extensive remediation since 1998 and COC concentrations are reduced compared to historic levels [Sando et al., 2014; RESPEC, 2024a]. All streamflow from Silver Bow Creek is captured by the Warm Springs Ponds and treated to reduce metal loading before discharging to the Clark Fork River. One sample site (Silver Bow Creek at Warm Springs; Site SS-25) is located on Silver Bow Creek, below the confluence of the Warm Springs Ponds Outfall and the Mill-Willow Bypass.

1.2.1.2.2 Warm Springs Creek

The Clark Fork River mainstem begins at the confluence of Silver Bow Creek and Warm Springs Creek. Warm Springs Creek is a major tributary to the Clark Fork River in Reach A. Warm Springs Creek typically has relatively low nutrient concentrations and relatively cool streamflows. Water chemistry in Warm Springs Creek is monitored at Site WSC-SBC.

[4] One significant change occurred to sediment laboratory analysis methods in 2014. Prior to 2014, metal concentrations were measured on a wet weight basis. Since 2014, all sediment metals concentrations have been analyzed on a dry weight basis.

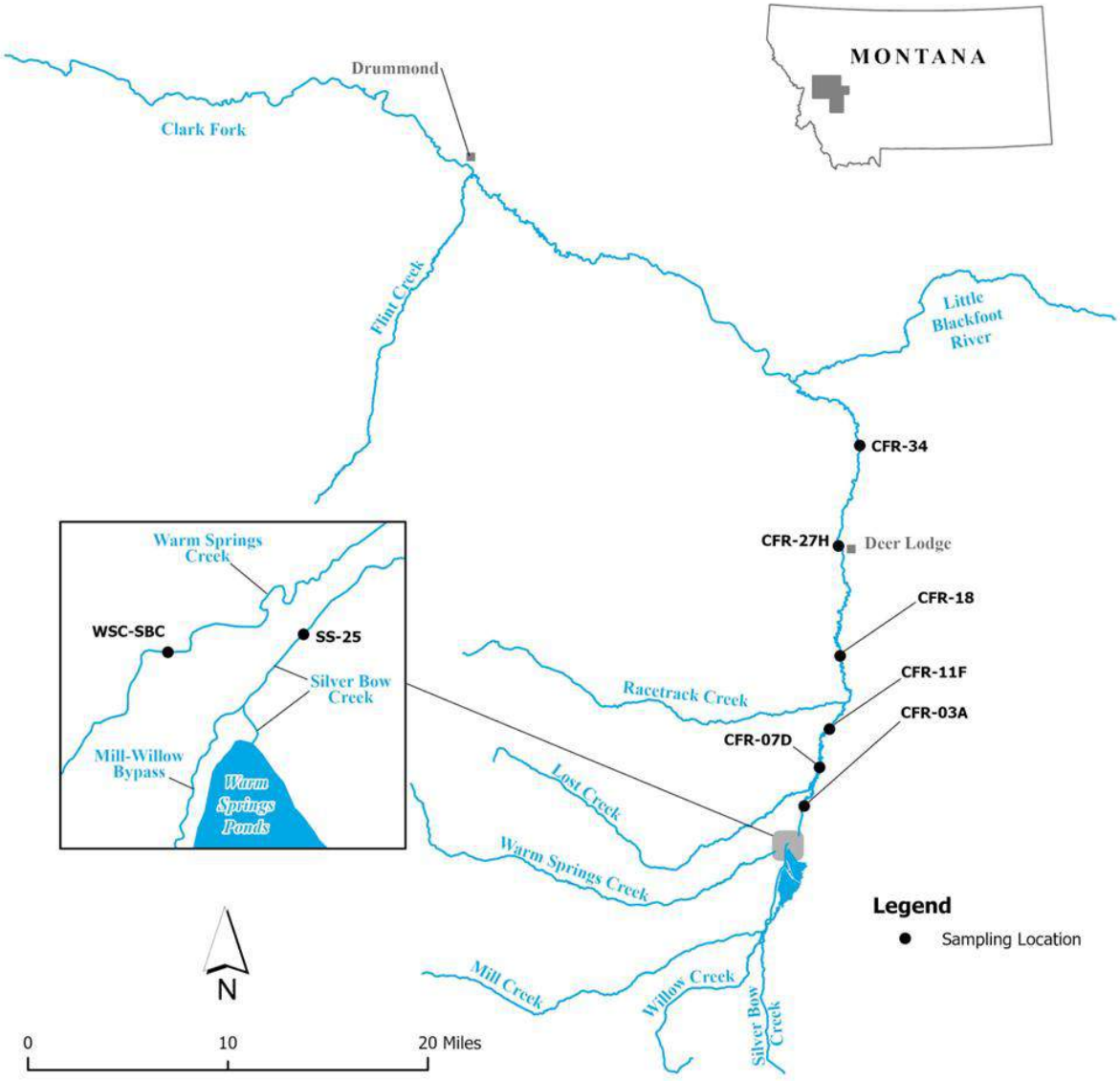


Figure 1-1. Surface water sampling locations in the Clark Fork River Operable Unit.

Table 1-2. Surface water sampling locations in the Clark Fork River Operable Unit. Streamflows were measured at all sites which did not a have co-located U.S. Geological Survey (USGS) streamflow gage.

Site ID	Site Location	Co-located USGS Streamflow Gage	Location (GPS coordinates, NAD 83)	
			Latitude	Longitude
Mainstem Sites				
CFR-03A	Clark Fork River near Galen	12323800	46.20877	-112.76740
CFR-07D	Clark Fork River at Galen Road	none	46.23725	-112.75302
CFR-11F	Clark Fork River at Gemback Road	none	46.26520	-112.74430
CFR-27H	Clark Fork River at Deer Lodge	12324200	46.39796	-112.74283
CFR-18	Clark Fork River at Perkins Lane	none	46.31737	-112.73609
CFR-34	Clark Fork River at Williams-Tavenner Bridge	none	46.47119	-112.72492
Tributary sites				
SS-25	Silver Bow Creek at Warm Springs	12323750	46.18123	-112.77917
WSC-SBC	Warm Springs Creek near mouth	12323770	46.18041	-112.78592

1.2.2 MONITORING SCHEDULE

At least one monitoring event was scheduled for each calendar quarter of 2024. Each quarterly monitoring event occurred near the end of each corresponding quarter. Monitoring events occurred on March 19, 2024 (Q1), May 29, 2024 (Q2), September 12, 2024 (Q3), and November 25, 2024 (Q4).

1.2.3 MONITORING PARAMETERS

Surface water samples were analyzed for the parameters and analytes listed in Table 1-3. Parameters and analytes were the same at all sites.

Four monitoring stations in the DEQ Clark Fork River monitoring network were co-located with active U.S. Geological Survey (USGS) streamflow gaging stations (Table 1-2). For sample sites with co-located gage stations, USGS streamflow records were accessed and streamflows were obtained from those gages for inclusion in this report. Streamflows at monitoring stations without co-located USGS gages were measured manually.

Table 1-3. Sampling parameters and analytes for surface water monitoring of the Clark Fork River Operable Unit.

Parameter	Analytes
Metal concentrations (total recoverable and dissolved)	Arsenic, cadmium, copper, lead, and zinc
Nutrient concentrations	Nitrogen (total nitrogen, nitrate plus nitrite, ammonia[5]), and phosphorus (total)
Common ion concentrations (total)	Sulfate, chloride, alkalinity, bicarbonate, magnesium, potassium, sodium
Field parameters	Total suspended sediment concentration, hardness, water temperature, pH, specific conductivity, dissolved oxygen (DO) concentrations, turbidity

[5] Ammonia concentrations were only measured in the Silver Bow Creek site.

1.2.4 SAMPLE COLLECTION AND ANALYSIS

Sample collection, analysis, and quality assurance procedures were described in the quality assurance project plan (QAPP) [RESPEC, 2024b]. Methods generally followed standard operating procedures (SOPs) developed for the Clark Fork River [AR, 1992]. Field sampling procedures were in accordance with DEQ [2019a] and followed "clean hands/dirty hands" procedures to minimize sample contamination as described in USGS [2006][6]. Composited surface water samples were collected using width-depth integration according to methods described in USGS [2006]. When streamflows were high, and samples could not be safely collected by wading, samples were collected with a crane mounted D-95 sampler operated from road bridges.

Field parameters (water temperature, pH, dissolved oxygen concentration, and conductivity) were measured during each monitoring event with a field multimeter (YSI Professional Plus or YSI 556). Turbidity was measured with a field turbidity meter (Hach Model 2100P Portable Turbidimeter). Streamflows were measured using either a portable electromagnetic streamflow meter (Marsh-McBirney Flo-Mate 2000) or an acoustic doppler current profiler (Teledyne StreamPro). Calibration methods for field meters, data recording and handling methods, and quality assurance and quality control procedures are described in the quality assurance project plan (QAPP) [RESPEC, 2024b].

Samples were analyzed by Energy Laboratories (Helena, Montana). Requested laboratory analysis procedures for each analyte are presented in Table 2-4.

Table 1-4. Analytes, methods, and reporting limits for surface water samples in the Clark Fork River Operable Unit. All samples were analyzed by Energy Laboratories in Helena, Montana.

Analyte	Requested Method	Requested Reporting Limit (mg/L)[7]	Holding Time (days)	Bottle	Preservative
Physical Properties and Inorganics					
Solids, Total Suspended (at 105C)	A 2540 D	1	7	1 L HDPE	4 ± 2 C
Alkalinity, Total (as CaCO3)	A 2320 B	4	14	500 mL HDPE	
Alkalinity, Bicarbonate (as HCO3)					
Chloride	EPA 300.0	1	28		
Sulfate					
Hardness (as CaCO3)	A 2340 B		180		
Nutrients					
Nitrogen, Ammonia (as N)	EPA 350.1	0.05	28	250 mL HDPE	4 ± 2 C
Nitrogen, Nitrate-Nitrite (as N)	EPA 353.2	0.02			H2SO4 to pH<2, 4 ± 2 C

[6] We deviated from the USGS [2006] protocols to minimize sample contamination (Section 4.0.2) in two regards. First, we did not collect samples sequentially in the order of least to greatest potential for contamination. Second, samples were processed outside the sampling vehicles, rather than within an enclosed space.

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

Analyte	Requested Method	Requested Reporting Limit (mg/L)[7]	Holding Time (days)	Bottle	Preservative
Nitrogen, Total	A 4500 N-C	0.05	30		4 ± 2 C
Phosphorus, Total	EPA 365.1	0.003	28		H2SO4 to pH<2, 4 ± 2 C
Dissolved Metals (0.45 µm filtered)					
Arsenic	EPA 200.8	0.001	180	250 mL HDPE	HNO3 to pH <2
Cadmium		0.00003			
Copper		0.001			
Lead		0.0003			
Zinc		0.008			
Total Recoverable Metals					
Total Recoverable Metals Digestion	EPA 200.2	-	-	-	-
Arsenic	EPA 200.8	0.001	180	250 mL HDPE	HNO3 to pH <2
Cadmium		0.00003			
Calcium		1			
Copper		0.001			
Lead		0.0003			
Magnesium		1			
Potassium		1			
Sodium		1			
Zinc		0.008			

1.2.5 DATA ANALYSIS

Data analysis approaches included evaluation of remedial performance goal exceedances (for COCs) or relevant regulatory standards (for non-COC constituents) and evaluation of spatial and temporal trends.

Exceedances were assessed by comparing constituent concentrations to the relevant performance goal or regulatory standard. For some COCs and for ammonia concentrations, the relevant goal or standard is based on site- and time-specific conditions (e.g., hardness-based standards; DEQ [2019b]) which were measured concomitantly with each sample collected. Some performance goals and regulatory standards assume that the measured constituent concentration will be consistent over a specific period. For example, the chronic aquatic life standard is typically based on 96-hour mean concentrations [DEQ, 2019b]. However, in this monitoring program analyte concentrations were measured at a specific point in time and mean concentrations over time are unknown. Therefore, assessments of performance goal or regulatory standard exceedances assume that the measured concentration was representative of the required period as it relates to each specific goal or standard.

To informally identify temporal trends, COC and total nitrogen and phosphorus concentrations through the periods of record at each monitoring site are displayed in scatterplots and LOESS (locally estimated scatterplot smooth) curves are fitted to the data.

Some samples had constituent concentrations which were below the method detection limits and therefore the precise concentration was unknown. These results are known as "censored data". To represent those censored data in graphical representations (i.e., scatterplots), values were substituted at half the method detection limit for each result below the detection limit concentration.

1.2.6 QUALITY CONTROL, QUALITY ASSURANCE, AND DATA VALIDATION

Data quality objectives (DQOs) were established in the CFROU monitoring project quality assurance project plan (QAPP) for data "representativeness", "comparability", "completeness", "sensitivity", "precision", "bias", and "accuracy" [RESPEC, 2024b]. Assessment of each DQO for surface water data collected in 2024 is provided in Appendix A.

1.3 RESULTS

1.3.1 STREAMFLOW

Streamflows, measured at each site at the time each sample was collected, are presented in Table 1-5.

Several sample sites were co-located with USGS streamflow gages, including Silver Bow Creek at Warm Springs (USGS 12323750), Warm Springs Creek at Warm Springs (USGS 12323770), Clark Fork River near Galen (USGS 12323800), and Clark Fork River at Deer Lodge (USGS 12324200), Hydrographs for 2024 for each of those sites are presented in Figure 1-2 through Figure 1-5.

Based on the annual hydrographs, streamflows in 2024 were generally well below average particularly during the spring, summer, and fall. Streamflows were particularly low in Silver Bow Creek and in the Clark Fork River mainstem. Warm Springs Creek had flows which were closer to the long-term median, although still generally below the median in the spring and summer.

Table 1-5. Streamflow (ft^3/s) at Clark Fork River Operable Unit monitoring stations, 2024.[8]u

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	163	160	69	65
CFR-07D	Clark Fork River at Galen Road	218	188	82	112
CFR-11F	Clark Fork River at Gemback Road	234	142	64	125
CFR-18	Clark Fork River at Perkins Lane	257	144	40	138
CFR-27H	Clark Fork River at Deer Lodge	288	167	83	174
CFR-34	Clark Fork River at Williams-Tavenner Bridge	308	191	106	208
Tributary Sites					
SS-25	Silver Bow Creek at Warm Springs	122	81	16	35
WSC-SBC	Warm Springs Creek near mouth	46	86	36	35

[8] Results from monitoring Sites CFR-03A, CFR-27H, SS-25, and WSC-SBC were obtained from USGS stream gages [USGS, 2025] and data may be provisional.

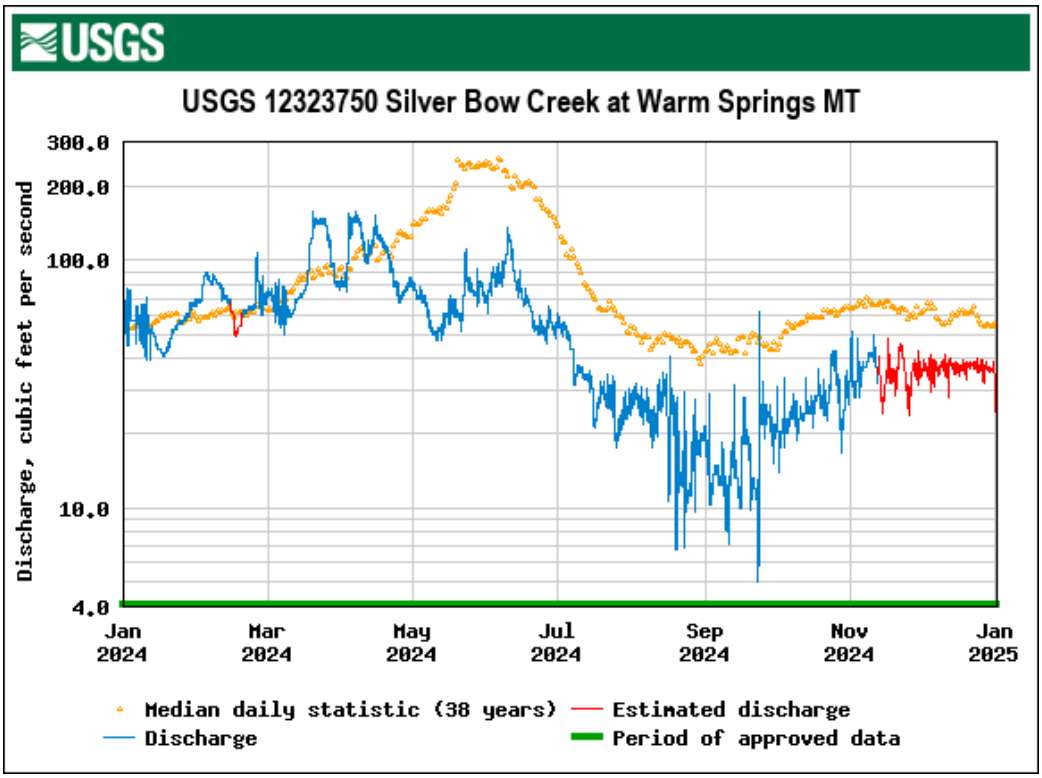


Figure 1-2. Hydrograph for Silver Bow Creek at Warm Springs, 2024.

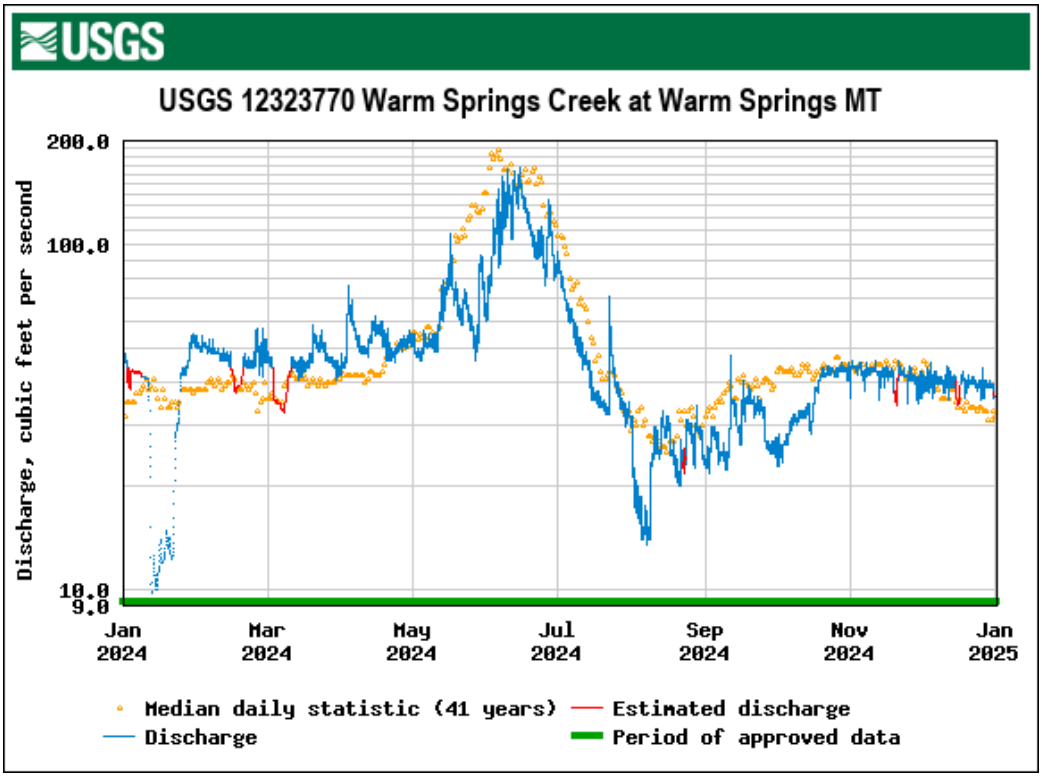


Figure 1-3. Hydrograph for Warm Springs Creek at Warm Springs, 2024.

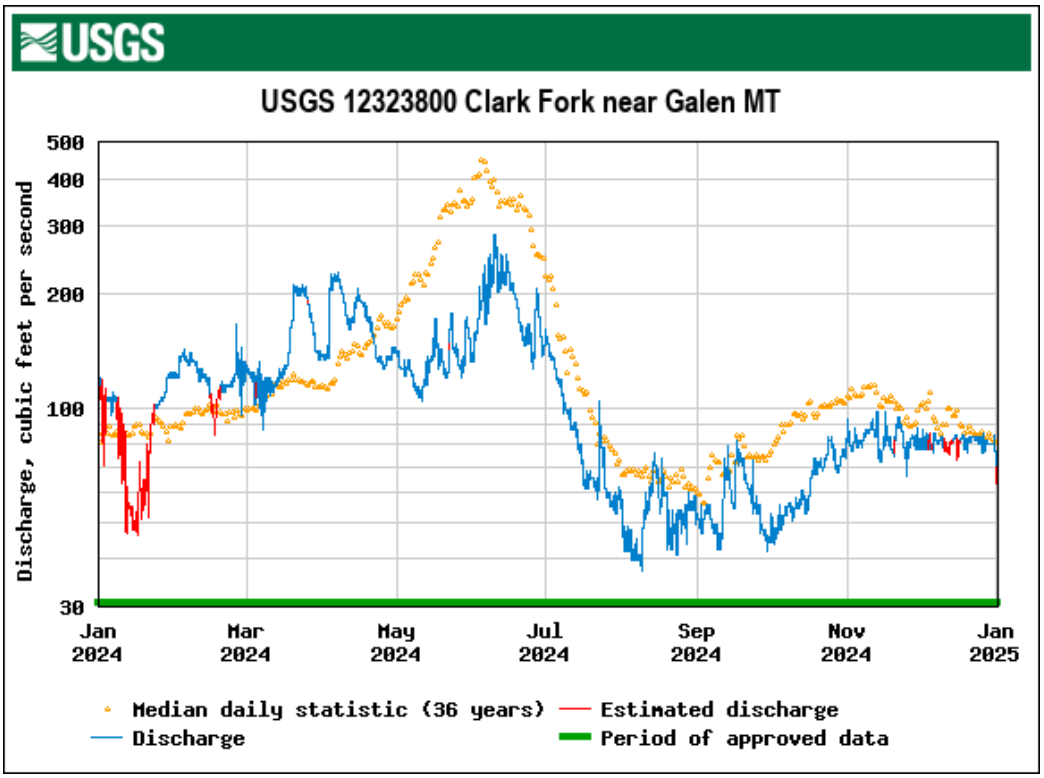


Figure 1-4. Hydrograph for Clark Fork River near Galen, 2024.

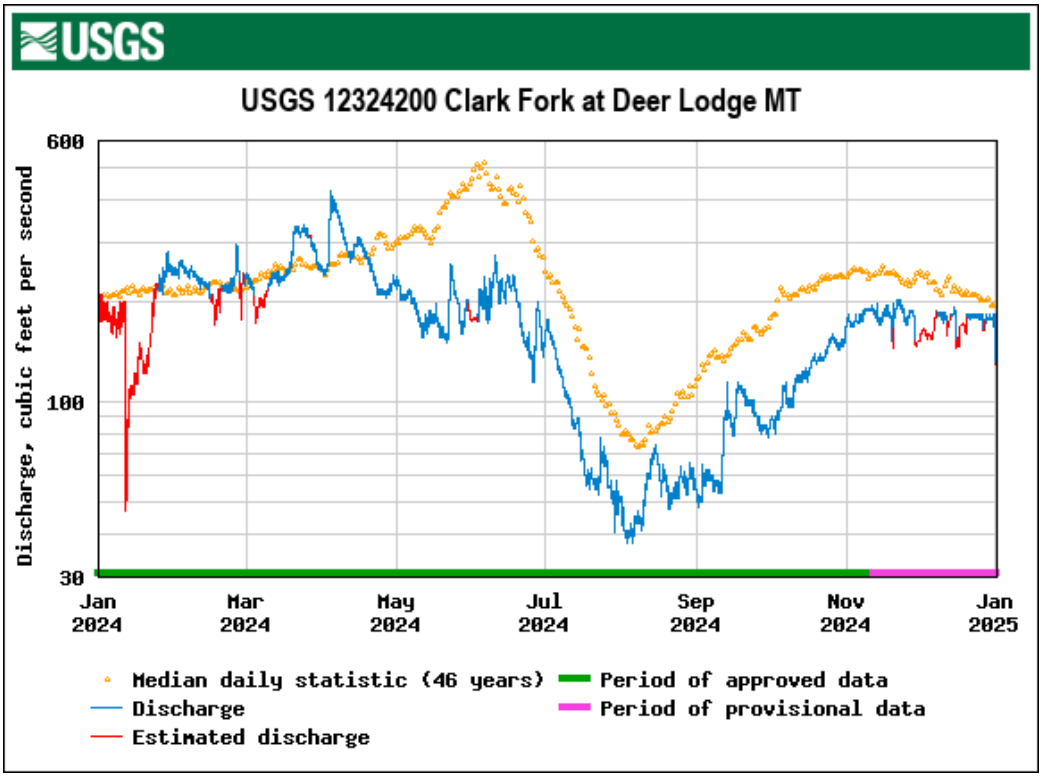


Figure 1-5. Hydrograph for Clark Fork River at Deer Lodge, 2024.

1.3.2 FIELD PARAMETERS

The following tables present measured field parameters at each CFROU site at the time samples were collected in 2024. Measured field parameters included: water temperature (Table 1-6), pH (Table 1-7), conductivity (Table 1-8), dissolved oxygen concentration (Table 1-9), and turbidity (Table 1-10).

Table 1-6. Water temperature (ºC) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	7.7	12.8	12.5	1.1
CFR-07D	Clark Fork River at Galen Road	7.2	13.2	13.1	1.3
CFR-11F	Clark Fork River at Gemback Road	6.6	13.1	14.0	1.2
CFR-18	Clark Fork River at Perkins Lane	5.4	13.9	12.8	0.7
CFR-27H	Clark Fork River at Deer Lodge	5.6	12.9	11.8	0.7
CFR-34	Clark Fork River at Williams-Tavenner Bridge	5.4	12.9	11.5	0.7
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	7.4	15.0	13.4	1.4
WSC-SBC	Warm Springs Creek near mouth	8.3	11.2	10.3	1.4

Table 1-7. Water pH at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	87	8.6	8.8	8.8
CFR-07D	Clark Fork River at Galen Road	8.5	8.7	8.7	8.7
CFR-11F	Clark Fork River at Gemback Road	8.5	8.5	8.9	8.5
CFR-18	Clark Fork River at Perkins Lane	8.4	8.4	8.6	8.5
CFR-27H	Clark Fork River at Deer Lodge	8.4	8.2	8.3	8.3
CFR-34	Clark Fork River at Williams-Tavenner Bridge	8.3	8.1	8.3	8.3
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	8.8	8.9	8.3	8.6
WSC-SBC	Warm Springs Creek near mouth	8.8	8.4	8.7	8.5
	Exceeds either the C-2 classification standard (pH range: 6.5-9.0; ARM 17.30.627) which applies to Sites CFR-03A, CFR-07D, CFR-11F, and CFR-27H or the C-1 classification standard (pH range: 6.5-8.5; ARM 17.30.626) which applies to Site CFR-34.				

Table 1-8. Conductivity (µS/cm) at Clark Fork River Operable Unit monitoring stations, 2024

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	565	389	436	469
CFR-07D	Clark Fork River at Galen Road	-	439	471	502
CFR-11F	Clark Fork River at Gemback Road	562	470	483	516
CFR-18	Clark Fork River at Perkins Lane	502	464	469	500
CFR-27H	Clark Fork River at Deer Lodge	507	482	483	511
CFR-34	Clark Fork River at Williams-Tavenner Bridge	509	501	483	505
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	655	490	656	664
WSC-SBC	Warm Springs Creek near mouth	301	227	261	306
-	No measurement.				

Table 1-9. Dissolved oxygen concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	11.1	8.6	11.9	14.2
CFR-07D	Clark Fork River at Galen Road	11.2	8.9	11.4	13.5
CFR-11F	Clark Fork River at Gemback Road	11.0	8.7	12.3	13.3
CFR-18	Clark Fork River at Perkins Lane	11.4	8.2	11.2	13.3
CFR-27H	Clark Fork River at Deer Lodge	11.2	8.4	10.3	12.9
CFR-34	Clark Fork River at Williams-Tavenner Bridge	10.7	8.1	10.4	13.0
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	11.2	8.1	9.1	12.4
WSC-SBC	Warm Springs Creek near mouth	11.1	8.3	10.0	12.3
	Below the dissolved oxygen 1-day minimum standard for waters classified as A-1, B-1, B-2, C-1, or C-2 where early life stages of fish are present (8.0 mg/L; DEQ [2019b]).				

Table 1-10. Turbidity (NTU) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	2.4	4.5	2.0	1.8
CFR-07D	Clark Fork River at Galen Road	4.5	3.7	1.5	2.3
CFR-11F	Clark Fork River at Gemback Road	5.0	3.2	2.5	2.7
CFR-18	Clark Fork River at Perkins Lane	6.2	3.0	1.7	2.6
CFR-27H	Clark Fork River at Deer Lodge	7.5	3.4	3.2	4.5
CFR-34	Clark Fork River at Williams-Tavenner Bridge	7.7	4.2	5.0	4.3
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	1.2	3.5	2.2	3.5
WSC-SBC	Warm Springs Creek near mouth	1.9	6.0	1.5	1.3
	Increase in turbidity between adjacent sites exceeds 10 NTU (for sites classified as C-2; ARM 17.30.627) which applies to Sites CFR-03A, CFR-07D, CFR-11F, and CFR-27H or 5 NTU (for sites classified as C-1; ARM 17.30.626) which applies to Site CFR-34.				

1.3.3 TOTAL SUSPENDED SEDIMENT

Total suspended sediment concentrations in the CFROU in 2024 are presented in Table 1-11.

Table 1-11. Total suspended sediment concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	6	8	3	2
CFR-07D	Clark Fork River at Galen Road	10	6	2	3
CFR-11F	Clark Fork River at Gemback Road	11	5	3	4
CFR-18	Clark Fork River at Perkins Lane	14	5	3	7
CFR-27H	Clark Fork River at Deer Lodge	18	7	9	13
CFR-34	Clark Fork River at Williams-Tavenner Bridge	20	7	17	9
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	4	7	4	6
WSC-SBC	Warm Springs Creek near mouth	2[J]	18	4	2[J]
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).				

1.3.4 COMMON IONS

The following tables present common ion concentrations at each CFROU site in 2024. Common ion concentrations measured include: water hardness (Table 1-12), calcium (Table 1-13), chloride (Table 1-14), magnesium (Table 1-15), and sulfate (Table 1-16).

Table 1-12. Hardness (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	242	166	190	208
CFR-07D	Clark Fork River at Galen Road	252	190	211	230
CFR-11F	Clark Fork River at Gemback Road	261	203	222	245
CFR-18	Clark Fork River at Perkins Lane	240	209	212	231
CFR-27H	Clark Fork River at Deer Lodge	230	214	209	234
CFR-34	Clark Fork River at Williams-Tavenner Bridge	230	224	213	233
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	271	226	276	279
WSC-SBC	Warm Springs Creek near mouth	158	115	129	160

Table 1-13. Calcium concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	76	50	56	61
CFR-07D	Clark Fork River at Galen Road	78	56	62	67
CFR-11F	Clark Fork River at Gemback Road	80	60	65	71
CFR-18	Clark Fork River at Perkins Lane	74	62	62	68
CFR-27H	Clark Fork River at Deer Lodge	71	64	62	69
CFR-34	Clark Fork River at Williams-Tavenner Bridge	70	66	63	69
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	86	71	82	82
WSC-SBC	Warm Springs Creek near mouth	47	38	38	47

Table 1-14. Chloride concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	22	10	13	14
CFR-07D	Clark Fork River at Galen Road	17	10	12	11
CFR-11F	Clark Fork River at Gemback Road	16	11	12	11
CFR-18	Clark Fork River at Perkins Lane	14	10	10	10
CFR-27H	Clark Fork River at Deer Lodge	13	11	13	12
CFR-34	Clark Fork River at Williams-Tavenner Bridge	13	12	13	11
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	30	19	31	32
WSC-SBC	Warm Springs Creek near mouth	2	0.7[J]	1	1

Table 1-15. Magnesium concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	13	10	12	14
CFR-07D	Clark Fork River at Galen Road	14	12	13	15
CFR-11F	Clark Fork River at Gemback Road	15	13	15	16
CFR-18	Clark Fork River at Perkins Lane	14	13	14	15
CFR-27H	Clark Fork River at Deer Lodge	13	13	13	15
CFR-34	Clark Fork River at Williams-Tavenner Bridge	13	14	13	15
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	14	11	17	18
WSC-SBC	Warm Springs Creek near mouth	10	7	8	10

Table 1-16. Sulfate concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	155	82	103	97
CFR-07D	Clark Fork River at Galen Road	142	97	113	104
CFR-11F	Clark Fork River at Gemback Road	139	104	116	104
CFR-18	Clark Fork River at Perkins Lane	120	96	101	97
CFR-27H	Clark Fork River at Deer Lodge	110	92	84	92
CFR-34	Clark Fork River at Williams-Tavenner Bridge	105	88	77	87
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	207	141	211	180
WSC-SBC	Warm Springs Creek near mouth	30	18	23	28

1.3.5 NUTRIENTS

1.3.5.1 TOTAL NITROGEN

Total nitrogen concentration ranged from 0.17-0.49 mg/L in the Clark Fork River, from 0.23-0.65 mg/L in Silver Bow Creek, and from 0.08-0.13 mg/L in Warm Springs Creek (Table 1-17). The Clark Fork River sites at Deer Lodge (Site CFR-27H) and at Williams-Tavenner Bridge (Site CFR-34) and Silver Bow Creek (Site SS-25) exceeded the Clark Fork River total nitrogen standard (ARM 17.30.631) in Q3 2024 (Table 1-17). Those sites also exceeded the Clark Fork River total nitrogen standard concentration in other quarters but the standard was only technically applicable during the Q3 monitoring period.

Concentrations measured in 2024 were generally at the lower end of the range of prior sample concentrations at each site, with the exception of the Q3 2024 sample from Silver Bow Creek, which was the highest total nitrogen concentration observed at the site since 2018 (Figure 1-6).

Table 1-17. Total nitrogen concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	0.21	0.19	0.22	0.17
CFR-07D	Clark Fork River at Galen Road	0.26	0.20	0.20	0.26
CFR-11F	Clark Fork River at Gemback Road	0.28	0.22	0.19	0.26
CFR-18	Clark Fork River at Perkins Lane	0.30	0.23	0.20	0.29
CFR-27H	Clark Fork River at Deer Lodge	0.35	0.28	0.46	0.48
CFR-34	Clark Fork River at Williams-Tavenner Bridge	0.35	0.25	0.49	0.45
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	0.23	0.33	0.65	0.39
WSC-SBC	Warm Springs Creek near mouth	0.09	0.10	0.08	0.13
	Exceeds Clark Fork River total nitrogen standard (0.30 mg/L; applies to mainstem sites from June 21 to September 21; ARM 17.30.631). Numeric exceedances of the standard are highlighted even during periods when the standard would not technically apply.				

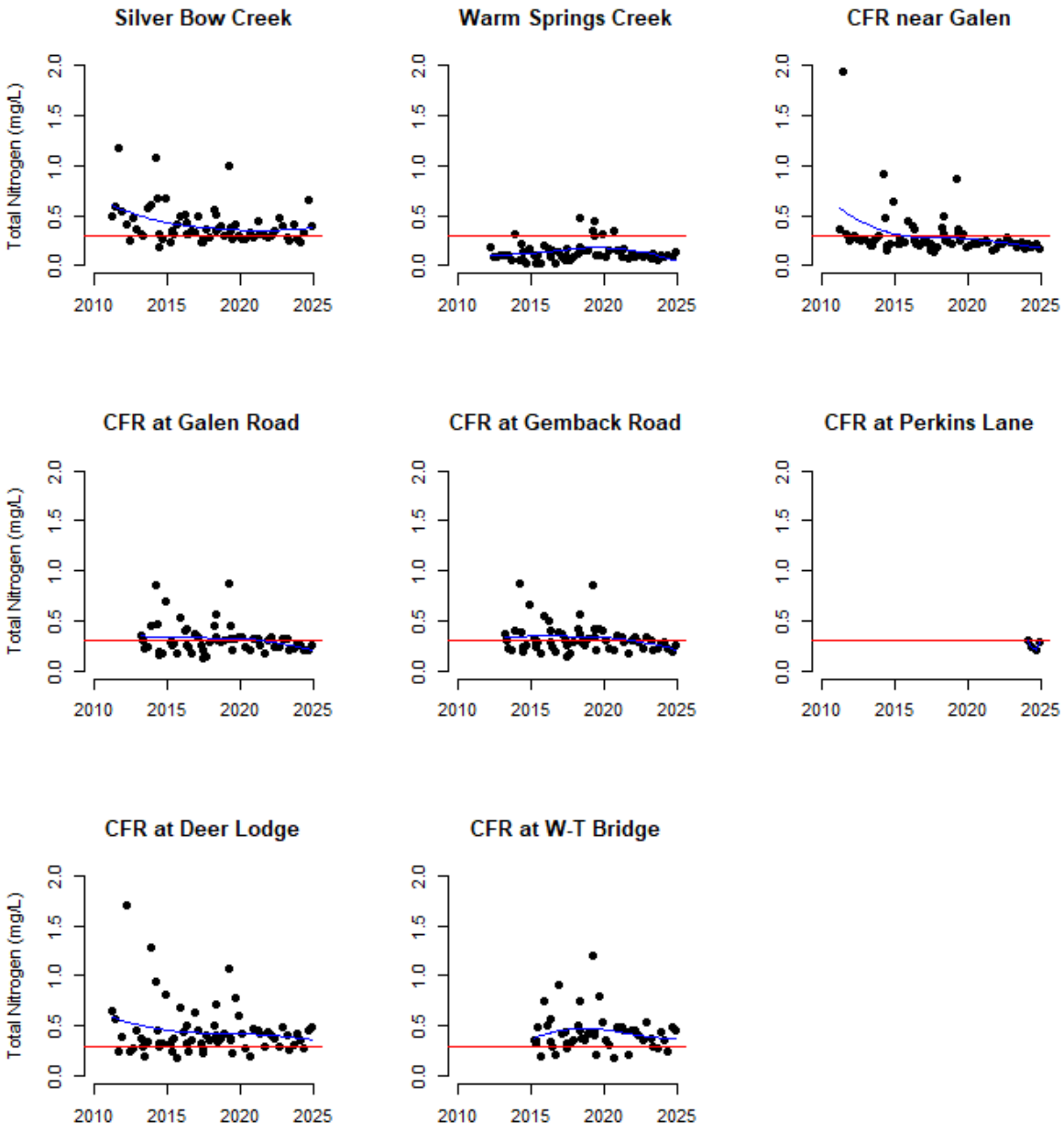


Figure 1-6. Total nitrogen concentration (mg/L) at sampling sites in the Clark Fork River Operable Unit, 2010-2024. Red line represents Clark Fork River total nitrogen standard (ARM 17.30.631). Blue lines represent locally estimated scatterplot smooth.

1.3.5.2 NITRATE PLUS NITRITE NITROGEN

Nitrate plus nitrite nitrogen concentrations in the CFROU in 2024 are presented in Table 1-18.

Table 1-18. Nitrate plus nitrite nitrogen concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	0.01[J]	ND	0.01[J]	0.01[J]
CFR-07D	Clark Fork River at Galen Road	0.08	0.01[J]	ND	0.13
CFR-11F	Clark Fork River at Gemback Road	0.09	0.01[J]	ND	0.11
CFR-18	Clark Fork River at Perkins Lane	0.12	0.02[J]	0.02[J]	0.14
CFR-27H	Clark Fork River at Deer Lodge	0.17	0.05	0.28	0.27
CFR-34	Clark Fork River at Williams-Tavenner Bridge	0.17	ND	0.27	0.25
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	ND	ND	0.08	0.01[J]
WSC-SBC	Warm Springs Creek near mouth	0.01[J]	ND	0.02	0.05
ND	Not detected at method detection limit.				
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).				

1.3.5.3 TOTAL AMMONIA

Ammonia concentrations were measured in Silver Bow Creek at Site SS-25. Concentrations were below the analytical reporting limit in all quarters except Q3. In Q3 ammonia concentration was 0.08 mg/L.

1.3.5.4 TOTAL PHOSPHORUS

Total phosphorus concentration ranged from 0.008-0.049 mg/L in the Clark Fork River, from 0.013-0.082 mg/L in Silver Bow Creek, and from 0.003-0.020 mg/L in Warm Springs Creek (Table 1-19). Exceedances of the total phosphorus standard (ARM 17.30.631) occurred in Q3 2024 in the Clark Fork River mainstem at Site CFR-34 and in Silver Bow Creek (Site SS-25). Concentrations also exceeded the Clark Fork River total phosphorus standard concentration in other quarters at multiple sites but the standard was only technically applicable during the Q3 monitoring period.

Concentrations measured in 2024 were generally at the lower end of the range of prior sample concentrations at each site (Figure 1-7).

Table 1-19. Total phosphorus concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	0.016	0.049	0.018[J]	0.008
CFR-07D	Clark Fork River at Galen Road	0.019	0.040	0.011	0.008
CFR-11F	Clark Fork River at Gemback Road	0.019	0.037	0.012	0.009
CFR-18	Clark Fork River at Perkins Lane	0.021	0.030	0.009	0.011
CFR-27H	Clark Fork River at Deer Lodge	0.024	0.024	0.014	0.016
CFR-34	Clark Fork River at Williams-Tavenner Bridge	0.029	0.031	0.035[J]	0.022
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	0.013	0.082	0.059[J]	0.020
WSC-SBC	Warm Springs Creek near mouth	0.005	0.020	0.004	0.003
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).				
	Exceeds Clark Fork River total phosphorus standard (0.020 mg/L; applies to mainstem sites from June 21 to September 21; ARM 17.30.631). Numeric exceedances of the standard are highlighted even during periods when the standard would not technically apply.				

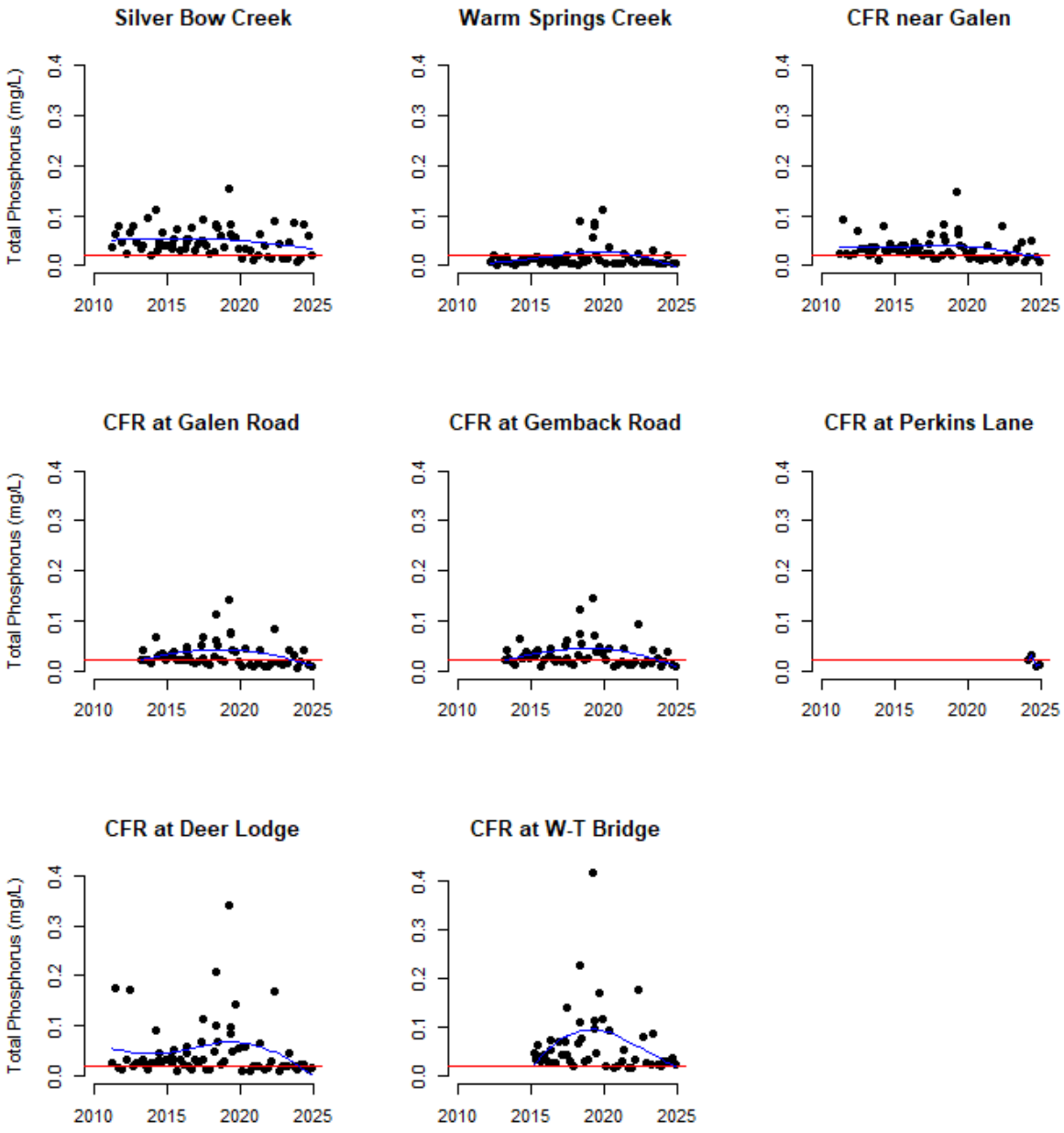


Figure 1-7. Total phosphorus concentration (mg/L) at sampling sites in the Clark Fork River Operable Unit, 2010-2024. Red lines represent the Clark Fork River total phosphorus standard (applies to mainstem sites from June 21 to September 21; ARM 17.30.631). Blue lines represent locally estimated scatterplot smooth.

1.3.6 CONTAMINANTS OF CONCERN

1.3.6.1 ARSENIC

1.3.6.1.1 Dissolved

Dissolved arsenic concentration ranged from 0.005-0.012 mg/L in the Clark Fork River, from 0.008-0.017 mg/L in Silver Bow Creek, and from 0.003-0.003 mg/L in Warm Springs Creek (Table 1-20). Exceedances of the dissolved arsenic performance goal occurred in Q2 at Clark Fork River mainstem Sites CFR-11F, CFR-18, CFR-27H and CFR-34 and in Silver Bow Creek (Site SS-25) in Q2 and Q3.

Dissolved arsenic concentrations measured in 2024 were generally at the lower end of the range of prior sample concentrations at each site (Figure 1-7). Concentrations appear to be trending downward in Silver Bow Creek and at all Clark Fork River mainstem sites since 2017.

Table 1-20. Dissolved arsenic concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	0.006	0.009	0.008	0.005
CFR-07D	Clark Fork River at Galen Road	0.007	0.010	0.008	0.006
CFR-11F	Clark Fork River at Gemback Road	0.008	0.011	0.009	0.006
CFR-18	Clark Fork River at Perkins Lane	0.007	0.011	0.008	0.006
CFR-27H	Clark Fork River at Deer Lodge	0.007	0.011	0.008	0.006
CFR-34	Clark Fork River at Williams-Tavenner Bridge	0.008	0.012	0.009	0.007
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	0.008	0.017	0.014	0.008
WSC-SBC	Warm Springs Creek near mouth	0.003	0.003	0.003	0.003
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).				
	Exceeds specified arsenic surface water performance goal for dissolved concentration (0.010 mg/L) [EPA, 2004].				

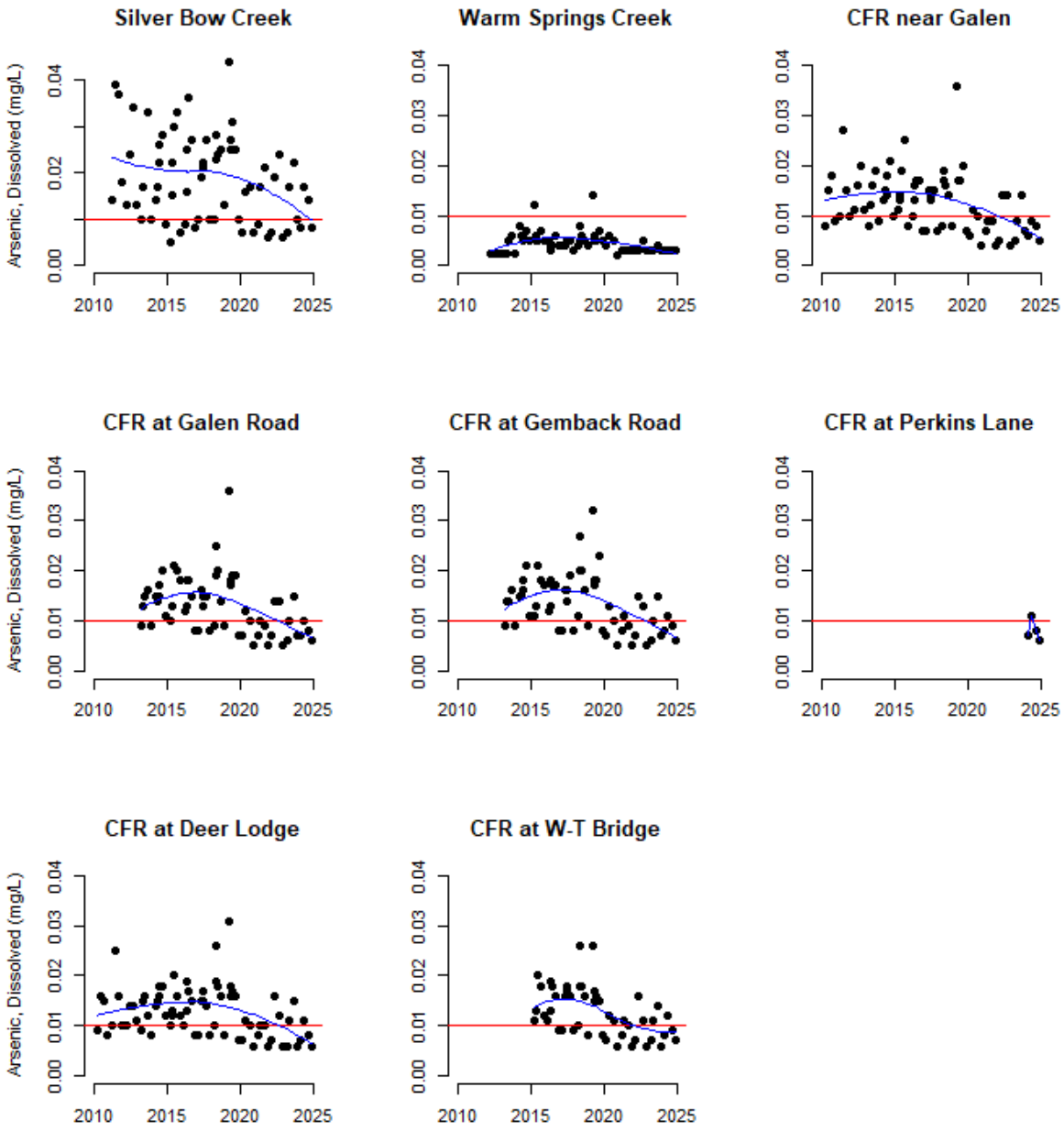


Figure 1-8. Dissolved arsenic concentration sampling sites in the Clark Fork River Operable Unit, 2010-2024. Red lines represent the arsenic performance goal for dissolved concentration [EPA, 2004]. Blue lines represent locally estimated scatterplot smooth.

1.3.6.1.2 Total Recoverable

Total recoverable arsenic concentration ranged from 0.006-0.013 mg/L in the Clark Fork River, from 0.009-0.019 mg/L in Silver Bow Creek, and from 0.003-0.005 mg/L in Warm Springs Creek (Table 1-21). Exceedances of the total recoverable arsenic performance goal occurred in Q2 in Silver Bow Creek (Site SS-25).

Total recoverable arsenic concentrations measured in 2024 were generally at the lower end of the range of prior sample concentrations at each site (Figure 1-7). Concentrations appear to be trending downward in Silver Bow Creek and at all Clark Fork River mainstem sites since 2017.

Table 1-21. Total recoverable arsenic concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	0.007	0.011	0.009	0.006
CFR-07D	Clark Fork River at Galen Road	0.010	0.011	0.008	0.007
CFR-11F	Clark Fork River at Gemback Road	0.009	0.012	0.010	0.007
CFR-18	Clark Fork River at Perkins Lane	0.009	0.012	0.008	0.007
CFR-27H	Clark Fork River at Deer Lodge	0.010	0.012	0.009	0.008
CFR-34	Clark Fork River at Williams-Tavenner Bridge	0.010	0.013	0.010	0.008
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	0.009	0.019	0.016	0.010
WSC-SBC	Warm Springs Creek near mouth	0.003	0.005	0.003	0.003
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).				
	Exceeds specified arsenic surface water performance goal for total recoverable concentration (0.018 mg/L) [EPA, 2004].				

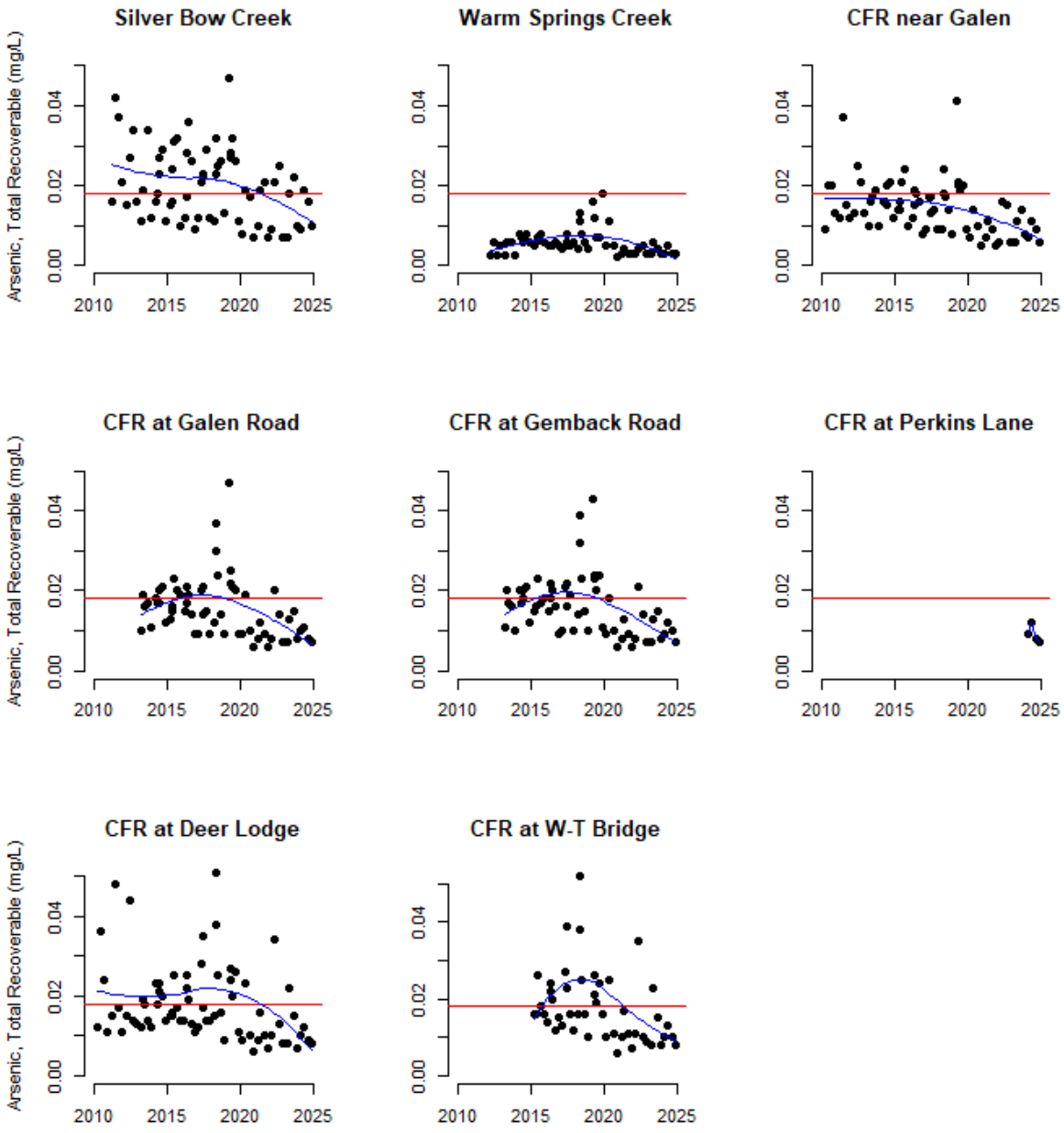


Figure 1-9. Total recoverable arsenic concentrations at sampling sites in the Clark Fork River Operable Unit, 2010-2024.[9] Red lines represent the arsenic performance goal for total recoverable concentration [EPA, 2004]. Blue lines represent locally estimated scatterplot smooth.

[9] Two samples collected on April 8, 2019, are not depicted: 0.081 mg/L at Site CFR-27H ("CFR at Deer Lodge") and 0.092 mg/L at Site CFR-27H ("CFR at W-T Bridge").

1.3.6.2 CADMIUM

Total recoverable cadmium concentration ranged from 0.00002-0.00014 mg/L in the Clark Fork River, from 0.00002-0.00012 mg/L in Silver Bow Creek, and from <0.00002-0.00005 mg/L in Warm Springs Creek in 2024 (Table 1-22). There were no exceedances of the chronic aquatic life standard at any sites in 2024.

Concentrations measured in 2024 were generally at the lower end of the range of prior sample concentrations at each site (Figure 1-7). Concentrations appear to be trending downward at some Clark Fork River mainstem sites since 2017.

Table 1-22. Total recoverable cadmium concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	0.00007	0.00004	0.00002[J]	0.00003[J]
CFR-07D	Clark Fork River at Galen Road	0.00009	0.00004	0.00002[J]	0.00003[J]
CFR-11F	Clark Fork River at Gemback Road	0.00010	0.00005	0.00003[J]	0.00003[J]
CFR-18	Clark Fork River at Perkins Lane	0.00012	0.00006	0.00002[J]	0.00006
CFR-27H	Clark Fork River at Deer Lodge	0.00012	0.00008	0.00007	0.00010
CFR-34	Clark Fork River at Williams-Tavenner Bridge	0.00014	0.00009	0.00007	0.00010
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	0.00008	0.00006	0.00002	0.00012
WSC-SBC	Warm Springs Creek near mouth	0.00003[J]	0.00005	0.00002	ND
ND	Not detected at method detection limit.				
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).				
	Exceeds chronic aquatic life standard [DEQ, 2019b].				

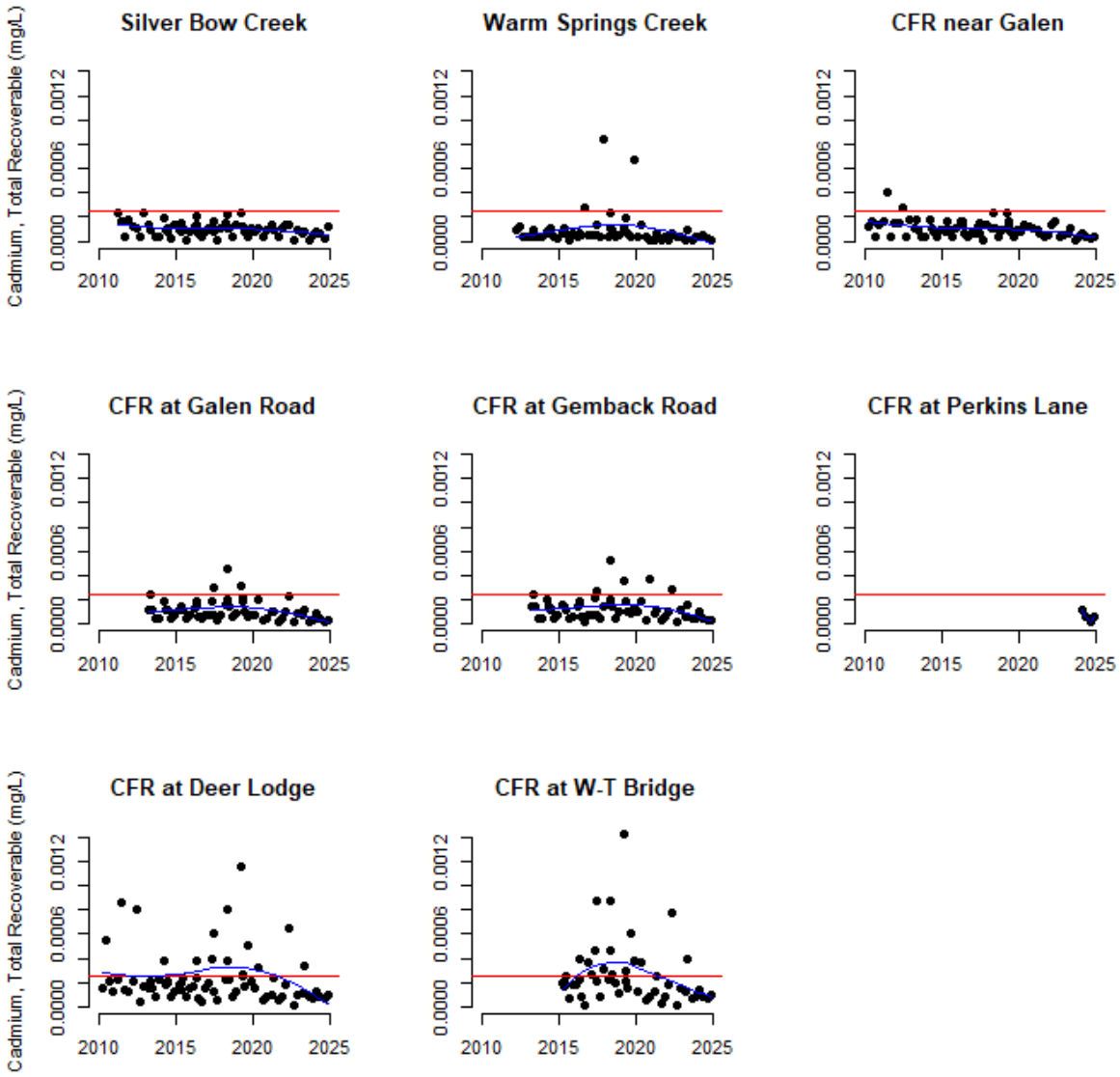


Figure 1-10. Total recoverable cadmium concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2024. Red lines represent the performance goal assuming hardness of 100 mg/L [EPA, 2004]. Blue lines represent locally estimated scatterplot smooth.

1.3.6.3 COPPER

Dissolved copper concentration ranged from 0.001-0.007 mg/L in the Clark Fork River, from 0.0008-0.003 mg/L in Silver Bow Creek, and from 0.0009-0.002 mg/L in Warm Springs Creek in 2024 (Table 1-23). There were no exceedances of the chronic aquatic life standard [EPA, 1986] based on dissolved copper concentrations in 2024.

Concentrations measured in 2024 were generally at the lower end of the range of prior sample concentrations at each site (Figure 1-7).

Table 1-23. Dissolved copper concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	0.004	0.002	0.002	0.001
CFR-07D	Clark Fork River at Galen Road	0.003	0.003	0.003	0.002
CFR-11F	Clark Fork River at Gemback Road	0.003	0.003	0.004	0.002
CFR-18	Clark Fork River at Perkins Lane	0.004	0.004	0.004	0.003
CFR-27H	Clark Fork River at Deer Lodge	0.006	0.006	0.005	0.003
CFR-34	Clark Fork River at Williams-Tavenner Bridge	0.006	0.007	0.004	0.003
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	0.003	0.002	0.0008[J]	0.002
WSC-SBC	Warm Springs Creek near mouth	0.002	0.002	0.002	0.0009[J]
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).				

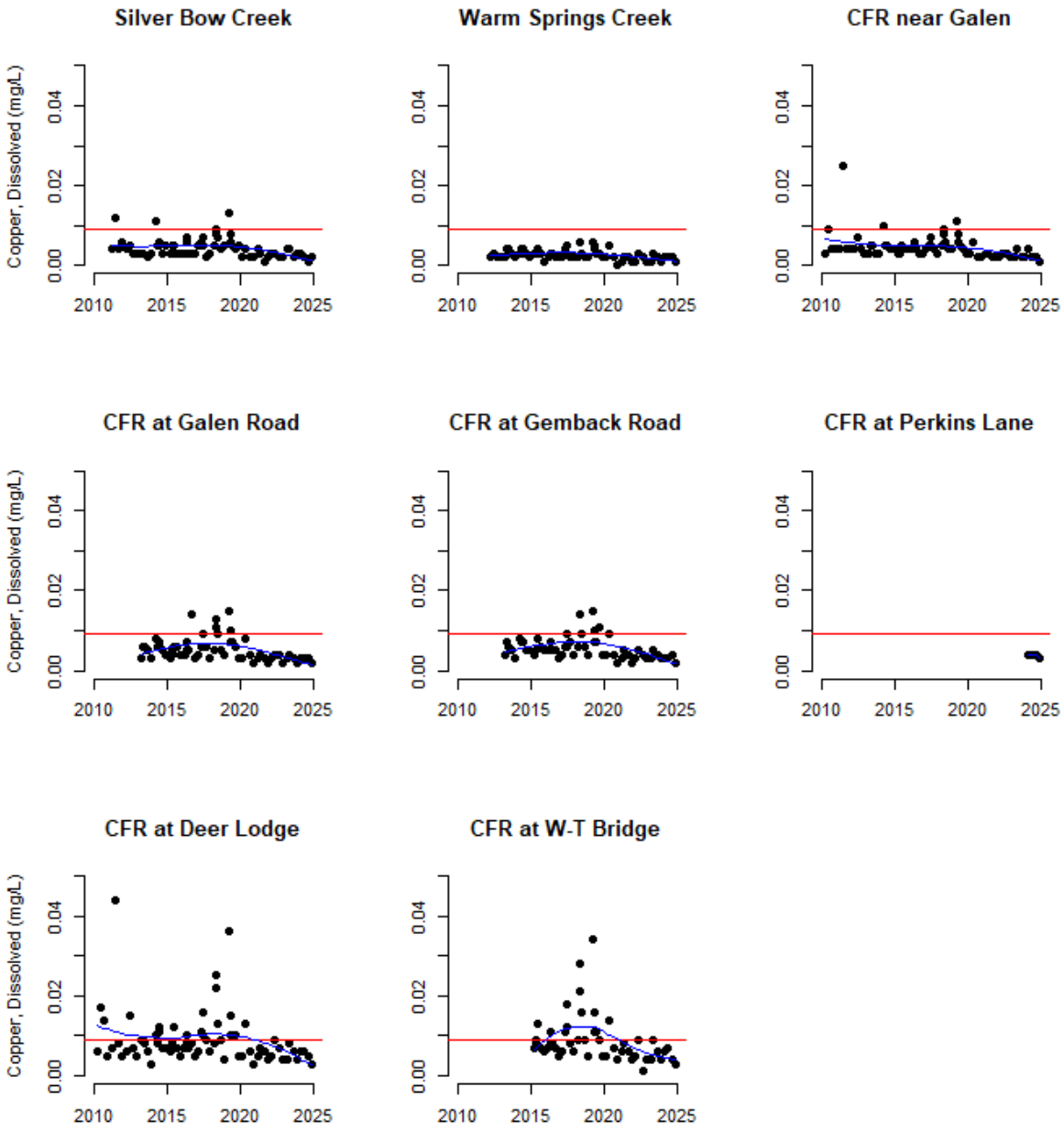


Figure 1-11. Dissolved copper concentration at sampling sites in the Clark Fork River Operable Unit, 2010-2024. Red lines represent the performance goal assuming hardness of 100 mg/L [EPA, 2004]. Blue lines represent locally estimated scatterplot smooth.

1.3.6.4 LEAD

Total recoverable lead concentration ranged from 0.0003-0.0037 mg/L in the Clark Fork River, from 0.0002-0.0013 mg/L in Silver Bow Creek, and from 0.0002-0.0018 mg/L in Warm Springs Creek in 2024 (Table 1-24). There were no exceedances of the chronic aquatic life standard at any sites in 2024.

Concentrations measured in 2024 were generally at the lower end of the range of prior sample concentrations at each site (Figure 1-7).

Table 1-24. Total recoverable lead concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	0.0007	0.0010	0.0003	0.0003
CFR-07D	Clark Fork River at Galen Road	0.0017	0.0009	0.0003	0.0004
CFR-11F	Clark Fork River at Gemback Road	0.0014	0.0008	0.0004	0.0006
CFR-18	Clark Fork River at Perkins Lane	0.0024	0.0009	0.0003	0.0009
CFR-27H	Clark Fork River at Deer Lodge	0.0032	0.0014	0.0012	0.0018
CFR-34	Clark Fork River at Williams-Tavenner Bridge	0.0037	0.0012	0.0015	0.0015
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	0.0002[J]	0.0008	0.0002[J]	0.0013
WSC-SBC	Warm Springs Creek near mouth	0.0003[J]	0.0018	0.0003[J]	0.0002[J]
ND	Not detected at method detection limit.				
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).				
	Exceeds chronic aquatic life standard [DEQ, 2019b].				

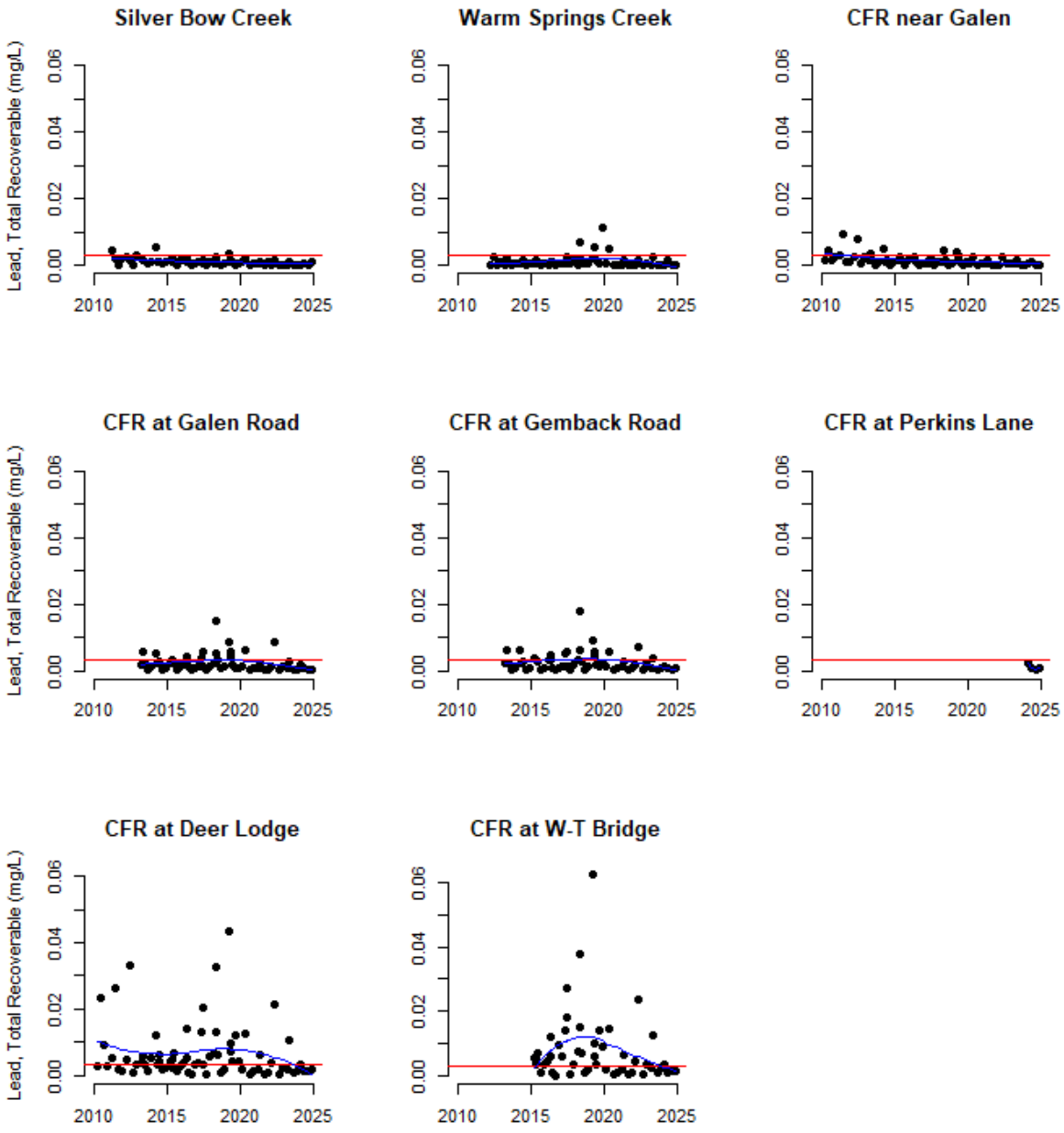


Figure 1-12. Total recoverable lead concentration at sampling sites in the Clark Fork River Operable Unit, 2010-2024. Red lines represent the performance goal assuming hardness of 100 mg/L [EPA, 2004]. Blue lines represent locally estimated scatterplot smooth.

1.3.6.5 ZINC

Total recoverable zinc concentration ranged from 0.003-0.030 mg/L in the Clark Fork River, from 0.004-0.016 mg/L in Silver Bow Creek, and from 0.002-0.010 mg/L in Warm Springs Creek in 2024 (Table 1-24). There were no exceedances of the chronic aquatic life standard at any sites in 2024.

Concentrations measured in 2024 were generally at the lower end of the range of prior sample concentrations at each site (Figure 1-7).

Table 1-25. Total recoverable zinc concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2024.

Site ID	Site Location	Sample Period			
		Q1	Q2	Q3	Q4
Mainstem sites					
CFR-03A	Clark Fork River near Galen	0.010	0.007[J]	0.003[J]	0.005[J]
CFR-07D	Clark Fork River at Galen Road	0.016	0.007[J]	0.003[J]	0.006[J]
CFR-11F	Clark Fork River at Gemback Road	0.016	0.007[J]	0.003[J]	0.008
CFR-18	Clark Fork River at Perkins Lane	0.021	0.010	0.005[J]	0.011
CFR-27H	Clark Fork River at Deer Lodge	0.023	0.014	0.012	0.019
CFR-34	Clark Fork River at Williams-Tavenner Bridge	0.030	0.014	0.014	0.018
Tributary sites					
SS-25	Silver Bow Creek at Warm Springs	0.009	0.006[J]	0.004[J]	0.016
WSC-SBC	Warm Springs Creek near mouth	0.003[J]	0.010	0.003[J]	0.002[J]
ND	Not detected at method detection limit.				
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (25 percent).				
	Exceeds chronic aquatic life standard [DEQ, 2019b].				

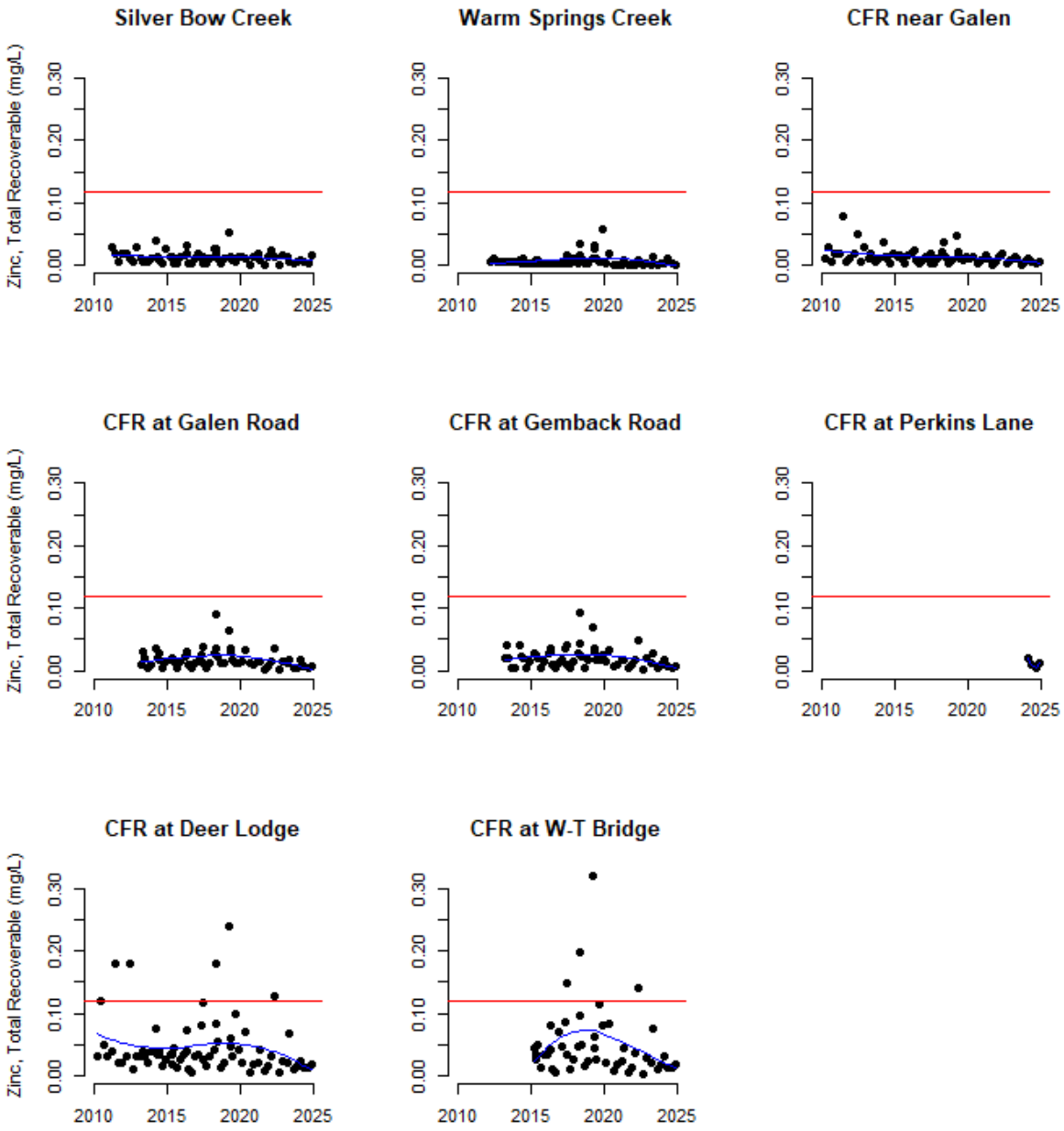


Figure 1-13. Total recoverable zinc concentration at sampling sites in the Clark Fork River Operable Unit, 2010-2024. Red lines represent the performance goal assuming hardness of 100 mg/L [EPA, 2004]. Blue lines represent locally estimated scatterplot smooth.

1.4 DISCUSSION

1.4.1 STREAMFLOWS

The snowpack in 2024 was poor in the upper Clark Fork basin which resulted in streamflows which were well below the long-term median in the spring and throughout the remainder of the year. Low streamflows corresponded to low overall metal concentrations in the CFROU in 2024.

1.4.2 FIELD PARAMETERS

1.4.2.1 PH

DEQ's beneficial use stream classifications for the upper Clark Fork River watershed vary by stream section. The designation for the Clark Fork River from the Warm Springs Creek confluence to the Cottonwood Creek confluence in Deer Lodge "C-2" and the river designation from the Cottonwood Creek confluence to the Little Blackfoot River confluence at Garrison is "C-1" (ARM 17.30.607). Each of those reaches has specific pH range standards: 6.5-8.5 for river reaches with C-1 designations and 6.5-9.0 for C-2 designations. There were no violations of these pH range standards at any sites in 2024.

1.4.2.2 DISSOLVED OXYGEN

Dissolved oxygen concentrations measured at all Clark Fork River sites and during all sample periods of 2024 were above the dissolved oxygen 1-day minimum standard (8.0 mg/L; DEQ [2019b]) for river reaches classified as C-1 or C-2 where early life stages of fish are present.

1.4.2.3 TURBIDITY

DEQ has established maximum allowable increases above naturally occurring turbidity for specific river reaches in the Clark Fork River based on beneficial use designations. The allowable increase is 10 nephelometric turbidity units (NTU) in C-2 classified reaches and five units for C-1 classified reaches. The difference in turbidity between all adjacent sites were within these limits in 2024.

1.4.3 NUTRIENTS

Numeric water quality standards have been adopted for nutrients in the Clark Fork River from the Warm Springs Creek confluence to the Blackfoot River confluence (ARM 17.30.631). All of the CFROU mainstem sites sampled in 2024 fall within this regulated nutrients zone. Nutrient standards for this segment of the Clark Fork River are 0.300 mg/L for total nitrogen and 0.020 mg/L for total phosphorus, but these standards apply only to the summer season (June 21 through September 21). In Q3 2024, two mainstem sites (Sites CFR-27H and CFR-34) had a total nitrogen concentration above the standard and one mainstem site (Site CFR-34) had total phosphorus concentrations above the standard.

1.4.4 CONTAMINANTS OF CONCERN

Exceedances of COC performance goals occurred for arsenic in 17 percent of the 24 mainstem samples but not for any other COCs. In Silver Bow Creek, arsenic exceeded the COC goal in 50 percent of the four samples. In Warm Springs Creek, there were no COC goal exceedances.

Long-term trends at CFROU sites suggest the remedial actions may be contributing to declines in COC concentrations. All COC concentrations have declined rapidly since approximately 2017 at the mainstem site located furthest downstream (Site CFR-34). At Deer Lodge (Site CFR-27H), arsenic,

cadmium, and copper concentrations have declined rapidly since 2017 and lead appears to also be declining, but at a more modest rate. Cadmium and copper appear to be declining at a modest rate since 2017 at all mainstem sites. Arsenic has declined rapidly at all mainstem sites since around 2017.

2.0 SEDIMENT

2.1 INTRODUCTION

The selected remedy for the CFROU does not include excavation of streambed sediments, however, remedial actions to remove floodplain tailings deposits and reduce streambank erosion within the CFROU are expected to result in reduced COC concentrations for instream sediments within the Clark Fork River. Therefore, instream sediment COC concentrations will be monitored in the CFROU prior to, during, and following remediation. This report reviews temporal trends for instream sediment metals concentrations in the CFROU during 2024 and prior monitoring years.

No specific remediation performance standards were established within the CFROU ROD for concentrations of COC metals in instream sediments [EPA, 2004]. In lieu of performance standards, the "threshold effect concentration" (TEC) and "probable effect concentration" (PEC) provide useful reference values for instream sediment quality (Table 2-1). These reference values are consensus-based sediment quality guidelines for benthic organisms from MacDonald et al. [2000]. At metal COC concentrations above the TEC, benthic organisms may be affected by that COC. At metal COC concentrations above the PEC, benthic organisms are likely to be affected by that COC.

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

Contaminant of Concern	Threshold Effect Concentration (mg/kg-DW)	Probable Effect Concentration (mg/kg-DW)
Arsenic	9.79	33.0
Cadmium	0.99	4.98
Copper	31.6	149
Lead	35.8	128
Zinc	121	459

2.2 METHODS

2.2.1 MONITORING LOCATIONS

Instream sediment was monitored at each surface water monitoring site (Figure 1-1; Table 1-1).

2.2.2 MONITORING SCHEDULE

Sediment samples were collected at the same time surface water samples were collected at each site. Monitoring events occurred on March 19, 2024 (Q1), May 29, 2024 (Q2), September 12, 2024 (Q3), and November 25, 2024 (Q4).

2.2.3 MONITORING PARAMETERS

Sediment samples were analyzed for dry weight (DW) total metal (arsenic, cadmium, copper, lead, and zinc) concentrations. Each sample was sieved in the laboratory and only the <0.063 mm size fraction was retained for analysis.

2.2.4 SAMPLE COLLECTION AND LABORATORY ANALYSIS

Sediment samples were collected by compositing subsamples from at least five depositional zones in wadeable locations at each monitoring site. Shallow (less than 5 cm below bed surface) bed sediment was collected manually with a high-density polyethylene spoon following the DEQ standard operating procedure [DEQ, 2019a]. The fine fraction (particle diameter <0.063 mm) portion of each sample was isolated from each by wet sieve in the laboratory shortly after collection and retained for analysis. Each sample was analyzed for total extractable dry weight concentrations (mg/kg-DW) of arsenic, cadmium, copper, lead, and zinc following methods identified in Table 2-2. The relative proportion (by weight) of the fine fraction sediment in each sample was also determined. Sediment samples were analyzed by Energy Laboratories (Helena, Montana).

Table 2-2. Analytes, methods, and reporting limits for instream sediment sampling in the Clark Fork River Operable Unit.

Analyte	Requested Method	Requested Reporting Limit (mg/kg-DW)	Holding Time (days)	Bottle	Preservative
Total Metals Digestion	EPA 3050	-	-	-	-
Arsenic	SW 6010B	5	180	1000 mL clear glass wide mouth jars	4 ± 2 C during shipment; -15 C in laboratory
Cadmium	SW 6010B	0.2			
Copper	SW 6010B	5			
Lead	SW 6010B	5			
Zinc	SW 6010B	5			

2.2.5 DATA ANALYSIS

Sample concentrations for each COC were compared to the TEC and PEC reference values for each COC to evaluate rates of exceedances. Temporal trends were evaluated informally through visual inspection of scatterplots for each COC, at each site, over the duration of monitoring in the CFROU.

Additionally, locally estimated scatterplot smooth (LOESS) curves were fitted to the data for each scatterplot.

2.2.6 QUALITY CONTROL, QUALITY ASSURANCE, AND DATA VALIDATION

Data quality objectives (DQOs) were established in the CFROU monitoring project quality assurance project plan (QAPP) for data "representativeness", "comparability", "completeness", "sensitivity", "precision", "bias", and "accuracy" [RESPEC, 2024b]. Assessment of each DQO for sediment data collected in 2024 is provided in Appendix A.

2.3 RESULTS

2.3.1 CONTAMINANTS OF CONCERN

2.3.1.1 ARSENIC

Arsenic concentrations ranged from 92-242 mg/kg in the Clark Fork River sediment samples, from 144-168 mg/kg in Silver Bow Creek samples, and from 66-69 mg/kg in Warm Springs Creek samples in 2024 (Table 2-3). Exceedances of the probable effect concentration occurred in all 2024 samples.

Concentrations measured in 2024 were generally similar to, or lower than, past results at most sites (Figure 2-1). There does not yet appear to be evidence of temporal trends at any of these sites.

Table 2-3. Total arsenic concentrations (mg/kg dry weight) in fine fraction (<0.063 mm) instream sediment samples from the Clark Fork River Operable Unit, 2024.

Site ID	Site Location	Sample concentration (mg/kg-DW)	
		Q1	Q3
Mainstem Sites			
CFR-03A	Clark Fork River near Galen	154	207
CFR-07D	Clark Fork River at Galen Road	155	242
CFR-11F	Clark Fork River at Gemback Road	103	136
CFR-18	Clark Fork River at Perkins Lane	101	201
CFR-27H	Clark Fork River at Deer Lodge	119	111
CFR-34	Clark Fork River at Williams-Tavenner Bridge	102	92
Tributary Sites			
SS-25	Silver Bow Creek at Warm Springs	168	144
168	Warm Springs Creek near mouth	66	69
	Exceeds threshold effect concentration (9.79 mg/kg; MacDonald et al. [2000]).		
	Exceeds probable effect concentration (33.0 mg/kg; MacDonald et al. [2000]).		

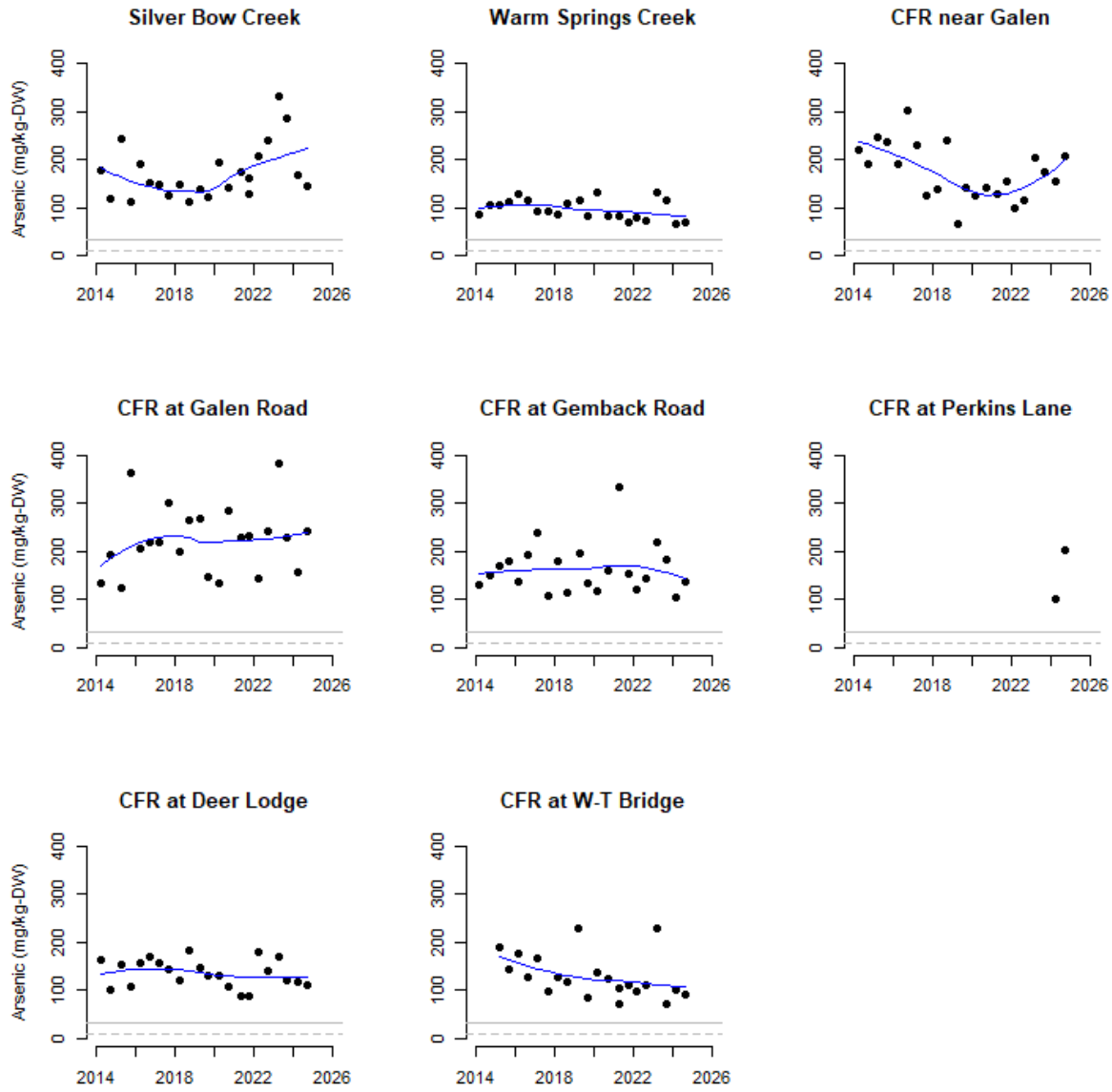


Figure 2-1. Total arsenic concentrations (dry weight) at each site in the Clark Fork River Operable Unit, 2014-2024. Gray lines represent the "threshold effect concentration" (TEC; dashed line; 9.79 mg/kg) and the "probable effect concentration" (PEC; solid line; 33.0 mg/kg) [MacDonald et al., 2000]. Blue lines are the locally estimated scatterplot smooth (LOESS) curves fitted to the data for each plot.

2.3.1.2 CADMIUM

Cadmium concentrations ranged from 4.4-12.5 mg/kg in the Clark Fork River sediment samples, from 8.9-10.2 mg/kg in Silver Bow Creek samples, and from 2.1-3.3 mg/kg in Warm Springs Creek samples in 2024 (Table 2-4).

All samples exceeded the threshold effect concentration in 2024. Exceedances of the probable effect concentration occurred at mainstem Site CFR-07D in Q2, at all mainstem sites in Q3, and in Silver Bow Creek during both sample periods of 2024.

Concentrations measured in 2024 were generally similar to, or lower than, past results at most sites (Figure 2-2). There does not yet appear to be evidence of temporal trends at any of these sites.

Table 2-4. Total cadmium concentrations (mg/kg dry weight) in fine fraction (<0.063 mm) instream sediment samples from the Clark Fork River Operable Unit, 2024.

Site ID	Site Location	Sample concentration (mg/kg-DW)	
		Q1	Q3
Mainstem Sites			
CFR-03A	Clark Fork River near Galen	4.4	6.7[J]
CFR-07D	Clark Fork River at Galen Road	5.4	6.3[J]
CFR-11F	Clark Fork River at Gemback Road	4.4	7.3[J]
CFR-18	Clark Fork River at Perkins Lane	4.5	12.5[J]
CFR-27H	Clark Fork River at Deer Lodge	4.7	7.6[J]
CFR-34	Clark Fork River at Williams-Tavenner Bridge	4.9	7.9[J]
Tributary Sites			
SS-25	Silver Bow Creek at Warm Springs	10.2	8.9[J]
WSC-SBC	Warm Springs Creek near mouth	2.1	3.3[J]
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (40 percent).		
	Exceeds threshold effect concentration, 0.99 mg/kg [MacDonald et al., 2000].		
	Exceeds probable effect concentration, 4.98 mg/kg [MacDonald et al., 2000].		

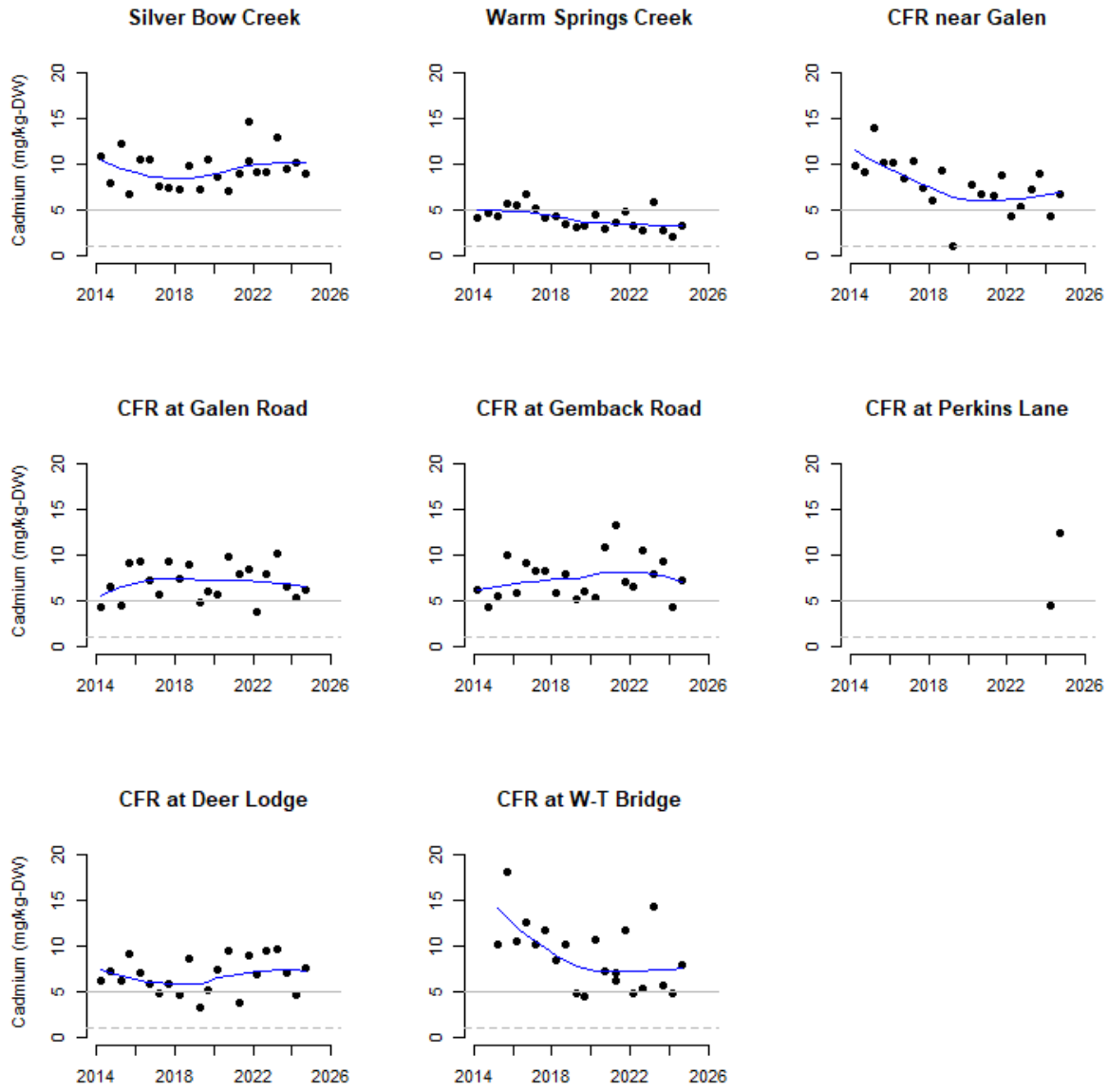


Figure 2-2. Total cadmium concentrations (dry weight) at each site in the Clark Fork River Operable Unit, 2014-2024. Gray lines represent the "threshold effect concentration" (TEC; dashed line) at 0.99 mg/kg and the "probable effect concentration" (PEC; solid line) at 4.98 mg/kg [MacDonald et al., 2000].[10] Blue lines are the locally estimated scatterplot smooth (LOESS) curves fitted to the data for each plot.

[10] One sample with a concentration of 106 mg/kg-DW, collected near Galen on September 10, 2019, is not depicted. This sample is not fitted in the LOESS curve for the site.

2.3.1.3 COPPER

Copper concentrations ranged from 815-2,270 mg/kg in the Clark Fork River sediment samples, from 298-338 mg/kg in Silver Bow Creek samples, and from 661-864 mg/kg in Warm Springs Creek samples in 2024 (Table 2-5). Exceedances of the probable effect concentration occurred in all 2024 samples.

Concentrations measured in 2024 were generally similar to, or lower than, past results at most sites (Figure 2-3). There does not yet appear to be evidence of temporal trends at any of these sites.

Table 2-5. Total copper concentrations (mg/kg dry weight) in fine fraction (<0.063 mm) instream sediment samples from the Clark Fork River Operable Unit, 2024.

Site ID	Site Location	Sample concentration (mg/kg-DW)	
		Q1	Q3
Mainstem Sites			
CFR-03A	Clark Fork River near Galen	815	1,570[J]
CFR-07D	Clark Fork River at Galen Road	1,360	2,270[J]
CFR-11F	Clark Fork River at Gemback Road	994	1,400[J]
CFR-18	Clark Fork River at Perkins Lane	1,020	2,110[J]
CFR-27H	Clark Fork River at Deer Lodge	1,240	1,440[J]
CFR-34	Clark Fork River at Williams-Tavenner Bridge	1,080	1,170[J]
Tributary Sites			
SS-25	Silver Bow Creek at Warm Springs	298	338[J]
WSC-SBC	Warm Springs Creek near mouth	661	864[J]
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (40 percent).		
	Exceeds threshold effect concentration, 31.6 mg/kg [MacDonald et al., 2000].		
	Exceeds probable effect concentration, 149 mg/kg [MacDonald et al., 2000].		

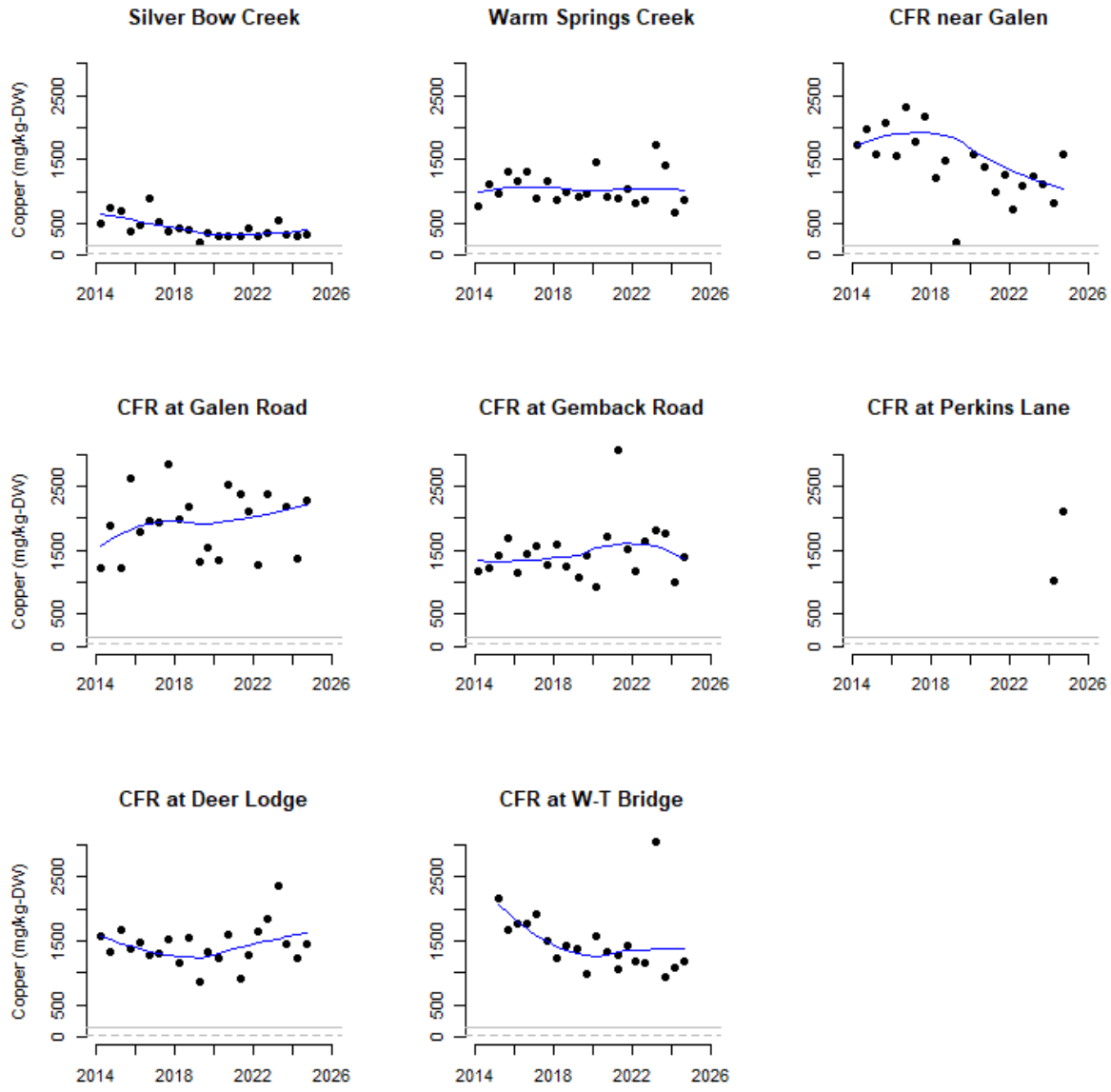


Figure 2-3. Total copper concentrations (dry weight) at each site in the Clark Fork River Operable Unit, 2014-2024. Gray lines represent the "threshold effect concentration" (TEC; dashed line) at 31.6 mg/kg and the "probable effect concentration" (PEC; solid line) at 149 mg/kg [MacDonald et al., 2000].[11] Blue lines are the locally estimated scatterplot smooth (LOESS) curves fitted to the data for each plot.

[11] One sample with a concentration of 4,880 mg/kg, collected near Galen on September 10, 2019, is not depicted.

2.3.1.4 LEAD

Lead concentrations ranged from 120-405 mg/kg in the Clark Fork River sediment samples, from 155-173 mg/kg in Silver Bow Creek samples, and from 82-102 mg/kg in Warm Springs Creek samples in 2024 (Table 2-6).

Concentrations measured in 2024 were generally similar to, or lower than, past results at most sites (Figure 2-4). There does not yet appear to be evidence of temporal trends at any of these sites.

Table 2-6. Total lead concentrations (mg/kg dry weight) in fine fraction (<0.063 mm) instream sediment samples from the Clark Fork River Operable Unit, 2024.

Site ID	Site Location	Sample concentration (mg/kg-DW)	
		Q1	Q3
Mainstem Sites			
CFR-03A	Clark Fork River near Galen	120	305[J]
CFR-07D	Clark Fork River at Galen Road	201	324[J]
CFR-11F	Clark Fork River at Gemback Road	159	266[J]
CFR-18	Clark Fork River at Perkins Lane	152	405[J]
CFR-27H	Clark Fork River at Deer Lodge	189	254[J]
CFR-34	Clark Fork River at Williams-Tavenner Bridge	153	236[J]
Tributary Sites			
SS-25	Silver Bow Creek at Warm Springs	155	173[J]
WSC-SBC	Warm Springs Creek near mouth	82	102[J]
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (40 percent).		
	Exceeds threshold effect concentration, 35.8 mg/kg [MacDonald et al., 2000].		
	Exceeds probable effect concentration, 128 mg/kg [MacDonald et al., 2000].		

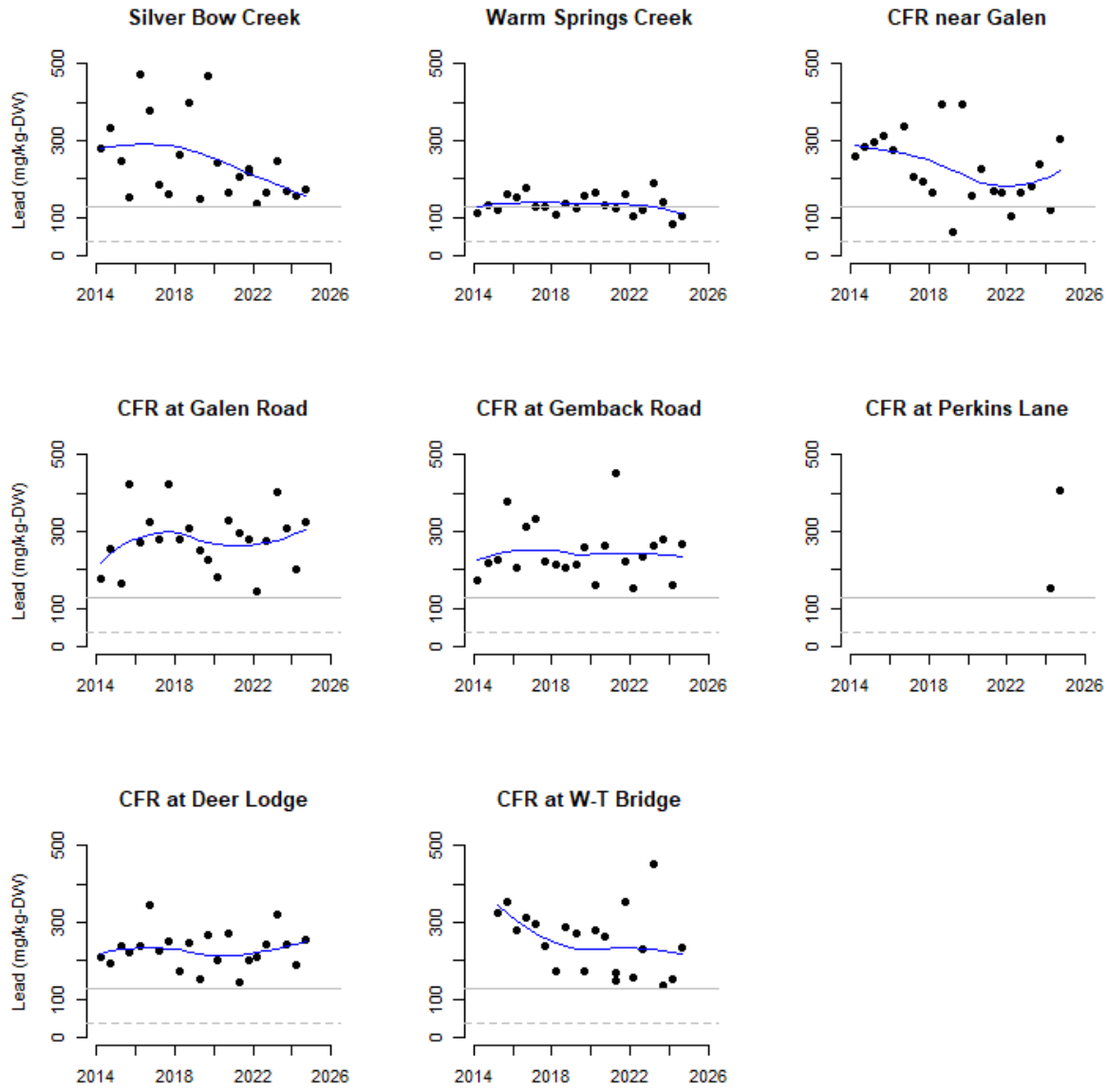


Figure 2-4. Total lead concentrations (dry weight) at each site in the Clark Fork River Operable Unit, 2014-2024. Gray lines represent the "threshold effect concentration" (TEC; dashed line) at 35.8 mg/kg and the "probable effect concentration" (PEC; solid line) at 128 mg/kg [MacDonald et al., 2000]. Blue lines are the locally estimated scatterplot smooth (LOESS) curves fitted to the data for each plot.

2.3.1.5 ZINC

Zinc concentrations ranged from 815-2,080 mg/kg in the Clark Fork River sediment samples, from 1,740-2,100 mg/kg in Silver Bow Creek samples, and from 356-464 mg/kg in Warm Springs Creek samples in 2024 (Table 3-9). All samples exceeded the threshold effect concentration and all samples except that from Warm Springs Creek in Q2 also exceeded the probable effect concentration in 2024.

Concentrations measured in 2024 were generally similar to, or lower than, past results at most sites (Figure 2-5). There does not yet appear to be evidence of temporal trends at any of these sites.

Table 2-7. Total zinc concentrations (mg/kg dry weight) in fine fraction (<0.063 mm) instream sediment samples from the Clark Fork River Operable Unit, 2024.

Site ID	Site Location	Sample concentration (mg/kg-DW)	
		Q1	Q3
Mainstem Sites			
CFR-03A	Clark Fork River near Galen	815	1,600[J]
CFR-07D	Clark Fork River at Galen Road	1,010	1,520[J]
CFR-11F	Clark Fork River at Gemback Road	882	1,370[J]
CFR-18	Clark Fork River at Perkins Lane	899	2,080[J]
CFR-27H	Clark Fork River at Deer Lodge	1,010	1,240[J]
CFR-34	Clark Fork River at Williams-Tavenner Bridge	1,010	1,160[J]
Tributary Sites			
SS-25	Silver Bow Creek at Warm Springs	2,100	1,740[J]
WSC-SBC	Warm Springs Creek near mouth	356	464[J]
J	Estimated because: (1) result is between method detection limit and analytical reporting limit, or (2) relative percent difference of associated field sample and duplicate pair was above project-specific data quality objective (40 percent).		
	Exceeds threshold effect concentration, 121 mg/kg [MacDonald et al., 2000].		
	Exceeds probable effect concentration, 459 mg/kg [MacDonald et al., 2000].		

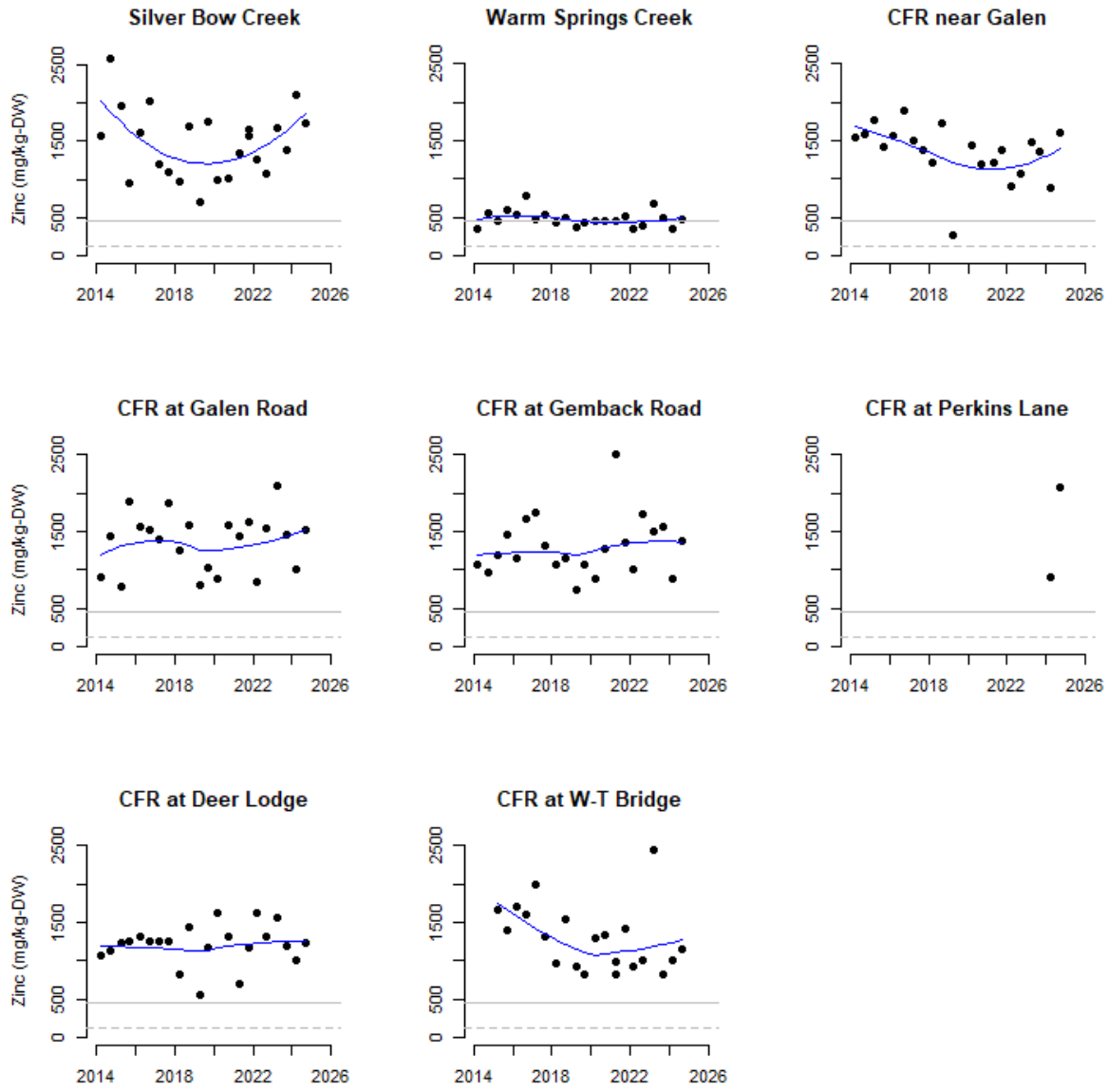


Figure 2-5. Total zinc concentrations (dry weight) at each site in the Clark Fork River Operable Unit, 2014-2024. Gray lines represent the "threshold effect concentration" (TEC; dashed line) at 121 mg/kg and the "probable effect concentration" (PEC; solid line) at 459 mg/kg [MacDonald et al., 2000].[12] Blue lines are the locally estimated scatterplot smooth (LOESS) curves fitted to the data for each plot.

[12] One sample with a concentration of 16,400 mg/kg, collected near Galen on September 10, 2019, is not depicted. This sample was not fitted in the LOESS curve for the site.

2.4 DISCUSSION

Results of 2024 sampling were generally consistent with prior results although generally COC concentrations were relatively low compared to prior results at each site. As in prior monitoring periods, rates of probable effect concentration (PEC) exceedances were high for all COCs in the mainstem sites in 2024. In 2024, PEC exceedances occurred in all mainstem samples for arsenic, copper, and zinc; in 58 percent of the samples for cadmium; and in 92 percent of the samples for lead. Prior rates of exceedances in the mainstem (from 2014-2023) were also 100 percent for arsenic and copper; 82 percent for cadmium; 97 percent for lead; and 99 percent for zinc.

3.0 VEGETATION

3.1 INTRODUCTION

Major remediation and revegetation has been completed in Phases 1, 2, 3, 5, 6, 15, and 16 of the Clark Fork River Operable Unit (CFROU). Work was completed in Phase 1 in 2014; in Phases 2, 5, and 6 in 2016; in Phases 15 and 16 in 2021; and in Phase 3 in 2024. Monitoring has occurred in each of these phases to assess vegetation conditions as measured by specific metrics and to evaluate progress toward attainment of vegetation performance targets.

Monitoring in 2024 was conducted to satisfy Year-10 vegetation monitoring requirements for Phase 1, and Year-1 vegetation monitoring requirements for Phase 3. This report provides detailed methods and results for vegetation monitoring activities in those phases in 2024.

Year-10 monitoring in Phase1 also required a final wetland delineation to assess wetland area. This wetland delineation report is available in Appendix G.

3.2 METHODS

3.2.1 MONITORING LOCATIONS

Performance standards for vegetation are identified in the CFROU Record of Decision (ROD) and are grouped according to "post-remedial land use and landscape position" [EPA, 2004]. We identified three specific vegetation zones corresponding to these "post-remedial land use and landscape position" groupings as identified in the ROD and have defined these vegetation zones to correspond to the specific vegetation performance standards (Table 3-1). The vegetation zone closest to the river is the "Riparian Zone", which is defined in the ROD as the "streambank riparian buffer zone" [EPA, 2004] and includes the area from the streambank and extending laterally 50 feet from the streambank on either side of the river. All areas outside the Riparian Zone are either identified as "Transition Zone" or "Upland Zone". Transition Zone areas are those outside the Riparian Zone but within the 100-year floodplain. The Upland Zone are any areas that are outside the 100-year floodplain.

Final monitoring plot and transect locations for Phases 1 and 3 are presented in Figure 3-1 and Figure 3-2.

Table 3-1. Vegetation minimum performance standards and guidelines for monitoring metrics in the Clark Fork River Operable Unit [EPA, 2004].

Vegetation Zone	Monitoring Metric	Year (post-remediation)						
		1	2	3	4	5	7	10
Riparian[13]	Planted woody species survival (%)[14]	90	90					
	Preferred woody species canopy cover (%)					50	60	80
	Total canopy cover of non-weed perennial vegetation (%)	90	95		98	98	98	98
	Noxious weed cover (%)							<5
Transition[15]	Total canopy cover of non-weed perennial vegetation (%)	90	95	98		98		
	Noxious weed cover (%)							<5
Upland[16]	Total canopy cover of non-weed perennial vegetation (%)							45
	Species richness (per 100 square meters)[17]							5
	Noxious weed cover (%)							<5

[13] The Riparian Zone performance standards correspond to Exhibit 2-26 in the ROD [EPA, 2004]. The Riparian Zone is defined as a polygon extending 50 feet laterally from the streambank on each side of the river in each remedial area. The Riparian Zone corresponds to the Streambank Riparian Buffer Zone, which is described in the ROD.

[14] The ROD specifies replanting criteria for the fourth, fifth, and seventh years instead of monitoring for this metric [EPA, 2004].

[15] The Transition Zone performance standards are identified in the ROD in Exhibit 2-27 [EPA, 2004]. This zone will be defined in the field as any portion of the floodplain between the riparian zone and the 100-year floodplain.

[16] This vegetation zone corresponds to performance standards identified in the ROD in Exhibit 2-28 [EPA, 2004]. Specific timelines for attaining performance standards in Exhibit 2-28 were not identified [EPA, 2004].

[17] Each species must account for more than 1 percent cover to be counted toward this metric; noxious weeds are not counted toward this metric. This metric does not apply in areas intended for agricultural crop production.

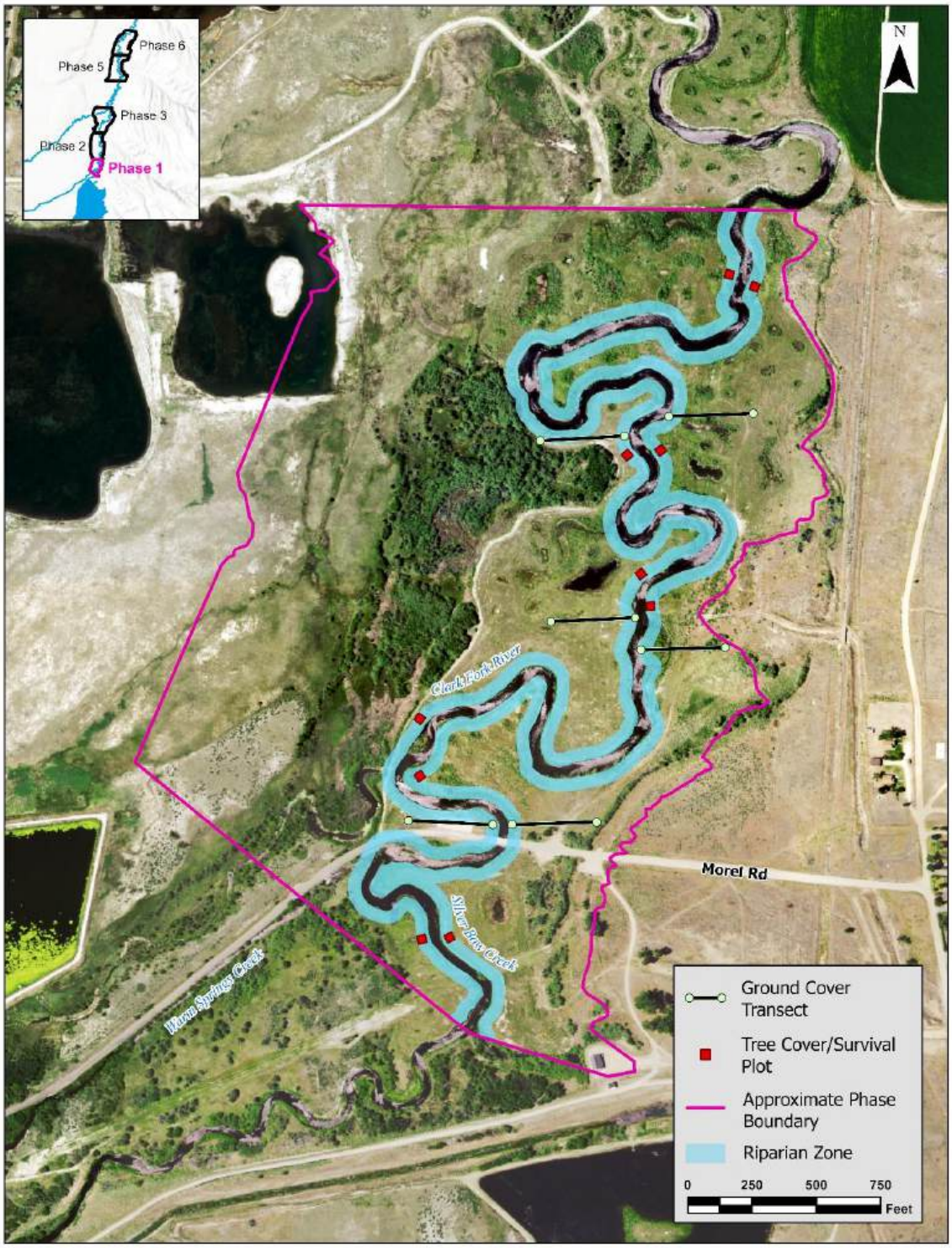


Figure 3-1. Vegetation monitoring plots and transects in Phase 1 of the Clark Fork River Operable Unit, 2024.

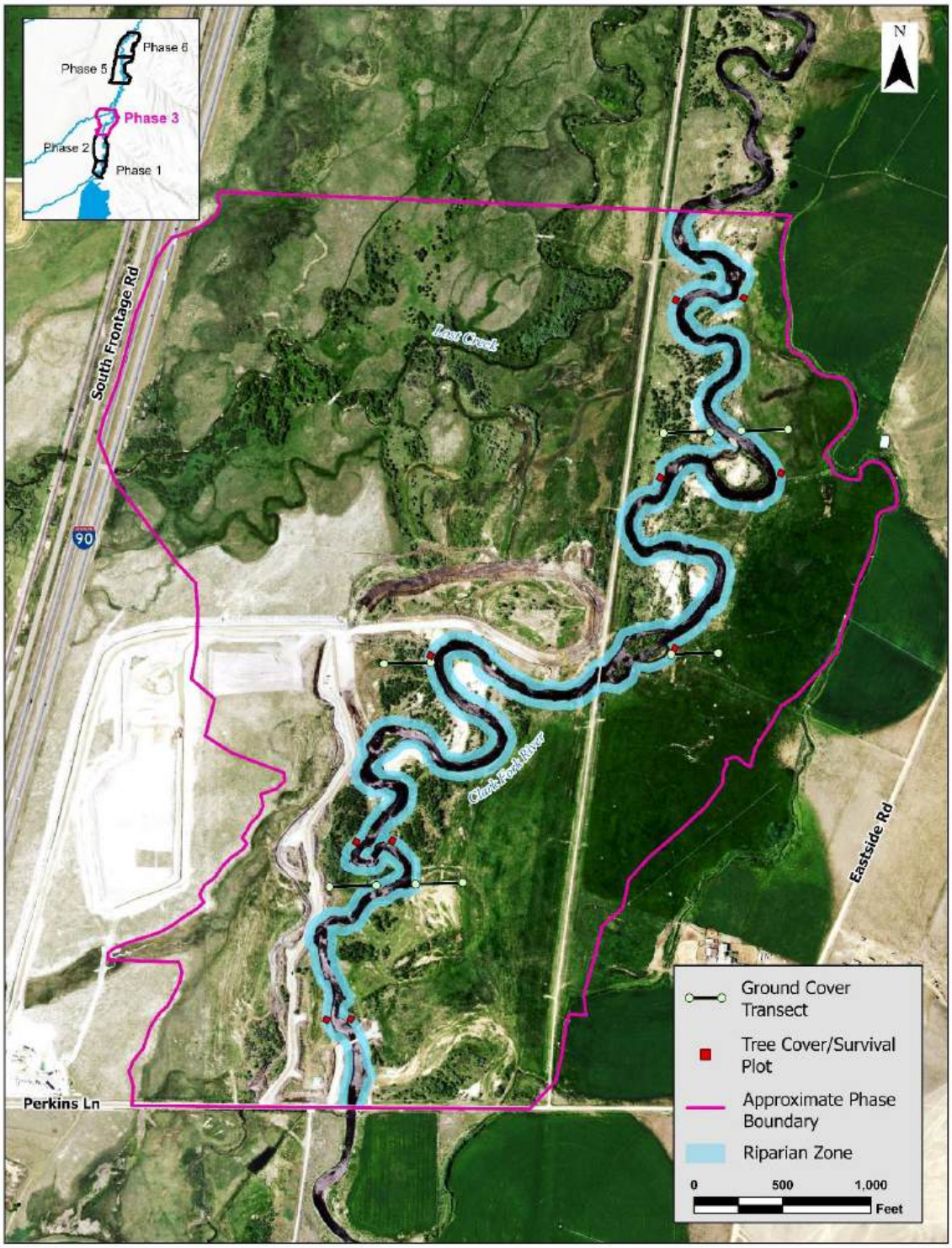


Figure 3-2. Vegetation monitoring plots and transects in Phase 3 of the Clark Fork River Operable Unit, 2024.

3.2.1.1 GROUND COVER

The CFROU ROD identified "total canopy cover of non-weed perennial vegetation" as a monitoring metric which we hereafter refer to as "ground cover". Ground cover was monitored in 60 small (1-m^2) plots (hereafter referred to as "transect subplots") located along six transects within each phase. Transects were 100 m and extended away from the riverbank along an east-west orientation. A pair of transect subplots were placed every 20 m, beginning at 10 m from the riverbank, as depicted in Figure 3-3. Transects were paired on each side of the river at three locations within each phase at 25 percent, 50 percent, and 75 percent of the linear distance from the phase start (upstream boundary) to the phase end (downstream boundary).

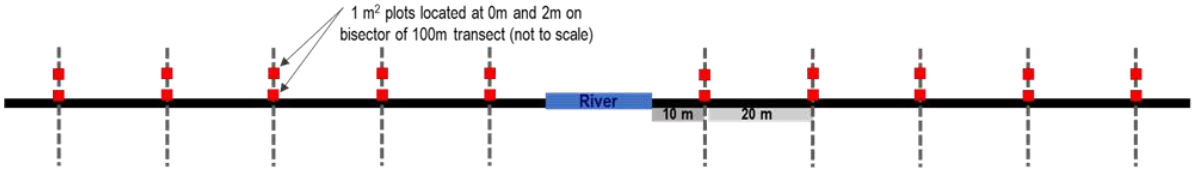


Figure 3-3. Example diagram of two transects and associated subplots for monitoring of total canopy cover of non-weed perennial vegetation.

3.2.1.2 TREE CANOPY COVER AND SURVIVAL

Five woody species (i.e., tree) canopy cover or survival plots were located on each side of the river within each phase for a total of ten plots per phase. All plots were located within the Riparian Zone of each phase (i.e., a 50-foot buffer extending out from the bank on each side of the river). Monitoring plots were 100-m^2. Plots were located at approximately 10, 30, 50, 70, and 90 percent of the linear distance from the phase origin and terminus (i.e., the upstream and downstream ends of each phase where the river passes through the phase boundary), in the nearest planting unit from those locations.[18]

3.2.2 MONITORING PARAMETERS

3.2.2.1 PHASE 1

Phase 1 monitoring in 2024 focused on Year-10 performance targets. In the Riparian Zone, monitoring included assessment of ground cover and tree cover. In the Upland Zone, monitoring focused on total ground cover, noxious weed cover, and species richness.

3.2.2.2 PHASE 3

Phase 3 monitoring in 2024 focused on Year-1 performance targets. In the Riparian Zone, monitoring included assessment of ground cover and tree survival. In the Transition Zone, monitoring focused on assessment of ground cover.

3.2.3 MONITORING SCHEDULE

Vegetation monitoring occurred from June 27-28, 2024.

[18] These points were determined prior to visiting the site using standard GIS tools and layers. Field biologists will navigate to these points using field GPS units.

3.2.4 SAMPLE COLLECTION AND ANALYSIS

3.2.4.1 TREE COVER

Each 100-m^2 canopy cover monitoring plot was sampled using a 121-point grid to provide a total cover estimate for the entire plot (Figure 3-4). Sampling grid lines were evenly spaced (11 per side including the plot boundaries) along each plot side. Samples were collected at each gridline intersection (red dots) for a total of 121 cover measurements per floodplain plot. At each grid point, a vegetation surveyor determined if an imaginary survey rod extended vertically from the ground to the forest canopy would contact (i.e., be covered by) any portion of a shrub or tree species and the proportion of points covered was calculated as the total cover estimate for each plot. Photos of each canopy cover monitoring plot are available to view in Appendix G.

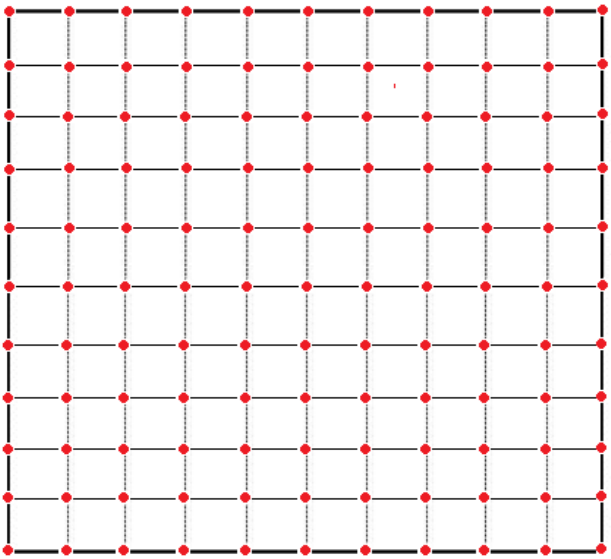


Figure 3-4. Schematic sampling grid for estimating shrub cover within each 100-m^2 Riparian Zone plot.

3.2.4.2 TREE SURVIVAL

In each survival plot (located in planting units within the Riparian Zone), each containerized woody plant was evaluated to determine plant species and survival. Plants which were rooted partially on the plot boundaries were considered within the plot if at least 50 percent of the plant's roots were assumed to be inside the plot. A photo was taken of each survival plot following sampling. Photos of each survival plot are available to view in Appendix G.

3.2.4.3 GROUND COVER

Within each transect subplot, the vegetation zone was determined (i.e., Riparian, Transition, or Upland) and visual estimates of cover percentage were made for each perennial plant species present. A photograph was taken of each transect subplot after each cover estimate was made. Vegetation monitoring photographs are available to view in Appendix E.

Ground cover was monitored in 60 one-square meter plots within each phase in 2024. As in prior monitoring years, plots were distributed systematically across the floodplain of each phase along six

transects. Plots were located in Riparian Zones, Transition Zones, and Upland Zones of each phase. Plot locations were determined independently from vegetation zones and thus sample sizes within each zone varied by phase (Table 3-2).

Table 3-2. Ground cover plot counts for each vegetation zone, in each phase monitored within the Clark Fork River Operable Unit in 2024.

Phase	Riparian Zone	Transition Zone	Upland Zone	Total
1	17	35	8	60
3	16	44	0	60

3.2.5 DATA ANALYSIS

3.2.5.1 PRECIPITATION

Climate and precipitation data were gathered from available sources and summarized to provide context for the 2024 vegetation monitoring results.

3.2.5.2 GROUND COVER

All perennial plant species in each transect subplot were identified and cover of each species, within each subplot, was estimated. Noxious species were noted and the cover of each was estimated as well. Noxious species were defined as any species identified as a noxious plant by MDA [2019]. Based on these classifications, average cover percentages for total vegetation and for noxious weeds were determined for each vegetation zone and compared to the performance target for each zone.

3.2.5.3 TREE COVER

Average (mean) canopy cover from each plot monitored within each phase was calculated and compared to the Year-10 performance target.

3.2.5.4 TREE SURVIVAL

Average (mean) survival was determined for all species collectively within each phase as the metric for evaluation of the "planted woody species survival" performance target. In addition, survival was averaged for each species within each phase to assist project managers in determining suitable species for Riparian Zone planting.

3.2.5.5 SPECIES RICHNESS

The total number of non-weed species observed in the Upland Zone was compared to the total number of transect subplots that occurred within the Upland Zone to estimate species richness per 100 square meters.

3.3 RESULTS

3.3.1 PRECIPITATION

The Deer Lodge valley is classified as having a "continental, warm-summer" or "Dfb" climate [Weatherbase, 2020] according to the Koppenen climate classification scale [Kottek et al., 2006]. This climate type is common in western plains and mountain states of the U.S. and is similar to "cold semi-arid steppe" or "BSk" climates. The Deer Lodge valley tends to have low annual precipitation averaging 11.6 inches from 2000-2024. Most precipitation tends to accumulate during the months of May and June (Figure 3-5).

Annual precipitation in Deer Lodge was 10.9 inches in 2024, or 94 percent of the average. Precipitation during the months of May and June, which are critical for establishment of vegetation in the region [Prodgers, 2021], was near average for May, but approximately 35 percent below average for June (Figure 3-5).

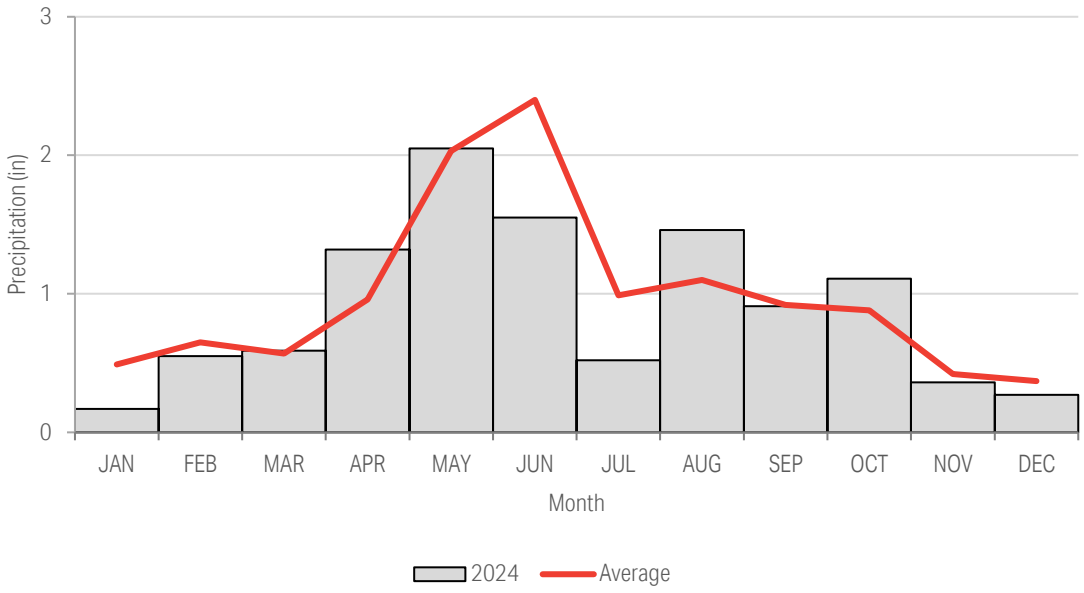


Figure 3-5. Monthly precipitation at Deer Lodge, Montana in 2024 [Weather Underground, 2025] compared to the long-term average [NWS, 2025].

3.3.2 PHASE 1

3.3.2.1 TREE COVER

The CFROU ROD specified a Year-10 performance target for tree cover of 80 percent in the Riparian Zone. Tree cover was estimated as 73.5 percent in 2024 falling below the performance target. Although below the final tree cover target, cover has increased during each monitoring period since Year-5 (Table 3-3).

Table 3-3. Post-remediation mean canopy cover in Phase 1 of the Clark Fork River Operable Unit.

Phase	Tree Canopy Cover (%)		
	Year-5	Year-7	Year-10
1	33.2	72.0	73.5
Performance Standard	50	60	80

3.3.2.2 GROUND COVER

The CFROU ROD specified a Year-10 performance target for ground cover of 98 percent in the Riparian Zone and 45 percent in the Upland Zone. In the Riparian Zone, ground cover in 2024 was 76.4 percent and therefore did not meet the Year-10 performance target but ground cover was 68.8 percent in the Upland Zone which exceeded the target (Figure 3-6). Ground cover has increased during each recent monitoring period in the Riparian Zone, and each other zone, indicating a positive trend throughout the phase.

As of Year-10, 23 separate plant species were observed in the Phase 1 floodplain (Table 3-4). Plant diversity was highest in the Transition Zone (18 species), lowest in the Upland Zone (5 species), and moderate in the Riparian Zone (12 species). Great Basin wildrye was the most abundant species in the Riparian and Transition Zones and rubber rabbitbrush was the most abundant species in the Upland Zone. One observed plant species in the Upland Zone could not be identified.

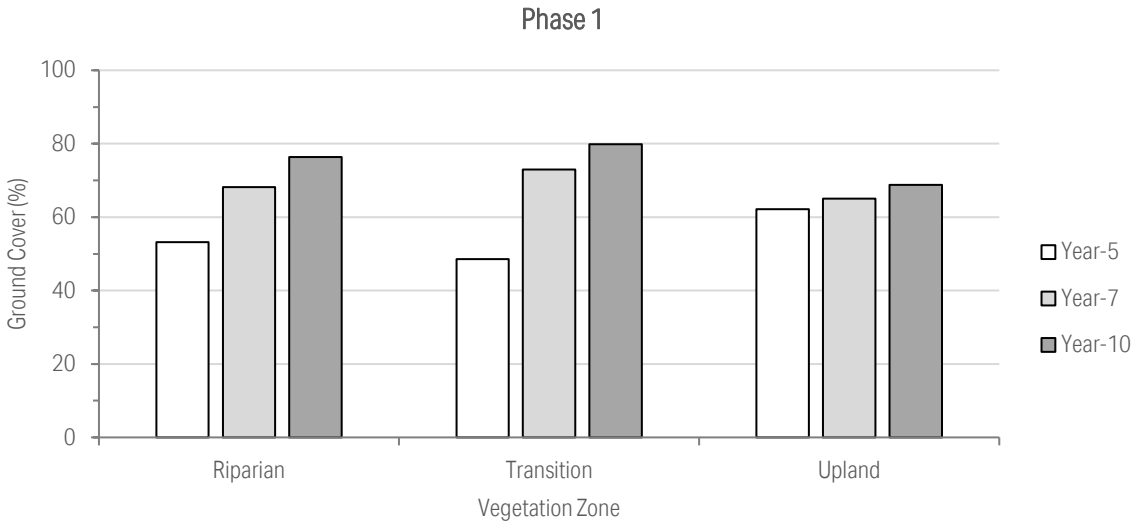


Figure 3-6. Post-remedy ground cover by vegetation zone and monitoring year in Phase 1 of the Clark Fork River Operable Unit.

Table 3-4. Mean ground cover (%) by species in vegetation zones of Phase 1 of the Clark Fork Operable Unit ten-years post-remedy (2024).

Species	Riparian Zone	Transition Zone	Upland Zone
Baltic rush		10.1	
Canada wildrye	9.4	5.9	
Cattail		0.1	
Cheatgrass			0.6
Common yarrow	2.4	0.3	
Creeping foxtail		1.4	
Creeping spikerush		0.9	
Fringed sagebrush		0.1	
Great Basin wildrye	21.4	26.4	
Meadow Timothy	0.6	1.1	
Mustard			1.9
Narrowleaf willow	7.4	7.0	
Orchard grass	1.8		
Prickly lettuce	1.2	4.0	
Red fescue		2.6	
Redtop	14.4	4.4	
Rubber rabbitbrush		2.9	40.0
Silver buffaloberry		0.3	
Slender wheatgrass	7.6	6.4	25.6
Speckled alder	2.4		
Unknown species			0.6
Wild oats		5.9	
Yellow sweetclover	7.9		
Canada thistle[19]		0.1	
Total	**76.4**	**79.8**	**68.8**

[19] Noxious weed species; not included in total cover summation.

3.3.2.3 SPECIES RICHNESS

The CFROU ROD specified a Year-10 performance target for the Upland Zone of least five species. This performance target was met in the Upland Zone of Phase 1 in 2024 (Table 3-4). Species observed included: slender wheatgrass, wild licorice, mustard, rubber rabbitbrush, cheatgrass, and one unknown forb species.

3.3.2.4 NOXIOUS WEEDS

The CFROU ROD specified a Year-10 performance target of no more than 5 percent cover from noxious weeds. This performance target was met in all vegetation zones of Phase 1 in 2024. Noxious weeds were entirely absent from the Riparian and Upland Zones of Phase 1 and noxious weed cover in the Transition Zone was 0.1 percent (Canada thistle).

3.3.3 PHASE 3

3.3.3.1 TREE SURVIVAL

The CFROU ROD specified a Year-1 performance target for tree survival of 90 percent in the Riparian Zone. Tree survival was 95 percent for plantings in 2024 exceeding the target. A total of 375 trees were observed and 357 trees were alive among the ten plots monitored. All planted trees observed were either sandbar willow or Bebb's willow.

3.3.3.2 GROUND COVER

The CFROU ROD specified a Year-1 performance target for ground cover in the Riparian and Transition Zones of 90 percent. Ground cover in Phase 3 was 42.2 percent in the Riparian Zone and 69.3 percent in the Transition Zone in 2024 falling short of the target in both zones (Figure 3-7). No monitoring plots were established in the Upland Zone of Phase 3 in Year-1.

As of Year-1, 17 separate plant species were observed in the Phase 3 floodplain (Table 3-5). Plant diversity was highest in the Transition Zone (16 species). Nine species were observed in the Riparian Zone. Alfalfa was the most abundant species in both vegetation zones monitored in Year-1. No noxious weed species were observed in Phase 3 in Year-1. One observed plant species could not be identified in the Transition Zone.



Figure 3-7. Year-1 post-remedy ground cover by vegetation zone in Phase 3 of the Clark Fork River Operable Unit.

Table 3-5. Mean ground cover (%) by species in vegetation zones of Phase 3 of the Clark Fork Operable Unit one-year post-remedy (2024).

Species	Riparian Zone	Transition Zone
Alfalfa	27.5	30.9
Baltic rush		1.4
Bebb willow	1.9	0.6
Common yarrow	1.6	4.8
Creeping foxtail		10.6
Fringed sagebrush		0.1
Mexican kochia	0.3	
Mustard		2.6
Narrowleaf willow	1.4	1.0
Red fescue	2.2	0.6
Redtop	0.6	3.3
Showy milkweed		0.7
Slender wheatgrass	0.8	4.3
Unknown species		0.1
White clover		1.1
Wild licorice		0.2
Wild oats		0.3
Yellow sweetclover	5.9	6.7
Total	**42.2**	**69.3**

3.4 DISCUSSION

Vegetation monitoring occurred in Phases 1 and 3 in 2024. Phase 1 was remediated in 2014 and Phase 3 was remediated in 2023. Therefore, monitoring in 2024 represented Year-10 and Year-1 conditions in each of those phases, respectively. Precipitation levels in 2024 were below average in the months of May and June which are critical to the establishment of vegetation, particularly in recently remediated phases. This low precipitation may have contributed to the low ground cover consistently observed in the monitoring plots in 2024.

Monitoring in Phase 1 focused on Year-10 performance targets, including: tree cover, ground cover, and noxious weed cover in the Riparian Zone; noxious weed cover in the Transition Zone; and ground cover, species richness , and noxious weed cover in the Upland Zone. Performance targets were met for noxious weed cover throughout the phase and for ground cover and species richness in the Upland Zone (Table 3-6). Performance targets were not met for tree cover or ground cover in the Riparian Zone.

Monitoring in Phase 3 focused on Year-1 performance targets, including: tree survival and ground cover in the Riparian Zone; and ground cover in the Transition Zone. The tree survival performance target was met but the ground cover performance target was not met in either zone.

Table 3-6. Attainment of revegetation performance targets for Clark Fork River Operable Unit phases monitored in 2024.

Phase	Vegetation Zone	Monitoring Metric	Year (post-remediation)	
			1	10
1	Riparian	Preferred woody species canopy cover (%)	-	Fail
		Total canopy cover of non-weed perennial vegetation (%)	-	Fail
		Noxious weed cover (%)	-	Pass
	Transition	Noxious weed cover (%)	-	Pass
	Upland	Total canopy cover of non-weed perennial vegetation (%)	-	Pass
		Species richness (per 100 square meters)	-	Pass
		Noxious weed cover (%)	-	Pass
3	Riparian	Planted woody species survival (%)	Pass	-
		Total canopy cover of non-weed perennial vegetation (%)	Fail	-
	Transition	Total canopy cover of non-weed perennial vegetation (%)	Fail	-

4.0 BIRDS

4.1 INTRODUCTION

Bird assemblages were monitored in the Clark Fork River Operable Unit (CFROU) during the spring of 2024. This report provides an assessment of the bird monitoring data collected in 2024. Special attention is paid to species richness by project phase and to special status species (e.g., Montana Species of Concern [MNHP, 2024]). Results provide information relevant to remedial design and construction teams to assess if remedial actions influence bird use in the CFROU and to minimize disturbance to bird habitat during construction and revegetation activities.

4.2 METHODS

4.2.1 MONITORING LOCATIONS

Birds were monitored at 15 sites distributed among eight CFROU phases (Phases 1, 2, 3, 4, 5, 6, 7, and 15) in 2024 (Table 4-1; Figure 4-1). Results are generally summarized by phase. Observations from sites within Phases 3 and 4 were combined, as were observations from sites within Phases 5 and 6. All monitoring sites were located within the floodplain riparian zone adjacent to the river or nearby water features such as constructed ponds. Monitoring sites were located in habitats that were representative of a large proportion of the prevailing bird habitat within each phase. Monitoring site locations have been consistent each year since 2016.

Construction-related remedial actions were completed in the fall of 2014 in Phase 1 (60 acres). Phase 1 was the first phase remediated in the CFROU. Revegetation actions continued in Phase 1 through the winter of 2015. Phase 1 consists of 1.6 river miles. Several features adjacent to this phase likely influence bird use within its boundaries. The Warm Springs Wildlife Management Area is located on the southern boundary of Phase 1. In addition, the confluence of Warm Springs Creek and Silver Bow Creek is located within the phase near the upstream (southern) boundary. Two sites were monitored in Phase 1: Sites 1-A and 1-B.

Phase 2 (88 acres) was under construction from the summer of 2015 through the fall of 2016. Phase 2 consists of 1.9 river miles immediately downstream from Phase 1. Two sites were monitored in Phase 2: Sites 2-A and 2-B.

Remediation was completed in Phase 3 in the 2023 monitoring period but Phase 4 had not been remediated as of 2024. Combined, these phases consist of 261 acres and 4.5 river miles and are located downstream from Phase 2. Three sites have been monitored in Phases 3 and 4: Sites 3/4-A, 3/4-B, and 3/4-C.

Remediation began in Phases 5 and 6 (125 acres combined) in the summer of 2014 and construction and revegetation actions were completed in 2016. Combined, these phases consist of 4.3 river miles and are located immediately downstream from Phase 4. The Racetrack Pond, located immediately downstream, is a feature adjacent to Phase 6 which may influence bird use. Three sites were monitored in Phases 5 and 6: Sites 5/6-A, 5/6-B, and 5/6-C.

Phase 7 (84 acres) had not been remediated as of 2024. This phase consists of a 1.9-mile river reach located immediately downstream from Phase 6. Phase 7 is adjacent to the Racetrack Pond, which likely provides a strong influence on the bird assemblage and bird use within the phase. Two sites were monitored in Phase 7: Sites 7-A and 7-B. Site 7-A is located along the shoreline of the Racetrack Pond.

Phase 15 construction and revegetation has been completed. Phase 15 is located within the Grant-Kohrs National Historic Site just north of Deer Lodge. The Grant-Kohrs National Historic Site is a 1,600-acre working cattle ranch maintained by the National Park Service. Three sites were monitored in Phase 15 in 2024: Sites 15-A, 15-B, and 15-C.

Table 4-1. Bird monitoring sites in the Clark Fork River Operable Unit, 2024.

Phase	Site	Latitude	Longitude
1	1-A	46.18778	112.76891
	1-B	46.19385	112.76527
2	2-A	46.19414	112.77627
	2-B	46.19612	112.76863
3/4	3/4-A	46.21611	112.76078
	3/4-B	46.22576	112.75906
	3/4-C	46.23546	112.75351
5/6	5/6-A	46.23748	112.75464
	5/6-B	46.25855	112.75230
	5/6-C	46.25441	112.75408
7	7-A	46.26893	112.74296
	7-B	46.27479	112.73683
15	15-A	46.40708	112.74887
	15-B	46.40968	112.74604
	15-C	46.41131	112.74627

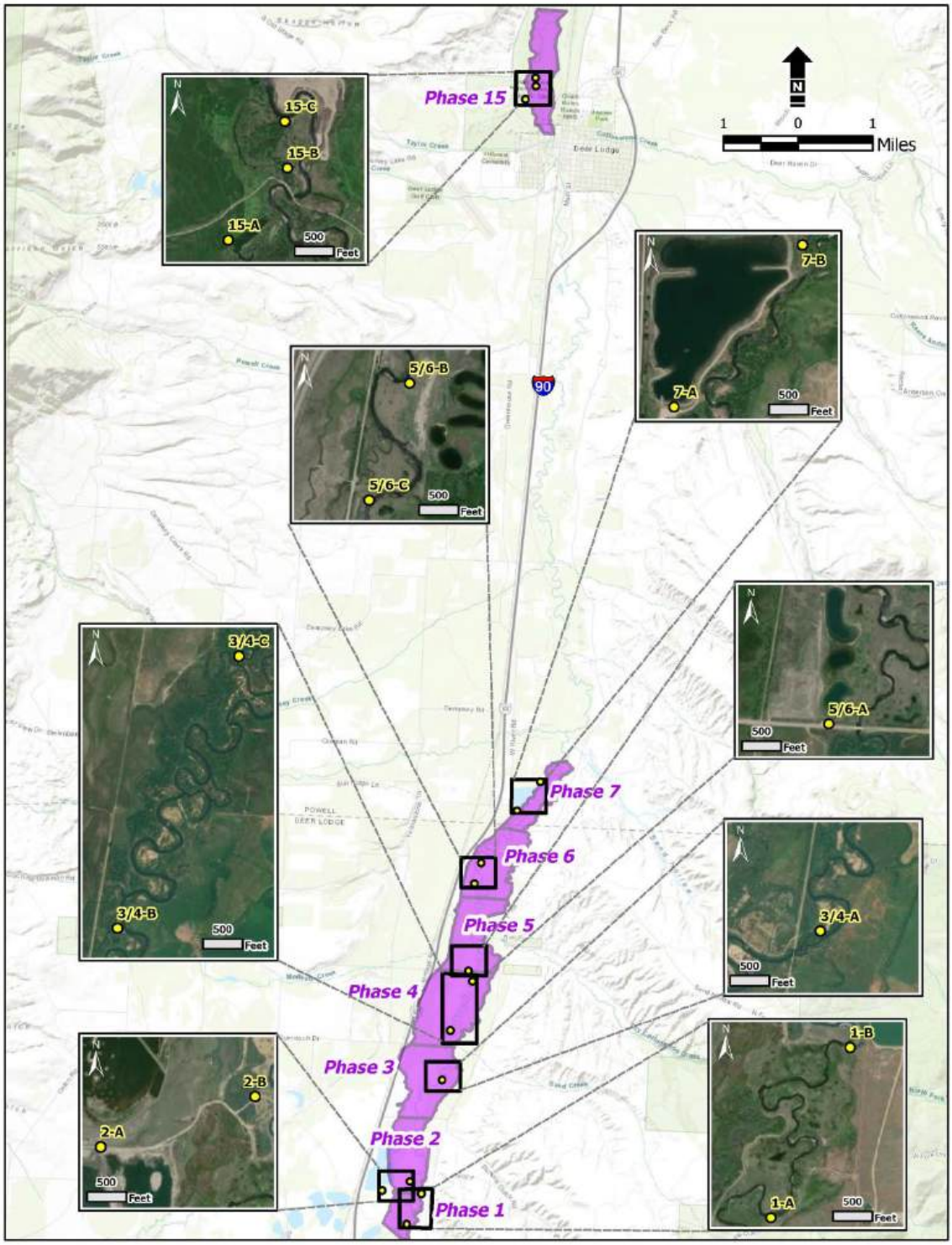


Figure 4-1. Bird monitoring locations in the Clark Fork River Operable Unit, 2024.

4.2.2 MONITORING SCHEDULE

The 2024 monitoring year constituted the tenth year of bird monitoring in the CFROU; monitoring has occurred annually since 2015. Monitoring each year has occurred during the spring and early summer months of April, May, and June. In 2024, monitoring occurred weekly at each site from April through June. Each site was visited 13 times during the monitoring period. Each monitoring site visit (i.e., "point-count") lasted ten minutes.

4.2.3 MONITORING PARAMETERS

Birds were observed following standard point-count methods similar to Hutto et al. [1986] and Buckland et al. [2001]. Birds were counted by species during each point-count. Types of individual bird observations were distinguished and classified separately as: (1) observed by sight within a 40-m radius, (2) identified by call or song, (3) identified by sight flying within a 40-m radius, or (4) identified by sight flying outside 40 m.

4.2.4 MONITORING METHODS

At each monitoring site, counts were conducted after a two-minute settling period following the surveyor's arrival, to allow birds to become accustomed to the surveyor's presence. Each bird observed was recorded using a four-letter abbreviation commonly referred to as an "ALPHA" code [IBP, 2018].

4.2.5 DATA ANALYSIS

This report compares bird species richness (i.e., species counts) among phases and among years in the CFROU.

4.3 RESULTS

4.3.1 EFFORT AND OBSERVATIONS

Point-counts were conducted at 15 sites in 2024. Each site was visited on 13 occasions (weekly) during a three-month monitoring period from April through June. In total, 195 point-counts were conducted in 2024 (Table 4-2). Among all point-counts conducted in 2024, 13,998 individual birds were observed from 134 different species, or about 30 percent of the species inhabiting Montana [MNHP, 2024] (Table 4-3). Most of the bird observations were within 40 m from the point-count site. The greatest number of individual birds (3,946), and species (94), were observed in Phase 7. The lowest number of individuals (1,492) were observed in Phase 1 and the fewest number of species (61) were observed in Phase 2.

Over the entire period of bird monitoring in the CFROU (2015-2024), 1,620 point-counts have occurred (Table 4-2) and 180 bird species have been observed, representing 40 percent of the 442 bird species believed to occur in Montana [MBRC, 2021]. Over the entire period of record in this monitoring program, a total of 116,610 individual birds have been observed and identified (Table 4-3).

Although bird assemblages have been abundant and diverse in all phases, Phase 7 has uniquely high diversity (147 species observed) and abundance (36,370 individuals observed) and accounts for nearly a third of all bird observations in the CFROU since 2015.

Table 4-2. Monitoring effort (point-counts) in each phase of the Clark Fork River Operable Unit by year.

Year	Phase							Total
	1	2	3/4	5/6	7	8	15	
2015	34	0	0	0	34	0	32	100
2016	23	0	31	0	24	35	31	144
2017	17	17	25	24	18	0	29	131
2018	20	20	28	29	16	0	29	142
2019	24	25	35	36	24	0	36	180
2020	26	26	39	39	26	0	39	195
2021	26	26	37	39	26	0	39	193
2022	26	26	13	39	26	0	39	169
2023	26	26	15	39	26	0	39	171
2024	26	26	39	39	26	0	39	195

Table 4-3. Bird richness and frequency of individual bird observations by phase in the Clark Fork River Operable Unit, 2015-2024. The monitoring period of record and level of effort has varied among phases and is summarized in Table 4-2.

Phase	2024		Period of Record	
	Species	Individuals	Species	Individuals
1	67	1,492	115	11,586
2	61	1,719	111	16,861
3/4	76	2,413	123	16,831
5/6	89	2,696	139	20,708
7	94	3,946	147	36,370
8	-	-	52	974
15	81	1,732	133	13,280
Total[20]	**134**	**13,998**	**180**	**116,610**

4.3.2 SPECIES RICHNESS

4.3.2.1 PHASE 1

Phase 1 has been monitored continuously for ten years from 2015-2024. During that period, 115 bird species have been observed and 67 of those species were observed in 2024 (Table 4-4). A Caspian Tern was observed in Phase 1 in 2024 and had never previously been observed in the Clark Fork River Operable Unit in this monitoring program. Species observed in Phase 1 for the first time in 2024 included Caspian Tern, Lincoln's Sparrow, and House Wren (Table 4-4).

Table 4-4. Bird species observed in Phase 1 of the Clark Fork River Operable Unit, 2015-2024.

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Hawks, kites, and eagles										
Bald Eagle	X	X	X			X	X	X		X
Ferruginous Hawk								X		
Golden Eagle										
Northern Harrier	X	X	X	X		X	X	X	X	X
Red-tailed Hawk	X					X	X	X	X	X
Sharp-shinned Hawk	X						X		X	
Swainson's Hawk							X			X
Osprey		X		X	X	X	X	X		X
Ducks and geese										
American Wigeon				X			X	X	X	X

[20] Most species were observed in more than one phase. Therefore, the total number of species observed in the Operable Unit is not cumulative among phases. Total individual bird counts, however, are cumulative among phases.

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Barrow's Goldeneye	X				X		X	X	X	
Blue-winged Teal							X			
Bufflehead	X									
Canada Goose	X	X	X	X	X	X	X	X	X	X
Canvasback					X					X
Cinnamon Teal	X	X		X	X	X	X	X	X	
Common Goldeneye	X		X	X	X	X			X	
Common Merganser			X	X			X	X		X
Gadwall	X			X	X	X	X	X	X	X
Green-winged Teal	X		X	X		X	X	X	X	X
Hooded Merganser								X		
Lesser Scaup	X	X		X	X	X	X	X	X	X
Mallard	X	X	X	X	X	X	X	X	X	X
Northern Pintail				X		X				
Northern Shoveler	X	X		X		X	X	X	X	X
Redhead				X				X		X
Ring-necked Duck				X				X		
Snow Goose							X			
Wood Duck								X		
Vultures										
Turkey Vulture	X	X					X			
Shorebirds										
Killdeer	X	X	X		X	X	X	X	X	X
Bonaparte's Gull	X									
California Gull	X	X	X	X	X	X	X	X	X	X
Franklin's Gull	X									
Ring-billed Gull	X	X	X	X	X	X	X	X	X	X
American Avocet	X					X				
Caspian Tern										X
Long-billed Curlew						X	X	X		
Spotted Sandpiper	X	X	X	X	X	X	X	X	X	X
Wilson's Phalarope								X		
Wilson's Snipe			X			X		X	X	
Pigeons and doves										
Eurasian Collared-Dove						X		X		X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Mourning Dove	X	X	X		X		X	X	X	X
Rock Pigeon						X	X	X		
Kingfishers										
Belted Kingfisher	X	X		X			X	X	X	X
Falcons										
American Kestrel		X		X		X	X	X	X	
Merlin							X			
Upland game birds										
Gray Partridge						X		X		X
Rails										
Sandhill Crane	X	X	X	X	X	X	X	X	X	X
American Coot	X		X							
Sora					X	X				
Songbirds										
Horned Lark							X			
Cedar Waxwing		X	X	X		X	X	X		X
Black-headed Grosbeak							X			
Lazuli Bunting							X			
Western Tanager						X	X	X		X
American Dipper						X				
American Crow	X					X	X	X	X	X
Black-billed Magpie	X	X	X	X	X	X	X	X	X	X
Common Raven	X	X	X	X	X	X	X	X	X	X
American Tree Sparrow	X			X						
Clay-colored Sparrow	X	X	X	X	X	X	X	X	X	X
Lark Sparrow							X			
Savannah Sparrow	X	X	X	X	X	X	X	X	X	X
Vesper Sparrow	X	X		X		X	X	X	X	X
White-crowned Sparrow				X		X	X			X
American Goldfinch						X	X	X		X
House Finch							X			
Bank Swallow		X				X	X	X	X	X
Barn Swallow					X		X		X	X
Cliff Swallow			X		X	X	X	X	X	X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Northern Rough-winged Swallow	X					X	X	X	X	X
Tree Swallow	X	X	X	X	X	X	X	X	X	X
Violet-green Swallow							X	X		X
Brewer's Blackbird	X	X	X		X	X	X	X	X	X
Brown-headed Cowbird	X	X	X	X	X	X	X	X	X	X
Bullock's Oriole		X					X			
Common Grackle						X	X			
Red-winged Blackbird	X	X	X	X	X	X	X	X	X	X
Western Meadowlark	X	X	X	X	X	X	X	X	X	X
Yellow-headed Blackbird	X	X	X	X	X	X	X	X	X	X
Gray Catbird		X				X		X		X
American Pipit							X			
Black-capped Chickadee	X					X	X	X	X	X
Common Yellowthroat	X					X	X	X	X	X
Northern Waterthrush		X			X					
Orange-crowned Warbler						X				
Yellow Warbler					X	X	X	X	X	X
Yellow-rumped Warbler				X	X	X	X	X	X	X
Brewer's Sparrow						X		X		X
Chipping Sparrow						X	X			
Lincoln's Sparrow										X
Dark-eyed Junco						X		X	X	X
Song Sparrow	X	X	X	X	X	X	X	X	X	X
House Sparrow							X			
Ruby-crowned Kinglet						X		X	X	
European Starling	X	X	X	X	X	X	X	X	X	X
House Wren										X
Marsh Wren		X			X					X
American Robin	X	X	X		X	X	X	X		X
Hermit Thrush							X			
Mountain Bluebird	X					X	X		X	X
Swainson's Thrush							X			X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Eastern Kingbird	X	X	X	X	X	X	X	X	X	X
Olive-sided Flycatcher								X		
Western Kingbird								X		
Western Wood-Pewee						X				
Willow Flycatcher						X	X	X	X	X
Pelicans, herons, bitterns, and ibises										
Great Blue Heron	X	X	X			X	X	X	X	X
American White Pelican	X						X	X		
Woodpeckers										
Lewis's Woodpecker							X			
Northern Flicker	X	X	X	X		X	X	X	X	X
Red-naped Sapsucker	X									X
Grebes										
Red-necked Grebe						X				
Cormorants										
Double-crested Cormorant	X	X	X	X	X	X	X	X	X	X

4.3.2.2 PHASE 2

Phase 2 has been monitored continuously for eight years from 2017-2024. During that period, 111 bird species have been observed and 61 of those species were observed in 2024 (Table 4-5). No new species were observed in Phase 2 in the 2024 monitoring period (Table 4-5).

Table 4-5. Bird species observed in Phase 2 of the Clark Fork River Operable Unit, 2017-2024.

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Hawks, kites, and eagles										
Bald Eagle	-	-				X		X	X	X
Golden Eagle	-	-				X	X			
Northern Harrier	-	-		X	X	X	X	X	X	X
Red-tailed Hawk	-	-		X	X					
Osprey	-	-	X			X	X	X	X	X
Ducks and geese										
American Wigeon	-	-	X	X	X	X	X	X	X	X
Barrow's Goldeneye	-	-	X		X	X	X		X	
Blue-winged Teal	-	-				X		X	X	X
Bufflehead	-	-			X	X	X	X	X	X
Canada Goose	-	-		X	X	X	X	X	X	X
Canvasback	-	-	X	X	X	X	X	X	X	X
Cinnamon Teal	-	-	X		X	X	X	X	X	X
Common Goldeneye	-	-	X	X	X	X	X	X	X	X
Common Merganser	-	-		X	X					
Gadwall	-	-	X	X	X	X	X	X	X	X
Greater Scaup	-	-				X	X	X	X	
Green-winged Teal	-	-	X	X		X	X	X	X	X
Hooded Merganser	-	-		X		X		X		
Lesser Scaup	-	-		X	X	X	X	X	X	X
Mallard	-	-	X	X	X	X	X	X	X	X
Northern Pintail	-	-					X	X	X	X
Northern Shoveler	-	-	X	X	X	X	X	X	X	X
Redhead	-	-	X	X	X	X	X	X	X	
Ring-necked Duck	-	-		X	X	X	X	X	X	X
Ruddy Duck	-	-			X	X	X	X		
Snow Goose	-	-		X		X	X			X
Trumpeter Swan	-	-				X	X			
Tundra Swan	-	-		X	X	X	X			

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Wood Duck	-	-					X			
Vultures										
Turkey Vulture	-	-	X				X			X
Shorebirds										
Killdeer	-	-	X	X	X	X	X	X	X	X
Bonaparte's Gull	-	-			X			X		X
California Gull	-	-	X	X	X	X	X	X	X	X
Common Tern	-	-		X			X			
Forster's Tern	-	-		X	X		X			
Franklin's Gull	-	-		X	X		X			
Ring-billed Gull	-	-	X	X	X	X	X	X	X	X
American Avocet	-	-	X	X	X	X	X	X	X	X
Black-necked Stilt	-	-		X	X	X	X	X		
Baird's Sandpiper	-	-					X	X		
Greater Yellowlegs	-	-			X		X			X
Lesser Yellowlegs	-	-			X					X
Long-billed Curlew	-	-				X	X	X	X	X
Long-billed Dowitcher	-	-		X	X	X	X			
Marbled Godwit	-	-		X	X	X	X	X		X
Sanderling	-	-						X		
Semipalmated Sandpiper	-	-						X		
Spotted Sandpiper	-	-			X	X	X	X	X	X
Willet	-	-					X			
Wilson's Phalarope	-	-		X	X	X	X	X	X	X
Wilson's Snipe	-	-	X						X	
Pigeons and doves										
Mourning Dove	-	-	X	X		X	X	X	X	X
Rock Pigeon	-	-						X		
Kingfishers										
Belted Kingfisher	-	-							X	X
Falcons										
American Kestrel	-	-				X	X			
Merlin	-	-				X				
Peregrine Falcon	-	-	X				X			
Prairie Falcon	-	-						X		
Loons										

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Common Loon	-	-			X					
Rails										
Sandhill Crane	-	-	X	X	X	X		X	X	X
American Coot	-	-		X	X	X	X	X		
Sora	-	-				X				X
Songbirds										
Horned Lark	-	-				X				
Cedar Waxwing	-	-					X	X	X	
Western Tanager	-	-						X		
American Crow	-	-	X	X	X	X	X	X	X	X
Black-billed Magpie	-	-	X	X	X	X	X	X	X	X
Common Raven	-	-	X	X	X	X	X	X	X	X
American Tree Sparrow	-	-							X	
Clay-colored Sparrow	-	-	X	X	X	X	X	X	X	X
Lark Sparrow	-	-						X		
Savannah Sparrow	-	-	X	X	X	X	X	X	X	X
Vesper Sparrow	-	-			X	X	X	X		
White-crowned Sparrow	-	-					X			
American Goldfinch	-	-				X	X	X	X	X
Bank Swallow	-	-				X	X	X	X	X
Barn Swallow	-	-				X	X			X
Cliff Swallow	-	-			X	X	X	X	X	X
Northern Rough-winged Swallow	-	-				X	X	X	X	X
Tree Swallow	-	-	X	X	X	X	X	X	X	X
Violet-green Swallow	-	-				X				X
Brewer's Blackbird	-	-	X		X	X		X		X
Brown-headed Cowbird	-	-	X	X	X	X	X	X	X	X
Red-winged Blackbird	-	-		X	X	X	X	X	X	X
Western Meadowlark	-	-	X	X	X	X	X	X	X	X
Yellow-headed Blackbird	-	-	X	X	X	X	X	X	X	X
Gray Catbird	-	-					X			
American Pipit	-	-				X	X	X		
Black-capped Chickadee	-	-			X	X		X		
Common Yellowthroat	-	-				X	X	X	X	X
Yellow Warbler	-	-				X		X	X	X
Yellow-rumped Warbler	-	-		X	X	X	X	X	X	

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Dark-eyed Junco	-	-		X		X		X		
Song Sparrow	-	-	X		X	X	X	X	X	X
Ruby-crowned Kinglet	-	-			X				X	
European Starling	-	-			X	X	X			X
Marsh Wren	-	-						X	X	X
American Robin	-	-				X	X	X		
Hermit Thrush	-	-					X			
Swainson's Thrush	-	-					X			
Eastern Kingbird	-	-		X	X		X	X	X	X
Willow Flycatcher	-	-				X	X	X	X	X
Warbling Vireo	-	-							X	
Pelicans, herons, bitterns, and ibises										
Great Blue Heron	-	-		X	X	X	X	X		X
American White Pelican	-	-	X			X		X		X
White-faced Ibis	-	-		X		X	X	X		
Woodpeckers										
Northern Flicker	-	-		X	X		X	X	X	
Grebes										
Eared Grebe	-	-			X				X	
Horned Grebe	-	-							X	
Red-necked Grebe	-	-	X			X	X		X	
Cormorants										
Double-crested Cormorant	-	-	X	X	X	X	X	X	X	X

4.3.2.3 PHASES 3 AND 4

Phases 3 and 4 have been monitored continuously for nine years from 2016-2024. During that period, 123 bird species have been observed and 76 of those species were observed in 2024 (Table 4-6). A Cackling Goose was observed in Phase 7 in 2024 and had never previously been observed in the Clark Fork River Operable Unit in this monitoring program. Species observed in Phases 3 and 4 for the first time in 2024 included Cackling Goose, Trumpeter Swan, and Pine Siskin (Table 4-6).

Table 4-6. Bird species observed in Phases 3 and 4 of the Clark Fork River Operable Unit, 2016-2024.

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Hawks, kites, and eagles										
Bald Eagle	-	X	X	X	X	X	X			X
Cooper's Hawk	-				X					X
Golden Eagle	-		X	X	X		X			X
Northern Harrier	-	X		X		X	X	X	X	X
Red-tailed Hawk	-	X	X	X	X	X	X	X	X	X
Sharp-shinned Hawk	-					X	X			
Swainson's Hawk	-	X	X	X			X			X
Osprey	-	X	X	X	X	X	X	X		X
Ducks and geese										
American Wigeon	-	X	X	X	X	X	X			X
Barrow's Goldeneye	-					X	X	X	X	
Blue-winged Teal	-				X	X				
Cackling Goose										X
Canada Goose	-	X		X	X	X	X	X	X	X
Canvasback	-					X				
Cinnamon Teal	-	X	X		X	X	X		X	X
Common Goldeneye	-	X	X	X	X	X	X		X	X
Common Merganser	-	X				X	X	X		X
Gadwall	-					X	X	X	X	X
Green-winged Teal	-					X	X	X	X	X
Hooded Merganser	-					X	X	X	X	X
Lesser Scaup	-	X		X	X	X	X		X	X
Mallard	-	X	X	X	X	X	X	X	X	X
Northern Pintail	-		X				X			
Northern Shoveler	-				X	X	X		X	X
Redhead	-					X				
Ross's Goose	-	X	X							
Snow Goose	-		X	X		X	X			X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Trumpeter Swan										X
Tundra Swan	-			X						
Wood Duck	-				X	X	X		X	X
Nightjars										
Common Nighthawk	-		X							
Vultures										
Turkey Vulture	-	X		X		X	X			X
Shorebirds										
Killdeer	-	X	X	X	X	X	X	X	X	X
California Gull	-	X	X		X	X	X	X	X	X
Forster's Tern	-	X						X		
Ring-billed Gull	-	X	X	X	X	X	X	X	X	X
American Avocet	-	X								
Greater Yellowlegs	-						X			
Long-billed Curlew	-	X				X	X		X	X
Marbled Godwit	-						X			X
Solitary Sandpiper	-	X				X				
Spotted Sandpiper	-	X	X	X		X	X	X	X	X
Wilson's Phalarope	-			X		X				
Wilson's Snipe	-	X		X	X	X	X			
Pigeons and doves										
Eurasian Collared-Dove	-									
Mourning Dove	-	X	X	X	X	X	X	X	X	X
Rock Pigeon	-	X	X	X		X	X			
Kingfishers										
Belted Kingfisher	-	X			X	X	X		X	X
Falcons										
American Kestrel	-	X			X	X	X		X	X
Merlin	-	X		X	X	X	X	X	X	
Peregrine Falcon	-	X				X				
Upland game birds										
Gray Partridge	-	X			X	X	X		X	
Rails										
Sandhill Crane	-	X	X	X	X	X	X			X
American Coot	-	X		X		X				
Sora	-				X					

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Songbirds										
Horned Lark	-						X	X		
Cedar Waxwing	-					X		X		X
Black-headed Grosbeak	-					X	X			
Western Tanager	-						X			
American Crow	-			X	X	X	X	X	X	X
Black-billed Magpie	-	X	X	X	X	X	X	X	X	X
Common Raven	-	X	X	X	X	X	X	X	X	X
Clay-colored Sparrow	-	X	X	X	X	X	X	X	X	X
Fox Sparrow	-	X				X	X			
Savannah Sparrow	-	X	X	X	X	X	X	X	X	X
Vesper Sparrow	-	X	X	X	X		X			X
White-crowned Sparrow	-					X	X		X	X
American Goldfinch	-					X	X	X	X	X
Cassin's Finch	-				X					
House Finch	-						X			
Pine Siskin										X
Bank Swallow	-	X	X	X	X	X	X	X	X	X
Barn Swallow	-	X	X		X	X	X		X	X
Cliff Swallow	-	X	X	X	X	X	X	X	X	X
Northern Rough-winged Swallow	-		X	X	X	X	X	X	X	X
Tree Swallow	-	X	X	X	X	X	X	X	X	X
Violet-green Swallow	-		X			X	X			X
Bobolink	-						X		X	X
Brewer's Blackbird	-	X	X	X	X	X	X	X	X	X
Brown-headed Cowbird	-	X	X	X	X	X	X	X	X	X
Bullock's Oriole	-					X	X		X	
Common Grackle	-	X			X					
Red-winged Blackbird	-	X	X	X	X	X	X	X	X	X
Western Meadowlark	-	X	X	X	X	X	X	X	X	X
Yellow-headed Blackbird	-	X	X	X	X	X	X	X	X	X
Gray Catbird	-	X	X			X	X		X	X
American Pipit	-						X			
Black-capped Chickadee	-	X			X	X	X	X	X	X
Common Yellowthroat	-					X	X	X	X	X
MacGillivray's Warbler	-						X			X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Northern Waterthrush	-				X	X			X	X
Orange-crowned Warbler	-					X				
Wilson's Warbler	-						X			
Yellow Warbler	-	X	X	X	X	X	X	X	X	X
Yellow-rumped Warbler	-		X	X		X	X	X	X	X
Brewer's Sparrow	-						X			
Chipping Sparrow	-					X				
Dark-eyed Junco	-			X		X	X			X
Lincoln's Sparrow	-					X	X			
Song Sparrow	-	X	X	X	X	X	X	X	X	X
Ruby-crowned Kinglet	-					X		X	X	X
European Starling	-	X	X	X	X	X	X	X	X	X
House Wren	-					X	X	X		
Marsh Wren	-				X	X				
American Robin	-	X	X	X	X	X	X	X		X
Hermit Thrush	-						X			
Mountain Bluebird	-		X							
Swainson's Thrush	-					X	X			X
Veery	-						X			
Cordilleran Flycatcher	-									
Dusky Flycatcher	-					X				X
Eastern Kingbird	-	X	X		X	X	X	X	X	X
Least Flycatcher	-				X	X				
Western Kingbird	-					X	X			X
Western Wood-Pewee	-					X				
Willow Flycatcher	-	X	X	X	X	X	X	X	X	X
Pelicans, herons, bitterns, and ibises										
Great Blue Heron	-	X	X		X	X	X	X		X
American White Pelican	-	X								
White-faced Ibis	-		X			X				
Woodpeckers										
Downy Woodpecker	-				X					X
Northern Flicker	-	X	X	X	X	X	X	X	X	X
Owls										
Great Horned Owl	-		X			X				
Cormorants										

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Double-crested Cormorant	-	X	X	X	X	X	X	X	X	X

4.3.2.4 PHASES 5 AND 6

Phases 5 and 6 have been monitored continuously for eight years from 2017-2024. During that period, 139 bird species have been observed and 89 of those species were observed in 2024 (Table 4-7). Species observed in Phases 5 and 6 for the first time in 2024 included Eurasian Wigeon, Rock Pigeon, Prairie Falcon, Pine Siskin, Hermit Thrush, Veery, Mountain Bluebird, and Dusky Flycatcher (Table 4-7).

Table 4-7. Bird species observed in Phases 5 and 6 of the Clark Fork River Operable Unit, 2017-2024.

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Hawks, kites, and eagles										
Bald Eagle	-	-	X	X	X	X	X	X	X	X
Cooper's Hawk	-	-						X	X	X
Golden Eagle	-	-		X						
Northern Harrier	-	-		X	X	X	X	X	X	X
Red-tailed Hawk	-	-		X	X	X	X	X	X	X
Rough-legged Hawk	-	-					X			
Sharp-shinned Hawk	-	-			X		X	X	X	
Swainson's Hawk	-	-		X	X	X		X		X
Osprey	-	-		X	X		X	X		X
Ducks and geese										
American Wigeon	-	-	X	X	X	X	X	X	X	X
Eurasian Wigeon										X
Barrow's Goldeneye	-	-		X	X	X	X	X	X	X
Blue-winged Teal	-	-					X	X	X	X
Bufflehead	-	-		X	X	X	X	X	X	X
Canada Goose	-	-		X	X	X	X	X	X	X
Canvasback	-	-		X		X		X	X	X
Cinnamon Teal	-	-		X	X	X	X	X	X	X
Common Goldeneye	-	-	X	X	X	X	X	X	X	X
Common Merganser	-	-	X	X	X	X	X	X	X	X
Gadwall	-	-	X	X	X	X	X	X	X	X
Green-winged Teal	-	-	X	X	X	X	X	X	X	X
Hooded Merganser	-	-			X	X	X	X		X
Lesser Scaup	-	-	X	X	X	X	X	X	X	X
Mallard	-	-	X	X	X	X	X	X	X	X
Northern Pintail	-	-	X	X		X	X		X	
Northern Shoveler	-	-	X	X	X	X	X	X	X	X
Red-breasted Merganser	-	-					X			
Redhead	-	-				X	X	X		

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Ring-necked Duck	-	-		X	X	X	X	X	X	X
Ross's Goose	-	-	X							
Ruddy Duck	-	-	X		X			X	X	
Snow Goose	-	-	X	X						
Trumpeter Swan	-	-				X	X	X		X
Tundra Swan	-	-		X	X		X			
Wood Duck	-	-				X			X	
Nightjars										
Common Nighthawk	-	-			X					
Vultures										
Turkey Vulture	-	-		X	X	X	X	X	X	X
Shorebirds										
Killdeer	-	-	X	X	X	X	X	X	X	X
California Gull	-	-	X			X	X	X	X	X
Ring-billed Gull	-	-	X	X		X	X	X	X	X
American Avocet	-	-						X		
Greater Yellowlegs	-	-						X		X
Lesser Yellowlegs	-	-	X							
Long-billed Curlew	-	-				X		X		X
Red-necked Phalarope	-	-						X		
Spotted Sandpiper	-	-	X	X	X	X	X	X	X	X
Wilson's Phalarope	-	-		X				X	X	X
Wilson's Snipe	-	-		X	X	X	X	X	X	X
Pigeons and doves										
Eurasian Collared-Dove	-	-				X				
Mourning Dove	-	-	X	X	X	X	X	X	X	X
Rock Pigeon										X
Kingfishers										
Belted Kingfisher	-	-		X		X	X	X	X	
Falcons										
American Kestrel	-	-	X	X	X	X	X	X	X	X
Prairie Falcon										X
Upland game birds										
Gray Partridge	-	-	X							
Loons										
Common Loon	-	-			X	X				

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Rails										
Sandhill Crane	-	-	X		X	X	X	X	X	X
American Coot	-	-		X	X		X		X	X
Common Gallinule	-	-	X							
Sora	-	-				X	X			X
Songbirds										
Horned Lark	-	-					X			
Cedar Waxwing	-	-				X	X	X	X	X
Snow Bunting	-	-				X				
Black-headed Grosbeak	-	-				X	X	X		X
Western Tanager	-	-				X	X	X	X	X
American Crow	-	-	X	X		X	X	X	X	X
Black-billed Magpie	-	-	X	X	X	X	X	X	X	X
Common Raven	-	-	X	X	X	X	X	X	X	X
American Tree Sparrow	-	-				X		X		
Clay-colored Sparrow	-	-				X	X	X	X	X
Fox Sparrow	-	-					X			
Lark Sparrow	-	-							X	
Savannah Sparrow	-	-	X	X	X	X	X	X	X	X
Vesper Sparrow	-	-	X	X			X	X		
White-crowned Sparrow	-	-				X	X	X		X
American Goldfinch	-	-		X	X	X	X	X	X	X
Cassin's Finch	-	-		X						
Common Redpoll	-	-		X						
House Finch	-	-					X			
Pine Siskin										X
Bank Swallow	-	-		X	X	X	X	X	X	X
Barn Swallow	-	-	X	X	X	X	X	X	X	X
Cliff Swallow	-	-	X	X	X	X	X	X	X	X
Northern Rough-winged Swallow	-	-	X	X	X	X	X	X	X	X
Tree Swallow	-	-	X	X	X	X	X	X	X	X
Violet-green Swallow	-	-	X	X		X		X		
Brewer's Blackbird	-	-	X	X	X			X	X	X
Brown-headed Cowbird	-	-	X	X	X	X	X	X	X	X
Bullock's Oriole	-	-				X	X	X	X	
Common Grackle	-	-	X	X					X	

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Red-winged Blackbird	-	-	X	X	X	X	X	X	X	X
Western Meadowlark	-	-	X	X	X	X	X	X	X	X
Yellow-headed Blackbird	-	-		X	X	X	X	X	X	X
Yellow-breasted Chat	-	-					X			
Gray Catbird	-	-	X	X		X	X	X	X	X
American Pipit	-	-				X	X	X		
Black-capped Chickadee	-	-				X	X	X	X	X
American Redstart	-	-						X		
Common Yellowthroat	-	-				X	X	X	X	X
MacGillivray's Warbler	-	-						X		
Northern Waterthrush	-	-			X		X			
Orange-crowned Warbler	-	-			X					X
Wilson's Warbler	-	-					X	X		
Yellow Warbler	-	-		X	X	X	X	X	X	X
Yellow-rumped Warbler	-	-		X	X	X	X	X	X	X
Chipping Sparrow	-	-		X		X	X	X	X	X
Dark-eyed Junco	-	-		X		X	X			X
Green-tailed Towhee	-	-							X	
Lincoln's Sparrow	-	-			X	X		X		X
Song Sparrow	-	-	X	X		X	X	X	X	X
Spotted Towhee	-	-				X				
House Sparrow	-	-			X					
Ruby-crowned Kinglet	-	-					X	X	X	X
European Starling	-	-	X	X	X	X	X	X	X	X
House Wren	-	-					X	X	X	
Marsh Wren	-	-			X	X	X		X	X
American Robin	-	-	X	X	X	X	X	X	X	X
Hermit Thrush										X
Swainson's Thrush	-	-				X	X	X	X	X
Veery										X
Mountain Bluebird										X
Eastern Kingbird	-	-	X	X	X	X	X	X	X	X
Dusky Flycatcher										X
Least Flycatcher	-	-				X	X			
Western Wood-Pewee	-	-			X	X	X	X	X	X
Willow Flycatcher	-	-		X	X	X	X	X	X	X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Warbling Vireo	-	-				X			X	X
Pelicans, herons, bitterns, and ibises										
Great Blue Heron	-	-	X	X	X	X		X	X	X
American White Pelican	-	-						X		
White-faced Ibis	-	-					X	X		
Woodpeckers										
Downy Woodpecker	-	-				X	X		X	X
Hairy Woodpecker	-	-				X				
Northern Flicker	-	-		X	X	X	X	X	X	X
Red-naped Sapsucker	-	-						X	X	
Grebes										
Eared Grebe	-	-			X		X	X	X	
Pied-billed Grebe	-	-				X	X			
Western Grebe	-	-		X						
Owls										
Great Horned Owl	-	-		X			X			X
Cormorants										
Double-crested Cormorant	-	-	X	X	X	X	X	X	X	X

4.3.2.5 PHASE 7

Phase 7 has been monitored continuously for ten years from 2015-2024. During that period, 147 bird species have been observed and 94 of those species were observed in 2024 (Table 4-8). Species observed in Phase 7 for the first time in 2024 included Peregrine Falcon, Prairie Falcon, Black-headed Grosbeak, Pine Siskin, Lincoln's Sparrow, and Red-naped Sapsucker (Table 4-8).

Table 4-8. Bird species observed in Phase 7 of the Clark Fork River Operable Unit, 2015-2024.

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Hawks, kites, and eagles										
Bald Eagle	X		X	X	X	X	X	X	X	
Cooper's Hawk							X		X	X
Golden Eagle				X						
Northern Harrier				X	X	X	X	X		X
Red-tailed Hawk	X	X	X	X	X	X	X	X	X	X
Sharp-shinned Hawk						X				
Swainson's Hawk	X									
Osprey	X	X	X	X	X	X	X	X	X	X
Ducks and geese										
American Wigeon	X		X	X	X	X	X	X	X	X
Barrow's Goldeneye	X		X		X	X				X
Blue-winged Teal	X						X	X	X	X
Bufflehead	X		X			X	X	X	X	X
Canada Goose	X	X		X	X	X	X	X	X	X
Canvasback							X	X	X	X
Cinnamon Teal	X	X	X	X		X	X	X	X	X
Common Goldeneye	X		X	X	X	X	X	X	X	X
Common Merganser	X	X	X		X	X	X	X	X	X
Eurasian Wigeon						X	X			
Gadwall	X	X	X	X	X	X	X	X	X	X
Greater Scaup									X	
Green-winged Teal	X	X	X	X	X	X	X	X	X	X
Hooded Merganser	X	X	X	X	X	X	X	X	X	X
Lesser Scaup	X	X	X			X	X	X	X	X
Mallard	X	X	X	X	X	X	X	X	X	X
Northern Pintail				X		X		X	X	X
Northern Shoveler	X		X	X	X	X	X	X	X	X
Red-breasted Merganser	X		X		X	X	X	X	X	X
Redhead	X					X	X	X	X	X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Ring-necked Duck	X		X			X	X	X	X	
Ross's Goose		X				X	X			X
Ruddy Duck	X	X			X	X	X	X	X	X
Snow Goose		X	X	X		X	X	X	X	X
Trumpeter Swan						X	X	X		
Tundra Swan							X		X	
Wood Duck						X				
Vultures										
Turkey Vulture	X			X		X	X	X	X	
Shorebirds										
Killdeer	X	X	X	X	X	X	X	X	X	X
Semipalmated Plover						X	X			
Bonaparte's Gull								X		
California Gull	X	X	X	X	X	X	X	X	X	X
Ring-billed Gull	X	X	X	X	X	X	X	X	X	X
American Avocet	X	X	X		X	X	X	X		X
Black-necked Stilt						X	X		X	
Baird's Sandpiper						X	X			
Greater Yellowlegs		X					X	X	X	
Least Sandpiper							X			
Lesser Yellowlegs								X		
Long-billed Curlew					X	X	X	X	X	X
Long-billed Dowitcher						X	X			
Marbled Godwit					X			X		X
Sanderling						X	X			
Solitary Sandpiper	X	X				X	X			X
Spotted Sandpiper	X	X	X	X	X	X	X	X	X	X
Willet						X				
Wilson's Phalarope						X	X	X	X	X
Wilson's Snipe	X	X	X			X		X	X	X
Pigeons and doves										
Eurasian Collared-Dove						X	X	X		X
Mourning Dove	X	X		X		X	X	X	X	X
Rock Pigeon						X	X	X		
Kingfishers										
Belted Kingfisher				X		X	X		X	X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Falcons										
American Kestrel	X					X		X	X	X
Merlin					X					X
Peregrine Falcon										X
Prairie Falcon										X
Upland game birds										
Gray Partridge						X			X	X
Loons										
Common Loon	X	X	X		X	X	X	X	X	X
Rails										
Sandhill Crane			X	X	X	X	X	X	X	X
American Coot	X	X	X	X	X	X	X	X	X	X
Sora									X	
Songbirds										
Horned Lark							X	X		X
Cedar Waxwing				X		X	X	X		
Black-headed Grosbeak										X
Western Tanager									X	
American Crow	X		X	X	X	X	X	X	X	X
Black-billed Magpie	X	X	X	X	X	X	X	X	X	X
Common Raven	X	X	X	X	X	X	X	X	X	X
American Tree Sparrow						X				
Clay-colored Sparrow	X	X				X	X	X	X	X
Fox Sparrow				X		X			X	
Lark Sparrow	X						X			
Savannah Sparrow	X		X	X	X	X	X	X	X	X
Vesper Sparrow		X		X	X	X	X	X	X	X
White-crowned Sparrow							X		X	
American Goldfinch	X					X	X	X	X	
Cassin's Finch								X		
House Finch							X			
Pine Siskin										X
Bank Swallow	X				X	X	X	X	X	X
Barn Swallow	X	X			X	X	X	X	X	X
Cliff Swallow	X				X	X	X	X	X	X
Northern Rough-winged Swallow	X		X	X	X	X	X	X	X	X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Tree Swallow	X	X	X	X	X	X	X	X	X	X
Violet-green Swallow		X				X	X	X	X	X
Bobolink		X								
Brewer's Blackbird	X	X	X	X	X	X	X	X	X	X
Brown-headed Cowbird	X	X	X	X	X	X	X	X	X	X
Bullock's Oriole							X	X	X	X
Common Grackle	X	X					X	X		
Red-winged Blackbird	X	X	X	X	X	X	X	X	X	X
Western Meadowlark	X	X	X	X	X	X	X	X	X	X
Yellow-headed Blackbird	X					X	X	X	X	X
Northern Shrike							X			
Gray Catbird	X	X	X	X	X	X	X	X	X	X
Sage Thrasher						X				
American Pipit					X		X			X
Black-capped Chickadee	X	X	X			X	X	X	X	X
Common Yellowthroat				X		X	X	X	X	X
Northern Waterthrush							X	X		
Orange-crowned Warbler	X					X				
Yellow Warbler	X				X	X	X	X	X	X
Yellow-rumped Warbler	X	X	X		X	X	X	X	X	X
Brewer's Sparrow						X	X	X	X	X
Chipping Sparrow						X	X		X	
Dark-eyed Junco				X		X	X	X		X
Grasshopper Sparrow								X		
Lincoln's Sparrow										X
Song Sparrow	X	X	X	X	X	X	X	X	X	X
Spotted Towhee									X	
House Sparrow							X	X	X	X
Ruby-crowned Kinglet									X	
European Starling	X	X	X	X	X	X	X	X	X	X
House Wren								X	X	X
Marsh Wren							X	X	X	X
American Robin	X	X	X	X	X	X	X	X	X	X
Hermit Thrush							X			
Mountain Bluebird	X	X		X	X	X	X	X	X	
Swainson's Thrush		X				X	X			X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Townsend's Solitaire									X	
Dusky Flycatcher						X				X
Eastern Kingbird	X	X	X		X	X	X	X	X	X
Least Flycatcher		X								
Western Kingbird						X	X			
Western Wood-Pewee						X	X			
Willow Flycatcher	X	X		X	X	X	X	X	X	X
Warbling Vireo						X	X	X	X	
Pelicans, herons, bitterns, and ibises										
Great Blue Heron	X	X	X		X		X	X	X	X
American White Pelican	X	X	X		X		X	X	X	X
White-faced Ibis							X		X	
Woodpeckers										
Northern Flicker	X	X	X	X	X	X	X	X	X	X
Red-naped Sapsucker										X
Grebes										
Eared Grebe						X	X	X	X	X
Horned Grebe	X						X		X	
Pied-billed Grebe							X			
Red-necked Grebe		X					X	X	X	
Western Grebe	X		X		X		X	X	X	X
Owls										
Great Horned Owl						X				
Cormorants										
Double-crested Cormorant	X	X	X	X	X	X	X	X	X	X

4.3.2.6 PHASE 15

Phase 15 has been monitored continuously for ten years from 2015-2024. During that period, 133 bird species have been observed and 81 of those species were observed in 2024 (Table 4-9). Species observed in Phase 15 for the first time in 2024 included Semipalmated Sandpiper, Lark Sparrow, and Red-naped Sapsucker (Table 4-9).

Table 4-9. Bird species observed in Phase 15 of the Clark Fork River Operable Unit, 2015-2024.

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Hawks, kites, and eagles										
Bald Eagle			X	X	X	X	X	X		X
Cooper's Hawk								X		
Golden Eagle				X						X
Northern Harrier	X	X	X			X			X	X
Red-tailed Hawk	X	X	X	X		X	X	X	X	
Rough-legged Hawk									X	
Sharp-shinned Hawk	X							X		X
Swainson's Hawk				X				X		
Osprey	X	X	X	X	X	X	X	X	X	X
Ducks and geese										
American Wigeon	X	X	X	X	X	X	X	X	X	X
Barrow's Goldeneye		X	X	X	X	X	X	X		
Blue-winged Teal	X					X	X	X	X	X
Bufflehead		X		X		X	X			X
Canada Goose	X	X		X	X	X	X	X	X	X
Canvasback				X	X					
Cinnamon Teal	X	X	X	X	X	X	X	X	X	X
Common Goldeneye		X		X	X	X	X	X	X	X
Common Merganser	X	X		X			X	X	X	X
Gadwall	X	X	X	X		X	X	X	X	X
Green-winged Teal	X	X	X	X	X	X	X	X	X	X
Hooded Merganser		X			X					
Lesser Scaup	X	X	X	X			X	X		
Mallard	X	X	X	X	X	X	X	X	X	X
Northern Pintail	X	X		X		X	X	X	X	
Northern Shoveler		X	X	X	X	X	X	X	X	X
Red-breasted Merganser			X							
Ring-necked Duck			X	X						
Snow Goose				X	X	X		X		

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Trumpeter Swan		X						X	X	
Tundra Swan					X	X		X		
Wood Duck					X	X			X	X
Hummingbirds										
Vaux's Swift						X				X
Nightjars										
Common Nighthawk		X				X		X		X
Vultures										
Turkey Vulture				X				X		X
Shorebirds										
Killdeer	X	X	X		X	X	X	X	X	X
California Gull			X				X	X	X	X
Ring-billed Gull	X	X	X		X		X	X		X
Black-necked Stilt						X				X
Baird's Sandpiper								X		
Greater Yellowlegs								X	X	
Least Sandpiper									X	X
Lesser Yellowlegs							X		X	X
Long-billed Curlew				X		X	X	X	X	X
Long-billed Dowitcher									X	
Semipalmated Sandpiper										X
Solitary Sandpiper							X		X	X
Spotted Sandpiper	X	X	X	X	X	X	X	X	X	X
Willet									X	
Wilson's Phalarope							X	X	X	X
Wilson's Snipe	X	X	X	X		X	X	X	X	X
Pigeons and doves										
Eurasian Collared-Dove						X				
Mourning Dove	X	X	X	X	X	X	X	X	X	X
Rock Pigeon			X			X	X			
Kingfishers										
Belted Kingfisher						X	X	X	X	X
Falcons										
American Kestrel	X			X			X	X		
Merlin						X				
Upland game birds										

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Gray Partridge								X		X
Rails										
Sandhill Crane	X	X	X	X	X	X	X	X	X	X
American Coot	X	X	X	X	X	X	X			
Sora			X				X	X	X	X
Virginia Rail				X						X
Songbirds										
Horned Lark						X		X		
Cedar Waxwing						X		X		
Black-headed Grosbeak			X			X	X			
Western Tanager						X	X	X	X	X
American Crow	X		X	X		X	X	X	X	X
Black-billed Magpie	X	X	X	X	X	X	X	X	X	X
Common Raven	X	X	X	X	X	X	X	X	X	X
American Tree Sparrow	X			X				X	X	
Clay-colored Sparrow	X	X		X	X			X	X	
Lark Sparrow										X
Savannah Sparrow	X	X	X	X	X	X	X	X	X	X
Vesper Sparrow	X	X	X	X	X	X	X	X	X	X
White-crowned Sparrow	X				X	X	X	X		X
American Goldfinch						X		X	X	X
House Finch							X			
Pine Siskin							X			
Bank Swallow	X	X				X	X	X	X	X
Barn Swallow		X	X	X		X	X	X	X	X
Cliff Swallow			X			X	X		X	X
Northern Rough-winged Swallow	X	X				X	X	X	X	X
Tree Swallow	X	X	X	X	X	X	X	X	X	X
Violet-green Swallow									X	
Bobolink	X	X	X	X	X	X	X	X	X	X
Brewer's Blackbird	X	X	X	X	X	X	X	X	X	X
Brown-headed Cowbird	X	X	X	X	X	X	X	X	X	X
Bullock's Oriole	X	X		X	X	X		X	X	X
Common Grackle		X				X				X
Red-winged Blackbird	X	X	X	X	X	X	X	X	X	X
Western Meadowlark	X	X	X	X	X	X	X	X	X	X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Yellow-headed Blackbird	X		X			X	X	X	X	X
Gray Catbird	X					X	X	X		X
American Pipit							X	X	X	X
Black-capped Chickadee	X	X		X	X	X	X	X	X	X
Common Yellowthroat		X				X	X	X	X	X
MacGillivray's Warbler									X	
Nashville Warbler							X	X		
Northern Waterthrush						X	X		X	
Orange-crowned Warbler					X	X	X	X	X	
Wilson's Warbler					X		X	X		
Yellow Warbler	X	X	X	X	X	X	X	X	X	X
Yellow-rumped Warbler	X			X	X	X	X	X	X	X
Chipping Sparrow							X			
Dark-eyed Junco						X		X	X	X
Lincoln's Sparrow							X	X	X	X
Song Sparrow	X	X	X	X	X	X	X	X	X	X
Spotted Towhee						X				
Ruby-crowned Kinglet	X			X	X	X	X	X	X	
European Starling	X	X	X	X		X	X	X	X	X
House Wren			X		X	X		X		X
Marsh Wren		X		X		X	X	X	X	X
American Robin	X	X	X	X	X	X	X	X	X	X
Hermit Thrush							X	X		
Swainson's Thrush						X	X			X
Cordilleran Flycatcher								X		
Dusky Flycatcher					X			X	X	
Eastern Kingbird	X	X	X	X	X	X	X	X	X	X
Least Flycatcher					X	X				
Olive-sided Flycatcher							X			
Western Kingbird						X		X		
Western Wood-Pewee						X	X	X	X	X
Willow Flycatcher	X	X			X	X	X	X	X	X
Red-eyed Vireo							X			
Warbling Vireo						X		X		
Pelicans, herons, bitterns, and ibises										
Great Blue Heron	X	X				X	X		X	X

Species	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
American White Pelican	X	X						X		
White-faced Ibis							X			
Woodpeckers										
Downy Woodpecker	X								X	
Hairy Woodpecker							X			
Northern Flicker	X	X	X	X	X	X	X	X	X	X
Red-naped Sapsucker										X
Owls										
Great Horned Owl								X		
Cormorants										
Double-crested Cormorant	X	X	X	X	X	X	X	X	X	X

4.4 DISCUSSION

The CFROU provides habitat for a diverse array of bird species. Over the last ten years, 180 distinct bird species, representing 18 taxonomic orders and 48 families, have been observed in the CFROU. This level of diversity is remarkable given that this sizable proportion of Montana species (40 percent) have been observed in a monitoring area of only about 40 square miles (or 0.03 percent of Montana's geographic area). The most diverse taxonomic orders include Passeriformes (perching birds; 79 species), Anseriformes (waterfowl; 28 species), Charadriiformes (shorebirds and waders; 26 species), and Accipitriformes (birds of prey; 10 species).

5.0 REFERENCES

AR (Atlantic Richfield Company), 1992. *Clark Fork River Superfund site investigations: Standard operating procedures,* prepared by AR, Anaconda, MT.

Buckland, S. T., Anderson, D. R., Burnham, K. P., Laake, J. L., Borchers, D. L. and L. Thomas, 2001. *Introduction to distance sampling.* Oxford, Oxford University Press.

DEQ (Montana Department of Environmental Quality), 2019a. *Standard Operating Procedure, Sample collection for chemistry Analysis: Water, Sediment, and biological Tissue, WQDWQPBFM-02, Version 1.0.* Water Quality Planning Bureau, Helena, MT. Available: https://deq.mt.gov/files/Water/WQPB/QAProgram/Documents/SOP_ChemistrySampling_WQDWQPBFM-02_2019_Final.pdf. (July 7, 2022).

DEQ (Montana Department of Environmental Quality), 2019b. *Circular DEQ-7, Montana Numeric Water Quality Standards,* prepared by Water Quality Planning Bureau, Water Quality Standards and Modeling Section, DEQ, Helena, MT.

DEQ (Montana Department of Environmental Quality) and EPA (U.S. Environmental Protection Agency), 1995. *Record of Decision: Streamside Tailings Operable Unit Silver Bow Creek/Butte Area National Priorities List site, Silver Bow and Deer Lodge Counties, Montana, EPA/ROD/R08-96/112*, prepared by EPA, Helena, MT. Available: http://www.epa.gov/superfund/sites/rods/fulltext/r0896112.pdf. (February 11, 2014).

EPA (U. S. Environmental Protection Agency), 1986. *Quality criteria for water 1986, EPA 440/5-86-001,* prepared by EPA Office of Water Regulations and Standards, Washington, DC. Available: http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/upload/2009_01_13_criteria_goldbook.pdf. (October 30, 2015).

EPA (U. S. Environmental Protection Agency), 2004. *Record of Decision, Clark Fork River Operable Unit of the Milltown Reservoir/Clark Fork River Superfund Site*, prepared by EPA, Region 8, Helena, MT. Available: http://www2.epa.gov/sites/production/files/documents/Pt2DecisionSummary.pdf. (May 19, 2015).

Hutto, R. L., S. M. Pletschet, and P. Hendricks, 1986. *A fixed-radius point count method for nonbreeding and breeding season use.* Auk 103:593-602.

IBP (The Institute for Bird Populations), 2018. Available: https://www.birdpop.org/pages/birdSpeciesCodes.php. (September 13, 2018).

Kottek, M., J. Grieser, C. Beck, B. Rudolf, and F. Rubel, 2006. *World map of the Köppen-Geiger climate classification updated.* Meteoroligische Zeitschriff 15:259-263.

MBRC (Montana Bird Records Committee), 2021. *Official state list of Montana birds.* Available: https://www.montanabirdadvocacy.org/state-list/. (February 14, 2021).

MDA (Montana Department of Agriculture), 2019. *Montana noxious weed list, effective: June 21, 2019,* prepared by MDA, Helena, MT. Available: 2019-Montana-Noxious-Weed-List.pdf (mt.gov). (June 22, 2023).

MNHP (Montana Natural Heritage Program), 2024. *Montana field guide*, prepared by MNHP, Helena, MT. Available: http://fieldguide.mt.gov/displayClasses.aspx?Kingdom=Plantae. (February 1, 2024).

MacDonald, D. D., C. G. Ingersoll, and T. A. Berger, 2000. *Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems.* Archives of Environmental Contamination and Toxicology 39:20-31.

NWS (National Weather Service), 2025. *National Oceanic and Atmospheric Administration Online Weather Data*. Available: https://www.weather.gov/wrh/Climate?wfo=mso. (February 21, 2025).

Prodgers, R., 2021. *Vegetation* in *Monitoring report for 2020: Streamside Tailings Operable Unit,* prepared by RESPEC, Missoula, MT, for Montana Department of Environmental Quality and Montana Department of Justice, Natural Resource Damage Program, Helena, MT.

RESPEC, 2024a. *Monitoring report for 2023: Streamside Tailings Operable Unit*, prepared by RESPEC, Missoula, MT, for Montana Department of Environmental Quality and U.S. Environmental Protection Agency, Helena, MT.

RESPEC, 2024b. *Quality Assurance Project Plan for the Clark Fork River Operable Unit - 2024*, prepared by RESPEC, Missoula, MT, for Montana Department of Environmental Quality and U.S. Environmental Protection Agency, Helena, MT.

Sando, S., A. Vecchia, D. Lorenz, and E. Barnhart, 2014. *Water-quality trends for selected sampling sites in the upper Clark Fork Basin, Montana, water years 1996-2010, Scientific Investigations Report 2013-5217,* prepared by U. S. Geological Survey, Helena, MT.

USGS (U. S. Geological Survey), 2006. *Chapter A4. Collection of water samples, Revised 2006,* prepared by USGS. Available: http://water.usgs.gov/owq/FieldManual/chapter4/pdf/Chap4_v2.pdf. (February 20, 2014).

USGS (U.S. Geological Survey), 2025. *Water data for the Nation.* Available: https://waterdata.usgs.gov/nwis. (January 7, 2025).

Weatherbase, 2020. Available: http://m.weatherbase.com. (March 1, 2020).

Weather Underground, 2025. *Weather Station SLWS835 – KMTDEERL20.* Available: https://www.wunderground.com/dashboard/pws/KMTDEERL20?cm_ven=localwx_pwsdash. (February 3, 2025).

APPENDIX A

QUALITY ASSURANCE AND QUALITY CONTROL REVIEW AND SUMMARY

INTRODUCTION

Specific quality assurance and quality control (QA/QC) requirements for field measurements, sample collection, laboratory analysis, and the reporting of resulting data were established by protocols contained in the quality assurance project plan (QAPP), a component of the approved sampling and analysis plan (SAP) for the Clark Fork River Operable Unit (CFROU). The following quality control checklist is a component of the Montana Department of Environmental Quality QA/QC protocols and provides review and validation of water chemistry and related data generated under the CFROU environmental monitoring program in 2024. This checklist provides an outline for reviewing and assessing some factors potentially affecting data quality and assists in identifying data that may be invalid or require additional documentation.

QUALITY CONTROL/CORRECTIVE ACTIONS

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

- First Quarter (Q1): No quality control issues were identified.
- Second Quarter (Q2): No quality control issues were identified.
- Third Quarter (Q3): Sample collection times were not provided on the chain of custody for samples WSC-SBC and SS-25. Sample collection times were recorded on the sample bottles for those samples.
- Fourth Quarter (Q4): No quality control issues were identified.

SUMMARY OF QUALITY CONTROL AND ANALYSIS RESULTS

Summarized in this appendix are quality control measures performed on field and laboratory data generated from surface water and instream sediment samples collected from the CFROU monitoring events. Assessed under the DEQ standard quality assurance and quality control protocols are data quality objectives (DQOs), including categories for: “representativeness”, “comparability”, and “completeness”. Also assessed under the DEQ standard quality assurance and quality control protocols are data quality indicators (DQIs) including categories for: ”sensitivity”, “lab precision”, “overall precision”, and “bias and accuracy”.

Overall, DQOs and DQIs were generally met at all monitoring sites in the CFROU. Surface water samples were collected and analyzed for total suspended sediment, nutrients, metals (dissolved and total recoverable), and common ions at sample sites on four occasions. Instream sediment samples were collected and analyzed for metals (total) during the first (Q1) and third (Q3) quarters.

REPRESENTATIVENESS

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

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

COMPARABILITY

Comparability is the applicability of project data to the remedial performance goals specified in the SAP for the various environmental media monitored under the project. The performance goal for surface water quality is for all contaminants of concern (COC) to meet water quality performance goals as described in the Record of Decision. Data acquired by the monitoring are applicable to assessing attainment of project performance goals.

COMPLETENESS

An overall data completeness goal of 85 percent was specified for the CFROU project and an evaluation table for data completeness is not required if the goal is met or exceeded. Data completeness for surface water and instream sediment samples from the CFROU monitoring sites was near 100 percent, with all chemical and physical parameters collected and analyzed during each of the four quarterly monitoring events.

SENSITIVITY

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

Sensitivity of field methods for surface water samples was determined through deionized water field blank analyses. Results for all metals, common ions and suspended sediment parameters in field blanks were below the analytical reporting limits for 100 percent (96 of 96) of the surface water field blank analytes.

PRECISION

LABORATORY

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

OVERALL

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

One surface water sample and duplicate pair was collected in each quarterly sampling event, and these were analyzed for dissolved and total recoverable metals, nutrients, and common ions. Results of RPD comparisons for all metal, common ion and suspended sediment parameters in the field duplicate and field sample pairs were within the established criteria in 99 percent (95 of 96) of the sample and duplicate pairs. The one exception was for total phosphorus in the sample pair from Site CFR-03A on September 12, 2024, which had an RPD of 127 percent.

One instream sediment sample and duplicate pair was collected during each sampling event, and these were analyzed for total metals. All analytes in the sediment field duplicate and field sample pairs in Q1 had RPDs below 40 percent. In Q3, the RPD for the field sample and duplicate pair exceeded 40 percent for cadmium, copper, lead, and zinc. RPDs were 69 percent for cadmium, 53 percent for copper, 58 percent for lead, and 51 percent for zinc. All results for those metals in Q3 have been qualified with "J-flags" in the project database.

BIAS AND ACCURACY

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

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

APPENDIX B

ANALYTICAL LABORATORY REPORTS

ANALYTICAL SUMMARY REPORT

April 19, 2024

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

Work Order: H24030603 Quote ID: H1525

Project Name: CFR Monitoring

Energy Laboratories Inc Helena MT received the following 19 samples for MT DEQ-Federal Superfund on 3/20/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H24030603-001	CFR-34	03/19/24 9:30	03/20/24	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Mercury, Total Recoverable Hardness Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 Mercury Digestion by E245.1 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H24030603-002	CFR-27H	03/19/24 10:45	03/20/24	Surface Water	Same As Above
H24030603-003	Field Blank CFR-18	03/19/24 11:45	03/20/24	Surface Water	Same As Above
H24030603-004	CFR-18	03/19/24 11:25	03/20/24	Surface Water	Same As Above
H24030603-005	CFR-11F	03/19/24 12:30	03/20/24	Surface Water	Same As Above
H24030603-006	CFR-07D	03/19/24 13:10	03/20/24	Surface Water	Same As Above
H24030603-007	CFR-07 Duplicate	03/19/24 13:10	03/20/24	Surface Water	Same As Above
H24030603-008	CFR-03A	03/19/24 14:00	03/20/24	Surface Water	Same As Above
H24030603-009	WSC-SBC	03/19/24 14:45	03/20/24	Surface Water	Same As Above
H24030603-010	SS-25	03/19/24 15:15	03/20/24	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Mercury, Total Recoverable Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 Mercury Digestion by E245.1 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H24030603-011	CFR-34	03/19/24 9:30	03/20/24	Sediment	Metals by ICP/ICPMS, Total Percent Moisture Total Metals Digestion by SW3050B Sieve Analysis, Wet

ANALYTICAL SUMMARY REPORT

H24030603-014	CFR-27H	03/19/24 10:45	03/20/24	Sediment	Same As Above
H24030603-017	CFR-18	03/19/24 11:25	03/20/24	Sediment	Same As Above
H24030603-020	CFR-11F	03/19/24 12:30	03/20/24	Sediment	Same As Above
H24030603-023	CFR-07D	03/19/24 13:10	03/20/24	Sediment	Same As Above
H24030603-026	CFR-03A	03/19/24 14:00	03/20/24	Sediment	Same As Above
H24030603-029	WSC-SBC	03/19/24 14:45	03/20/24	Sediment	Same As Above
H24030603-032	SS-25	03/19/24 15:15	03/20/24	Sediment	Same As Above
H24030603-035	SS-25 Duplicate	03/19/24 15:15	03/20/24	Sediment	Same As Above

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

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

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

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-34
Project: CFR Monitoring
Matrix: Surface Water

Lab ID: H24030603-001
Collection Date: 03/19/24 09:30
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	20	mg/L		3	0.3	A2540 D	03/21/24 14:13 / dpw			:cu-124 (14410200)_240321A : 6		TSS20240321A
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	03/21/24 16:14 / dpw			PHSC_101-H_240321A : 148		R193270
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	03/21/24 16:14 / dpw			PHSC_101-H_240321A : 148		R193270
Chloride	13	mg/L		1	0.02	E300.0	03/21/24 15:56 / SR			IC METROHM_240321A : 26		R193307
Sulfate	105	mg/L		1	0.03	E300.0	03/21/24 15:56 / SR			IC METROHM_240321A : 26		R193307
Hardness as CaCO3	230	mg/L		1	1	A2340 B	03/28/24 11:14 / slj			WATERCALC_240328A : 1		R193495
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.17	mg/L		0.02	0.01	E353.2	03/25/24 11:42 / JA			SEAL AA500_240325A : 41		R193395
Nitrogen, Total	0.35	mg/L		0.05	0.02	A4500 N-C	03/23/24 11:39 / JA	03/22/24 08:49	A4500 N-	FIA203-HE_240323A : 86		70939
Phosphorus, Total as P	0.029	mg/L		0.003	0.001	E365.1	03/26/24 17:23 / JA	03/25/24 08:46	E365.1	SEAL AA500_240326A : 62		70955
METALS, DISSOLVED												
Arsenic	0.008	mg/L		0.001	0.0002	E200.8	03/25/24 23:07 / slj			ICPMS205-H_240325B : 140		R193399
Cadmium	0.00006	mg/L		0.00003	0.00002	E200.8	03/27/24 21:19 / dck			ICPMS205-H_240327A : 111		R193489
Copper	0.006	mg/L		0.001	0.0001	E200.8	03/25/24 23:07 / slj			ICPMS205-H_240325B : 140		R193399
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	03/25/24 23:07 / slj			ICPMS205-H_240325B : 140		R193399
Zinc	0.010	mg/L		0.008	0.001	E200.8	03/25/24 23:07 / slj			ICPMS205-H_240325B : 140		R193399
METALS, TOTAL RECOVERABLE												
Arsenic	0.010	mg/L		0.001	0.0001	E200.8	03/27/24 21:22 / dck	03/25/24 09:45	E200.2	ICPMS205-H_240327A : 112		70959
Cadmium	0.00014	mg/L		0.00003	0.00003	E200.8	03/27/24 21:22 / dck	03/25/24 09:45	E200.2	ICPMS205-H_240327A : 112		70959
Calcium	70	mg/L		1	0.1	E200.7	03/26/24 18:05 / slj	03/25/24 09:45	E200.2	ICP2-HE_240326B : 92		70959
Copper	0.030	mg/L		0.001	0.0003	E200.8	03/27/24 21:22 / dck	03/25/24 09:45	E200.2	ICPMS205-H_240327A : 112		70959
Lead	0.0037	mg/L		0.0003	0.0001	E200.8	03/27/24 21:22 / dck	03/25/24 09:45	E200.2	ICPMS205-H_240327A : 112		70959
Magnesium	13	mg/L		1	0.05	E200.7	03/26/24 18:05 / slj	03/25/24 09:45	E200.2	ICP2-HE_240326B : 92		70959
Mercury	0.025	ug/L		0.005	0.00003	E245.1	03/22/24 11:31 / kjb	03/22/24 08:20	E245.1	HGCV205-H_240322A : 14		70936
Potassium	4	mg/L		1	0.1	E200.7	03/26/24 18:05 / slj	03/25/24 09:45	E200.2	ICP2-HE_240326B : 92		70959
Sodium	17	mg/L		1	0.05	E200.7	03/26/24 18:05 / slj	03/25/24 09:45	E200.2	ICP2-HE_240326B : 92		70959
Zinc	0.030	mg/L		0.008	0.001	E200.8	03/27/24 21:22 / dck	03/25/24 09:45	E200.2	ICPMS205-H_240327A : 112		70959

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-27H
Project: CFR Monitoring
Matrix: Surface Water

Lab ID: H24030603-002
Collection Date: 03/19/24 10:45
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	18	mg/L		2	0.3	A2540 D	03/21/24 14:13 / dpw			:cu-124 (14410200)_240321A : 7		TSS20240321A
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	03/21/24 16:55 / dpw			PHSC_101-H_240321A : 158		R193270
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	03/21/24 16:55 / dpw			PHSC_101-H_240321A : 158		R193270
Chloride	13	mg/L		1	0.02	E300.0	03/21/24 16:10 / SR			IC METROHM_240321A : 27		R193307
Sulfate	110	mg/L		1	0.03	E300.0	03/21/24 16:10 / SR			IC METROHM_240321A : 27		R193307
Hardness as CaCO3	230	mg/L		1	1	A2340 B	03/28/24 11:14 / slj			WATERCALC_240328A : 2		R193495
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.17	mg/L		0.02	0.01	E353.2	03/25/24 11:47 / JA			SEAL AA500_240325A : 46		R193395
Nitrogen, Total	0.35	mg/L		0.05	0.02	A4500 N-C	03/23/24 11:40 / JA	03/22/24 08:49	A4500 N-	FIA203-HE_240323A : 87		70939
Phosphorus, Total as P	0.024	mg/L		0.003	0.001	E365.1	03/26/24 17:24 / JA	03/25/24 08:46	E365.1	SEAL AA500_240326A : 63		70955
METALS, DISSOLVED												
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	03/25/24 23:10 / slj			ICPMS205-H_240325B : 141		R193399
Cadmium	0.00006	mg/L		0.00003	0.00002	E200.8	03/27/24 21:25 / dck			ICPMS205-H_240327A : 113		R193489
Copper	0.006	mg/L		0.001	0.0001	E200.8	03/25/24 23:10 / slj			ICPMS205-H_240325B : 141		R193399
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/25/24 23:10 / slj			ICPMS205-H_240325B : 141		R193399
Zinc	0.009	mg/L		0.008	0.001	E200.8	03/25/24 23:10 / slj			ICPMS205-H_240325B : 141		R193399
METALS, TOTAL RECOVERABLE												
Arsenic	0.010	mg/L		0.001	0.0001	E200.8	03/27/24 21:28 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 114		70959
Cadmium	0.00012	mg/L		0.00003	0.00003	E200.8	03/27/24 21:28 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 114		70959
Calcium	71	mg/L		1	0.1	E200.7	03/26/24 18:24 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 97		70959
Copper	0.025	mg/L		0.001	0.0003	E200.8	03/27/24 21:28 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 114		70959
Lead	0.0032	mg/L		0.0003	0.0001	E200.8	03/27/24 21:28 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 114		70959
Magnesium	13	mg/L		1	0.05	E200.7	03/26/24 18:24 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 97		70959
Mercury	0.018	ug/L		0.005	0.00003	E245.1	03/22/24 11:40 / kjb	03/22/24 08:20	E245.1	HGCV205-H_240322A : 17		70936
Potassium	4	mg/L		1	0.1	E200.7	03/26/24 18:24 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 97		70959
Sodium	17	mg/L		1	0.05	E200.7	03/26/24 18:24 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 97		70959
Zinc	0.023	mg/L		0.008	0.001	E200.8	03/27/24 21:28 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 114		70959

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Field Blank CFR-18
Project: CFR Monitoring
Matrix: Surface Water

Lab ID: H24030603-003
Collection Date: 03/19/24 11:45
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	ND	mg/L	L	2	0.3	A2540 D	03/21/24 14:13 / dpw			:cu-124 (14410200)_240321A	8	TSS20240321A
INORGANICS												
Alkalinity, Total as CaCO3	3	mg/L	J	4	2	A2320 B	03/21/24 17:00 / dpw			PHSC_101-H_240321A	160	R193270
Bicarbonate as HCO3	3	mg/L	J	4	3	A2320 B	03/21/24 17:00 / dpw			PHSC_101-H_240321A	160	R193270
Chloride	ND	mg/L		1	0.02	E300.0	03/21/24 16:25 / SR			IC METROHM_240321A	28	R193307
Sulfate	ND	mg/L		1	0.03	E300.0	03/21/24 16:25 / SR			IC METROHM_240321A	28	R193307
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	03/28/24 11:14 / slj			WATERCALC_240328A	3	R193495
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.01	E353.2	03/25/24 11:50 / JA			SEAL AA500_240325A	49	R193395
Nitrogen, Total	ND	mg/L		0.05	0.02	A4500 N-C	03/23/24 11:41 / JA	03/22/24 08:49	A4500 N-	FIA203-HE_240323A	88	70939
Phosphorus, Total as P	ND	mg/L		0.003	0.001	E365.1	03/26/24 17:25 / JA	03/25/24 08:46	E365.1	SEAL AA500_240326A	64	70955
METALS, DISSOLVED												
Arsenic	ND	mg/L		0.001	0.0002	E200.8	03/25/24 23:25 / slj			ICPMS205-H_240325B	146	R193399
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	03/25/24 23:25 / slj			ICPMS205-H_240325B	146	R193399
Copper	ND	mg/L		0.001	0.0001	E200.8	03/25/24 23:25 / slj			ICPMS205-H_240325B	146	R193399
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/25/24 23:25 / slj			ICPMS205-H_240325B	146	R193399
Zinc	ND	mg/L		0.008	0.001	E200.8	03/25/24 23:25 / slj			ICPMS205-H_240325B	146	R193399
METALS, TOTAL RECOVERABLE												
Arsenic	ND	mg/L		0.001	0.0001	E200.8	03/27/24 21:34 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	116	70959
Cadmium	ND	mg/L		0.00003	0.00003	E200.8	03/27/24 21:34 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	116	70959
Calcium	ND	mg/L		1	0.1	E200.7	03/26/24 18:27 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	98	70959
Copper	ND	mg/L		0.001	0.0003	E200.8	03/27/24 21:34 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	116	70959
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/27/24 21:34 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	116	70959
Magnesium	ND	mg/L		1	0.05	E200.7	03/26/24 18:27 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	98	70959
Mercury	0.0005	ug/L	J	0.005	0.00003	E245.1	03/22/24 11:44 / kjb	03/22/24 08:20	E245.1	HGCV205-H_240322A	18	70936
Potassium	ND	mg/L		1	0.1	E200.7	03/26/24 18:27 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	98	70959
Sodium	0.07	mg/L	J	1	0.05	E200.7	03/26/24 18:27 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	98	70959
Zinc	ND	mg/L		0.008	0.001	E200.8	03/27/24 21:34 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	116	70959

Report Definitions:
RL - Analyte Reporting Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
L -Lowest available reporting limit for the analytical method used and/or volume submitted
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-18
Project: CFR Monitoring
Matrix: Surface Water

Lab ID: H24030603-004
Collection Date: 03/19/24 11:25
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	14	mg/L		2	0.3	A2540 D	03/21/24 14:14 / dpw			:cu-124 (14410200)_240321A : 9		TSS20240321A
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	03/21/24 17:04 / dpw			PHSC_101-H_240321A : 162		R193270
Bicarbonate as HCO3	160	mg/L		4	3	A2320 B	03/21/24 17:04 / dpw			PHSC_101-H_240321A : 162		R193270
Chloride	14	mg/L		1	0.02	E300.0	03/21/24 16:39 / SR			IC METROHM_240321A : 29		R193307
Sulfate	120	mg/L		1	0.03	E300.0	03/21/24 16:39 / SR			IC METROHM_240321A : 29		R193307
Hardness as CaCO3	240	mg/L		1	1	A2340 B	03/28/24 11:14 / slj			WATERCALC_240328A : 4		R193495
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.12	mg/L		0.02	0.01	E353.2	03/25/24 11:51 / JA			SEAL AA500_240325A : 50		R193395
Nitrogen, Total	0.3	mg/L		0.05	0.02	A4500 N-C	03/23/24 11:43 / JA	03/22/24 08:49	A4500 N-	FIA203-HE_240323A : 89		70939
Phosphorus, Total as P	0.021	mg/L		0.003	0.001	E365.1	03/26/24 17:26 / JA	03/25/24 08:46	E365.1	SEAL AA500_240326A : 65		70955
METALS, DISSOLVED												
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	03/25/24 23:28 / slj			ICPMS205-H_240325B : 147		R193399
Cadmium	0.00004	mg/L		0.00003	0.00002	E200.8	03/27/24 21:37 / dck			ICPMS205-H_240327A : 117		R193489
Copper	0.004	mg/L		0.001	0.0001	E200.8	03/25/24 23:28 / slj			ICPMS205-H_240325B : 147		R193399
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/25/24 23:28 / slj			ICPMS205-H_240325B : 147		R193399
Zinc	0.007	mg/L	J	0.008	0.001	E200.8	03/25/24 23:28 / slj			ICPMS205-H_240325B : 147		R193399
METALS, TOTAL RECOVERABLE												
Arsenic	0.009	mg/L		0.001	0.0001	E200.8	03/27/24 21:40 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 118		70959
Cadmium	0.00012	mg/L		0.00003	0.00002	E200.8	03/27/24 21:40 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 118		70959
Calcium	74	mg/L		1	0.1	E200.7	03/26/24 18:31 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 99		70959
Copper	0.021	mg/L		0.001	0.0003	E200.8	03/27/24 21:40 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 118		70959
Lead	0.0024	mg/L		0.0003	0.0001	E200.8	03/27/24 21:40 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 118		70959
Magnesium	14	mg/L		1	0.05	E200.7	03/26/24 18:31 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 99		70959
Mercury	0.017	ug/L		0.005	0.00003	E245.1	03/22/24 11:47 / kjb	03/22/24 08:20	E245.1	HGCV205-H_240322A : 19		70936
Potassium	4	mg/L		1	0.1	E200.7	03/26/24 18:31 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 99		70959
Sodium	17	mg/L		1	0.05	E200.7	03/26/24 18:31 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 99		70959
Zinc	0.021	mg/L		0.008	0.001	E200.8	03/27/24 21:40 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 118		70959

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-11F
Project: CFR Monitoring
Matrix: Surface Water

Lab ID: H24030603-005
Collection Date: 03/19/24 12:30
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	11	mg/L		2	0.3	A2540 D	03/21/24 14:14 / dpw			:u-124 (14410200)_240321A	10	TSS20240321A
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	03/21/24 17:09 / dpw			PHSC_101-H_240321A	164	R193270
Bicarbonate as HCO3	160	mg/L		4	3	A2320 B	03/21/24 17:09 / dpw			PHSC_101-H_240321A	164	R193270
Chloride	16	mg/L		1	0.02	E300.0	03/21/24 16:53 / SR			IC METROHM_240321A	30	R193307
Sulfate	139	mg/L		1	0.03	E300.0	03/21/24 16:53 / SR			IC METROHM_240321A	30	R193307
Hardness as CaCO3	261	mg/L		1	1	A2340 B	03/28/24 11:14 / slj			WATERCALC_240328A	5	R193495
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.09	mg/L		0.02	0.01	E353.2	03/25/24 11:52 / JA			SEAL AA500_240325A	51	R193395
Nitrogen, Total	0.28	mg/L		0.05	0.02	A4500 N-C	03/23/24 11:44 / JA	03/22/24 08:49	A4500 N-	FIA203-HE_240323A	90	70939
Phosphorus, Total as P	0.019	mg/L		0.003	0.001	E365.1	03/26/24 17:28 / JA	03/25/24 08:46	E365.1	SEAL AA500_240326A	66	70955
METALS, DISSOLVED												
Arsenic	0.008	mg/L		0.001	0.0002	E200.8	03/25/24 23:31 / slj			ICPMS205-H_240325B	148	R193399
Cadmium	0.00004	mg/L		0.00003	0.00002	E200.8	03/27/24 21:43 / dck			ICPMS205-H_240327A	119	R193489
Copper	0.003	mg/L		0.001	0.0001	E200.8	03/25/24 23:31 / slj			ICPMS205-H_240325B	148	R193399
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/25/24 23:31 / slj			ICPMS205-H_240325B	148	R193399
Zinc	0.006	mg/L	J	0.008	0.001	E200.8	03/25/24 23:31 / slj			ICPMS205-H_240325B	148	R193399
METALS, TOTAL RECOVERABLE												
Arsenic	0.009	mg/L		0.001	0.0001	E200.8	03/27/24 21:46 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	120	70959
Cadmium	0.00010	mg/L		0.00003	0.00003	E200.8	03/27/24 21:46 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	120	70959
Calcium	80	mg/L		1	0.1	E200.7	03/26/24 18:35 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	100	70959
Copper	0.014	mg/L		0.001	0.0003	E200.8	03/27/24 21:46 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	120	70959
Lead	0.0014	mg/L		0.0003	0.0001	E200.8	03/27/24 21:46 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	120	70959
Magnesium	15	mg/L		1	0.05	E200.7	03/26/24 18:35 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	100	70959
Mercury	0.011	ug/L		0.005	0.00003	E245.1	03/22/24 11:50 / kjb	03/22/24 08:20	E245.1	HGCV205-H_240322A	20	70936
Potassium	4	mg/L		1	0.1	E200.7	03/26/24 18:35 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	100	70959
Sodium	18	mg/L		1	0.05	E200.7	03/26/24 18:35 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	100	70959
Zinc	0.016	mg/L		0.008	0.001	E200.8	03/27/24 21:46 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	120	70959

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-07D
Project: CFR Monitoring
Matrix: Surface Water

Lab ID: H24030603-006
Collection Date: 03/19/24 13:10
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	10	mg/L		2	0.3	A2540 D	03/21/24 14:14 / dpw			:u-124 (14410200)_240321A	11	TSS20240321A
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	03/21/24 17:15 / dpw			PHSC_101-H_240321A	166	R193270
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	03/21/24 17:15 / dpw			PHSC_101-H_240321A	166	R193270
Chloride	17	mg/L		1	0.02	E300.0	03/22/24 14:07 / SR			IC METROHM_240322A	16	R193354
Sulfate	142	mg/L		1	0.03	E300.0	03/22/24 14:07 / SR			IC METROHM_240322A	16	R193354
Hardness as CaCO3	252	mg/L		1	1	A2340 B	03/28/24 11:14 / slj			WATERCALC_240328A	6	R193495
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.08	mg/L		0.02	0.01	E353.2	03/25/24 11:53 / JA			SEAL AA500_240325A	52	R193395
Nitrogen, Total	0.26	mg/L		0.05	0.02	A4500 N-C	03/23/24 11:47 / JA	03/22/24 08:50	A4500 N-	FIA203-HE_240323A	93	70940
Phosphorus, Total as P	0.019	mg/L		0.003	0.001	E365.1	03/26/24 17:29 / JA	03/25/24 08:46	E365.1	SEAL AA500_240326A	67	70955
METALS, DISSOLVED												
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	03/25/24 23:34 / slj			ICPMS205-H_240325B	149	R193399
Cadmium	0.00003	mg/L		0.00003	0.00002	E200.8	03/27/24 21:48 / dck			ICPMS205-H_240327A	121	R193489
Copper	0.003	mg/L		0.001	0.0001	E200.8	03/25/24 23:34 / slj			ICPMS205-H_240325B	149	R193399
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/25/24 23:34 / slj			ICPMS205-H_240325B	149	R193399
Zinc	0.006	mg/L	J	0.008	0.001	E200.8	03/25/24 23:34 / slj			ICPMS205-H_240325B	149	R193399
METALS, TOTAL RECOVERABLE												
Arsenic	0.010	mg/L		0.001	0.0001	E200.8	03/27/24 21:51 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	122	70959
Cadmium	0.00009	mg/L		0.00003	0.00003	E200.8	03/27/24 21:51 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	122	70959
Calcium	78	mg/L		1	0.1	E200.7	03/26/24 18:39 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	101	70959
Copper	0.015	mg/L		0.001	0.0003	E200.8	03/27/24 21:51 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	122	70959
Lead	0.0017	mg/L		0.0003	0.0001	E200.8	03/27/24 21:51 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	122	70959
Magnesium	14	mg/L		1	0.05	E200.7	03/26/24 18:39 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	101	70959
Mercury	0.011	ug/L		0.005	0.00003	E245.1	03/22/24 11:53 / kjb	03/22/24 08:20	E245.1	HGCV205-H_240322A	21	70936
Potassium	4	mg/L		1	0.1	E200.7	03/26/24 18:39 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	101	70959
Sodium	19	mg/L		1	0.05	E200.7	03/26/24 18:39 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	101	70959
Zinc	0.016	mg/L		0.008	0.001	E200.8	03/27/24 21:51 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	122	70959

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-07 Duplicate
Project: CFR Monitoring
Matrix: Surface Water

Lab ID: H24030603-007
Collection Date: 03/19/24 13:10
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	12	mg/L		2	0.3	A2540 D	03/21/24 14:15 / dpw			:u-124 (14410200)_240321A	12	TSS20240321A
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	03/21/24 17:20 / dpw			PHSC_101-H_240321A	168	R193270
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	03/21/24 17:20 / dpw			PHSC_101-H_240321A	168	R193270
Chloride	17	mg/L		1	0.02	E300.0	03/22/24 16:02 / SR			IC METROHM_240322A	23	R193354
Sulfate	143	mg/L		1	0.03	E300.0	03/22/24 16:02 / SR			IC METROHM_240322A	23	R193354
Hardness as CaCO3	254	mg/L		1	1	A2340 B	03/28/24 11:14 / slj			WATERCALC_240328A	7	R193495
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.08	mg/L		0.02	0.01	E353.2	03/25/24 11:54 / JA			SEAL AA500_240325A	53	R193395
Nitrogen, Total	0.26	mg/L		0.05	0.02	A4500 N-C	03/23/24 11:51 / JA	03/22/24 08:50	A4500 N-	FIA203-HE_240323A	96	70940
Phosphorus, Total as P	0.018	mg/L		0.003	0.001	E365.1	03/26/24 17:33 / JA	03/25/24 08:46	E365.1	SEAL AA500_240326A	71	70955
METALS, DISSOLVED												
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	03/25/24 23:37 / slj			ICPMS205-H_240325B	150	R193399
Cadmium	0.00005	mg/L		0.00003	0.00002	E200.8	03/27/24 22:11 / dck			ICPMS205-H_240327A	129	R193489
Copper	0.003	mg/L		0.001	0.0001	E200.8	03/25/24 23:37 / slj			ICPMS205-H_240325B	150	R193399
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/25/24 23:37 / slj			ICPMS205-H_240325B	150	R193399
Zinc	0.005	mg/L	J	0.008	0.001	E200.8	03/25/24 23:37 / slj			ICPMS205-H_240325B	150	R193399
METALS, TOTAL RECOVERABLE												
Arsenic	0.010	mg/L		0.001	0.0001	E200.8	03/27/24 22:14 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	130	70959
Cadmium	0.00011	mg/L		0.00003	0.00003	E200.8	03/27/24 22:14 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	130	70959
Calcium	78	mg/L		1	0.1	E200.7	03/26/24 18:51 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	104	70959
Copper	0.017	mg/L		0.001	0.0003	E200.8	03/27/24 22:14 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	130	70959
Lead	0.0017	mg/L		0.0003	0.0001	E200.8	03/27/24 22:14 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	130	70959
Magnesium	14	mg/L		1	0.05	E200.7	03/26/24 18:51 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	104	70959
Mercury	0.010	ug/L		0.005	0.00003	E245.1	03/22/24 11:56 / kjb	03/22/24 08:20	E245.1	HGCV205-H_240322A	22	70936
Potassium	4	mg/L		1	0.1	E200.7	03/26/24 18:51 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	104	70959
Sodium	19	mg/L		1	0.05	E200.7	03/26/24 18:51 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	104	70959
Zinc	0.016	mg/L		0.008	0.001	E200.8	03/27/24 22:14 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	130	70959

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-03A
Project: CFR Monitoring
Matrix: Surface Water

Lab ID: H24030603-008
Collection Date: 03/19/24 14:00
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	6	mg/L		2	0.3	A2540 D	03/21/24 14:15 / dpw			:u-124 (14410200)_240321A	13	TSS20240321A
INORGANICS												
Alkalinity, Total as CaCO3	100	mg/L		4	2	A2320 B	03/21/24 17:25 / dpw			PHSC_101-H_240321A	170	R193270
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	03/21/24 17:25 / dpw			PHSC_101-H_240321A	170	R193270
Chloride	22	mg/L		1	0.02	E300.0	03/22/24 16:17 / SR			IC METROHM_240322A	24	R193354
Sulfate	155	mg/L		1	0.03	E300.0	03/22/24 16:17 / SR			IC METROHM_240322A	24	R193354
Hardness as CaCO3	242	mg/L		1	1	A2340 B	03/28/24 11:14 / slj			WATERCALC_240328A	8	R193495
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.01	mg/L	J	0.02	0.01	E353.2	03/25/24 11:55 / JA			SEAL AA500_240325A	54	R193395
Nitrogen, Total	0.21	mg/L		0.05	0.02	A4500 N-C	03/23/24 11:52 / JA	03/22/24 08:50	A4500 N-	FIA203-HE_240323A	97	70940
Phosphorus, Total as P	0.016	mg/L		0.003	0.001	E365.1	03/26/24 17:34 / JA	03/25/24 08:46	E365.1	SEAL AA500_240326A	72	70955
METALS, DISSOLVED												
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	03/25/24 23:40 / slj			ICPMS205-H_240325B	151	R193399
Cadmium	0.00004	mg/L		0.00003	0.00002	E200.8	03/27/24 22:17 / dck			ICPMS205-H_240327A	131	R193489
Copper	0.004	mg/L		0.001	0.0001	E200.8	03/25/24 23:40 / slj			ICPMS205-H_240325B	151	R193399
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/25/24 23:40 / slj			ICPMS205-H_240325B	151	R193399
Zinc	0.008	mg/L	J	0.008	0.001	E200.8	03/25/24 23:40 / slj			ICPMS205-H_240325B	151	R193399
METALS, TOTAL RECOVERABLE												
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	03/27/24 22:20 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	132	70959
Cadmium	0.00007	mg/L		0.00003	0.00003	E200.8	03/27/24 22:20 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	132	70959
Calcium	76	mg/L		1	0.1	E200.7	03/26/24 18:54 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	105	70959
Copper	0.007	mg/L		0.001	0.0003	E200.8	03/27/24 22:20 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	132	70959
Lead	0.0007	mg/L		0.0003	0.0001	E200.8	03/27/24 22:20 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	132	70959
Magnesium	13	mg/L		1	0.05	E200.7	03/26/24 18:54 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	105	70959
Mercury	0.006	ug/L		0.005	0.00003	E245.1	03/22/24 12:00 / kjb	03/22/24 08:20	E245.1	HGCV205-H_240322A	23	70936
Potassium	5	mg/L		1	0.1	E200.7	03/26/24 18:54 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	105	70959
Sodium	21	mg/L		1	0.05	E200.7	03/26/24 18:54 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	105	70959
Zinc	0.010	mg/L		0.008	0.001	E200.8	03/27/24 22:20 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	132	70959

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: WSC-SBC
Project: CFR Monitoring
Matrix: Surface Water

Lab ID: H24030603-009
Collection Date: 03/19/24 14:45
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	4	mg/L		2	0.3	A2540 D	03/21/24 14:15 / dpw			:u-124 (14410200)_240321A : 14		TSS20240321A
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	03/21/24 17:30 / dpw			PHSC_101-H_240321A : 172		R193270
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	03/21/24 17:30 / dpw			PHSC_101-H_240321A : 172		R193270
Chloride	2	mg/L		1	0.02	E300.0	03/22/24 16:31 / SR			IC METROHM_240322A : 25		R193354
Sulfate	30	mg/L		1	0.03	E300.0	03/22/24 16:31 / SR			IC METROHM_240322A : 25		R193354
Hardness as CaCO3	158	mg/L		1	1	A2340 B	03/28/24 11:14 / slj			WATERCALC_240328A : 9		R193495
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.01	mg/L	J	0.02	0.01	E353.2	03/25/24 11:56 / JA			SEAL AA500_240325A : 55		R193395
Nitrogen, Total	0.09	mg/L		0.05	0.02	A4500 N-C	03/23/24 11:53 / JA	03/22/24 08:50	A4500 N-	FIA203-HE_240323A : 98		70940
Phosphorus, Total as P	0.005	mg/L		0.003	0.001	E365.1	03/26/24 17:35 / JA	03/25/24 08:46	E365.1	SEAL AA500_240326A : 73		70955
METALS, DISSOLVED												
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	03/25/24 23:43 / slj			ICPMS205-H_240325B : 152		R193399
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	03/25/24 23:43 / slj			ICPMS205-H_240325B : 152		R193399
Copper	0.002	mg/L		0.001	0.0001	E200.8	03/25/24 23:43 / slj			ICPMS205-H_240325B : 152		R193399
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/25/24 23:43 / slj			ICPMS205-H_240325B : 152		R193399
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	03/25/24 23:43 / slj			ICPMS205-H_240325B : 152		R193399
METALS, TOTAL RECOVERABLE												
Arsenic	0.003	mg/L		0.001	0.0001	E200.8	03/27/24 22:26 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 134		70959
Cadmium	0.00003	mg/L	J	0.00003	0.00003	E200.8	03/27/24 22:26 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 134		70959
Calcium	47	mg/L		1	0.1	E200.7	03/26/24 18:58 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 106		70959
Copper	0.005	mg/L		0.001	0.0003	E200.8	03/27/24 22:26 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 134		70959
Lead	0.0003	mg/L	J	0.0003	0.0001	E200.8	03/27/24 22:26 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 134		70959
Magnesium	10	mg/L		1	0.05	E200.7	03/26/24 18:58 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 106		70959
Mercury	0.002	ug/L	J	0.005	0.00003	E245.1	03/22/24 12:03 / kjb	03/22/24 08:20	E245.1	HGCV205-H_240322A : 24		70936
Potassium	2	mg/L		1	0.1	E200.7	03/26/24 18:58 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 106		70959
Sodium	4	mg/L		1	0.05	E200.7	03/26/24 18:58 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B : 106		70959
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	03/27/24 22:26 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A : 134		70959

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-25
Project: CFR Monitoring
Matrix: Surface Water

Lab ID: H24030603-010
Collection Date: 03/19/24 15:15
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	2	mg/L	JL	2	0.3	A2540 D	03/21/24 14:15 / dpw			:u-124 (14410200)_240321A	: 15	TSS20240321A
INORGANICS												
Alkalinity, Total as CaCO3	89	mg/L		4	2	A2320 B	03/21/24 17:35 / dpw			PHSC_101-H_240321A	: 174	R193270
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	03/21/24 17:35 / dpw			PHSC_101-H_240321A	: 174	R193270
Chloride	30	mg/L		1	0.02	E300.0	03/22/24 16:46 / SR			IC METROHM_240322A	: 26	R193354
Sulfate	207	mg/L		1	0.03	E300.0	03/22/24 16:46 / SR			IC METROHM_240322A	: 26	R193354
Hardness as CaCO3	271	mg/L		1	1	A2340 B	03/28/24 11:14 / slj			WATERCALC_240328A	: 10	R193495
NUTRIENTS												
Nitrogen, Ammonia as N	0.02	mg/L	J	0.05	0.02	E350.1	03/22/24 14:09 / SR			FIA203-HE_240322B	: 48	R193352
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.01	E353.2	03/25/24 11:57 / JA			SEAL AA500_240325A	: 56	R193395
Nitrogen, Total	0.23	mg/L		0.05	0.02	A4500 N-C	03/23/24 11:55 / JA	03/22/24 08:50	A4500 N-	FIA203-HE_240323A	: 99	70940
Phosphorus, Total as P	0.013	mg/L		0.003	0.001	E365.1	03/26/24 17:36 / JA	03/25/24 08:46	E365.1	SEAL AA500_240326A	: 74	70955
METALS, DISSOLVED												
Arsenic	0.008	mg/L		0.001	0.0002	E200.8	03/25/24 23:46 / slj			ICPMS205-H_240325B	: 153	R193399
Cadmium	0.00006	mg/L		0.00003	0.00002	E200.8	03/27/24 22:29 / dck			ICPMS205-H_240327A	: 135	R193489
Copper	0.003	mg/L		0.001	0.0001	E200.8	03/25/24 23:46 / slj			ICPMS205-H_240325B	: 153	R193399
Lead	ND	mg/L		0.0003	0.0001	E200.8	03/25/24 23:46 / slj			ICPMS205-H_240325B	: 153	R193399
Zinc	0.009	mg/L		0.008	0.001	E200.8	03/25/24 23:46 / slj			ICPMS205-H_240325B	: 153	R193399
METALS, TOTAL RECOVERABLE												
Arsenic	0.009	mg/L		0.001	0.0001	E200.8	03/27/24 22:32 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	: 136	70959
Cadmium	0.00008	mg/L		0.00003	0.00002	E200.8	03/27/24 22:32 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	: 136	70959
Calcium	86	mg/L		1	0.1	E200.7	03/26/24 19:02 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	: 107	70959
Copper	0.004	mg/L		0.001	0.0003	E200.8	03/27/24 22:32 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	: 136	70959
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	03/27/24 22:32 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	: 136	70959
Magnesium	14	mg/L		1	0.05	E200.7	03/26/24 19:02 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	: 107	70959
Mercury	0.003	ug/L	J	0.005	0.00003	E245.1	03/22/24 12:06 / kjb	03/22/24 08:20	E245.1	HGCV205-H_240322A	: 25	70936
Potassium	6	mg/L		1	0.1	E200.7	03/26/24 19:02 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	: 107	70959
Sodium	28	mg/L		1	0.05	E200.7	03/26/24 19:02 / slj	03/25/24 09:46	E200.2	ICP2-HE_240326B	: 107	70959
Zinc	0.009	mg/L		0.008	0.001	E200.8	03/27/24 22:32 / dck	03/25/24 09:46	E200.2	ICPMS205-H_240327A	: 136	70959

Report Definitions:
RL - Analyte Reporting Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
L -Lowest available reporting limit for the analytical method used and/or volume submitted
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-34
Project: CFR Monitoring
Matrix: Sediment

Lab ID: H24030603-011
Collection Date: 03/19/24 09:30
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	50.0	wt%		0.2	0.02	D2974	04/09/24 15:07 / ctf			TSS OVEN_240409A : 1		PMOIST_240409_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	8.5	wt%-wet		0.1		SSSA 15-2	04/09/24 14:27 / jjp			MISC SOILS_240409A : 6		R193824
METALS, TOTAL - EPA SW846												
Arsenic	102	mg/kg-dry		2	2	SW6020	04/08/24 11:03 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 27		71121
Cadmium	4.9	mg/kg-dry		0.3	0.3	SW6020	04/08/24 11:03 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 27		71121
Copper	1080	mg/kg-dry		7	7	SW6020	04/08/24 11:03 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 27		71121
Lead	153	mg/kg-dry		5	4	SW6020	04/08/24 11:03 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 27		71121
Zinc	1010	mg/kg-dry		30	30	SW6020	04/08/24 11:03 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 27		71121

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-27H
Project: CFR Monitoring
Matrix: Sediment

Lab ID: H24030603-014
Collection Date: 03/19/24 10:45
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	60.4	wt%		0.2	0.02	D2974	04/09/24 15:07 / ctf			TSS OVEN_240409A : 3		PMOIST_240409_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	3.5	wt%-wet		0.1		SSSA 15-2	04/09/24 14:27 / jjp			MISC SOILS_240409A : 7		R193824
METALS, TOTAL - EPA SW846												
Arsenic	119	mg/kg-dry		2	2	SW6020	04/08/24 11:09 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 29		71121
Cadmium	4.7	mg/kg-dry		0.3	0.3	SW6020	04/08/24 11:09 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 29		71121
Copper	1240	mg/kg-dry		9	9	SW6020	04/08/24 11:09 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 29		71121
Lead	189	mg/kg-dry		5	5	SW6020	04/08/24 11:09 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 29		71121
Zinc	1010	mg/kg-dry		40	40	SW6020	04/08/24 11:09 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 29		71121

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-18
Project: CFR Monitoring
Matrix: Sediment

Lab ID: H24030603-017
Collection Date: 03/19/24 11:25
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	54.1	wt%		0.2	0.02	D2974	04/09/24 15:07 / ctf			TSS OVEN_240409A : 5		PMOIST_240409_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	10.7	wt%-wet		0.1		SSSA 15-2	04/09/24 14:27 / jjp			MISC SOILS_240409A : 8		R193824
METALS, TOTAL - EPA SW846												
Arsenic	101	mg/kg-dry		2	2	SW6020	04/08/24 11:12 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 30		71121
Cadmium	4.5	mg/kg-dry		0.3	0.3	SW6020	04/08/24 11:12 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 30		71121
Copper	1020	mg/kg-dry		8	8	SW6020	04/08/24 11:12 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 30		71121
Lead	152	mg/kg-dry		5	5	SW6020	04/08/24 11:12 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 30		71121
Zinc	899	mg/kg-dry		30	30	SW6020	04/08/24 11:12 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 30		71121

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-11F
Project: CFR Monitoring
Matrix: Sediment

Lab ID: H24030603-020
Collection Date: 03/19/24 12:30
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	64.6	wt%		0.2	0.02	D2974	04/09/24 15:08 / ctf			TSS OVEN_240409A : 9		PMOIST_240409_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	7.0	wt%-wet		0.1		SSSA 15-2	04/09/24 14:27 / jjp			MISC SOILS_240409A : 9		R193824
METALS, TOTAL - EPA SW846												
Arsenic	103	mg/kg-dry		2	2	SW6020	04/08/24 11:15 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 31		71121
Cadmium	4.4	mg/kg-dry		0.4	0.4	SW6020	04/08/24 11:15 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 31		71121
Copper	994	mg/kg-dry		10	10	SW6020	04/08/24 11:15 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 31		71121
Lead	159	mg/kg-dry		6	6	SW6020	04/08/24 11:15 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 31		71121
Zinc	882	mg/kg-dry		40	40	SW6020	04/08/24 11:15 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A : 31		71121

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-07D
Project: CFR Monitoring
Matrix: Sediment

Lab ID: H24030603-023
Collection Date: 03/19/24 13:10
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	72.2	wt%		0.2	0.02	D2974	04/09/24 15:08 / ctf			TSS OVEN_240409A	11	PMOIST_240409_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	8.8	wt%-wet		0.1		SSSA 15-2	04/09/24 14:27 / jjp			MISC SOILS_240409A	10	R193824
METALS, TOTAL - EPA SW846												
Arsenic	155	mg/kg-dry		3	3	SW6020	04/08/24 11:18 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	32	71121
Cadmium	5.4	mg/kg-dry		0.5	0.5	SW6020	04/08/24 11:18 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	32	71121
Copper	1360	mg/kg-dry		10	10	SW6020	04/08/24 11:18 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	32	71121
Lead	201	mg/kg-dry		8	8	SW6020	04/08/24 11:18 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	32	71121
Zinc	1010	mg/kg-dry		60	60	SW6020	04/08/24 11:18 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	32	71121

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-03A
Project: CFR Monitoring
Matrix: Sediment

Lab ID: H24030603-026
Collection Date: 03/19/24 14:00
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	66.0	wt%		0.2	0.02	D2974	04/09/24 15:08 / ctf			TSS OVEN_240409A	13	PMOIST_240409_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	2.5	wt%-wet		0.1		SSSA 15-2	04/09/24 14:27 / jjp			MISC SOILS_240409A	11	R193824
METALS, TOTAL - EPA SW846												
Arsenic	154	mg/kg-dry		2	2	SW6020	04/08/24 11:21 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	33	71121
Cadmium	4.4	mg/kg-dry		0.4	0.4	SW6020	04/08/24 11:21 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	33	71121
Copper	815	mg/kg-dry		10	10	SW6020	04/08/24 11:21 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	33	71121
Lead	120	mg/kg-dry		6	6	SW6020	04/08/24 11:21 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	33	71121
Zinc	878	mg/kg-dry		50	50	SW6020	04/08/24 11:21 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	33	71121

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: WSC-SBC
Project: CFR Monitoring
Matrix: Sediment

Lab ID: H24030603-029
Collection Date: 03/19/24 14:45
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	53.3	wt%		0.2	0.02	D2974	04/09/24 15:08 / ctf			TSS OVEN_240409A	15	PMOIST_240409_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	8.6	wt%-wet		0.1		SSSA 15-2	04/09/24 14:27 / jjp			MISC SOILS_240409A	12	R193824
METALS, TOTAL - EPA SW846												
Arsenic	66	mg/kg-dry		2	2	SW6020	04/08/24 11:24 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	34	71121
Cadmium	2.1	mg/kg-dry		0.3	0.3	SW6020	04/08/24 11:24 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	34	71121
Copper	661	mg/kg-dry		8	8	SW6020	04/08/24 11:24 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	34	71121
Lead	82	mg/kg-dry		5	5	SW6020	04/08/24 11:24 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	34	71121
Zinc	356	mg/kg-dry		30	30	SW6020	04/08/24 11:24 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	34	71121

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-25
Project: CFR Monitoring
Matrix: Sediment

Lab ID: H24030603-032
Collection Date: 03/19/24 15:15
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	69.5	wt%		0.2	0.02	D2974	04/09/24 15:08 / ctf			TSS OVEN_240409A	19	PMOIST_240409_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	1.4	wt%-wet		0.1		SSSA 15-2	04/09/24 14:27 / jjp			MISC SOILS_240409A	13	R193824
METALS, TOTAL - EPA SW846												
Arsenic	168	mg/kg-dry		3	3	SW6020	04/08/24 11:27 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	35	71121
Cadmium	10.2	mg/kg-dry		0.4	0.4	SW6020	04/08/24 11:27 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	35	71121
Copper	298	mg/kg-dry		10	10	SW6020	04/08/24 11:27 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	35	71121
Lead	155	mg/kg-dry		7	7	SW6020	04/08/24 11:27 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	35	71121
Zinc	2100	mg/kg-dry		50	50	SW6020	04/08/24 11:27 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	35	71121

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-25 Duplicate
Project: CFR Monitoring
Matrix: Sediment

Lab ID: H24030603-035
Collection Date: 03/19/24 15:15
DateReceived: 03/20/24
Report Date: 04/19/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	67.7	wt%		0.2	0.02	D2974	04/09/24 15:09 / ctf			TSS OVEN_240409A	21	PMOIST_240409_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	2.0	wt%-wet		0.1		SSSA 15-2	04/09/24 14:27 / jjp			MISC SOILS_240409A	14	R193824
METALS, TOTAL - EPA SW846												
Arsenic	126	mg/kg-dry		2	2	SW6020	04/08/24 11:29 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	36	71121
Cadmium	8.7	mg/kg-dry		0.4	0.4	SW6020	04/08/24 11:29 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	36	71121
Copper	272	mg/kg-dry		10	10	SW6020	04/08/24 11:29 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	36	71121
Lead	137	mg/kg-dry		7	7	SW6020	04/08/24 11:29 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	36	71121
Zinc	1680	mg/kg-dry		50	50	SW6020	04/08/24 11:29 / slj	04/04/24 07:28	SW3050 B	ICPMS205-H_240408A	36	71121

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24030603 **BatchID:** 240322waLL-hg205 **Date:** *19-Apr-24*

Run ID :Run Order: **HGCV205-H_240322A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E245.1**

Analysis Date: **03/22/24 11:14** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0998	0.0050	0.1	0	**100**	90	110				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **HGCV205-H_240322A: 10** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV1** Method: **E245.1**

Analysis Date: **03/22/24 11:17** Units: **ug/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0989	0.0050	0.1	0	**99**	95	105				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: 42595
Date: *19-Apr-24*

Run ID :Run Order: **SEAL AA500_240326A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **03/26/24 16:29** Units: **mg/L** **Prep Info:** Prep Date: **8/7/2018** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.243	0.010	0.25	0	97	90	110				

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: 50660
Date: *19-Apr-24*

Run ID :Run Order: **SEAL AA500_240326A: 52** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **03/26/24 17:12** Units: **mg/L** **Prep Info:** Prep Date: **3/20/2020** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.103	0.010	0.1	0	**103**	90	110				

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240326A: 68** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **03/26/24 17:30** Units: **mg/L** **Prep Info:** Prep Date: **3/20/2020** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.101	0.010	0.1	0	**101**	90	110				

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: 52062
Date: *19-Apr-24*

Run ID :Run Order: **FIA203-HE_240323A: 77** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **03/23/24 11:28** Units: **mg/L** **Prep Info:** Prep Date: **7/7/2020** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.499	0.10	0.5	0	**100**	90	110				

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A, H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **FIA203-HE_240323A: 91** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **03/23/24 11:45** Units: **mg/L** **Prep Info:** Prep Date: **7/7/2020** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.504	0.10	0.5	0	**101**	90	110				

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A, H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24030603 **BatchID: 70936** **Date:** *19-Apr-24*

Run ID :Run Order: **HGCV205-H_240322A: 12** SampType: **Method Blank** Lab ID: **MB-70936** Method: **E245.1**

Analysis Date: **03/22/24 11:24** Units: **ug/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00003									

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **HGCV205-H_240322A: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-70936** Method: **E245.1**

Analysis Date: **03/22/24 11:28** Units: **ug/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0497	0.0050	0.05	0	99	90	110				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **HGCV205-H_240322A: 29** SampType: **Sample Matrix Spike** Lab ID: **H24030608-001CMS** Method: **E245.1**

Analysis Date: **03/22/24 12:19** Units: **ug/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0519	0.0050	0.05	0.001706	100	70	130				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **HGCV205-H_240322A: 30** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030608-001CMSD** Method: **E245.1**

Analysis Date: **03/22/24 12:22** Units: **ug/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **E245.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0530	0.0050	0.05	0.001706	103	70	130	0.05193	2.0	20	

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: 70939
Date: *19-Apr-24*

Run ID :Run Order: **FIA203-HE_240323A: 13** SampType: **Method Blank** Lab ID: **MB-70939** Method: **A4500 N-C**
Analysis Date: **03/23/24 10:10** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

Run ID :Run Order: **FIA203-HE_240323A: 17** SampType: **Laboratory Control Sample** Lab ID: **LCS-70939** Method: **A4500 N-C**
Analysis Date: **03/23/24 10:15** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.966	0.10	1	0	97	90	110				

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

Run ID :Run Order: **FIA203-HE_240323A: 21** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-70939** Method: **A4500 N-C**
Analysis Date: **03/23/24 10:19** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.957	0.10	1	0	96	90	110				

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

Run ID :Run Order: **FIA203-HE_240323A: 82** SampType: **Sample Matrix Spike** Lab ID: **H24030599-001AMS** Method: **A4500 N-C**
Analysis Date: **03/23/24 11:34** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.03	0.10	1	0	103	90	110				

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

Run ID :Run Order: **FIA203-HE_240323A: 83** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030599-001AMSD** Method: **A4500 N-C**
Analysis Date: **03/23/24 11:36** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.03	0.10	1	0	103	90	110	1.033	0.2	20	

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24030603 **BatchID: 70940** **Date:** *19-Apr-24*

Run ID :Run Order: **FIA203-HE_240323A: 14** SampType: **Method Blank** Lab ID: **MB-70940** Method: **A4500 N-C**

Analysis Date: **03/23/24 10:11** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **FIA203-HE_240323A: 18** SampType: **Laboratory Control Sample** Lab ID: **LCS-70940** Method: **A4500 N-C**

Analysis Date: **03/23/24 10:16** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.956	0.10	1	0	96	90	110				

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **FIA203-HE_240323A: 22** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-70940** Method: **A4500 N-C**

Analysis Date: **03/23/24 10:21** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.962	0.10	1	0	96	90	110				

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **FIA203-HE_240323A: 94** SampType: **Sample Matrix Spike** Lab ID: **H24030603-006AMS** Method: **A4500 N-C**

Analysis Date: **03/23/24 11:49** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.33	0.10	1	0.2626	106	90	110				

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **FIA203-HE_240323A: 95** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030603-006AMSD** Method: **A4500 N-C**

Analysis Date: **03/23/24 11:50** Units: **mg/L** **Prep Info:** Prep Date: **3/22/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.33	0.10	1	0.2626	106	90	110	1.325	0	20	

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24030603 **BatchID: 70955** **Date:** *19-Apr-24*

Run ID :Run Order: **SEAL AA500_240326A: 20** SampType: **Laboratory Control Sample** Lab ID: **LCS-70955** Method: **E365.1**

Analysis Date: **03/26/24 16:36** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.419	0.010	0.4	0	**105**	90	110				

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240326A: 69** SampType: **Method Blank** Lab ID: **MB-70955** Method: **E365.1**

Analysis Date: **03/26/24 17:31** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.001									

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240326A: 76** SampType: **Sample Matrix Spike** Lab ID: **H24030608-001Ems** Method: **E365.1**

Analysis Date: **03/26/24 17:38** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.215	0.010	0.2	0	**108**	90	110				

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240326A: 77** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030608-001Emsd** Method: **E365.1**

Analysis Date: **03/26/24 17:39** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.220	0.010	0.2	0	**110**	90	110	0.2152	**2.4**	20	

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: 70959
Date: *19-Apr-24*

Run ID :Run Order: **ICP2-HE_240326B: 88** SampType: **Method Blank** Lab ID: **MB-70959** Method: **E200.7**

Analysis Date: **03/26/24 17:50** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.1									
Magnesium	ND	0.05									
Potassium	ND	0.1									
Sodium	0.07	0.05									

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **ICP2-HE_240326B: 89** SampType: **Laboratory Control Sample** Lab ID: **LCS-70959** Method: **E200.7**

Analysis Date: **03/26/24 17:54** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.8	1.0	25	0	**103**	85	115				
Magnesium	25.2	1.0	25	0	**101**	85	115				
Potassium	27.0	1.0	25	0	**108**	85	115				
Sodium	26.2	1.0	25	0	**105**	85	115				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **ICP2-HE_240326B: 93** SampType: **Serial Dilution** Lab ID: **H24030603-001DDIL** Method: **E200.7**

Analysis Date: **03/26/24 18:09** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	69.6	1.0		0		0	0	70.02	**0.6**	10	
Magnesium	13.7	1.0		0		0	0	13.48	**1.3**	10	
Potassium	4.31	1.0		0		0	0	4.128		10	N
Sodium	17.9	1.0		0		0	0	17.37	**3.2**	10	

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **ICP2-HE_240326B: 95** SampType: **Sample Matrix Spike** Lab ID: **H24030603-001DMS3** Method: **E200.7**

Analysis Date: **03/26/24 18:16** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	93.1	1.0	25	70.02	**92**	70	130				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: 70959
Date: *19-Apr-24*

Run ID :Run Order: **ICP2-HE_240326B: 95** SampType: **Sample Matrix Spike** Lab ID: **H24030603-001DMS3** Method: **E200.7**

Analysis Date: **03/26/24 18:16** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	37.3	1.0	25	13.48	**95**	70	130				
Potassium	29.9	1.0	25	4.128	**103**	70	130				
Sodium	43.2	1.0	25	17.37	**103**	70	130				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **ICP2-HE_240326B: 96** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030603-001DMSD3** Method: **E200.7**

Analysis Date: **03/26/24 18:20** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	98.0	1.0	25	70.02	**112**	70	130	93.08	**5.1**	20	
Magnesium	39.1	1.0	25	13.48	**102**	70	130	37.26	**4.7**	20	
Potassium	30.4	1.0	25	4.128	**105**	70	130	29.89	**1.5**	20	
Sodium	43.5	1.0	25	17.37	**105**	70	130	43.18	**0.8**	20	

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: 70959
Date: *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240327A: 110** SampType: **Method Blank** Lab ID: **MB-70959** Method: **E200.8**

Analysis Date: **03/27/24 21:17** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0001									
Cadmium	ND	0.00003									
Copper	ND	0.0003									
Lead	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **ICPMS205-H_240327A: 123** SampType: **Laboratory Control Sample** Lab ID: **LCS-70959** Method: **E200.8**

Analysis Date: **03/27/24 21:54** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.494	0.0010	0.5	0	99	85	115				
Cadmium	0.236	0.0010	0.25	0	94	85	115				
Copper	0.475	0.0050	0.5	0	95	85	115				
Lead	0.496	0.0010	0.5	0	99	85	115				
Zinc	0.486	0.010	0.5	0	97	85	115				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **ICPMS205-H_240327A: 124** SampType: **Sample Matrix Spike** Lab ID: **H24030603-001DMS3** Method: **E200.8**

Analysis Date: **03/27/24 21:57** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.495	0.0010	0.5	0.01006	97	70	130				
Cadmium	0.235	0.0010	0.25	0.0001377	94	70	130				
Copper	0.481	0.0050	0.5	0.03045	90	70	130				
Lead	0.504	0.0010	0.5	0.00366	100	70	130				
Zinc	0.495	0.010	0.5	0.02953	93	70	130				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24030603 — **BatchID: 70959** — **Date:** *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240327A: 125** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030603-001DMSD3** Method: **E200.8**

Analysis Date: **03/27/24 22:00** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.496	0.0010	0.5	0.01006	**97**	70	130	0.4948	**0.1**	20	
Cadmium	0.237	0.0010	0.25	0.0001377	**95**	70	130	0.235	**0.7**	20	
Copper	0.483	0.0050	0.5	0.03045	**91**	70	130	0.4806	**0.5**	20	
Lead	0.490	0.0010	0.5	0.00366	**97**	70	130	0.504	**2.8**	20	
Zinc	0.498	0.010	0.5	0.02953	**94**	70	130	0.4948	**0.6**	20	

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24030603 **BatchID: 71121** **Date:** *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240408A: 26** SampType: **Method Blank** Lab ID: **MB-71121** Method: **SW6020**

Analysis Date: **04/08/24 11:00** Units: **mg/kg** **Prep Info:** Prep Date: **4/4/2024** Prep Method: **SW3050 B**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.2									
Cadmium	ND	0.03									
Copper	ND	0.7									
Lead	ND	0.4									
Zinc	ND	3									

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

Run ID :Run Order: **ICPMS205-H_240408A: 28** SampType: **Serial Dilution** Lab ID: **H24030603-011ADIL** Method: **SW6020**

Analysis Date: **04/08/24 11:06** Units: **mg/kg-dry** **Prep Info:** Prep Date: **4/4/2024** Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	104	7.8		0		0	0	102.2	**2.0**	10	
Cadmium	4.98	1.3		0		0	0	4.883		10	N
Copper	1120	36		0		0	0	1082	**3.5**	10	
Lead	154	22		0		0	0	153.4		10	N
Zinc	1070	150		0		0	0	1012		10	N

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

Run ID :Run Order: **ICPMS205-H_240408A: 37** SampType: **Laboratory Control Sample** Lab ID: **LCS-71121** Method: **SW6020**

Analysis Date: **04/08/24 11:32** Units: **mg/kg** **Prep Info:** Prep Date: **4/4/2024** Prep Method: **SW3050 B**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	168	1.0	191.7	0	**87**	66.4	104				
Cadmium	98.5	1.0	96.82	0	**102**	79.2	121				
Copper	126	3.6	134	0	**94**	73.9	113				
Lead	103	2.2	102.7	0	**101**	71.6	128				
Zinc	245	15	225.9	0	**108**	83.1	125				

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: 71121
Date: *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240408A: 38** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-71121** Method: **SW6020**

Analysis Date: **04/08/24 11:35** Units: **mg/kg** **Prep Info:** Prep Date: **4/4/2024** Prep Method: **SW3050 B**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.4	1.0	49.5	0	102	80	120				
Cadmium	26.0	1.0	24.75	0	105	80	120				
Copper	53.4	3.6	49.5	0	108	80	120				
Lead	49.5	2.2	49.5	0	100	80	120				
Zinc	51.5	15	49.5	0	104	80	120				

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

Run ID :Run Order: **ICPMS205-H_240408A: 39** SampType: **Post Digestion/Distillation Spike** Lab ID: **H24030603-011APDS1** Method: **SW6020**

Analysis Date: **04/08/24 11:38** Units: **mg/kg-dry** **Prep Info:** Prep Date: **4/4/2024** Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	150	1.6	49.6	102.2	96	75	125				
Cadmium	54.3	1.0	49.6	4.883	100	75	125				
Copper	1110	7.3	49.6	1082		75	125				A
Lead	193	4.4	49.6	153.4	80	75	125				
Zinc	1040	31	49.6	1012		75	125				A

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

Run ID :Run Order: **ICPMS205-H_240408A: 40** SampType: **Sample Matrix Spike** Lab ID: **H24030603-011AMS** Method: **SW6020**

Analysis Date: **04/08/24 11:41** Units: **mg/kg-dry** **Prep Info:** Prep Date: **4/4/2024** Prep Method: **SW3050 B**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	198	1.6	100	102.2	96	75	125				
Cadmium	57.6	1.0	50	4.883	105	75	125				
Copper	1050	7.3	100	1082		75	125				A
Lead	245	4.4	100	153.4	92	75	125				
Zinc	1080	31	100	1012		75	125				A

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: 71121
Date: *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240408A: 41** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030603-011AMSD** Method: **SW6020**

Analysis Date: **04/08/24 11:44** Units: **mg/kg-dry** **Prep Info:** Prep Date: **4/4/2024** Prep Method: **SW3050 B**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	209	1.6	101	102.2	**106**	75	125	198.3	**5.3**	20	
Cadmium	58.6	1.0	50.5	4.883	**106**	75	125	57.58	**1.7**	20	
Copper	1170	7.4	101	1082		75	125	1054	**10**	20	A
Lead	252	4.4	101	153.4	**98**	75	125	245	**2.9**	20	
Zinc	1130	31	101	1012		75	125	1075	**5.3**	20	A

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: PMOIST_240409_A
Date: *19-Apr-24*

Run ID :Run Order: **TSS OVEN_240409A: 7** SampType: **Sample Duplicate** Lab ID: **H24030603-017A DUP** Method: **D2974**

Analysis Date: **04/09/24 15:07** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	58.2	0.20		0				54.08	**7.3**	20	

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

Run ID :Run Order: **TSS OVEN_240409A: 17** SampType: **Sample Duplicate** Lab ID: **H24030603-029A DUP** Method: **D2974**

Analysis Date: **04/09/24 15:08** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	51.9	0.20		0				53.29	**2.6**	20	

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193270
Date: *19-Apr-24*

Run ID :Run Order: **PHSC_101-H_240321A: 146** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **03/21/24 15:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A, H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **PHSC_101-H_240321A: 147** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **03/21/24 16:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	600	4.0	600	0	**100**	90	110				

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A, H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **PHSC_101-H_240321A: 150** SampType: **Sample Duplicate** Lab ID: **H24030603-001ADUP** Method: **A2320 B**

Analysis Date: **03/21/24 16:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	140	4.0		0				142.5	**0.2**	10	
Bicarbonate as HCO3	170	4.0		0				173.2	**0.2**	10	

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A, H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24030603 **BatchID: R193307** **Date:** *19-Apr-24*

Run ID :Run Order: **IC METROHM_240321A: 2** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **03/21/24 10:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.03									

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

Run ID :Run Order: **IC METROHM_240321A: 3** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **03/21/24 10:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	1.0	100	0	100	90	110				
Sulfate	396	1.0	400	0	99	90	110				

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

Run ID :Run Order: **IC METROHM_240321A: 4** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **03/21/24 10:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.3	1.0	25	0	97	90	110				
Sulfate	100	1.0	100	0	100	90	110				

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

Run ID :Run Order: **IC METROHM_240321A: 19** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **03/21/24 14:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.3	1.0	50	0	99	90	110				
Sulfate	199	1.0	200	0	100	90	110				

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

Run ID :Run Order: **IC METROHM_240321A: 31** SampType: **Sample Matrix Spike** Lab ID: **H24030603-005AMS** Method: **E300.0**

Analysis Date: **03/21/24 17:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	41.1	1.0	25	15.98	100	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193307
Date: *19-Apr-24*

Run ID :Run Order: **IC METROHM_240321A: 31** SampType: **Sample Matrix Spike** Lab ID: **H24030603-005AMS** Method: **E300.0**

Analysis Date: **03/21/24 17:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	238	1.0	100	138.6	99	90	110				

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

Run ID :Run Order: **IC METROHM_240321A: 32** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030603-005AMSD** Method: **E300.0**

Analysis Date: **03/21/24 17:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	41.2	1.0	25	15.98	101	90	110	41.08	0.3	20	
Sulfate	240	1.0	100	138.6	101	90	110	238	0.7	20	

Associated samples: **H24030603-001A, H24030603-002A, H24030603-003A, H24030603-004A, H24030603-005A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193352
Date: *19-Apr-24*

Run ID :Run Order: **FIA203-HE_240322B: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E350.1**
Analysis Date: **03/22/24 13:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.992	0.050	1	0	99	90	110				

Associated samples: **H24030603-010E**

Run ID :Run Order: **FIA203-HE_240322B: 10** SampType: **Method Blank** Lab ID: **MBLK** Method: **E350.1**
Analysis Date: **03/22/24 13:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	ND	0.02									

Associated samples: **H24030603-010E**

Run ID :Run Order: **FIA203-HE_240322B: 11** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E350.1**
Analysis Date: **03/22/24 13:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.988	0.050	1	0	99	90	110				

Associated samples: **H24030603-010E**

Run ID :Run Order: **FIA203-HE_240322B: 38** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E350.1**
Analysis Date: **03/22/24 13:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.487	0.050	0.5	0	97	90	110				

Associated samples: **H24030603-010E**

Run ID :Run Order: **FIA203-HE_240322B: 44** SampType: **Sample Matrix Spike** Lab ID: **H24030567-001DMS** Method: **E350.1**
Analysis Date: **03/22/24 14:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.900	0.050	1	0.0207	88	80	120				

Associated samples: **H24030603-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193352
Date: *19-Apr-24*

Run ID :Run Order: **FIA203-HE_240322B: 45** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030567-001DMSD** Method: **E350.1**
Analysis Date: **03/22/24 14:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.899	0.050	1	0.0207	**88**	80	120	0.9002	**0.2**	10	

Associated samples: **H24030603-010E**

Run ID :Run Order: **FIA203-HE_240322B: 80** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV DOC1** Method: **E350.1**
Analysis Date: **03/22/24 14:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	1.01	0.050	1	0	**101**	90	110				

Associated samples: **H24030603-010E**

Run ID :Run Order: **FIA203-HE_240322B: 81** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV DOC2** Method: **E350.1**
Analysis Date: **03/22/24 14:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.999	0.050	1	0	**100**	90	110				

Associated samples: **H24030603-010E**

Run ID :Run Order: **FIA203-HE_240322B: 82** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV DOC3** Method: **E350.1**
Analysis Date: **03/22/24 14:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	1.00	0.050	1	0	**100**	90	110				

Associated samples: **H24030603-010E**

Run ID :Run Order: **FIA203-HE_240322B: 91** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E350.1**
Analysis Date: **03/22/24 15:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.101	0.010	0.1	0	**101**	90	110				

Associated samples: **H24030603-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193352
Date: *19-Apr-24*

Run ID :Run Order: **FIA203-HE_240322B: 157** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV DOC1** Method: **E350.1**

Analysis Date: **03/22/24 16:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.107	0.010	0.1	0	**107**	90	110				

Associated samples: **H24030603-010E**

Run ID :Run Order: **FIA203-HE_240322B: 158** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV DOC2** Method: **E350.1**

Analysis Date: **03/22/24 16:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.103	0.010	0.1	0	**103**	90	110				

Associated samples: **H24030603-010E**

Run ID :Run Order: **FIA203-HE_240322B: 159** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV DOC3** Method: **E350.1**

Analysis Date: **03/22/24 16:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.106	0.010	0.1	0	**106**	90	110				

Associated samples: **H24030603-010E**

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: **R193354**
Date: *19-Apr-24*

Run ID :Run Order: **IC METROHM_240322A: 1** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **03/22/24 09:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.03									

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **IC METROHM_240322A: 2** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **03/22/24 09:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	101	1.0	100	0	101	90	110				
Sulfate	397	1.0	400	0	99	90	110				

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **IC METROHM_240322A: 3** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **03/22/24 10:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23.8	1.0	25	0	95	90	110				
Sulfate	98.5	1.0	100	0	99	90	110				

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **IC METROHM_240322A: 5** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **03/22/24 10:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.6	1.0	50	0	99	90	110				
Sulfate	199	1.0	200	0	99	90	110				

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **IC METROHM_240322A: 17** SampType: **Sample Matrix Spike** Lab ID: **H24030603-006AMS** Method: **E300.0**

Analysis Date: **03/22/24 14:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	41.5	1.0	25	16.77	99	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193354
Date: *19-Apr-24*

Run ID :Run Order: **IC METROHM_240322A: 17** SampType: **Sample Matrix Spike** Lab ID: **H24030603-006AMS** Method: **E300.0**

Analysis Date: **03/22/24 14:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	240	1.0	100	142.3	98	90	110				

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **IC METROHM_240322A: 18** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030603-006AMSD** Method: **E300.0**

Analysis Date: **03/22/24 14:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	41.6	1.0	25	16.77	99	90	110	41.47	0.3	20	
Sulfate	242	1.0	100	142.3	99	90	110	239.9	0.7	20	

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

Run ID :Run Order: **IC METROHM_240322A: 19** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **03/22/24 14:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.2	1.0	50	0	98	90	110				
Sulfate	198	1.0	200	0	99	90	110				

Associated samples: **H24030603-006A, H24030603-007A, H24030603-008A, H24030603-009A, H24030603-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24030603 **BatchID: R193395** **Date:** *19-Apr-24*

Run ID :Run Order: **SEAL AA500_240325A: 12** SampType: **Method Blank** Lab ID: **ICB** Method: **E353.2**

Analysis Date: **03/25/24 11:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	ND	0.01									

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240325A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E353.2**

Analysis Date: **03/25/24 11:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.06	0.010	1	0	106	90	110				

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240325A: 15** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E353.2**

Analysis Date: **03/25/24 11:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.992	0.011	1	0	99	90	110				

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240325A: 29** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **03/25/24 11:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.05	0.010	1	0	105	90	110				

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240325A: 42** SampType: **Sample Matrix Spike** Lab ID: **H24030603-001EMS** Method: **E353.2**

Analysis Date: **03/25/24 11:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.22	0.011	1	0.1667	106	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24030603 **BatchID: R193395** **Date:** *19-Apr-24*

Run ID :Run Order: **SEAL AA500_240325A: 42** SampType: **Sample Matrix Spike** Lab ID: **H24030603-001EMS** Method: **E353.2**

Analysis Date: **03/25/24 11:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240325A: 43** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030603-001EMSD** Method: **E353.2**

Analysis Date: **03/25/24 11:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.24	0.011	1	0.1667	107	90	110	1.224	1.2	10	

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240325A: 44** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **03/25/24 11:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.05	0.010	1	0	105	90	110				

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240325A: 47** SampType: **Sample Matrix Spike** Lab ID: **H24030603-002EMS** Method: **E353.2**

Analysis Date: **03/25/24 11:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.23	0.011	1	0.1722	106	90	110				

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

Run ID :Run Order: **SEAL AA500_240325A: 48** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030603-002EMSD** Method: **E353.2**

Analysis Date: **03/25/24 11:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.24	0.011	1	0.1722	107	90	110	1.235	0.7	10	

Associated samples: **H24030603-001E, H24030603-002E, H24030603-003E, H24030603-004E, H24030603-005E, H24030603-006E, H24030603-007E, H24030603-008E, H24030603-009E, H24030603-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193399
Date: *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240325B: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/25/24 16:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0606	0.0050	0.06	0	101	90	110				
Cadmium	0.0311	0.0010	0.03	0	104	90	110				
Copper	0.0618	0.010	0.06	0	103	90	110				
Lead	0.0603	0.010	0.06	0	100	90	110				
Zinc	0.0635	0.010	0.06	0	106	90	110				

Associated samples: **H24030603-001C, H24030603-002C, H24030603-003C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-009C, H24030603-010C**

Run ID :Run Order: **ICPMS205-H_240325B: 22** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **03/25/24 17:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0002									
Cadmium	ND	0.00002									
Copper	ND	0.0001									
Lead	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H24030603-001C, H24030603-002C, H24030603-003C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-009C, H24030603-010C**

Run ID :Run Order: **ICPMS205-H_240325B: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **03/25/24 17:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0503	0.0050	0.05	0	101	85	115				
Cadmium	0.0497	0.0010	0.05	0	99	85	115				
Copper	0.0505	0.010	0.05	0	101	85	115				
Lead	0.0481	0.010	0.05	0	96	85	115				
Zinc	0.0510	0.010	0.05	0	102	85	115				

Associated samples: **H24030603-001C, H24030603-002C, H24030603-003C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-009C, H24030603-010C**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193399
Date: *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240325B: 130** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **03/25/24 22:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0516	0.0050	0.05	0	103	90	110				
Cadmium	0.0518	0.0010	0.05	0	103	90	110				
Copper	0.0522	0.010	0.05	0	104	90	110				
Lead	0.0490	0.010	0.05	0	98	90	110				
Zinc	0.0527	0.010	0.05	0	105	90	110				

Associated samples: **H24030603-001C, H24030603-002C, H24030603-003C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-009C, H24030603-010C**

Run ID :Run Order: **ICPMS205-H_240325B: 144** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **03/25/24 23:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0503	0.0050	0.05	0	101	90	110				
Cadmium	0.0511	0.0010	0.05	0	102	90	110				
Copper	0.0511	0.010	0.05	0	102	90	110				
Lead	0.0496	0.010	0.05	0	99	90	110				
Zinc	0.0520	0.010	0.05	0	104	90	110				

Associated samples: **H24030603-001C, H24030603-002C, H24030603-003C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-009C, H24030603-010C**

Run ID :Run Order: **ICPMS205-H_240325B: 154** SampType: **Sample Matrix Spike** Lab ID: **H24030603-010CMS** Method: **E200.8**

Analysis Date: **03/25/24 23:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0586	0.0010	0.05	0.008107	101	70	130				
Cadmium	0.0506	0.0010	0.05	0.00004844	101	70	130				
Copper	0.0524	0.0050	0.05	0.003104	99	70	130				
Lead	0.0515	0.0010	0.05	0	103	70	130				
Zinc	0.0586	0.010	0.05	0.009237	99	70	130				

Associated samples: **H24030603-001C, H24030603-002C, H24030603-003C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-009C, H24030603-010C**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193399
Date: *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240325B: 155** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030603-010CMSD** Method: **E200.8**

Analysis Date: **03/25/24 23:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0580	0.0010	0.05	0.008107	**100**	70	130	0.05863	**1.1**	20	
Cadmium	0.0513	0.0010	0.05	0.00004844	**102**	70	130	0.05059	**1.4**	20	
Copper	0.0526	0.0050	0.05	0.003104	**99**	70	130	0.05245	**0.3**	20	
Lead	0.0517	0.0010	0.05	0	**103**	70	130	0.0515	**0.4**	20	
Zinc	0.0602	0.010	0.05	0.009237	**102**	70	130	0.05856	**2.8**	20	

Associated samples: **H24030603-001C, H24030603-002C, H24030603-003C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-009C, H24030603-010C**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193457
Date: *19-Apr-24*

Run ID :Run Order: **ICP2-HE_240326B: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **03/26/24 10:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	40.6	1.0	40	0	101	95	105				
Magnesium	40.7	1.0	40	0	102	95	105				
Potassium	41.4	1.0	40	0	104	95	105				
Sodium	41.1	1.0	40	0	103	95	105				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **ICP2-HE_240326B: 22** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **03/26/24 11:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	40.3	1.0	40	0	101	95	105				
Magnesium	39.9	1.0	40	0	100	95	105				
Potassium	40.6	1.0	40	0	101	95	105				
Sodium	40.6	1.0	40	0	101	95	105				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **ICP2-HE_240326B: 23** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **03/26/24 11:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.0	1.0	25	0	100	95	105				
Magnesium	24.9	1.0	25	0	100	95	105				
Potassium	24.9	1.0	25	0	99	95	105				
Sodium	24.5	1.0	25	0	98	95	105				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **ICP2-HE_240326B: 90** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **03/26/24 17:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.8	1.0	25	0	103	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193457
Date: *19-Apr-24*

Run ID :Run Order: **ICP2-HE_240326B: 90** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **03/26/24 17:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	24.9	1.0	25	0	**100**	90	110				
Potassium	26.4	1.0	25	0	**106**	90	110				
Sodium	25.5	1.0	25	0	**102**	90	110				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

Run ID :Run Order: **ICP2-HE_240326B: 102** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **03/26/24 18:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.5	1.0	25	0	**102**	90	110				
Magnesium	24.7	1.0	25	0	**99**	90	110				
Potassium	26.1	1.0	25	0	**104**	90	110				
Sodium	25.1	1.0	25	0	**100**	90	110				

Associated samples: **H24030603-001D, H24030603-002D, H24030603-003D, H24030603-004D, H24030603-005D, H24030603-006D, H24030603-007D, H24030603-008D, H24030603-009D, H24030603-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603 **BatchID: R193489** **Date:** *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240327A: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/27/24 12:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0597	0.0050	0.06	0	99	90	110				
Cadmium	0.0302	0.0010	0.03	0	101	90	110				
Copper	0.0603	0.010	0.06	0	101	90	110				
Lead	0.0597	0.010	0.06	0	99	90	110				
Zinc	0.0621	0.010	0.06	0	103	90	110				

Associated samples: **H24030603-001C, H24030603-001D, H24030603-002C, H24030603-002D, H24030603-003D, H24030603-004C, H24030603-004D, H24030603-005C, H24030603-005D, H24030603-006C, H24030603-006D, H24030603-007C, H24030603-007D, H24030603-008C, H24030603-008D, H24030603-009D, H24030603-010C, H24030603-010D**

Run ID :Run Order: **ICPMS205-H_240327A: 64** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/27/24 19:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0606	0.0050	0.06	0	101	90	110				
Cadmium	0.0306	0.0010	0.03	0	102	90	110				
Copper	0.0606	0.010	0.06	0	101	90	110				
Lead	0.0596	0.010	0.06	0	99	90	110				
Zinc	0.0628	0.010	0.06	0	105	90	110				

Associated samples: **H24030603-001C, H24030603-001D, H24030603-002C, H24030603-002D, H24030603-003D, H24030603-004C, H24030603-004D, H24030603-005C, H24030603-005D, H24030603-006C, H24030603-006D, H24030603-007C, H24030603-007D, H24030603-008C, H24030603-008D, H24030603-009D, H24030603-010C, H24030603-010D**

Run ID :Run Order: **ICPMS205-H_240327A: 74** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **03/27/24 19:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.00002									

Associated samples: **H24030603-001C, H24030603-002C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-010C**

Run ID :Run Order: **ICPMS205-H_240327A: 75** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **03/27/24 19:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0499	0.0010	0.05	0	100	85	115				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24030603 **BatchID: R193489** **Date:** *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240327A: 75** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **03/27/24 19:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24030603-001C, H24030603-002C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-010C**

Run ID :Run Order: **ICPMS205-H_240327A: 108** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **03/27/24 21:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0492	0.0050	0.05	0	98	90	110				
Cadmium	0.0464	0.0010	0.05	0	93	90	110				
Copper	0.0472	0.010	0.05	0	94	90	110				
Lead	0.0477	0.010	0.05	0	95	90	110				
Zinc	0.0491	0.010	0.05	0	98	90	110				

Associated samples: **H24030603-001C, H24030603-001D, H24030603-002C, H24030603-002D, H24030603-003D, H24030603-004C, H24030603-004D, H24030603-005C, H24030603-005D, H24030603-006C, H24030603-006D, H24030603-007C, H24030603-007D, H24030603-008C, H24030603-008D, H24030603-009D, H24030603-010C, H24030603-010D**

Run ID :Run Order: **ICPMS205-H_240327A: 127** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **03/27/24 22:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0488	0.0050	0.05	0	98	90	110				
Cadmium	0.0468	0.0010	0.05	0	94	90	110				
Copper	0.0481	0.010	0.05	0	96	90	110				
Lead	0.0481	0.010	0.05	0	96	90	110				
Zinc	0.0505	0.010	0.05	0	101	90	110				

Associated samples: **H24030603-001C, H24030603-001D, H24030603-002C, H24030603-002D, H24030603-003D, H24030603-004C, H24030603-004D, H24030603-005C, H24030603-005D, H24030603-006C, H24030603-006D, H24030603-007C, H24030603-007D, H24030603-008C, H24030603-008D, H24030603-009D, H24030603-010C, H24030603-010D**

Run ID :Run Order: **ICPMS205-H_240327A: 137** SampType: **Sample Matrix Spike** Lab ID: **H24030603-010CMS** Method: **E200.8**

Analysis Date: **03/27/24 22:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0474	0.0010	0.05	0.00005827	95	70	130				

Associated samples: **H24030603-001C, H24030603-002C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-010C**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193489
Date: *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240327A: 138** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24030603-010CMSD** Method: **E200.8**

Analysis Date: **03/27/24 22:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0476	0.0010	0.05	0.00005827	**95**	70	130	0.04741	**0.4**	20	

Associated samples: **H24030603-001C, H24030603-002C, H24030603-004C, H24030603-005C, H24030603-006C, H24030603-007C, H24030603-008C, H24030603-010C**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193785
Date: *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240408A: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**

Analysis Date: **04/08/24 10:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0612	0.0010	0.06	0	102	90	110				
Cadmium	0.0314	0.0010	0.03	0	105	90	110				
Copper	0.0628	0.0010	0.06	0	105	90	110				
Lead	0.0606	0.0010	0.06	0	101	90	110				
Zinc	0.0641	0.0013	0.06	0	107	90	110				

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

Run ID :Run Order: **ICPMS205-H_240408A: 15** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **04/08/24 10:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0000380	0.0010		0							
Cadmium	0.000100	0.0010		0							
Copper	-0.0000771	0.0010		0							
Lead	0.000738	0.0010		0							
Zinc	0.000188	0.0013		0							

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

Run ID :Run Order: **ICPMS205-H_240408A: 17** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **04/08/24 10:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0101	0.0010	0.01	0	101	70	130				
Cadmium	0.00999	0.0010	0.01	0	100	70	130				
Copper	0.0198	0.0010	0.02	0	99	70	130				
Lead	-0.0000353	0.0010		0		0	0				
Zinc	0.0109	0.0013	0.01	0	109	70	130				

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: R193785
Date: *19-Apr-24*

Run ID :Run Order: **ICPMS205-H_240408A: 20** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **04/08/24 10:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0492	0.0010	0.05	0	**98**	90	110				
Cadmium	0.0500	0.0010	0.05	0	**100**	90	110				
Copper	0.0506	0.0010	0.05	0	**101**	90	110				
Lead	0.0489	0.0010	0.05	0	**98**	90	110				
Zinc	0.0504	0.0013	0.05	0	**101**	90	110				

Associated samples: **H24030603-011A, H24030603-014A, H24030603-017A, H24030603-020A, H24030603-023A, H24030603-026A, H24030603-029A, H24030603-032A, H24030603-035A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24030603
BatchID: TSS20240321A
Date: *19-Apr-24*

Run ID :Run Order: **Accu-124 (14410200)_240321A: 1** SampType: **Method Blank** Lab ID: **MBLK_20240321-2** Method: **A2540 D**

Analysis Date: **03/21/24 14:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	0.3									

Associated samples: **H24030603-001B, H24030603-002B, H24030603-003B, H24030603-004B, H24030603-005B, H24030603-006B, H24030603-007B, H24030603-008B, H24030603-009B, H24030603-010B**

Run ID :Run Order: **Accu-124 (14410200)_240321A: 2** SampType: **Laboratory Control Sample** Lab ID: **LCS_20240321-2** Method: **A2540 D**

Analysis Date: **03/21/24 14:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	98.0	25	100	0	**98**	80	120				

Associated samples: **H24030603-001B, H24030603-002B, H24030603-003B, H24030603-004B, H24030603-005B, H24030603-006B, H24030603-007B, H24030603-008B, H24030603-009B, H24030603-010B**

Run ID :Run Order: **Accu-124 (14410200)_240321A: 4** SampType: **Sample Duplicate** Lab ID: **H24030592-001ADUP** Method: **A2540 D**

Analysis Date: **03/21/24 14:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	83.3	83		0				83.33	**0.0**	10	

Associated samples: **H24030603-001B, H24030603-002B, H24030603-003B, H24030603-004B, H24030603-005B, H24030603-006B, H24030603-007B, H24030603-008B, H24030603-009B, H24030603-010B**

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

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H24030603

Login completed by: Wanda Johnson
Date Received: 3/20/2024

Reviewed by: rtooke
Received by: RRS

Reviewed Date: 3/22/2024
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	1.0°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

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

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

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

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 of the sample(s) for shipping container 1 was 0.6°C, shipping container 2 was 1.0°C, and shipping container 3 was 1.2°C.
Per T. Traxler the Sediment analysis should be on one fraction only. wjj 3/21/2024

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Chain of Custody & Analytical Request Record

www.energylab.com

Account Information *(Billing information)*

Company/Name	MTDEQ
Contact	Jessica Banaszak
Phone	(406) 431-2252
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	jessica.banaszak@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	47068

Report Information *(if different than Account Information)*

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; tanner.traxler@respec.com
Receive Report	☐Hard Copy ■Email
Special Report/Formats:	☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

All dissolved samples field filtered

C4 - 0.6
C5 - 1.0
C6 - 1.2

Project Information

Project Name, PWSID, Permit, etc.	CFROU Monitoring
Sampler Name	Tanner Traxler
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

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

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	TR Metals (see list)	Diss Metals (see list)	TPN	NO3+2, TP	NH3	TSS	Tot. Alk., Sulfate, Chloride	Hardness (TR Ca & Mg)		See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	CFR-34	3/19/24	0930	5	W	✓	✓	✓	✓		✓	✓	✓				H24030603
2	CFR-27H	3/19/24	1015	5	W	✓	✓	✓	✓		✓	✓	✓				
3	Field Blank CFR-18	3/19/24	1145	5	W	✓	✓	✓	✓		✓	✓	✓				
4	CFR-18	3/19/24	1125	5	W	✓	✓	✓	✓		✓	✓	✓				
5	CFR-11F	3/19/24	1230	5	W	✓	✓	✓	✓		✓	✓	✓				
6	CFR-07D	3/19/24	1310	5	W	✓	✓	✓	✓		✓	✓	✓				
7	CFR-07D Duplicate	3/19/24	1310	5	W	✓	✓	✓	✓		✓	✓	✓				
8	CFR-03A	3/19/24	1400	5	W	✓	✓	✓	✓		✓	✓	✓				
9	WSC-SBC	3/19/24	1445	5	W	✓	✓	✓	✓		✓	✓	✓				
10	SS-25	3/19/24	1515	5	W	✓	✓	✓	✓	✓	✓	✓	✓				

Custody Record MUST be signed	Relinquished by (print): Tanner Traxler	Date/Time: 3/20/24 1700	Signature: Tanner Traxler	Received by (print)	Date/Time / Signature
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print): A SPONHOLZ	Date/Time: 032024 1700 / Signature

LABORATORY USE ONLY

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

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

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Chain of Custody & Analytical Request Record

www.energylab.com

Account Information (Billing information)

Company/Name	MTDEQ
Contact	Jessica Banaszak
Phone	(406) 431-2252
Mailing Address	MTDEQ, P.O.Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	jessica.banaszak@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	47068

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; tanner.traxler@respec.com
Receive Report	☐Hard Copy ■Email
Special Report/Formats:	☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

lab to sieve sediment samples into 3 size fractions, report as dry weight concentrations

C4-0.6
C5-1.0
C6-1.2

Project Information

Project Name, PWSID, Permit, etc.	CFROU Monitoring
Sampler Name	Tanner Traxler
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

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

Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Analysis Requested: Total As, Cd, Cu, Pb, Zn	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1 CFR-34	3/19/24	0930	1	S	✓			H240306-03
2 CFR-27H	3/19/24	1045	1	S	✓			
3 CFR-18	3/19/24	1125	1	S	✓			
4 CFR-11F	3/19/24	1230	1	S	✓			
5 CFR-07D	3/19/24	1310	1	S	✓			
6 CFR-03A	3/19/24	1400	1	S	✓			
7 WSC-SBC	3/19/24	1445	1	S	✓			
8 SS-25	3/19/24	1515	1	S	✓			
9 SS-25 Duplicate	3/19/24	1515	1	S	✓			
10								

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Tanner Traxler	3/20/24 1700				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				R SPONHOLZ	032024 1700	

LABORATORY USE ONLY

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

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

ANALYTICAL SUMMARY REPORT

June 27, 2024

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

Work Order: H24050895 Quote ID: H1525

Project Name: CFROU Monitoring

Energy Laboratories Inc Helena MT received the following 10 samples for MT DEQ-Federal Superfund on 5/31/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H24050895-001	CFR-34	05/29/24 9:20	05/31/24	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Hardness Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H24050895-002	CFR-27H	05/29/24 10:30	05/31/24	Surface Water	Same As Above
H24050895-003	CFR-18	05/29/24 11:30	05/31/24	Surface Water	Same As Above
H24050895-004	Field Blank CFR-11F	05/29/24 12:45	05/31/24	Surface Water	Same As Above
H24050895-005	CFR-11F	05/29/24 12:15	05/31/24	Surface Water	Same As Above
H24050895-006	CFR-07D	05/29/24 13:15	05/31/24	Surface Water	Same As Above
H24050895-007	CFR-03A	05/29/24 14:15	05/31/24	Surface Water	Same As Above
H24050895-008	WSC-SBC	05/29/24 14:50	05/31/24	Surface Water	Same As Above
H24050895-009	WSC-SBC Duplicate	05/29/24 14:50	05/31/24	Surface Water	Same As Above
H24050895-010	SS-25	05/29/24 15:45	05/31/24	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended

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.

ANALYTICAL SUMMARY REPORT

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

CLIENT: MT DEQ-Federal Superfund
Project: CFROU Monitoring
Work Order: H24050895

Report Date: 06/27/24

CASE NARRATIVE

Prep Comments for Sample H24050895-004E, Test PRP-P-W: The prep hold time was exceeded by 2 days.
Prep Comments for Sample H24050895-004E, Test PRP-P-W: The prep hold time was exceeded by 2 days.
Prep Comments for Sample H24050895-004E, Test PRP-P-W: The prep hold time was exceeded by 2 days.

All "J" qualified analyte concentrations are below the laboratory minimum recommended Reporting Limit (RL) and above the calculated method detection limit (MDL). Inorganic analytes reported with "J" qualifiers should be verified against the corresponding method blank and continuing calibration blanks. Inorganic "J" quantitations near the MDL may be suspect due to possible method background levels, sample matrix effects, and/or daily variability in instrument signal-to-noise levels.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-34
Project: CFROU Monitoring
Matrix: Surface Water

Lab ID: H24050895-001
Collection Date: 05/29/24 09:20
DateReceived: 05/31/24
Report Date: 06/27/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	7	mg/L		3	0.3	A2540 D	05/31/24 14:04 / dpw			:u-124 (14410200)_240531A : 18		TSS20240531A
INORGANICS												
Alkalinity, Total as CaCO3	150	mg/L		4	2	A2320 B	06/03/24 20:26 / dpw			PHSC_101-H_240603A : 168		R195382
Bicarbonate as HCO3	180	mg/L		4	3	A2320 B	06/03/24 20:26 / dpw			PHSC_101-H_240603A : 168		R195382
Chloride	12	mg/L		1	0.02	E300.0	05/31/24 15:04 / eer			IC METROHM_240531A : 17		R195393
Sulfate	88	mg/L		1	0.03	E300.0	05/31/24 15:04 / eer			IC METROHM_240531A : 17		R195393
Hardness as CaCO3	224	mg/L		1	1	A2340 B	06/04/24 15:14 / SR			CALC_240605A : 663		R195490
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.01	E353.2	06/13/24 15:09 / JAR			SEAL AA500_240613A : 84		R195761
Nitrogen, Total	0.25	mg/L		0.05	0.02	A4500 N-C	06/04/24 13:02 / JAR	06/03/24 15:24	A4500 N-C	FIA203-HE_240604A : 34		72116
Phosphorus, Total as P	0.031	mg/L		0.003	0.001	E365.1	06/08/24 14:20 / JAR	06/06/24 07:35	E365.1	SEAL AA500_240608A : 113		72154
METALS, DISSOLVED												
Arsenic	0.012	mg/L		0.001	0.0002	E200.8	06/08/24 03:07 / dck			ICPMS205-H_240607A : 143		R195570
Cadmium	0.00003	mg/L	J	0.00003	0.00002	E200.8	06/08/24 03:07 / dck			ICPMS205-H_240607A : 143		R195570
Copper	0.007	mg/L		0.001	0.0001	E200.8	06/08/24 03:07 / dck			ICPMS205-H_240607A : 143		R195570
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	06/08/24 03:07 / dck			ICPMS205-H_240607A : 143		R195570
Zinc	0.006	mg/L	J	0.008	0.001	E200.8	06/08/24 03:07 / dck			ICPMS205-H_240607A : 143		R195570
METALS, TOTAL RECOVERABLE												
Arsenic	0.013	mg/L		0.001	0.0001	E200.8	06/08/24 03:12 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A : 144		72078
Cadmium	0.00009	mg/L		0.00003	0.00002	E200.8	06/08/24 03:12 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A : 144		72078
Calcium	66	mg/L		1	0.1	E200.7	06/04/24 15:14 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B : 34		72078
Copper	0.015	mg/L		0.001	0.0003	E200.8	06/08/24 03:12 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A : 144		72078
Lead	0.0012	mg/L		0.0003	0.0001	E200.8	06/08/24 03:12 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A : 144		72078
Magnesium	14	mg/L		1	0.05	E200.7	06/04/24 15:14 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B : 34		72078
Potassium	4	mg/L		1	0.1	E200.7	06/05/24 10:37 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A : 34		72078
Sodium	19	mg/L		1	0.05	E200.7	06/05/24 10:37 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A : 34		72078
Zinc	0.014	mg/L		0.008	0.001	E200.8	06/08/24 03:12 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A : 144		72078

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-27H
Project: CFROU Monitoring
Matrix: Surface Water

Lab ID: H24050895-002
Collection Date: 05/29/24 10:30
DateReceived: 05/31/24
Report Date: 06/27/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	7	mg/L		3	0.3	A2540 D	05/31/24 14:05 / dpw			:u-124 (14410200)_240531A	19	TSS20240531A
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	06/03/24 20:33 / dpw			PHSC_101-H_240603A	170	R195382
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	06/03/24 20:33 / dpw			PHSC_101-H_240603A	170	R195382
Chloride	11	mg/L		1	0.02	E300.0	05/31/24 18:26 / eer			IC METROHM_240531A	31	R195393
Sulfate	92	mg/L		1	0.03	E300.0	05/31/24 18:26 / eer			IC METROHM_240531A	31	R195393
Hardness as CaCO3	214	mg/L		1	1	A2340 B	06/04/24 15:18 / SR			CALC_240605A	674	R195490
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.05	mg/L		0.02	0.01	E353.2	06/13/24 15:10 / JAR			SEAL AA500_240613A	85	R195761
Nitrogen, Total	0.28	mg/L		0.05	0.02	A4500 N-C	06/04/24 13:03 / JAR	06/03/24 15:24	A4500 N-C	FIA203-HE_240604A	35	72116
Phosphorus, Total as P	0.024	mg/L		0.003	0.001	E365.1	06/08/24 14:21 / JAR	06/06/24 07:35	E365.1	SEAL AA500_240608A	114	72154
METALS, DISSOLVED												
Arsenic	0.011	mg/L		0.001	0.0002	E200.8	06/08/24 03:17 / dck			ICPMS205-H_240607A	145	R195570
Cadmium	0.00002	mg/L	J	0.00003	0.00002	E200.8	06/08/24 03:17 / dck			ICPMS205-H_240607A	145	R195570
Copper	0.006	mg/L		0.001	0.0001	E200.8	06/08/24 03:17 / dck			ICPMS205-H_240607A	145	R195570
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	06/08/24 03:17 / dck			ICPMS205-H_240607A	145	R195570
Zinc	0.005	mg/L	J	0.008	0.001	E200.8	06/08/24 03:17 / dck			ICPMS205-H_240607A	145	R195570
METALS, TOTAL RECOVERABLE												
Arsenic	0.012	mg/L		0.001	0.0001	E200.8	06/08/24 03:22 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	146	72078
Cadmium	0.00008	mg/L		0.00003	0.00002	E200.8	06/08/24 03:22 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	146	72078
Calcium	64	mg/L		1	0.1	E200.7	06/04/24 15:18 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B	35	72078
Copper	0.015	mg/L		0.001	0.0003	E200.8	06/08/24 03:22 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	146	72078
Lead	0.0014	mg/L		0.0003	0.0001	E200.8	06/08/24 03:22 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	146	72078
Magnesium	13	mg/L		1	0.05	E200.7	06/04/24 15:18 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B	35	72078
Potassium	4	mg/L		1	0.1	E200.7	06/05/24 10:41 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A	35	72078
Sodium	17	mg/L		1	0.05	E200.7	06/05/24 10:41 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A	35	72078
Zinc	0.014	mg/L		0.008	0.001	E200.8	06/08/24 03:22 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	146	72078

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-18
Project: CFROU Monitoring
Matrix: Surface Water

Lab ID: H24050895-003
Collection Date: 05/29/24 11:30
DateReceived: 05/31/24
Report Date: 06/27/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	5	mg/L		3	0.3	A2540 D	05/31/24 14:05 / dpw			:u-124 (14410200)_240531A	20	TSS20240531A
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	06/03/24 20:39 / dpw			PHSC_101-H_240603A	172	R195382
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	06/03/24 20:39 / dpw			PHSC_101-H_240603A	172	R195382
Chloride	10	mg/L		1	0.02	E300.0	05/31/24 16:16 / eer			IC METROHM_240531A	22	R195393
Sulfate	96	mg/L		1	0.03	E300.0	05/31/24 16:16 / eer			IC METROHM_240531A	22	R195393
Hardness as CaCO3	209	mg/L		1	1	A2340 B	06/04/24 15:22 / SR			CALC_240605A	685	R195490
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.02	mg/L	J	0.02	0.01	E353.2	06/13/24 15:11 / JAR			SEAL AA500_240613A	86	R195761
Nitrogen, Total	0.23	mg/L		0.05	0.02	A4500 N-C	06/04/24 13:04 / JAR	06/03/24 15:24	A4500 N-C	FIA203-HE_240604A	36	72116
Phosphorus, Total as P	0.030	mg/L		0.003	0.001	E365.1	06/08/24 14:22 / JAR	06/06/24 07:35	E365.1	SEAL AA500_240608A	115	72154
METALS, DISSOLVED												
Arsenic	0.011	mg/L		0.001	0.0002	E200.8	06/08/24 03:26 / dck			ICPMS205-H_240607A	147	R195570
Cadmium	0.00002	mg/L	J	0.00003	0.00002	E200.8	06/08/24 03:26 / dck			ICPMS205-H_240607A	147	R195570
Copper	0.004	mg/L		0.001	0.0001	E200.8	06/08/24 03:26 / dck			ICPMS205-H_240607A	147	R195570
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	06/08/24 03:26 / dck			ICPMS205-H_240607A	147	R195570
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	06/08/24 03:26 / dck			ICPMS205-H_240607A	147	R195570
METALS, TOTAL RECOVERABLE												
Arsenic	0.012	mg/L		0.001	0.0001	E200.8	06/08/24 03:31 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	148	72078
Cadmium	0.00006	mg/L		0.00003	0.00002	E200.8	06/08/24 03:31 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	148	72078
Calcium	62	mg/L		1	0.1	E200.7	06/04/24 15:22 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B	36	72078
Copper	0.011	mg/L		0.001	0.0003	E200.8	06/08/24 03:31 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	148	72078
Lead	0.0009	mg/L		0.0003	0.0001	E200.8	06/08/24 03:31 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	148	72078
Magnesium	13	mg/L		1	0.05	E200.7	06/04/24 15:22 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B	36	72078
Potassium	4	mg/L		1	0.1	E200.7	06/05/24 10:44 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A	36	72078
Sodium	15	mg/L		1	0.05	E200.7	06/05/24 10:44 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A	36	72078
Zinc	0.010	mg/L		0.008	0.001	E200.8	06/08/24 03:31 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	148	72078

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: Field Blank CFR-11F
Project: CFROU Monitoring
Matrix: Surface Water

Lab ID: H24050895-004
Collection Date: 05/29/24 12:45
DateReceived: 05/31/24
Report Date: 06/27/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	ND	mg/L	L	2	0.3	A2540 D	05/31/24 14:06 / dpw			:u-124 (14410200)_240531A	21	TSS20240531A
INORGANICS												
Alkalinity, Total as CaCO3	2	mg/L	J	4	2	A2320 B	06/03/24 20:45 / dpw			PHSC_101-H_240603A	174	R195382
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	06/03/24 20:45 / dpw			PHSC_101-H_240603A	174	R195382
Chloride	0.04	mg/L	J	1	0.02	E300.0	05/31/24 16:30 / eer			IC METROHM_240531A	23	R195393
Sulfate	ND	mg/L		1	0.03	E300.0	05/31/24 16:30 / eer			IC METROHM_240531A	23	R195393
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	06/13/24 08:10 / slj			WATERCALC_240613A	39	R195711
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.01	E353.2	06/13/24 15:14 / JAR			SEAL AA500_240613A	89	R195761
Nitrogen, Total	ND	mg/L		0.05	0.02	A4500 N-C	06/04/24 13:06 / JAR	06/03/24 15:24	A4500 N-C	FIA203-HE_240604A	37	72116
Phosphorus, Total as P	ND	mg/L		0.003	0.001	E365.1	06/26/24 13:57 / JAR	06/25/24 08:41	E365.1	SEAL AA500_240626A	25	72505
METALS, DISSOLVED												
Arsenic	ND	mg/L		0.001	0.0002	E200.8	06/08/24 03:36 / dck			ICPMS205-H_240607A	149	R195570
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	06/08/24 03:36 / dck			ICPMS205-H_240607A	149	R195570
Copper	0.0004	mg/L	J	0.001	0.0001	E200.8	06/08/24 03:36 / dck			ICPMS205-H_240607A	149	R195570
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/08/24 03:36 / dck			ICPMS205-H_240607A	149	R195570
Zinc	ND	mg/L		0.008	0.001	E200.8	06/08/24 03:36 / dck			ICPMS205-H_240607A	149	R195570
METALS, TOTAL RECOVERABLE												
Arsenic	ND	mg/L		0.001	0.0001	E200.8	06/08/24 03:41 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	150	72078
Cadmium	ND	mg/L		0.00003	0.00003	E200.8	06/08/24 03:41 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	150	72078
Calcium	ND	mg/L		1	0.1	E200.7	06/04/24 15:41 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B	41	72078
Copper	ND	mg/L		0.001	0.0003	E200.8	06/08/24 03:41 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	150	72078
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/08/24 03:41 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	150	72078
Magnesium	ND	mg/L		1	0.05	E200.7	06/04/24 15:41 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B	41	72078
Potassium	ND	mg/L		1	0.1	E200.7	06/05/24 11:11 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A	43	72078
Sodium	0.08	mg/L	J	1	0.05	E200.7	06/05/24 11:11 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A	43	72078
Zinc	0.006	mg/L	J	0.008	0.001	E200.8	06/08/24 03:41 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	150	72078

Report Definitions:
RL - Analyte Reporting Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
L -Lowest available reporting limit for the analytical method used and/or volume submitted
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-11F
Project: CFROU Monitoring
Matrix: Surface Water

Lab ID: H24050895-005
Collection Date: 05/29/24 12:15
DateReceived: 05/31/24
Report Date: 06/27/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	5	mg/L		3	0.3	A2540 D	05/31/24 14:06 / dpw			:u-124 (14410200)_240531A	22	TSS20240531A
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	06/03/24 20:49 / dpw			PHSC_101-H_240603A	176	R195382
Bicarbonate as HCO3	140	mg/L		4	3	A2320 B	06/03/24 20:49 / dpw			PHSC_101-H_240603A	176	R195382
Chloride	11	mg/L		1	0.02	E300.0	05/31/24 16:45 / eer			IC METROHM_240531A	24	R195393
Sulfate	104	mg/L		1	0.03	E300.0	05/31/24 16:45 / eer			IC METROHM_240531A	24	R195393
Hardness as CaCO3	203	mg/L		1	1	A2340 B	06/04/24 15:52 / SR			CALC_240605A	707	R195490
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.01	mg/L	J	0.02	0.01	E353.2	06/13/24 15:17 / JAR			SEAL AA500_240613A	92	R195761
Nitrogen, Total	0.22	mg/L		0.05	0.02	A4500 N-C	06/04/24 13:07 / JAR	06/03/24 15:24	A4500 N-C	FIA203-HE_240604A	38	72116
Phosphorus, Total as P	0.037	mg/L		0.003	0.001	E365.1	06/08/24 14:31 / JAR	06/06/24 07:36	E365.1	SEAL AA500_240608A	123	72155
METALS, DISSOLVED												
Arsenic	0.011	mg/L		0.001	0.0002	E200.8	06/08/24 04:14 / dck			ICPMS205-H_240607A	157	R195570
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	06/08/24 04:14 / dck			ICPMS205-H_240607A	157	R195570
Copper	0.003	mg/L		0.001	0.0001	E200.8	06/08/24 04:14 / dck			ICPMS205-H_240607A	157	R195570
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	06/08/24 04:14 / dck			ICPMS205-H_240607A	157	R195570
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	06/08/24 04:14 / dck			ICPMS205-H_240607A	157	R195570
METALS, TOTAL RECOVERABLE												
Arsenic	0.012	mg/L		0.001	0.0001	E200.8	06/08/24 04:19 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	158	72078
Cadmium	0.00005	mg/L		0.00003	0.00003	E200.8	06/08/24 04:19 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	158	72078
Calcium	60	mg/L		1	0.1	E200.7	06/04/24 15:52 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B	44	72078
Copper	0.008	mg/L		0.001	0.0003	E200.8	06/08/24 04:19 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	158	72078
Lead	0.0008	mg/L		0.0003	0.0001	E200.8	06/08/24 04:19 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	158	72078
Magnesium	13	mg/L		1	0.05	E200.7	06/04/24 15:52 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B	44	72078
Potassium	4	mg/L		1	0.1	E200.7	06/05/24 11:15 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A	44	72078
Sodium	16	mg/L		1	0.05	E200.7	06/05/24 11:15 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A	44	72078
Zinc	0.007	mg/L	J	0.008	0.001	E200.8	06/08/24 04:19 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	158	72078

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-07D
Project: CFROU Monitoring
Matrix: Surface Water

Lab ID: H24050895-006
Collection Date: 05/29/24 13:15
DateReceived: 05/31/24
Report Date: 06/27/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	6	mg/L		3	0.3	A2540 D	05/31/24 14:07 / dpw			:u-124 (14410200)_240531A : 23		TSS20240531A
INORGANICS												
Alkalinity, Total as CaCO3	110	mg/L		4	2	A2320 B	06/03/24 20:56 / dpw			PHSC_101-H_240603A : 178		R195382
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	06/03/24 20:56 / dpw			PHSC_101-H_240603A : 178		R195382
Chloride	10	mg/L		1	0.02	E300.0	05/31/24 16:59 / eer			IC METROHM_240531A : 25		R195393
Sulfate	97	mg/L		1	0.03	E300.0	05/31/24 16:59 / eer			IC METROHM_240531A : 25		R195393
Hardness as CaCO3	190	mg/L		1	1	A2340 B	06/04/24 15:56 / SR			CALC_240605A : 718		R195490
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.01	mg/L	J	0.02	0.01	E353.2	06/13/24 15:18 / JAR			SEAL AA500_240613A : 93		R195761
Nitrogen, Total	0.2	mg/L		0.05	0.02	A4500 N-C	06/04/24 13:08 / JAR	06/03/24 15:24	A4500 N-C	FIA203-HE_240604A : 39		72116
Phosphorus, Total as P	0.040	mg/L		0.003	0.001	E365.1	06/08/24 14:32 / JAR	06/06/24 07:36	E365.1	SEAL AA500_240608A : 124		72155
METALS, DISSOLVED												
Arsenic	0.010	mg/L		0.001	0.0002	E200.8	06/08/24 04:24 / dck			ICPMS205-H_240607A : 159		R195570
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	06/08/24 04:24 / dck			ICPMS205-H_240607A : 159		R195570
Copper	0.003	mg/L		0.001	0.0001	E200.8	06/08/24 04:24 / dck			ICPMS205-H_240607A : 159		R195570
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	06/08/24 04:24 / dck			ICPMS205-H_240607A : 159		R195570
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	06/08/24 04:24 / dck			ICPMS205-H_240607A : 159		R195570
METALS, TOTAL RECOVERABLE												
Arsenic	0.011	mg/L		0.001	0.0001	E200.8	06/08/24 04:28 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A : 160		72078
Cadmium	0.00004	mg/L		0.00003	0.00003	E200.8	06/08/24 04:28 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A : 160		72078
Calcium	56	mg/L		1	0.1	E200.7	06/04/24 15:56 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B : 45		72078
Copper	0.009	mg/L		0.001	0.0003	E200.8	06/08/24 04:28 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A : 160		72078
Lead	0.0009	mg/L		0.0003	0.0001	E200.8	06/08/24 04:28 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A : 160		72078
Magnesium	12	mg/L		1	0.05	E200.7	06/04/24 15:56 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B : 45		72078
Potassium	4	mg/L		1	0.1	E200.7	06/05/24 11:19 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A : 45		72078
Sodium	15	mg/L		1	0.05	E200.7	06/05/24 11:19 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A : 45		72078
Zinc	0.007	mg/L	J	0.008	0.001	E200.8	06/08/24 04:28 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A : 160		72078

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-03A
Project: CFROU Monitoring
Matrix: Surface Water

Lab ID: H24050895-007
Collection Date: 05/29/24 14:15
DateReceived: 05/31/24
Report Date: 06/27/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	8	mg/L		2	0.3	A2540 D	05/31/24 14:12 / dpw			:u-124 (14410200)_240531A	: 29	TSS20240531A
INORGANICS												
Alkalinity, Total as CaCO3	98	mg/L		4	2	A2320 B	06/03/24 21:02 / dpw			PHSC_101-H_240603A	: 180	R195382
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	06/03/24 21:02 / dpw			PHSC_101-H_240603A	: 180	R195382
Chloride	10	mg/L		1	0.02	E300.0	05/31/24 17:14 / eer			IC METROHM_240531A	: 26	R195393
Sulfate	82	mg/L		1	0.03	E300.0	05/31/24 17:14 / eer			IC METROHM_240531A	: 26	R195393
Hardness as CaCO3	166	mg/L		1	1	A2340 B	06/04/24 16:00 / SR			CALC_240605A	: 729	R195490
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.01	E353.2	06/13/24 15:19 / JAR			SEAL AA500_240613A	: 94	R195761
Nitrogen, Total	0.19	mg/L		0.05	0.02	A4500 N-C	06/04/24 13:09 / JAR	06/03/24 15:24	A4500 N-C	FIA203-HE_240604A	: 40	72116
Phosphorus, Total as P	0.049	mg/L		0.003	0.001	E365.1	06/08/24 14:33 / JAR	06/06/24 07:36	E365.1	SEAL AA500_240608A	: 125	72155
METALS, DISSOLVED												
Arsenic	0.009	mg/L		0.001	0.0002	E200.8	06/08/24 04:33 / dck			ICPMS205-H_240607A	: 161	R195570
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	06/08/24 04:33 / dck			ICPMS205-H_240607A	: 161	R195570
Copper	0.002	mg/L		0.001	0.0001	E200.8	06/08/24 04:33 / dck			ICPMS205-H_240607A	: 161	R195570
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	06/08/24 04:33 / dck			ICPMS205-H_240607A	: 161	R195570
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	06/08/24 04:33 / dck			ICPMS205-H_240607A	: 161	R195570
METALS, TOTAL RECOVERABLE												
Arsenic	0.011	mg/L		0.001	0.0001	E200.8	06/08/24 04:38 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	: 162	72078
Cadmium	0.00004	mg/L		0.00003	0.00002	E200.8	06/08/24 04:38 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	: 162	72078
Calcium	50	mg/L		1	0.1	E200.7	06/04/24 16:00 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B	: 46	72078
Copper	0.009	mg/L		0.001	0.0003	E200.8	06/08/24 04:38 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	: 162	72078
Lead	0.0010	mg/L		0.0003	0.0001	E200.8	06/08/24 04:38 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	: 162	72078
Magnesium	10	mg/L		1	0.05	E200.7	06/04/24 16:00 / slj	06/03/24 08:34	E200.2	ICP2-HE_240604B	: 46	72078
Potassium	3	mg/L		1	0.1	E200.7	06/05/24 11:23 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A	: 46	72078
Sodium	13	mg/L		1	0.05	E200.7	06/05/24 11:23 / slj	06/03/24 08:34	E200.2	ICP2-HE_240605A	: 46	72078
Zinc	0.007	mg/L	J	0.008	0.001	E200.8	06/08/24 04:38 / dck	06/03/24 08:34	E200.2	ICPMS205-H_240607A	: 162	72078

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: WSC-SBC
Project: CFROU Monitoring
Matrix: Surface Water

Lab ID: H24050895-008
Collection Date: 05/29/24 14:50
DateReceived: 05/31/24
Report Date: 06/27/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	18	mg/L		2	0.3	A2540 D	05/31/24 14:12 / dpw			:u-124 (14410200)_240531A	30	TSS20240531A
INORGANICS												
Alkalinity, Total as CaCO3	96	mg/L		4	2	A2320 B	06/03/24 21:08 / dpw			PHSC_101-H_240603A	182	R195382
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	06/03/24 21:08 / dpw			PHSC_101-H_240603A	182	R195382
Chloride	0.7	mg/L	J	1	0.02	E300.0	05/31/24 17:28 / eer			IC METROHM_240531A	27	R195393
Sulfate	18	mg/L		1	0.03	E300.0	05/31/24 17:28 / eer			IC METROHM_240531A	27	R195393
Hardness as CaCO3	115	mg/L		1	1	A2340 B	06/08/24 04:43 / SR			CALC_240612B	476	R195693
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.01	E353.2	06/13/24 15:20 / JAR			SEAL AA500_240613A	95	R195761
Nitrogen, Total	0.1	mg/L		0.05	0.02	A4500 N-C	06/04/24 13:52 / JAR	06/03/24 15:24	A4500 N-C	FIA203-HE_240604A	73	72116
Phosphorus, Total as P	0.020	mg/L		0.003	0.001	E365.1	06/08/24 14:34 / JAR	06/06/24 07:36	E365.1	SEAL AA500_240608A	126	72155
METALS, DISSOLVED												
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	06/08/24 04:43 / dck			ICPMS205-H_240607A	163	R195570
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	06/08/24 04:43 / dck			ICPMS205-H_240607A	163	R195570
Copper	0.002	mg/L		0.001	0.0001	E200.8	06/08/24 04:43 / dck			ICPMS205-H_240607A	163	R195570
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/08/24 04:43 / dck			ICPMS205-H_240607A	163	R195570
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	06/08/24 04:43 / dck			ICPMS205-H_240607A	163	R195570
METALS, TOTAL RECOVERABLE												
Arsenic	0.005	mg/L		0.001	0.0001	E200.8	06/08/24 04:47 / dck	06/04/24 08:35	E200.2	ICPMS205-H_240607A	164	72126
Cadmium	0.00005	mg/L		0.00003	0.00002	E200.8	06/08/24 04:47 / dck	06/04/24 08:35	E200.2	ICPMS205-H_240607A	164	72126
Calcium	38	mg/L		1	0.1	E200.7	06/07/24 14:53 / slj	06/04/24 08:35	E200.2	ICP2-HE_240607A	105	72126
Copper	0.018	mg/L		0.001	0.0003	E200.8	06/08/24 04:47 / dck	06/04/24 08:35	E200.2	ICPMS205-H_240607A	164	72126
Lead	0.0018	mg/L		0.0003	0.0001	E200.8	06/08/24 04:47 / dck	06/04/24 08:35	E200.2	ICPMS205-H_240607A	164	72126
Magnesium	7	mg/L		1	0.05	E200.7	06/07/24 14:53 / slj	06/04/24 08:35	E200.2	ICP2-HE_240607A	105	72126
Potassium	1	mg/L		1	0.1	E200.7	06/07/24 14:53 / slj	06/04/24 08:35	E200.2	ICP2-HE_240607A	105	72126
Sodium	3	mg/L		1	0.05	E200.7	06/07/24 14:53 / slj	06/04/24 08:35	E200.2	ICP2-HE_240607A	105	72126
Zinc	0.010	mg/L		0.008	0.001	E200.8	06/08/24 04:47 / dck	06/04/24 08:35	E200.2	ICPMS205-H_240607A	164	72126

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: WSC-SBC Duplicate
Project: CFROU Monitoring
Matrix: Surface Water

Lab ID: H24050895-009
Collection Date: 05/29/24 14:50
DateReceived: 05/31/24
Report Date: 06/27/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	20	mg/L		2	0.3	A2540 D	05/31/24 14:13 / dpw			:u-124 (14410200)_240531A : 31		TSS20240531A
INORGANICS												
Alkalinity, Total as CaCO3	96	mg/L		4	2	A2320 B	06/03/24 21:15 / dpw			PHSC_101-H_240603A : 184		R195382
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	06/03/24 21:15 / dpw			PHSC_101-H_240603A : 184		R195382
Chloride	0.7	mg/L	J	1	0.02	E300.0	05/31/24 17:43 / eer			IC METROHM_240531A : 28		R195393
Sulfate	18	mg/L		1	0.03	E300.0	05/31/24 17:43 / eer			IC METROHM_240531A : 28		R195393
Hardness as CaCO3	115	mg/L		1	1	A2340 B	06/08/24 05:35 / SR			CALC_240612B : 487		R195693
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.01	E353.2	06/13/24 15:22 / JAR			SEAL AA500_240613A : 96		R195761
Nitrogen, Total	0.09	mg/L		0.05	0.02	A4500 N-C	06/04/24 13:53 / JAR	06/03/24 15:24	A4500 N-C	FIA203-HE_240604A : 74		72116
Phosphorus, Total as P	0.017	mg/L		0.003	0.001	E365.1	06/08/24 14:38 / JAR	06/06/24 07:36	E365.1	SEAL AA500_240608A : 130		72155
METALS, DISSOLVED												
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	06/08/24 05:35 / dck			ICPMS205-H_240607A : 174		R195570
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	06/08/24 05:35 / dck			ICPMS205-H_240607A : 174		R195570
Copper	0.002	mg/L		0.001	0.0001	E200.8	06/08/24 05:35 / dck			ICPMS205-H_240607A : 174		R195570
Lead	ND	mg/L		0.0003	0.0001	E200.8	06/08/24 05:35 / dck			ICPMS205-H_240607A : 174		R195570
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	06/08/24 05:35 / dck			ICPMS205-H_240607A : 174		R195570
METALS, TOTAL RECOVERABLE												
Arsenic	0.005	mg/L		0.001	0.0001	E200.8	06/08/24 05:40 / dck	06/04/24 08:36	E200.2	ICPMS205-H_240607A : 175		72126
Cadmium	0.00006	mg/L		0.00003	0.00003	E200.8	06/08/24 05:40 / dck	06/04/24 08:36	E200.2	ICPMS205-H_240607A : 175		72126
Calcium	38	mg/L		1	0.1	E200.7	06/07/24 15:12 / slj	06/04/24 08:36	E200.2	ICP2-HE_240607A : 110		72126
Copper	0.023	mg/L		0.001	0.0003	E200.8	06/08/24 05:40 / dck	06/04/24 08:36	E200.2	ICPMS205-H_240607A : 175		72126
Lead	0.0022	mg/L		0.0003	0.0001	E200.8	06/08/24 05:40 / dck	06/04/24 08:36	E200.2	ICPMS205-H_240607A : 175		72126
Magnesium	7	mg/L		1	0.05	E200.7	06/07/24 15:12 / slj	06/04/24 08:36	E200.2	ICP2-HE_240607A : 110		72126
Potassium	1	mg/L		1	0.1	E200.7	06/07/24 15:12 / slj	06/04/24 08:36	E200.2	ICP2-HE_240607A : 110		72126
Sodium	3	mg/L		1	0.05	E200.7	06/07/24 15:12 / slj	06/04/24 08:36	E200.2	ICP2-HE_240607A : 110		72126
Zinc	0.010	mg/L		0.008	0.001	E200.8	06/08/24 05:40 / dck	06/04/24 08:36	E200.2	ICPMS205-H_240607A : 175		72126

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-25
Project: CFROU Monitoring
Matrix: Surface Water

Lab ID: H24050895-010
Collection Date: 05/29/24 15:45
DateReceived: 05/31/24
Report Date: 06/27/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	7	mg/L		2	0.3	A2540 D	05/31/24 14:13 / dpw			:u-124 (14410200)_240531A	32	TSS20240531A
INORGANICS												
Alkalinity, Total as CaCO3	89	mg/L		4	2	A2320 B	06/03/24 21:22 / dpw			PHSC_101-H_240603A	186	R195382
Bicarbonate as HCO3	110	mg/L		4	3	A2320 B	06/03/24 21:22 / dpw			PHSC_101-H_240603A	186	R195382
Chloride	19	mg/L		1	0.02	E300.0	05/31/24 17:57 / eer			IC METROHM_240531A	29	R195393
Sulfate	141	mg/L		1	0.03	E300.0	05/31/24 17:57 / eer			IC METROHM_240531A	29	R195393
Hardness as CaCO3	226	mg/L		1	1	A2340 B	06/07/24 15:24 / SR			CALC_240612B	80	R195693
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.02	E350.1	06/07/24 13:47 / JAR			FIA203-HE_240607A	37	R195583
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.01	E353.2	06/13/24 15:23 / JAR			SEAL AA500_240613A	97	R195761
Nitrogen, Total	0.33	mg/L		0.05	0.02	A4500 N-C	06/04/24 13:54 / JAR	06/03/24 15:24	A4500 N-C	FIA203-HE_240604A	75	72116
Phosphorus, Total as P	0.082	mg/L		0.003	0.001	E365.1	06/08/24 14:39 / JAR	06/06/24 07:36	E365.1	SEAL AA500_240608A	131	72155
METALS, DISSOLVED												
Arsenic	0.017	mg/L		0.001	0.0002	E200.8	06/08/24 05:44 / dck			ICPMS205-H_240607A	176	R195570
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	06/08/24 05:44 / dck			ICPMS205-H_240607A	176	R195570
Copper	0.002	mg/L		0.001	0.0001	E200.8	06/08/24 05:44 / dck			ICPMS205-H_240607A	176	R195570
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	06/08/24 05:44 / dck			ICPMS205-H_240607A	176	R195570
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	06/08/24 05:44 / dck			ICPMS205-H_240607A	176	R195570
METALS, TOTAL RECOVERABLE												
Arsenic	0.019	mg/L		0.001	0.0001	E200.8	06/08/24 05:49 / dck	06/04/24 08:36	E200.2	ICPMS205-H_240607A	177	72126
Cadmium	0.00006	mg/L		0.00003	0.00002	E200.8	06/08/24 05:49 / dck	06/04/24 08:36	E200.2	ICPMS205-H_240607A	177	72126
Calcium	71	mg/L		1	0.1	E200.7	06/07/24 15:24 / slj	06/04/24 08:36	E200.2	ICP2-HE_240607A	113	72126
Copper	0.004	mg/L		0.001	0.0003	E200.8	06/08/24 05:49 / dck	06/04/24 08:36	E200.2	ICPMS205-H_240607A	177	72126
Lead	0.0008	mg/L		0.0003	0.0001	E200.8	06/08/24 05:49 / dck	06/04/24 08:36	E200.2	ICPMS205-H_240607A	177	72126
Magnesium	11	mg/L		1	0.05	E200.7	06/07/24 15:24 / slj	06/04/24 08:36	E200.2	ICP2-HE_240607A	113	72126
Potassium	5	mg/L		1	0.1	E200.7	06/07/24 15:24 / slj	06/04/24 08:36	E200.2	ICP2-HE_240607A	113	72126
Sodium	22	mg/L		1	0.05	E200.7	06/07/24 15:24 / slj	06/04/24 08:36	E200.2	ICP2-HE_240607A	113	72126
Zinc	0.006	mg/L	J	0.008	0.001	E200.8	06/08/24 05:49 / dck	06/04/24 08:36	E200.2	ICPMS205-H_240607A	177	72126

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 42595
Date: *27-Jun-24*

Run ID :Run Order: **SEAL AA500_240626A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **06/26/24 13:45** Units: **mg/L** **Prep Info:** Prep Date: **8/7/2018** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.248	0.010	0.25	0	**99**	90	110				

Associated samples: **H24050895-004E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 55893
Date: *27-Jun-24*

Run ID :Run Order: **SEAL AA500_240608A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **06/08/24 12:24** Units: **mg/L** **Prep Info:** Prep Date: **4/16/2021** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.252	0.010	0.25	0	101	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240608A: 108** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **06/08/24 14:12** Units: **mg/L** **Prep Info:** Prep Date: **4/16/2021** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.0987	0.010	0.1	0	99	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240608A: 127** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **06/08/24 14:35** Units: **mg/L** **Prep Info:** Prep Date: **4/16/2021** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.0980	0.010	0.1	0	98	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 62278
Date: *27-Jun-24*

Run ID :Run Order: **FIA203-HE_240604A: 29** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **06/04/24 12:56** Units: **mg/L** **Prep Info:** Prep Date: **7/15/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.461	0.10	0.5	0	92	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **FIA203-HE_240604A: 41** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **06/04/24 13:10** Units: **mg/L** **Prep Info:** Prep Date: **7/15/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.459	0.10	0.5	0	92	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **FIA203-HE_240604A: 72** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **06/04/24 13:51** Units: **mg/L** **Prep Info:** Prep Date: **7/15/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.498	0.10	0.5	0	100	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72078
Date: *27-Jun-24*

Run ID :Run Order: **ICP2-HE_240604B: 16** SampType: **Method Blank** Lab ID: **MB-72078** Method: **E200.7**

Analysis Date: **06/04/24 13:58** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.1									
Magnesium	ND	0.05									
Potassium	ND	0.1									
Sodium	0.07	0.05									

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240604B: 17** SampType: **Laboratory Control Sample** Lab ID: **LCS-72078** Method: **E200.7**

Analysis Date: **06/04/24 14:01** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.0	1.0	25	0	100	85	115				
Magnesium	25.2	1.0	25	0	101	85	115				
Potassium	26.6	1.0	25	0	106	85	115				
Sodium	26.0	1.0	25	0	104	85	115				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240604B: 39** SampType: **Sample Matrix Spike** Lab ID: **H24050895-003DMS3** Method: **E200.7**

Analysis Date: **06/04/24 15:33** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	85.9	1.0	25	62.44	94	70	130				
Magnesium	37.4	1.0	25	12.78	99	70	130				
Potassium	30.3	1.0	25	3.677	106	70	130				
Sodium	41.0	1.0	25	14.68	105	70	130				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240604B: 40** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-003DMSD3** Method: **E200.7**

Analysis Date: **06/04/24 15:37** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	87.3	1.0	25	62.44	99	70	130	85.87	1.6	20	
Magnesium	38.2	1.0	25	12.78	102	70	130	37.42	2.0	20	
Potassium	30.7	1.0	25	3.677	108	70	130	30.3	1.5	20	

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: 72078** **Date:** *27-Jun-24*

Run ID :Run Order: **ICP2-HE_240604B: 40** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-003DMSD3** Method: **E200.7**

Analysis Date: **06/04/24 15:37** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	41.5	1.0	25	14.68	107	70	130	41.03	1.0	20	

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240605A: 22** SampType: **Method Blank** Lab ID: **MB-72078** Method: **E200.7**

Analysis Date: **06/05/24 09:51** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.1									
Magnesium	ND	0.05									
Potassium	0.1	0.1									
Sodium	0.06	0.05									

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240605A: 23** SampType: **Laboratory Control Sample** Lab ID: **LCS-72078** Method: **E200.7**

Analysis Date: **06/05/24 09:55** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.2	1.0	25	0	97	85	115				
Magnesium	25.6	1.0	25	0	102	85	115				
Potassium	27.7	1.0	25	0	111	85	115				
Sodium	26.8	1.0	25	0	107	85	115				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240605A: 39** SampType: **Sample Matrix Spike** Lab ID: **H24050895-003DMS3** Method: **E200.7**

Analysis Date: **06/05/24 10:56** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	79.5	1.0	25	58.05	86	70	130				
Magnesium	38.3	1.0	25	13.16	101	70	130				
Potassium	31.6	1.0	25	3.861	111	70	130				
Sodium	43.4	1.0	25	15.46	112	70	130				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72078
Date: *27-Jun-24*

Run ID :Run Order: **ICP2-HE_240605A: 42** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-003DMSD3** Method: **E200.7**

Analysis Date: **06/05/24 11:07** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	79.7	1.0	25	58.05	**86**	70	130	79.51	**0.2**	20	
Magnesium	38.4	1.0	25	13.16	**101**	70	130	38.34	**0.1**	20	
Potassium	31.3	1.0	25	3.861	**110**	70	130	31.58	**0.9**	20	
Sodium	42.9	1.0	25	15.46	**110**	70	130	43.43	**1.3**	20	

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72078
Date: *27-Jun-24*

Run ID :Run Order: **ICPMS205-H_240607A: 96** SampType: **Method Blank** Lab ID: **MB-72078** Method: **E200.8**

Analysis Date: **06/07/24 23:23** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0001									
Cadmium	ND	0.00003									
Copper	ND	0.0003									
Lead	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICPMS205-H_240607A: 102** SampType: **Laboratory Control Sample** Lab ID: **LCS-72078** Method: **E200.8**

Analysis Date: **06/07/24 23:52** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.499	0.0010	0.5	0	**100**	85	115				
Cadmium	0.256	0.0010	0.25	0	**102**	85	115				
Copper	0.495	0.0050	0.5	0	**99**	85	115				
Lead	0.519	0.0010	0.5	0	**104**	85	115				
Zinc	0.492	0.010	0.5	0	**98**	85	115				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICPMS205-H_240607A: 151** SampType: **Sample Matrix Spike** Lab ID: **H24050895-003DMS3** Method: **E200.8**

Analysis Date: **06/08/24 03:46** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.514	0.0010	0.5	0.01189	**100**	70	130				
Cadmium	0.253	0.0010	0.25	0.00005939	**101**	70	130				
Copper	0.488	0.0050	0.5	0.01061	**96**	70	130				
Lead	0.523	0.0010	0.5	0.0009425	**104**	70	130				
Zinc	0.486	0.010	0.5	0.009947	**95**	70	130				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72078
Date: *27-Jun-24*

Run ID :Run Order: **ICPMS205-H_240607A: 152** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-003DMSD3** Method: **E200.8**

Analysis Date: **06/08/24 03:50** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.519	0.0010	0.5	0.01189	**101**	70	130	0.5142	**1.0**	20	
Cadmium	0.255	0.0010	0.25	0.00005939	**102**	70	130	0.253	**0.7**	20	
Copper	0.500	0.0050	0.5	0.01061	**98**	70	130	0.4884	**2.4**	20	
Lead	0.523	0.0010	0.5	0.0009425	**104**	70	130	0.5227	**0.1**	20	
Zinc	0.494	0.010	0.5	0.009947	**97**	70	130	0.4859	**1.6**	20	

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: 72116** **Date:** *27-Jun-24*

Run ID :Run Order: **FIA203-HE_240604A: 11** SampType: **Method Blank** Lab ID: **MB-72116** Method: **A4500 N-C**

Analysis Date: **06/04/24 12:35** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **FIA203-HE_240604A: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-72116** Method: **A4500 N-C**

Analysis Date: **06/04/24 12:37** Units: **mg/L** **Prep Info:** Prep Date: **6/3/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.00	0.10	1	0	**100**	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **FIA203-HE_240604A: 15** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-72116** Method: **A4500 N-C**

Analysis Date: **06/04/24 12:39** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.968	0.10	1	0	**97**	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **FIA203-HE_240604A: 25** SampType: **Sample Matrix Spike** Lab ID: **H24050861-001Dms** Method: **A4500 N-C**

Analysis Date: **06/04/24 12:51** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.20	0.10	1	0.219	**98**	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **FIA203-HE_240604A: 26** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050861-001Dmsd** Method: **A4500 N-C**

Analysis Date: **06/04/24 12:53** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.18	0.10	1	0.219	**96**	90	110	1.197	**1.5**	20	

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: 72116** **Date:** *27-Jun-24*

Run ID :Run Order: **FIA203-HE_240604A: 26** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050861-001Dmsd** Method: **A4500 N-C**

Analysis Date: **06/04/24 12:53** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **FIA203-HE_240604A: 77** SampType: **Sample Matrix Spike** Lab ID: **H24050896-001Bms** Method: **A4500 N-C**

Analysis Date: **06/04/24 13:56** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.09	0.10	1	0.037	**105**	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **FIA203-HE_240604A: 78** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050896-001Bmsd** Method: **A4500 N-C**

Analysis Date: **06/04/24 13:58** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.07	0.10	1	0.037	**103**	90	110	1.085	**1.5**	20	

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72126
Date: *27-Jun-24*

Run ID :Run Order: **ICP2-HE_240607A: 103** SampType: **Method Blank** Lab ID: **MB-72126** Method: **E200.7**

Analysis Date: **06/07/24 14:46** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.1									
Magnesium	ND	0.05									
Potassium	ND	0.1									
Sodium	0.06	0.05									

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

Run ID :Run Order: **ICP2-HE_240607A: 104** SampType: **Laboratory Control Sample** Lab ID: **LCS-72126** Method: **E200.7**

Analysis Date: **06/07/24 14:50** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.9	1.0	25	0	108	85	115				
Magnesium	23.4	1.0	25	0	94	85	115				
Potassium	26.8	1.0	25	0	107	85	115				
Sodium	26.7	1.0	25	0	107	85	115				

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

Run ID :Run Order: **ICP2-HE_240607A: 108** SampType: **Sample Matrix Spike** Lab ID: **H24050895-008DMS3** Method: **E200.7**

Analysis Date: **06/07/24 15:05** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	64.9	1.0	25	37.75	109	70	130				
Magnesium	30.7	1.0	25	6.681	96	70	130				
Potassium	27.6	1.0	25	1.082	106	70	130				
Sodium	29.2	1.0	25	2.758	106	70	130				

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

Run ID :Run Order: **ICP2-HE_240607A: 109** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-008DMSD3** Method: **E200.7**

Analysis Date: **06/07/24 15:08** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	63.7	1.0	25	37.75	104	70	130	64.91	1.9	20	
Magnesium	29.8	1.0	25	6.681	92	70	130	30.65	2.8	20	
Potassium	28.1	1.0	25	1.082	108	70	130	27.59	1.8	20	

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72126
Date: *27-Jun-24*

Run ID :Run Order: **ICP2-HE_240607A: 109** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-008DMSD3** Method: **E200.7**

Analysis Date: **06/07/24 15:08** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **E200.2**

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	29.7	1.0	25	2.758	**108**	70	130	29.22	**1.5**	20	

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72126
Date: *27-Jun-24*

Run ID :Run Order: **ICPMS205-H_240607A: 156** SampType: **Method Blank** Lab ID: **MB-72126** Method: **E200.8**

Analysis Date: **06/08/24 04:09** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0001									
Cadmium	ND	0.00003									
Copper	ND	0.0003									
Lead	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

Run ID :Run Order: **ICPMS205-H_240607A: 165** SampType: **Laboratory Control Sample** Lab ID: **LCS-72126** Method: **E200.8**

Analysis Date: **06/08/24 04:52** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.499	0.0010	0.5	0	**100**	85	115				
Cadmium	0.257	0.0010	0.25	0	**103**	85	115				
Copper	0.496	0.0050	0.5	0	**99**	85	115				
Lead	0.521	0.0010	0.5	0	**104**	85	115				
Zinc	0.485	0.010	0.5	0	**97**	85	115				

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

Run ID :Run Order: **ICPMS205-H_240607A: 166** SampType: **Sample Matrix Spike** Lab ID: **H24050895-008DMS3** Method: **E200.8**

Analysis Date: **06/08/24 04:57** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.522	0.0010	0.5	0.004804	**103**	70	130				
Cadmium	0.257	0.0010	0.25	0.00005121	**103**	70	130				
Copper	0.517	0.0050	0.5	0.01834	**100**	70	130				
Lead	0.528	0.0010	0.5	0.001775	**105**	70	130				
Zinc	0.505	0.010	0.5	0.01016	**99**	70	130				

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72126
Date: *27-Jun-24*

Run ID :Run Order: **ICPMS205-H_240607A: 167** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-008DMSD3** Method: **E200.8**

Analysis Date: **06/08/24 05:01** Units: **mg/L** **Prep Info:** Prep Date: **6/4/2024** Prep Method: **E200.2**

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.500	0.0010	0.5	0.004804	**99**	70	130	0.5223	**4.4**	20	
Cadmium	0.254	0.0010	0.25	0.00005121	**102**	70	130	0.2573	**1.1**	20	
Copper	0.500	0.0050	0.5	0.01834	**96**	70	130	0.517	**3.4**	20	
Lead	0.518	0.0010	0.5	0.001775	**103**	70	130	0.528	**2.0**	20	
Zinc	0.488	0.010	0.5	0.01016	**95**	70	130	0.5049	**3.5**	20	

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72154
Date: *27-Jun-24*

Run ID :Run Order: **SEAL AA500_240608A: 17** SampType: **Method Blank** Lab ID: **MB-72154** Method: **E365.1**
Analysis Date: **06/08/24 12:27** Units: **mg/L** **Prep Info:** Prep Date: **6/6/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.001									

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E**

Run ID :Run Order: **SEAL AA500_240608A: 23** SampType: **Laboratory Control Sample** Lab ID: **LCS-72154** Method: **E365.1**
Analysis Date: **06/08/24 12:34** Units: **mg/L** **Prep Info:** Prep Date: **6/6/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.418	0.010	0.4	0	**104**	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E**

Run ID :Run Order: **SEAL AA500_240608A: 116** SampType: **Sample Matrix Spike** Lab ID: **H24050895-003EMS** Method: **E365.1**
Analysis Date: **06/08/24 14:23** Units: **mg/L** **Prep Info:** Prep Date: **6/6/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.244	0.010	0.2	0.0298	**107**	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E**

Run ID :Run Order: **SEAL AA500_240608A: 117** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-003EMSD** Method: **E365.1**
Analysis Date: **06/08/24 14:24** Units: **mg/L** **Prep Info:** Prep Date: **6/6/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.246	0.010	0.2	0.0298	**108**	90	110	0.2435	**0.9**	20	

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72155
Date: *27-Jun-24*

Run ID :Run Order: **SEAL AA500_240608A: 18** SampType: **Method Blank** Lab ID: **MB-72155** Method: **E365.1**
Analysis Date: **06/08/24 12:28** Units: **mg/L** **Prep Info:** Prep Date: **6/6/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.001									

Associated samples: **H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240608A: 24** SampType: **Laboratory Control Sample** Lab ID: **LCS-72155** Method: **E365.1**
Analysis Date: **06/08/24 12:35** Units: **mg/L** **Prep Info:** Prep Date: **6/6/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.416	0.010	0.4	0	104	90	110				

Associated samples: **H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240608A: 120** SampType: **Sample Matrix Spike** Lab ID: **H24050895-004EMS** Method: **E365.1**
Analysis Date: **06/08/24 14:28** Units: **mg/L** **Prep Info:** Prep Date: **6/6/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.211	0.010	0.2	0.0063	102	90	110				

Associated samples: **H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240608A: 121** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-004EMSD** Method: **E365.1**
Analysis Date: **06/08/24 14:29** Units: **mg/L** **Prep Info:** Prep Date: **6/6/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.210	0.010	0.2	0.0063	102	90	110	0.2109	0.5	20	

Associated samples: **H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: 72505
Date: *27-Jun-24*

Run ID :Run Order: **SEAL AA500_240626A: 16** SampType: **Method Blank** Lab ID: **MB-72505** Method: **E365.1**
Analysis Date: **06/26/24 13:47** Units: **mg/L** **Prep Info:** Prep Date: **6/25/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.001									

Associated samples: **H24050895-004E**

Run ID :Run Order: **SEAL AA500_240626A: 20** SampType: **Laboratory Control Sample** Lab ID: **LCS-72505** Method: **E365.1**
Analysis Date: **06/26/24 13:51** Units: **mg/L** **Prep Info:** Prep Date: **6/25/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.415	0.010	0.4	0	**104**	90	110				

Associated samples: **H24050895-004E**

Run ID :Run Order: **SEAL AA500_240626A: 26** SampType: **Sample Matrix Spike** Lab ID: **H24050895-004Ems** Method: **E365.1**
Analysis Date: **06/26/24 13:58** Units: **mg/L** **Prep Info:** Prep Date: **6/6/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.207	0.010	0.2	0	**103**	90	110				

Associated samples: **H24050895-004E**

Run ID :Run Order: **SEAL AA500_240626A: 27** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-004Emsd** Method: **E365.1**
Analysis Date: **06/26/24 13:59** Units: **mg/L** **Prep Info:** Prep Date: **6/25/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.209	0.010	0.2	0	**105**	90	110	0.2067	**1.2**	20	

Associated samples: **H24050895-004E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: R195382
Date: *27-Jun-24*

Run ID :Run Order: **PHSC_101-H_240603A: 6** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **06/03/24 09:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **PHSC_101-H_240603A: 7** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **06/03/24 09:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	610	4.0	600	0	**101**	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **PHSC_101-H_240603A: 188** SampType: **Sample Duplicate** Lab ID: **H24050895-010ADUP** Method: **A2320 B**

Analysis Date: **06/03/24 21:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	91	4.0		0				88.65	**2.1**	10	
Bicarbonate as HCO3	110	4.0		0				105.6	**1.9**	10	

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: R195393
Date: *27-Jun-24*

Run ID :Run Order: **IC METROHM_240531A: 2** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **05/31/24 11:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.03									

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **IC METROHM_240531A: 3** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **05/31/24 11:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98.5	1.0	100	0	99	90	110				
Sulfate	394	1.0	400	0	99	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **IC METROHM_240531A: 4** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **05/31/24 11:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23.9	1.0	25	0	96	90	110				
Sulfate	95.9	1.0	100	0	96	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **IC METROHM_240531A: 6** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **05/31/24 12:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	48.9	1.0	50	0	98	90	110				
Sulfate	190	1.0	200	0	95	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: R195393** **Date:** *27-Jun-24*

Run ID :Run Order: **IC METROHM_240531A: 18** SampType: **Sample Matrix Spike** Lab ID: **H24050895-001AMS** Method: **E300.0**

Analysis Date: **05/31/24 15:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	37.1	1.0	25	11.77	101	90	110				
Sulfate	185	1.0	100	88.3	97	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **IC METROHM_240531A: 19** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-001AMSD** Method: **E300.0**

Analysis Date: **05/31/24 15:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	37.1	1.0	25	11.77	101	90	110	37.08	0	20	
Sulfate	187	1.0	100	88.3	98	90	110	185	0.9	20	

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **IC METROHM_240531A: 20** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **05/31/24 15:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.0	1.0	50	0	98	90	110				
Sulfate	192	1.0	200	0	96	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

Run ID :Run Order: **IC METROHM_240531A: 32** SampType: **Sample Matrix Spike** Lab ID: **H24050895-002AMS** Method: **E300.0**

Analysis Date: **05/31/24 18:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	36.6	1.0	25	11.15	102	90	110				
Sulfate	195	1.0	100	92.32	103	90	110				

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: R195393
Date: *27-Jun-24*

Run ID :Run Order: **IC METROHM_240531A: 33** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-002AMSD** Method: **E300.0**

Analysis Date: **05/31/24 18:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	36.4	1.0	25	11.15	**101**	90	110	36.63	**0.6**	20	
Sulfate	196	1.0	100	92.32	**104**	90	110	195.5	**0.4**	20	

Associated samples: **H24050895-001A, H24050895-002A, H24050895-003A, H24050895-004A, H24050895-005A, H24050895-006A, H24050895-007A, H24050895-008A, H24050895-009A, H24050895-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: R195466** **Date:** *27-Jun-24*

Run ID :Run Order: **ICP2-HE_240604B: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **06/04/24 13:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	38.4	1.0	40	0	96	95	105				
Magnesium	38.8	1.0	40	0	97	95	105				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240604B: 8** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **06/04/24 13:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.7	1.0	25	0	99	95	105				
Magnesium	24.9	1.0	25	0	100	95	105				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240604B: 30** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **06/04/24 14:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.2	1.0	25	0	97	90	110				
Magnesium	24.4	1.0	25	0	97	90	110				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240604B: 42** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **06/04/24 15:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	23.8	1.0	25	0	95	90	110				
Magnesium	25.1	1.0	25	0	100	90	110				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: R195487** **Date:** *27-Jun-24*

Run ID :Run Order: **ICP2-HE_240605A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **06/05/24 08:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	41.7	1.0	40	0	104	95	105				
Sodium	41.5	1.0	40	0	104	95	105				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240605A: 8** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **06/05/24 08:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	25.7	1.0	25	0	103	95	105				
Sodium	25.0	1.0	25	0	100	95	105				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240605A: 28** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **06/05/24 10:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	26.6	1.0	25	0	106	90	110				
Sodium	25.8	1.0	25	0	103	90	110				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

Run ID :Run Order: **ICP2-HE_240605A: 40** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **06/05/24 11:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	27.1	1.0	25	0	108	90	110				
Sodium	26.6	1.0	25	0	107	90	110				

Associated samples: **H24050895-001D, H24050895-002D, H24050895-003D, H24050895-004D, H24050895-005D, H24050895-006D, H24050895-007D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: R195560
Date: *27-Jun-24*

Run ID :Run Order: **ICP2-HE_240607A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **06/07/24 08:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	39.4	1.0	40	0	98	95	105				
Magnesium	39.5	1.0	40	0	99	95	105				
Potassium	40.1	1.0	40	0	100	95	105				
Sodium	40.2	1.0	40	0	100	95	105				

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

Run ID :Run Order: **ICP2-HE_240607A: 7** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **06/07/24 08:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.7	1.0	25	0	99	95	105				
Magnesium	24.6	1.0	25	0	98	95	105				
Potassium	25.4	1.0	25	0	102	95	105				
Sodium	24.7	1.0	25	0	99	95	105				

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

Run ID :Run Order: **ICP2-HE_240607A: 99** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **06/07/24 14:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	27.2	1.0	25	0	109	90	110				
Magnesium	23.7	1.0	25	0	95	90	110				
Potassium	26.3	1.0	25	0	105	90	110				
Sodium	26.4	1.0	25	0	106	90	110				

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

Run ID :Run Order: **ICP2-HE_240607A: 111** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **06/07/24 15:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	27.3	1.0	25	0	109	90	110				
Magnesium	23.6	1.0	25	0	95	90	110				
Potassium	27.1	1.0	25	0	108	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H24050895
BatchID: R195560
Date: *27-Jun-24*

Run ID :Run Order: **ICP2-HE_240607A: 111** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**
Analysis Date: **06/07/24 15:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	27.0	1.0	25	0	108	90	110				

Associated samples: **H24050895-008D, H24050895-009D, H24050895-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: R195570** **Date:** *27-Jun-24*

Run ID :Run Order: **ICPMS205-H_240607A: 66** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **06/07/24 18:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0601	0.0050	0.06	0	100	90	110				
Cadmium	0.0307	0.0010	0.03	0	102	90	110				
Copper	0.0610	0.010	0.06	0	102	90	110				
Lead	0.0604	0.010	0.06	0	101	90	110				
Zinc	0.0634	0.010	0.06	0	106	90	110				

Associated samples: **H24050895-001C, H24050895-001D, H24050895-002C, H24050895-002D, H24050895-003C, H24050895-003D, H24050895-004C, H24050895-004D, H24050895-005C, H24050895-005D, H24050895-006C, H24050895-006D, H24050895-007C, H24050895-007D, H24050895-008C, H24050895-008D, H24050895-009C, H24050895-009D, H24050895-010C, H24050895-010D**

Run ID :Run Order: **ICPMS205-H_240607A: 92** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **06/07/24 23:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0002									
Cadmium	ND	0.00002									
Copper	ND	0.0001									
Lead	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H24050895-001C, H24050895-002C, H24050895-003C, H24050895-004C, H24050895-005C, H24050895-006C, H24050895-007C, H24050895-008C, H24050895-009C, H24050895-010C**

Run ID :Run Order: **ICPMS205-H_240607A: 93** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **06/07/24 23:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0507	0.0050	0.05	0	101	85	115				
Cadmium	0.0503	0.0010	0.05	0	101	85	115				
Copper	0.0507	0.010	0.05	0	101	85	115				
Lead	0.0509	0.010	0.05	0	102	85	115				
Zinc	0.0517	0.010	0.05	0	103	85	115				

Associated samples: **H24050895-001C, H24050895-002C, H24050895-003C, H24050895-004C, H24050895-005C, H24050895-006C, H24050895-007C, H24050895-008C, H24050895-009C, H24050895-010C**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: R195570
Date: *27-Jun-24*

Run ID :Run Order: **ICPMS205-H_240607A: 136** SampType: **Sample Matrix Spike** Lab ID: **H24050892-010AMS** Method: **E200.8**

Analysis Date: **06/08/24 02:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0760	0.0010	0.05	0.0247	103	70	130				
Cadmium	0.0504	0.0010	0.05	0	101	70	130				
Copper	0.0498	0.0050	0.05	0	100	70	130				
Lead	0.0520	0.0010	0.05	0	104	70	130				
Zinc	0.0506	0.010	0.05	0	101	70	130				

Associated samples: **H24050895-001C, H24050895-002C, H24050895-003C, H24050895-004C, H24050895-005C, H24050895-006C, H24050895-007C, H24050895-008C, H24050895-009C, H24050895-010C**

Run ID :Run Order: **ICPMS205-H_240607A: 137** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050892-010AMSD** Method: **E200.8**

Analysis Date: **06/08/24 02:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0766	0.0010	0.05	0.0247	104	70	130	0.07603	0.8	20	
Cadmium	0.0510	0.0010	0.05	0	102	70	130	0.0504	1.2	20	
Copper	0.0501	0.0050	0.05	0	100	70	130	0.04978	0.7	20	
Lead	0.0523	0.0010	0.05	0	105	70	130	0.05197	0.6	20	
Zinc	0.0527	0.010	0.05	0	105	70	130	0.0506	4.1	20	

Associated samples: **H24050895-001C, H24050895-002C, H24050895-003C, H24050895-004C, H24050895-005C, H24050895-006C, H24050895-007C, H24050895-008C, H24050895-009C, H24050895-010C**

Run ID :Run Order: **ICPMS205-H_240607A: 139** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/08/24 02:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0500	0.0050	0.05	0	100	90	110				
Cadmium	0.0505	0.0010	0.05	0	101	90	110				
Copper	0.0507	0.010	0.05	0	101	90	110				
Lead	0.0502	0.010	0.05	0	100	90	110				
Zinc	0.0487	0.010	0.05	0	97	90	110				

Associated samples: **H24050895-001C, H24050895-001D, H24050895-002C, H24050895-002D, H24050895-003C, H24050895-003D, H24050895-004C, H24050895-004D, H24050895-005C, H24050895-005D, H24050895-006C, H24050895-006D, H24050895-007C, H24050895-007D, H24050895-008C, H24050895-008D, H24050895-009C, H24050895-009D, H24050895-010C, H24050895-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: R195570** **Date:** *27-Jun-24*

Run ID :Run Order: **ICPMS205-H_240607A: 154** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/08/24 04:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0502	0.0050	0.05	0	100	90	110				
Cadmium	0.0508	0.0010	0.05	0	101	90	110				
Copper	0.0498	0.010	0.05	0	99	90	110				
Lead	0.0504	0.010	0.05	0	101	90	110				
Zinc	0.0490	0.010	0.05	0	98	90	110				

Associated samples: **H24050895-001C, H24050895-001D, H24050895-002C, H24050895-002D, H24050895-003C, H24050895-003D, H24050895-004C, H24050895-004D, H24050895-005C, H24050895-005D, H24050895-006C, H24050895-006D, H24050895-007C, H24050895-007D, H24050895-008C, H24050895-008D, H24050895-009C, H24050895-009D, H24050895-010C, H24050895-010D**

Run ID :Run Order: **ICPMS205-H_240607A: 169** SampType: **Sample Matrix Spike** Lab ID: **H24050895-005CMS** Method: **E200.8**

Analysis Date: **06/08/24 05:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0614	0.0010	0.05	0.01059	102	70	130				
Cadmium	0.0503	0.0010	0.05	0	101	70	130				
Copper	0.0522	0.0050	0.05	0.003306	98	70	130				
Lead	0.0525	0.0010	0.05	0.0001448	105	70	130				
Zinc	0.0534	0.010	0.05	0.002737	101	70	130				

Associated samples: **H24050895-001C, H24050895-002C, H24050895-003C, H24050895-004C, H24050895-005C, H24050895-006C, H24050895-007C, H24050895-008C, H24050895-009C, H24050895-010C**

Run ID :Run Order: **ICPMS205-H_240607A: 170** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-005CMSD** Method: **E200.8**

Analysis Date: **06/08/24 05:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0626	0.0010	0.05	0.01059	104	70	130	0.06139	1.9	20	
Cadmium	0.0511	0.0010	0.05	0	102	70	130	0.05028	1.7	20	
Copper	0.0537	0.0050	0.05	0.003306	101	70	130	0.05221	2.9	20	
Lead	0.0532	0.0010	0.05	0.0001448	106	70	130	0.05249	1.4	20	
Zinc	0.0538	0.010	0.05	0.002737	102	70	130	0.05343	0.7	20	

Associated samples: **H24050895-001C, H24050895-002C, H24050895-003C, H24050895-004C, H24050895-005C, H24050895-006C, H24050895-007C, H24050895-008C, H24050895-009C, H24050895-010C**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: R195570
Date: *27-Jun-24*

Run ID :Run Order: **ICPMS205-H_240607A: 172** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **06/08/24 05:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0507	0.0050	0.05	0	**101**	90	110				
Cadmium	0.0501	0.0010	0.05	0	**100**	90	110				
Copper	0.0509	0.010	0.05	0	**102**	90	110				
Lead	0.0511	0.010	0.05	0	**102**	90	110				
Zinc	0.0496	0.010	0.05	0	**99**	90	110				

Associated samples: **H24050895-001C, H24050895-001D, H24050895-002C, H24050895-002D, H24050895-003C, H24050895-003D, H24050895-004C, H24050895-004D, H24050895-005C, H24050895-005D, H24050895-006C, H24050895-006D, H24050895-007C, H24050895-007D, H24050895-008C, H24050895-008D, H24050895-009C, H24050895-009D, H24050895-010C, H24050895-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: R195583
Date: *27-Jun-24*

Run ID :Run Order: **FIA203-HE_240607A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E350.1**
Analysis Date: **06/07/24 13:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.942	0.050	1	0	**94**	90	110				

Associated samples: **H24050895-010E**

Run ID :Run Order: **FIA203-HE_240607A: 10** SampType: **Method Blank** Lab ID: **MBLK** Method: **E350.1**
Analysis Date: **06/07/24 13:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	ND	0.02									

Associated samples: **H24050895-010E**

Run ID :Run Order: **FIA203-HE_240607A: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E350.1**
Analysis Date: **06/07/24 13:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.990	0.050	1	0	**99**	90	110				

Associated samples: **H24050895-010E**

Run ID :Run Order: **FIA203-HE_240607A: 25** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E350.1**
Analysis Date: **06/07/24 13:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.499	0.050	0.5	0	**100**	90	110				

Associated samples: **H24050895-010E**

Run ID :Run Order: **FIA203-HE_240607A: 42** SampType: **Sample Matrix Spike** Lab ID: **H24050896-002FMS** Method: **E350.1**
Analysis Date: **06/07/24 13:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.983	0.050	1	0	**98**	80	120				

Associated samples: **H24050895-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: R195583** **Date:** *27-Jun-24*

Run ID :Run Order: **FIA203-HE_240607A: 43** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050896-002FMSD** Method: **E350.1**

Analysis Date: **06/07/24 13:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.979	0.050	1	0	**98**	80	120	0.9828	**0.4**	10	

Associated samples: **H24050895-010E**

Run ID :Run Order: **FIA203-HE_240607A: 56** SampType: **Sample Matrix Spike** Lab ID: **H24060071-005DMS** Method: **E350.1**

Analysis Date: **06/07/24 14:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.850	0.050	1	0	**85**	80	120				

Associated samples: **H24050895-010E**

Run ID :Run Order: **FIA203-HE_240607A: 57** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24060071-005DMSD** Method: **E350.1**

Analysis Date: **06/07/24 14:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.848	0.050	1	0	**85**	80	120	0.8501	**0.2**	10	

Associated samples: **H24050895-010E**

Run ID :Run Order: **FIA203-HE_240607A: 70** SampType: **Sample Matrix Spike** Lab ID: **H24060071-015DMS** Method: **E350.1**

Analysis Date: **06/07/24 14:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.890	0.050	1	0	**89**	80	120				

Associated samples: **H24050895-010E**

Run ID :Run Order: **FIA203-HE_240607A: 71** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24060071-015DMSD** Method: **E350.1**

Analysis Date: **06/07/24 14:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.891	0.050	1	0	**89**	80	120	0.8902	**0.1**	10	

Associated samples: **H24050895-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: R195583
Date: *27-Jun-24*

Run ID :Run Order: **FIA203-HE_240607A: 84** SampType: **Sample Matrix Spike** Lab ID: **H24060071-025DMS** Method: **E350.1**

Analysis Date: **06/07/24 14:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.915	0.050	1	0	**91**	80	120				

Associated samples: **H24050895-010E**

Run ID :Run Order: **FIA203-HE_240607A: 85** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24060071-025DMSD** Method: **E350.1**

Analysis Date: **06/07/24 14:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.924	0.050	1	0	**92**	80	120	0.9146	**1.0**	10	

Associated samples: **H24050895-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: R195761** **Date:** *27-Jun-24*

Run ID :Run Order: **SEAL AA500_240613A: 12** SampType: **Method Blank** Lab ID: **ICB** Method: **E353.2**

Analysis Date: **06/13/24 13:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	ND	0.01									

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E353.2**

Analysis Date: **06/13/24 13:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.01	0.010	1	0	101	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 15** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E353.2**

Analysis Date: **06/13/24 13:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.991	0.011	1	0	99	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 72** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **06/13/24 14:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.01	0.010	1	0	101	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 79** SampType: **Sample Matrix Spike** Lab ID: **H24050887-003CMS** Method: **E353.2**

Analysis Date: **06/13/24 15:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.01	0.011	1	0.0128	100	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: R195761** **Date:** *27-Jun-24*

Run ID :Run Order: **SEAL AA500_240613A: 79** SampType: **Sample Matrix Spike** Lab ID: **H24050887-003CMS** Method: **E353.2**

Analysis Date: **06/13/24 15:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 80** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050887-003CMSD** Method: **E353.2**

Analysis Date: **06/13/24 15:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.01	0.011	1	0.0128	100	90	110	1.012	0.3	10	

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 87** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **06/13/24 15:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.00	0.010	1	0	100	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 90** SampType: **Sample Matrix Spike** Lab ID: **H24050895-004EMS** Method: **E353.2**

Analysis Date: **06/13/24 15:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.02	0.011	1	0	102	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 91** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050895-004EMSD** Method: **E353.2**

Analysis Date: **06/13/24 15:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.01	0.011	1	0	101	90	110	1.016	0.6	10	

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: R195761** **Date:** *27-Jun-24*

Run ID :Run Order: **SEAL AA500_240613A: 104** SampType: **Sample Matrix Spike** Lab ID: **H24050897-004EMS** Method: **E353.2**

Analysis Date: **06/13/24 15:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.997	0.011	1	0	100	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 105** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24050897-004EMSD** Method: **E353.2**

Analysis Date: **06/13/24 15:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.00	0.011	1	0	100	90	110	0.9968	0.4	10	

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 150** SampType: **Sample Matrix Spike** Lab ID: **H24060071-007DMS** Method: **E353.2**

Analysis Date: **06/13/24 16:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.996	0.011	1	0	100	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 151** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24060071-007DMSD** Method: **E353.2**

Analysis Date: **06/13/24 16:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.998	0.011	1	0	100	90	110	0.9957	0.2	10	

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 163** SampType: **Sample Matrix Spike** Lab ID: **H24060071-016DMS** Method: **E353.2**

Analysis Date: **06/13/24 16:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.00	0.011	1	0	100	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24050895 **BatchID: R195761** **Date:** *27-Jun-24*

Run ID :Run Order: **SEAL AA500_240613A: 163** SampType: **Sample Matrix Spike** Lab ID: **H24060071-016DMS** Method: **E353.2**

Analysis Date: **06/13/24 16:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 164** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24060071-016DMSD** Method: **E353.2**

Analysis Date: **06/13/24 16:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.01	0.011	1	0	**101**	90	110	1.001	**0.9**	10	

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 178** SampType: **Sample Matrix Spike** Lab ID: **H24060071-026DMS** Method: **E353.2**

Analysis Date: **06/13/24 16:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.995	0.011	1	0	**99**	90	110				

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

Run ID :Run Order: **SEAL AA500_240613A: 179** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24060071-026DMSD** Method: **E353.2**

Analysis Date: **06/13/24 16:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.999	0.011	1	0	**100**	90	110	0.995	**0.4**	10	

Associated samples: **H24050895-001E, H24050895-002E, H24050895-003E, H24050895-004E, H24050895-005E, H24050895-006E, H24050895-007E, H24050895-008E, H24050895-009E, H24050895-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24050895
BatchID: TSS20240531A
Date: *27-Jun-24*

Run ID :Run Order: **Accu-124 (14410200)_240531A: 1** SampType: **Method Blank** Lab ID: **MBLK_20240531-4** Method: **A2540 D**

Analysis Date: **05/31/24 13:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	0.3									

Associated samples: **H24050895-001B, H24050895-002B, H24050895-003B, H24050895-004B, H24050895-005B, H24050895-006B, H24050895-007B, H24050895-008B, H24050895-009B, H24050895-010B**

Run ID :Run Order: **Accu-124 (14410200)_240531A: 2** SampType: **Laboratory Control Sample** Lab ID: **LCS_20240531-4** Method: **A2540 D**

Analysis Date: **05/31/24 13:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	86.0	25	100	0	**86**	80	120				

Associated samples: **H24050895-001B, H24050895-002B, H24050895-003B, H24050895-004B, H24050895-005B, H24050895-006B, H24050895-007B, H24050895-008B, H24050895-009B, H24050895-010B**

Run ID :Run Order: **Accu-124 (14410200)_240531A: 4** SampType: **Sample Duplicate** Lab ID: **H24050847-001ADUP** Method: **A2540 D**

Analysis Date: **05/31/24 13:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	290	250		0				290	**0.0**	10	

Associated samples: **H24050895-001B, H24050895-002B, H24050895-003B, H24050895-004B, H24050895-005B, H24050895-006B, H24050895-007B, H24050895-008B, H24050895-009B, H24050895-010B**

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

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H24050895

Login completed by:	Taylor K. Jones	Date Received:	5/31/2024
Reviewed by:	rtooke	Received by:	WJJ
Reviewed Date:	6/5/2024	Carrier name:	Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	3.6°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

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

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

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

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.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

The Temperature Blank temperature for shipping container 1 was 2.0°C and shipping container 2 was 3.6°C. tj 5/31/24

ENERGY LABORATORIES

Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information (Billing information)

Company/Name	MTDEQ
Contact	Jessica Banaszak
Phone	(406) 431-2252
Mailing Address	MT DEQ, P.O. Box 200901-0901
City, State, Zip	Helena, MT 59620-0901
Email	jessica.banaszak@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	1525
Bottle Order	47910

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com; tanner.traxler@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

Comments

All dissolved samples field filtered

Project Information

Project Name, PWSID, Permit, etc.	CFROU Monitoring
Sampler Name	Tanner Traxler
Sampler Phone	(406) 437-3346
Sample Origin State	Montana
EPA/State Compliance	☐ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

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

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	TR Metals (see list)	Diss Metals (see list)	TPN	NO3+2, TP	NH3	TSS	Tot. Alk., Sulfate, Chloride	Hardness (TR Ca & Mg)		See Attached	RUSH TAT	ELI LAB ID Laboratory Use Only
1	CFR-34	5/29/24	0920	5	W	✓	✓	✓	✓		✓	✓	✓				H24050895
2	CFR-27H	5/29/24	1030	5	W	✓	✓	✓	✓		✓	✓	✓				
3	CFR-18	5/29/24	1130	5	W	✓	✓	✓	✓		✓	✓	✓				
4	Field Blank CFR-11F (1245)	5/29/24	~~1245~~	5	W	✓	✓	✓	✓		✓	✓	✓				
5	CFR-11F	5/29/24	1245	5	W	✓	✓	✓	✓		✓	✓	✓				
6	CFR-07D	5/29/24	1315	5	W	✓	✓	✓	✓		✓	✓	✓				
7	CFR-03A	5/29/24	1415	5	W	✓	✓	✓	✓		✓	✓	✓				
8	WSC-SBC	5/29/24	1450	5	W	✓	✓	✓	✓		✓	✓	✓				
9	WSC-SBC Duplicate	5/29/24	1450	5	W	✓	✓	✓	✓		✓	✓	✓				
10	SS-25	5/29/24	1545	5	W	✓	✓	✓	✓	✓	✓	✓	✓				

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Brett Traxler	5/30/24 1830	Brett Traxler			
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Madi John	5-31-24	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
Hand Delivered	4	Y N C B	Y N	1-2.0°C	Y N	Y N	CC Cash Check_____	$	

After hrs

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

ANALYTICAL SUMMARY REPORT

October 08, 2024

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

Work Order: H24090532 Quote ID: H1525

Project Name: CFROU - SURFACE WATER

Energy Laboratories Inc Helena MT received the following 10 samples for MT DEQ-Federal Superfund on 9/14/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H24090532-001	CFR-34	09/12/24 10:00	09/14/24	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Hardness Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H24090532-002	CFR-27H	09/12/24 11:00	09/14/24	Surface Water	Same As Above
H24090532-003	CFR-18	09/12/24 11:45	09/14/24	Surface Water	Same As Above
H24090532-004	CFR-11F	09/12/24 15:00	09/14/24	Surface Water	Same As Above
H24090532-005	CFR-07D	09/12/24 12:45	09/14/24	Surface Water	Same As Above
H24090532-006	CFR-03A	09/12/24 14:00	09/14/24	Surface Water	Same As Above
H24090532-007	WSC-SBC	09/12/24 16:30	09/14/24	Surface Water	Same As Above
H24090532-008	SS-25	09/12/24 17:15	09/14/24	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended

ANALYTICAL SUMMARY REPORT

H24090532-009	CFR-03A QC-FD	09/12/24 14:00	09/14/24	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Hardness Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H24090532-010	CFR-11F QC-FB	09/12/24 15:00	09/14/24	Surface Water	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise 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.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-34
Project: CFROU - SURFACE WATER
Matrix: Surface Water

Lab ID: H24090532-001
Collection Date: 09/12/24 10:00
DateReceived: 09/14/24
Report Date: 10/08/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	17	mg/L		2	1	A2540 D	09/18/24 14:55 / eer			ırtorius-BCA124-1S_240918A : 5		TSS20240918B
INORGANICS												
Alkalinity, Total as CaCO3	170	mg/L		4	2	A2320 B	09/20/24 16:02 / eer			PHSC_101-H_240920A : 110		R198685
Bicarbonate as HCO3	210	mg/L		4	3	A2320 B	09/20/24 16:02 / eer			PHSC_101-H_240920A : 110		R198685
Chloride	13	mg/L		1	0.02	E300.0	09/25/24 19:09 / eer			IC METROHM_240924A : 104		R198856
Sulfate	77	mg/L		1	0.03	E300.0	09/25/24 19:09 / eer			IC METROHM_240924A : 104		R198856
Hardness as CaCO3	213	mg/L		1	1	A2340 B	09/24/24 10:00 / slj			WATERCALC_240924C : 31		R198805
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.27	mg/L		0.02	0.007	E353.2	09/26/24 20:58 / JA			SEAL AA500_240926A : 234		R198963
Nitrogen, Total	0.49	mg/L		0.05	0.02	A4500 N-C	09/26/24 17:33 / JA	09/26/24 09:27	A4500 N-	FIA203-HE_240926B : 100		74130
Phosphorus, Total as P	0.035	mg/L		0.003	0.002	E365.1	09/29/24 11:33 / JA	09/27/24 07:34	E365.1	SEAL AA500_240927A : 251		74157
METALS, DISSOLVED												
Arsenic	0.009	mg/L		0.001	0.00001	E200.8	09/20/24 22:44 / dck			ICPMS206-H_240920A : 143		R198744
Cadmium	0.00001	mg/L	J	0.00003	7E-06	E200.8	09/20/24 22:44 / dck			ICPMS206-H_240920A : 143		R198744
Copper	0.004	mg/L		0.001	0.00004	E200.8	09/20/24 22:44 / dck			ICPMS206-H_240920A : 143		R198744
Lead	0.0001	mg/L	J	0.0003	0.00002	E200.8	09/20/24 22:44 / dck			ICPMS206-H_240920A : 143		R198744
Zinc	0.007	mg/L	J	0.008	0.0007	E200.8	09/20/24 22:44 / dck			ICPMS206-H_240920A : 143		R198744
METALS, TOTAL RECOVERABLE												
Arsenic	0.010	mg/L		0.001	0.00002	E200.8	09/20/24 22:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 144		73991
Cadmium	0.00007	mg/L		0.00003	5E-06	E200.8	09/20/24 22:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 144		73991
Calcium	63	mg/L		1	0.04	E200.8	09/20/24 22:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 144		73991
Copper	0.014	mg/L		0.001	0.0001	E200.8	09/20/24 22:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 144		73991
Lead	0.0015	mg/L		0.0003	0.00005	E200.8	09/20/24 22:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 144		73991
Magnesium	13	mg/L		1	0.001	E200.8	09/20/24 22:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 144		73991
Potassium	4	mg/L		1	0.04	E200.8	09/20/24 22:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 144		73991
Sodium	20	mg/L		1	0.01	E200.8	09/20/24 22:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 144		73991
Zinc	0.014	mg/L		0.008	0.0006	E200.8	09/20/24 22:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 144		73991

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-27H
Project: CFROU - SURFACE WATER
Matrix: Surface Water

Lab ID: H24090532-002
Collection Date: 09/12/24 11:00
DateReceived: 09/14/24
Report Date: 10/08/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	9	mg/L		2	1	A2540 D	09/18/24 14:55 / eer			ırtorius-BCA124-1S_240918A : 6		TSS20240918B
INORGANICS												
Alkalinity, Total as CaCO3	170	mg/L		4	2	A2320 B	09/20/24 16:07 / eer			PHSC_101-H_240920A : 112		R198685
Bicarbonate as HCO3	200	mg/L		4	3	A2320 B	09/20/24 16:07 / eer			PHSC_101-H_240920A : 112		R198685
Chloride	13	mg/L		1	0.02	E300.0	09/25/24 19:23 / eer			IC METROHM_240924A : 105		R198856
Sulfate	84	mg/L		1	0.03	E300.0	09/25/24 19:23 / eer			IC METROHM_240924A : 105		R198856
Hardness as CaCO3	209	mg/L		1	1	A2340 B	09/24/24 10:00 / slj			WATERCALC_240924C : 32		R198805
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.28	mg/L		0.02	0.007	E353.2	09/26/24 20:59 / JA			SEAL AA500_240926A : 235		R198963
Nitrogen, Total	0.46	mg/L		0.05	0.02	A4500 N-C	09/26/24 17:34 / JA	09/26/24 09:27	A4500 N-	FIA203-HE_240926B : 101		74130
Phosphorus, Total as P	0.014	mg/L		0.003	0.002	E365.1	09/29/24 11:34 / JA	09/27/24 07:34	E365.1	SEAL AA500_240927A : 252		74157
METALS, DISSOLVED												
Arsenic	0.008	mg/L		0.001	0.00001	E200.8	09/20/24 23:09 / dck			ICPMS206-H_240920A : 150		R198744
Cadmium	0.00002	mg/L	J	0.00003	7E-06	E200.8	09/20/24 23:09 / dck			ICPMS206-H_240920A : 150		R198744
Copper	0.005	mg/L		0.001	0.00004	E200.8	09/20/24 23:09 / dck			ICPMS206-H_240920A : 150		R198744
Lead	0.0002	mg/L	J	0.0003	0.00002	E200.8	09/20/24 23:09 / dck			ICPMS206-H_240920A : 150		R198744
Zinc	0.007	mg/L	J	0.008	0.001	E200.8	10/08/24 13:39 / dck			ICPMS205-H_241008A : 36		R199288
METALS, TOTAL RECOVERABLE												
Arsenic	0.009	mg/L		0.001	0.00002	E200.8	09/20/24 23:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 151		73991
Cadmium	0.00007	mg/L		0.00003	5E-06	E200.8	09/20/24 23:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 151		73991
Calcium	62	mg/L		1	0.04	E200.8	09/20/24 23:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 151		73991
Copper	0.013	mg/L		0.001	0.0001	E200.8	09/20/24 23:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 151		73991
Lead	0.0012	mg/L		0.0003	0.00005	E200.8	09/20/24 23:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 151		73991
Magnesium	13	mg/L		1	0.001	E200.8	09/20/24 23:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 151		73991
Potassium	4	mg/L		1	0.04	E200.8	09/20/24 23:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 151		73991
Sodium	18	mg/L		1	0.01	E200.8	09/20/24 23:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 151		73991
Zinc	0.012	mg/L		0.008	0.0006	E200.8	09/20/24 23:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 151		73991

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-18
Project: CFROU - SURFACE WATER
Matrix: Surface Water

Lab ID: H24090532-003
Collection Date: 09/12/24 11:45
DateReceived: 09/14/24
Report Date: 10/08/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L		2	1	A2540 D	09/18/24 14:56 / eer			ırtorius-BCA124-1S_240918A : 7		TSS20240918B
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	09/20/24 16:13 / eer			PHSC_101-H_240920A : 114		R198685
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	09/20/24 16:13 / eer			PHSC_101-H_240920A : 114		R198685
Chloride	10	mg/L		1	0.02	E300.0	09/25/24 19:38 / eer			IC METROHM_240924A : 106		R198856
Sulfate	101	mg/L		1	0.03	E300.0	09/25/24 19:38 / eer			IC METROHM_240924A : 106		R198856
Hardness as CaCO3	212	mg/L		1	1	A2340 B	09/24/24 10:00 / slj			WATERCALC_240924C : 33		R198805
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.02	mg/L	J	0.02	0.007	E353.2	09/26/24 21:00 / JA			SEAL AA500_240926A : 236		R198963
Nitrogen, Total	0.2	mg/L		0.05	0.02	A4500 N-C	09/26/24 17:38 / JA	09/26/24 09:27	A4500 N-	FIA203-HE_240926B : 104		74130
Phosphorus, Total as P	0.009	mg/L		0.003	0.002	E365.1	09/29/24 11:35 / JA	09/27/24 07:34	E365.1	SEAL AA500_240927A : 253		74157
METALS, DISSOLVED												
Arsenic	0.008	mg/L		0.001	0.00001	E200.8	09/20/24 23:16 / dck			ICPMS206-H_240920A : 152		R198744
Cadmium	0.00001	mg/L	J	0.00003	7E-06	E200.8	09/20/24 23:16 / dck			ICPMS206-H_240920A : 152		R198744
Copper	0.004	mg/L		0.001	0.00004	E200.8	09/20/24 23:16 / dck			ICPMS206-H_240920A : 152		R198744
Lead	0.00005	mg/L	J	0.0003	0.00002	E200.8	09/20/24 23:16 / dck			ICPMS206-H_240920A : 152		R198744
Zinc	0.004	mg/L	J	0.008	0.0007	E200.8	09/20/24 23:16 / dck			ICPMS206-H_240920A : 152		R198744
METALS, TOTAL RECOVERABLE												
Arsenic	0.008	mg/L		0.001	0.00002	E200.8	09/20/24 23:19 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 153		73991
Cadmium	0.00002	mg/L	J	0.00003	5E-06	E200.8	09/20/24 23:19 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 153		73991
Calcium	62	mg/L		1	0.04	E200.8	09/20/24 23:19 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 153		73991
Copper	0.006	mg/L		0.001	0.0001	E200.8	09/20/24 23:19 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 153		73991
Lead	0.0003	mg/L		0.0003	0.00005	E200.8	09/20/24 23:19 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 153		73991
Magnesium	14	mg/L		1	0.001	E200.8	09/20/24 23:19 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 153		73991
Potassium	3	mg/L		1	0.04	E200.8	09/20/24 23:19 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 153		73991
Sodium	16	mg/L		1	0.01	E200.8	09/20/24 23:19 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 153		73991
Zinc	0.005	mg/L	J	0.008	0.0006	E200.8	09/20/24 23:19 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 153		73991

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-11F
Project: CFROU - SURFACE WATER
Matrix: Surface Water

Lab ID: H24090532-004
Collection Date: 09/12/24 15:00
DateReceived: 09/14/24
Report Date: 10/08/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L		2	1	A2540 D	09/18/24 14:56 / eer			ırtorius-BCA124-1S_240918A : 8		TSS20240918B
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	09/20/24 16:18 / eer			PHSC_101-H_240920A : 116		R198685
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	09/20/24 16:18 / eer			PHSC_101-H_240920A : 116		R198685
Chloride	12	mg/L		1	0.02	E300.0	09/25/24 19:52 / eer			IC METROHM_240924A : 107		R198856
Sulfate	116	mg/L		1	0.03	E300.0	09/25/24 19:52 / eer			IC METROHM_240924A : 107		R198856
Hardness as CaCO3	222	mg/L		1	1	A2340 B	09/24/24 10:00 / slj			WATERCALC_240924C : 34		R198805
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.007	E353.2	09/26/24 21:01 / JA			SEAL AA500_240926A : 237		R198963
Nitrogen, Total	0.19	mg/L		0.05	0.02	A4500 N-C	09/26/24 17:41 / JA	09/26/24 09:27	A4500 N-	FIA203-HE_240926B : 107		74130
Phosphorus, Total as P	0.012	mg/L		0.003	0.002	E365.1	09/29/24 11:36 / JA	09/27/24 07:34	E365.1	SEAL AA500_240927A : 254		74157
METALS, DISSOLVED												
Arsenic	0.009	mg/L		0.001	0.00001	E200.8	09/20/24 23:30 / dck			ICPMS206-H_240920A : 156		R198744
Cadmium	9E-06	mg/L	J	0.00003	7E-06	E200.8	09/20/24 23:30 / dck			ICPMS206-H_240920A : 156		R198744
Copper	0.004	mg/L		0.001	0.00004	E200.8	09/20/24 23:30 / dck			ICPMS206-H_240920A : 156		R198744
Lead	0.00006	mg/L	J	0.0003	0.00002	E200.8	09/20/24 23:30 / dck			ICPMS206-H_240920A : 156		R198744
Zinc	0.002	mg/L	J	0.008	0.0007	E200.8	09/20/24 23:30 / dck			ICPMS206-H_240920A : 156		R198744
METALS, TOTAL RECOVERABLE												
Arsenic	0.010	mg/L		0.001	0.00002	E200.8	09/20/24 23:33 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 157		73991
Cadmium	0.00003	mg/L	J	0.00003	5E-06	E200.8	09/20/24 23:33 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 157		73991
Calcium	65	mg/L		1	0.04	E200.8	09/20/24 23:33 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 157		73991
Copper	0.006	mg/L		0.001	0.0001	E200.8	09/20/24 23:33 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 157		73991
Lead	0.0004	mg/L		0.0003	0.00005	E200.8	09/20/24 23:33 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 157		73991
Magnesium	15	mg/L		1	0.001	E200.8	09/20/24 23:33 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 157		73991
Potassium	3	mg/L		1	0.04	E200.8	09/20/24 23:33 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 157		73991
Sodium	16	mg/L		1	0.01	E200.8	09/20/24 23:33 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 157		73991
Zinc	0.003	mg/L	J	0.008	0.0006	E200.8	09/20/24 23:33 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 157		73991

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-07D
Project: CFROU - SURFACE WATER
Matrix: Surface Water

Lab ID: H24090532-005
Collection Date: 09/12/24 12:45
DateReceived: 09/14/24
Report Date: 10/08/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	2	mg/L	JL	2	1	A2540 D	09/18/24 14:56 / eer			ırtorius-BCA124-1S_240918A : 9		TSS20240918B
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	09/20/24 16:24 / eer			PHSC_101-H_240920A : 118		R198685
Bicarbonate as HCO3	150	mg/L		4	3	A2320 B	09/20/24 16:24 / eer			PHSC_101-H_240920A : 118		R198685
Chloride	12	mg/L		1	0.02	E300.0	09/25/24 20:06 / eer			IC METROHM_240924A : 108		R198856
Sulfate	113	mg/L		1	0.03	E300.0	09/25/24 20:06 / eer			IC METROHM_240924A : 108		R198856
Hardness as CaCO3	211	mg/L		1	1	A2340 B	09/24/24 10:00 / slj			WATERCALC_240924C : 35		R198805
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.007	E353.2	09/26/24 21:02 / JA			SEAL AA500_240926A : 238		R198963
Nitrogen, Total	0.2	mg/L		0.05	0.02	A4500 N-C	09/26/24 17:42 / JA	09/26/24 09:27	A4500 N-	FIA203-HE_240926B : 108		74130
Phosphorus, Total as P	0.011	mg/L		0.003	0.002	E365.1	09/29/24 11:37 / JA	09/27/24 07:34	E365.1	SEAL AA500_240927A : 255		74157
METALS, DISSOLVED												
Arsenic	0.008	mg/L		0.001	0.00001	E200.8	09/20/24 23:37 / dck			ICPMS206-H_240920A : 158		R198744
Cadmium	0.00001	mg/L	J	0.00003	7E-06	E200.8	09/20/24 23:37 / dck			ICPMS206-H_240920A : 158		R198744
Copper	0.003	mg/L		0.001	0.00004	E200.8	09/20/24 23:37 / dck			ICPMS206-H_240920A : 158		R198744
Lead	0.00004	mg/L	J	0.0003	0.00002	E200.8	09/20/24 23:37 / dck			ICPMS206-H_240920A : 158		R198744
Zinc	0.003	mg/L	J	0.008	0.0007	E200.8	09/20/24 23:37 / dck			ICPMS206-H_240920A : 158		R198744
METALS, TOTAL RECOVERABLE												
Arsenic	0.008	mg/L		0.001	0.00002	E200.8	09/20/24 23:40 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 159		73991
Cadmium	0.00002	mg/L	J	0.00003	5E-06	E200.8	09/20/24 23:40 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 159		73991
Calcium	62	mg/L		1	0.04	E200.8	09/20/24 23:40 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 159		73991
Copper	0.005	mg/L		0.001	0.0001	E200.8	09/20/24 23:40 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 159		73991
Lead	0.0003	mg/L		0.0003	0.00005	E200.8	09/20/24 23:40 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 159		73991
Magnesium	13	mg/L		1	0.001	E200.8	09/20/24 23:40 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 159		73991
Potassium	3	mg/L		1	0.04	E200.8	09/20/24 23:40 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 159		73991
Sodium	15	mg/L		1	0.01	E200.8	09/20/24 23:40 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 159		73991
Zinc	0.003	mg/L	J	0.008	0.0006	E200.8	09/20/24 23:40 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A : 159		73991

Report Definitions:
RL - Analyte Reporting Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
L -Lowest available reporting limit for the analytical method used and/or volume submitted
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-03A
Project: CFROU - SURFACE WATER
Matrix: Surface Water

Lab ID: H24090532-006
Collection Date: 09/12/24 14:00
DateReceived: 09/14/24
Report Date: 10/08/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L		2	1	A2540 D	09/18/24 14:57 / eer			torius-BCA124-1S_240918A	10	TSS20240918B
INORGANICS												
Alkalinity, Total as CaCO3	110	mg/L		4	2	A2320 B	09/20/24 16:30 / eer			PHSC_101-H_240920A	120	R198685
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	09/20/24 16:30 / eer			PHSC_101-H_240920A	120	R198685
Chloride	13	mg/L		1	0.02	E300.0	09/25/24 20:21 / eer			IC METROHM_240924A	109	R198856
Sulfate	103	mg/L		1	0.03	E300.0	09/25/24 20:21 / eer			IC METROHM_240924A	109	R198856
Hardness as CaCO3	190	mg/L		1	1	A2340 B	09/24/24 10:00 / slj			WATERCALC_240924C	36	R198805
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.01	mg/L	J	0.02	0.007	E353.2	09/26/24 21:04 / JA			SEAL AA500_240926A	239	R198963
Nitrogen, Total	0.22	mg/L		0.05	0.02	A4500 N-C	09/26/24 17:44 / JA	09/26/24 09:27	A4500 N-	FIA203-HE_240926B	109	74130
Phosphorus, Total as P	0.018	mg/L		0.003	0.002	E365.1	09/29/24 11:38 / JA	09/27/24 07:34	E365.1	SEAL AA500_240927A	256	74157
METALS, DISSOLVED												
Arsenic	0.008	mg/L		0.001	0.00001	E200.8	09/20/24 23:44 / dck			ICPMS206-H_240920A	160	R198744
Cadmium	9E-06	mg/L	J	0.00003	7E-06	E200.8	09/20/24 23:44 / dck			ICPMS206-H_240920A	160	R198744
Copper	0.002	mg/L		0.001	0.00004	E200.8	09/20/24 23:44 / dck			ICPMS206-H_240920A	160	R198744
Lead	0.00003	mg/L	J	0.0003	0.00002	E200.8	09/20/24 23:44 / dck			ICPMS206-H_240920A	160	R198744
Zinc	0.002	mg/L	J	0.008	0.0007	E200.8	09/20/24 23:44 / dck			ICPMS206-H_240920A	160	R198744
METALS, TOTAL RECOVERABLE												
Arsenic	0.009	mg/L		0.001	0.00002	E200.8	09/20/24 23:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	161	73991
Cadmium	0.00002	mg/L	J	0.00003	5E-06	E200.8	09/20/24 23:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	161	73991
Calcium	56	mg/L		1	0.04	E200.8	09/20/24 23:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	161	73991
Copper	0.005	mg/L		0.001	0.0001	E200.8	09/20/24 23:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	161	73991
Lead	0.0003	mg/L		0.0003	0.00005	E200.8	09/20/24 23:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	161	73991
Magnesium	12	mg/L		1	0.001	E200.8	09/20/24 23:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	161	73991
Potassium	3	mg/L		1	0.04	E200.8	09/20/24 23:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	161	73991
Sodium	14	mg/L		1	0.01	E200.8	09/20/24 23:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	161	73991
Zinc	0.003	mg/L	J	0.008	0.0006	E200.8	09/20/24 23:48 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	161	73991

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: WSC-SBC
Project: CFROU - SURFACE WATER
Matrix: Surface Water

Lab ID: H24090532-007
Collection Date: 09/12/24 16:30
DateReceived: 09/14/24
Report Date: 10/08/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	4	mg/L		2	1	A2540 D	09/18/24 14:57 / eer			torius-BCA124-1S_240918A	11	TSS20240918B
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	09/20/24 16:35 / eer			PHSC_101-H_240920A	122	R198685
Bicarbonate as HCO3	140	mg/L		4	3	A2320 B	09/20/24 16:35 / eer			PHSC_101-H_240920A	122	R198685
Chloride	1	mg/L		1	0.02	E300.0	09/25/24 20:35 / eer			IC METROHM_240924A	110	R198856
Sulfate	23	mg/L		1	0.03	E300.0	09/25/24 20:35 / eer			IC METROHM_240924A	110	R198856
Hardness as CaCO3	129	mg/L		1	1	A2340 B	09/24/24 10:00 / slj			WATERCALC_240924C	37	R198805
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.02	mg/L		0.02	0.007	E353.2	09/26/24 21:05 / JA			SEAL AA500_240926A	240	R198963
Nitrogen, Total	0.08	mg/L		0.05	0.02	A4500 N-C	09/26/24 17:45 / JA	09/26/24 09:27	A4500 N-	FIA203-HE_240926B	110	74130
Phosphorus, Total as P	0.004	mg/L		0.003	0.002	E365.1	09/29/24 11:39 / JA	09/27/24 07:34	E365.1	SEAL AA500_240927A	257	74157
METALS, DISSOLVED												
Arsenic	0.003	mg/L		0.001	0.00001	E200.8	09/20/24 23:51 / dck			ICPMS206-H_240920A	162	R198744
Cadmium	0.00001	mg/L	J	0.00003	7E-06	E200.8	09/20/24 23:51 / dck			ICPMS206-H_240920A	162	R198744
Copper	0.002	mg/L		0.001	0.00004	E200.8	09/20/24 23:51 / dck			ICPMS206-H_240920A	162	R198744
Lead	0.00002	mg/L	J	0.0003	0.00002	E200.8	09/20/24 23:51 / dck			ICPMS206-H_240920A	162	R198744
Zinc	0.002	mg/L	J	0.008	0.0007	E200.8	09/20/24 23:51 / dck			ICPMS206-H_240920A	162	R198744
METALS, TOTAL RECOVERABLE												
Arsenic	0.003	mg/L		0.001	0.00002	E200.8	09/20/24 23:55 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	163	73991
Cadmium	0.00002	mg/L	J	0.00003	5E-06	E200.8	09/20/24 23:55 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	163	73991
Calcium	38	mg/L		1	0.04	E200.8	09/20/24 23:55 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	163	73991
Copper	0.005	mg/L		0.001	0.0001	E200.8	09/20/24 23:55 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	163	73991
Lead	0.0003	mg/L	J	0.0003	0.00005	E200.8	09/20/24 23:55 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	163	73991
Magnesium	8	mg/L		1	0.001	E200.8	09/20/24 23:55 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	163	73991
Potassium	1	mg/L		1	0.04	E200.8	09/20/24 23:55 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	163	73991
Sodium	3	mg/L		1	0.01	E200.8	09/20/24 23:55 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	163	73991
Zinc	0.003	mg/L	J	0.008	0.0006	E200.8	09/20/24 23:55 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	163	73991

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-25
Project: CFROU - SURFACE WATER
Matrix: Surface Water

Lab ID: H24090532-008
Collection Date: 09/12/24 17:15
DateReceived: 09/14/24
Report Date: 10/08/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	4	mg/L		2	1	A2540 D	09/18/24 14:57 / eer			torius-BCA124-1S_240918A	12	TSS20240918B
INORGANICS												
Alkalinity, Total as CaCO3	100	mg/L		4	2	A2320 B	09/20/24 16:41 / eer			PHSC_101-H_240920A	124	R198685
Bicarbonate as HCO3	120	mg/L		4	3	A2320 B	09/20/24 16:41 / eer			PHSC_101-H_240920A	124	R198685
Chloride	31	mg/L		1	0.02	E300.0	09/25/24 20:50 / eer			IC METROHM_240924A	111	R198856
Sulfate	211	mg/L		1	0.03	E300.0	09/25/24 20:50 / eer			IC METROHM_240924A	111	R198856
Hardness as CaCO3	276	mg/L		1	1	A2340 B	09/24/24 10:00 / slj			WATERCALC_240924C	38	R198805
NUTRIENTS												
Nitrogen, Ammonia as N	0.08	mg/L		0.05	0.03	E350.1	10/02/24 13:00 / JA			FIA203-HE_241002A	46	R199118
Nitrogen, Nitrate+Nitrite as N	0.08	mg/L		0.02	0.007	E353.2	09/26/24 21:06 / JA			SEAL AA500_240926A	241	R198963
Nitrogen, Total	0.65	mg/L		0.05	0.02	A4500 N-C	09/26/24 17:46 / JA	09/26/24 09:27	A4500 N-	FIA203-HE_240926B	111	74130
Phosphorus, Total as P	0.059	mg/L		0.003	0.002	E365.1	09/29/24 11:40 / JA	09/27/24 07:34	E365.1	SEAL AA500_240927A	258	74157
METALS, DISSOLVED												
Arsenic	0.014	mg/L		0.001	0.00001	E200.8	09/21/24 00:09 / dck			ICPMS206-H_240920A	167	R198744
Cadmium	0.00002	mg/L	J	0.00003	7E-06	E200.8	09/21/24 00:09 / dck			ICPMS206-H_240920A	167	R198744
Copper	0.0008	mg/L	J	0.001	0.00004	E200.8	09/21/24 00:09 / dck			ICPMS206-H_240920A	167	R198744
Lead	0.00003	mg/L	J	0.0003	0.00002	E200.8	09/21/24 00:09 / dck			ICPMS206-H_240920A	167	R198744
Zinc	0.026	mg/L		0.008	0.0007	E200.8	09/21/24 00:09 / dck			ICPMS206-H_240920A	167	R198744
METALS, TOTAL RECOVERABLE												
Arsenic	0.016	mg/L		0.001	0.00002	E200.8	09/21/24 00:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	168	73991
Cadmium	0.00002	mg/L	J	0.00003	5E-06	E200.8	09/21/24 00:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	168	73991
Calcium	82	mg/L		1	0.04	E200.8	09/21/24 00:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	168	73991
Copper	0.002	mg/L		0.001	0.0001	E200.8	09/21/24 00:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	168	73991
Lead	0.0002	mg/L	J	0.0003	0.00005	E200.8	09/21/24 00:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	168	73991
Magnesium	17	mg/L		1	0.001	E200.8	09/21/24 00:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	168	73991
Potassium	6	mg/L		1	0.04	E200.8	09/21/24 00:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	168	73991
Sodium	29	mg/L		1	0.01	E200.8	09/21/24 00:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	168	73991
Zinc	0.004	mg/L	J	0.008	0.0006	E200.8	09/21/24 00:12 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	168	73991

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-03A QC-FD
Project: CFROU - SURFACE WATER
Matrix: Surface Water

Lab ID: H24090532-009
Collection Date: 09/12/24 14:00
DateReceived: 09/14/24
Report Date: 10/08/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L		2	1	A2540 D	09/18/24 14:58 / eer			torius-BCA124-1S_240918A	13	TSS20240918B
INORGANICS												
Alkalinity, Total as CaCO3	110	mg/L		4	2	A2320 B	09/20/24 16:46 / eer			PHSC_101-H_240920A	126	R198685
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	09/20/24 16:46 / eer			PHSC_101-H_240920A	126	R198685
Chloride	13	mg/L		1	0.02	E300.0	09/25/24 21:18 / eer			IC METROHM_240924A	113	R198856
Sulfate	103	mg/L		1	0.03	E300.0	09/25/24 21:18 / eer			IC METROHM_240924A	113	R198856
Hardness as CaCO3	192	mg/L		1	1	A2340 B	09/24/24 10:00 / slj			WATERCALC_240924C	39	R198805
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.02	mg/L	J	0.02	0.007	E353.2	09/26/24 21:12 / JA			SEAL AA500_240926A	245	R198963
Nitrogen, Total	0.21	mg/L		0.05	0.02	A4500 N-C	09/26/24 17:47 / JA	09/26/24 09:27	A4500 N-	FIA203-HE_240926B	112	74130
Phosphorus, Total as P	0.004	mg/L		0.003	0.002	E365.1	09/29/24 11:47 / JA	09/27/24 07:34	E365.1	SEAL AA500_240927A	262	74157
METALS, DISSOLVED												
Arsenic	0.008	mg/L		0.001	0.00001	E200.8	09/21/24 00:23 / dck			ICPMS206-H_240920A	171	R198744
Cadmium	0.00001	mg/L	J	0.00003	7E-06	E200.8	09/21/24 00:23 / dck			ICPMS206-H_240920A	171	R198744
Copper	0.002	mg/L		0.001	0.00004	E200.8	09/21/24 00:23 / dck			ICPMS206-H_240920A	171	R198744
Lead	0.00003	mg/L	J	0.0003	0.00002	E200.8	09/21/24 00:23 / dck			ICPMS206-H_240920A	171	R198744
Zinc	0.002	mg/L	J	0.008	0.0007	E200.8	09/21/24 00:23 / dck			ICPMS206-H_240920A	171	R198744
METALS, TOTAL RECOVERABLE												
Arsenic	0.009	mg/L		0.001	0.00002	E200.8	09/21/24 00:26 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	172	73991
Cadmium	0.00003	mg/L	J	0.00003	5E-06	E200.8	09/21/24 00:26 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	172	73991
Calcium	57	mg/L		1	0.04	E200.8	09/21/24 00:26 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	172	73991
Copper	0.005	mg/L		0.001	0.0001	E200.8	09/21/24 00:26 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	172	73991
Lead	0.0003	mg/L		0.0003	0.00005	E200.8	09/21/24 00:26 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	172	73991
Magnesium	12	mg/L		1	0.001	E200.8	09/21/24 00:26 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	172	73991
Potassium	3	mg/L		1	0.04	E200.8	09/21/24 00:26 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	172	73991
Sodium	14	mg/L		1	0.01	E200.8	09/21/24 00:26 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	172	73991
Zinc	0.004	mg/L	J	0.008	0.0006	E200.8	09/21/24 00:26 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	172	73991

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-11F QC-FB
Project: CFROU - SURFACE WATER
Matrix: Surface Water

Lab ID: H24090532-010
Collection Date: 09/12/24 15:00
DateReceived: 09/14/24
Report Date: 10/08/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	ND	mg/L	L	2	1	A2540 D	09/18/24 14:58 / eer			torius-BCA124-1S_240918A	14	TSS20240918B
INORGANICS												
Alkalinity, Total as CaCO3	2	mg/L	J	4	2	A2320 B	09/20/24 16:51 / eer			PHSC_101-H_240920A	128	R198685
Bicarbonate as HCO3	ND	mg/L		4	3	A2320 B	09/20/24 16:51 / eer			PHSC_101-H_240920A	128	R198685
Chloride	ND	mg/L		1	0.02	E300.0	09/25/24 21:04 / eer			IC METROHM_240924A	112	R198856
Sulfate	ND	mg/L		1	0.03	E300.0	09/25/24 21:04 / eer			IC METROHM_240924A	112	R198856
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	09/24/24 10:00 / slj			WATERCALC_240924C	40	R198805
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.007	E353.2	09/26/24 21:15 / JA			SEAL AA500_240926A	248	R198963
Nitrogen, Total	ND	mg/L		0.05	0.02	A4500 N-C	09/26/24 17:48 / JA	09/26/24 09:27	A4500 N-	FIA203-HE_240926B	113	74130
Phosphorus, Total as P	ND	mg/L		0.003	0.002	E365.1	09/29/24 11:48 / JA	09/27/24 07:34	E365.1	SEAL AA500_240927A	263	74157
METALS, DISSOLVED												
Arsenic	ND	mg/L		0.001	0.00001	E200.8	09/21/24 00:30 / dck			ICPMS206-H_240920A	173	R198744
Cadmium	ND	mg/L		0.00003	7E-06	E200.8	09/21/24 00:30 / dck			ICPMS206-H_240920A	173	R198744
Copper	ND	mg/L		0.001	0.00004	E200.8	09/21/24 00:30 / dck			ICPMS206-H_240920A	173	R198744
Lead	ND	mg/L		0.0003	0.00002	E200.8	09/21/24 00:30 / dck			ICPMS206-H_240920A	173	R198744
Zinc	0.003	mg/L	J	0.008	0.0007	E200.8	09/21/24 00:30 / dck			ICPMS206-H_240920A	173	R198744
METALS, TOTAL RECOVERABLE												
Arsenic	ND	mg/L		0.001	0.00002	E200.8	09/21/24 00:34 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	174	73991
Cadmium	ND	mg/L		0.00003	5E-06	E200.8	09/21/24 00:34 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	174	73991
Calcium	ND	mg/L		1	0.04	E200.8	09/21/24 00:34 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	174	73991
Copper	ND	mg/L		0.001	0.0001	E200.8	09/21/24 00:34 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	174	73991
Lead	ND	mg/L		0.0003	0.00005	E200.8	09/21/24 00:34 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	174	73991
Magnesium	0.001	mg/L	J	1	0.001	E200.8	09/21/24 00:34 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	174	73991
Potassium	ND	mg/L		1	0.04	E200.8	09/21/24 00:34 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	174	73991
Sodium	0.02	mg/L	J	1	0.01	E200.8	09/21/24 00:34 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	174	73991
Zinc	ND	mg/L		0.008	0.0006	E200.8	09/21/24 00:34 / dck	09/19/24 08:03	E200.2	ICPMS206-H_240920A	174	73991

Report Definitions:

RL - Analyte Reporting Limit

MCL - Maximum Contaminant Level

ND - Not detected at the Reporting Limit (RL)

J - Estimated value - analyte was present but less than the Reporting Limit (RL)

L -Lowest available reporting limit for the analytical method used and/or volume submitted

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24090532
BatchID: 42595
Date: *08-Oct-24*

Run ID :Run Order: **SEAL AA500_240927A: 241** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **09/29/24 11:22** Units: **mg/L** **Prep Info:** Prep Date: **8/7/2018** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.239	0.010	0.25	0	**96**	90	110				

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24090532
BatchID: 50660
Date: *08-Oct-24*

Run ID :Run Order: **SEAL AA500_240927A: 259** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **09/29/24 11:42** Units: **mg/L** **Prep Info:** Prep Date: **3/20/2020** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.100	0.010	0.1	0	**100**	90	110				

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24090532
BatchID: 53220
Date: *08-Oct-24*

Run ID :Run Order: **SEAL AA500_240927A: 223** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **09/27/24 21:12** Units: **mg/L** **Prep Info:** Prep Date: **9/14/2020** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.102	0.010	0.1	0	**102**	90	110				

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: 62392** **Date:** *08-Oct-24*

Run ID :Run Order: **FIA203-HE_240926B: 88** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **09/26/24 17:18** Units: **mg/L** **Prep Info:** Prep Date: **7/15/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.504	0.10	0.5	0	**101**	90	110				

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **FIA203-HE_240926B: 102** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **09/26/24 17:35** Units: **mg/L** **Prep Info:** Prep Date: **7/15/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.500	0.10	0.5	0	**100**	90	110				

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: 73991** **Date:** *08-Oct-24*

Run ID :Run Order: **ICPMS206-H_240920A: 140** SampType: **Method Blank** Lab ID: **MB-73991** Method: **E200.8**

Analysis Date: **09/20/24 22:34** Units: **mg/L** **Prep Info:** Prep Date: **9/19/2024** Prep Method: **E200.2**

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.00002									
Cadmium	ND	5E-06									
Calcium	ND	0.04									
Copper	ND	0.0001									
Lead	ND	0.00005									
Magnesium	0.002	0.001									
Potassium	ND	0.04									
Sodium	0.06	0.01									
Zinc	ND	0.0006									

Associated samples: **H24090532-001D, H24090532-002D, H24090532-003D, H24090532-004D, H24090532-005D, H24090532-006D, H24090532-007D, H24090532-008D, H24090532-009D, H24090532-010D**

Run ID :Run Order: **ICPMS206-H_240920A: 141** SampType: **Laboratory Control Sample** Lab ID: **LCS-73991** Method: **E200.8**

Analysis Date: **09/20/24 22:37** Units: **mg/L** **Prep Info:** Prep Date: **9/19/2024** Prep Method: **E200.2**

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.484	0.0010	0.5	0	97	85	115				
Cadmium	0.238	0.0010	0.25	0	95	85	115				
Calcium	24.5	1.0	25	0	98	85	115				
Copper	0.470	0.0050	0.5	0	94	85	115				
Lead	0.489	0.0010	0.5	0	98	85	115				
Magnesium	25.1	1.0	25	0	100	85	115				
Potassium	24.0	1.0	25	0	96	85	115				
Sodium	24.4	1.0	25	0	98	85	115				
Zinc	0.467	0.010	0.5	0	93	85	115				

Associated samples: **H24090532-001D, H24090532-002D, H24090532-003D, H24090532-004D, H24090532-005D, H24090532-006D, H24090532-007D, H24090532-008D, H24090532-009D, H24090532-010D**

Run ID :Run Order: **ICPMS206-H_240920A: 146** SampType: **Sample Matrix Spike** Lab ID: **H24090532-001DMS3** Method: **E200.8**

Analysis Date: **09/20/24 22:55** Units: **mg/L** **Prep Info:** Prep Date: **9/19/2024** Prep Method: **E200.2**

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.497	0.0010	0.5	0.01029	97	70	130				
Cadmium	0.240	0.0010	0.25	0.00007099	96	70	130				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: 73991** **Date:** *08-Oct-24*

Run ID :Run Order: **ICPMS206-H_240920A: 146** SampType: **Sample Matrix Spike** Lab ID: **H24090532-001DMS3** Method: **E200.8**

Analysis Date: **09/20/24 22:55** Units: **mg/L** **Prep Info:** Prep Date: **9/19/2024** Prep Method: **E200.2**

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	88.2	1.0	25	63.32	99	70	130				
Copper	0.480	0.0050	0.5	0.01417	93	70	130				
Lead	0.490	0.0010	0.5	0.001539	98	70	130				
Magnesium	37.7	1.0	25	13.44	97	70	130				
Potassium	28.2	1.0	25	4.214	96	70	130				
Sodium	42.8	1.0	25	20.15	90	70	130				
Zinc	0.483	0.010	0.5	0.01378	94	70	130				

Associated samples: **H24090532-001D, H24090532-002D, H24090532-003D, H24090532-004D, H24090532-005D, H24090532-006D, H24090532-007D, H24090532-008D, H24090532-009D, H24090532-010D**

Run ID :Run Order: **ICPMS206-H_240920A: 147** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24090532-001DMSD3** Method: **E200.8**

Analysis Date: **09/20/24 22:58** Units: **mg/L** **Prep Info:** Prep Date: **9/19/2024** Prep Method: **E200.2**

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.490	0.0010	0.5	0.01029	96	70	130	0.497	1.3	20	
Cadmium	0.243	0.0010	0.25	0.00007099	97	70	130	0.2397	1.4	20	
Calcium	86.5	1.0	25	63.32	93	70	130	88.17	1.9	20	
Copper	0.480	0.0050	0.5	0.01417	93	70	130	0.4798	0	20	
Lead	0.504	0.0010	0.5	0.001539	100	70	130	0.4895	2.9	20	
Magnesium	37.2	1.0	25	13.44	95	70	130	37.73	1.4	20	
Potassium	28.0	1.0	25	4.214	95	70	130	28.25	0.7	20	
Sodium	43.0	1.0	25	20.15	91	70	130	42.76	0.6	20	
Zinc	0.475	0.010	0.5	0.01378	92	70	130	0.483	1.6	20	

Associated samples: **H24090532-001D, H24090532-002D, H24090532-003D, H24090532-004D, H24090532-005D, H24090532-006D, H24090532-007D, H24090532-008D, H24090532-009D, H24090532-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: 74130** **Date:** *08-Oct-24*

Run ID :Run Order: **FIA203-HE_240926B: 12** SampType: **Method Blank** Lab ID: **MB-74130** Method: **A4500 N-C**

Analysis Date: **09/26/24 15:07** Units: **mg/L** **Prep Info:** Prep Date: **9/26/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **FIA203-HE_240926B: 19** SampType: **Laboratory Control Sample** Lab ID: **LCS-74130** Method: **A4500 N-C**

Analysis Date: **09/26/24 15:15** Units: **mg/L** **Prep Info:** Prep Date: **9/26/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.939	0.10	1	0	94	90	110				

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **FIA203-HE_240926B: 26** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-74130** Method: **A4500 N-C**

Analysis Date: **09/26/24 15:24** Units: **mg/L** **Prep Info:** Prep Date: **9/26/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.900	0.10	1	0	90	90	110				

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **FIA203-HE_240926B: 105** SampType: **Sample Matrix Spike** Lab ID: **H24090532-003AMS** Method: **A4500 N-C**

Analysis Date: **09/26/24 17:39** Units: **mg/L** **Prep Info:** Prep Date: **9/26/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.20	0.10	1	0.1991	100	90	110				

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **FIA203-HE_240926B: 106** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24090532-003AMSD** Method: **A4500 N-C**

Analysis Date: **09/26/24 17:40** Units: **mg/L** **Prep Info:** Prep Date: **9/26/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.20	0.10	1	0.1991	100	90	110	1.197	0.2	20	

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24090532
BatchID: 74130
Date: *08-Oct-24*

Run ID :Run Order: **FIA203-HE_240926B: 106** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24090532-003AMSD** Method: **A4500 N-C**

Analysis Date: **09/26/24 17:40** Units: **mg/L** **Prep Info:** Prep Date: **9/26/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: 74157** **Date:** *08-Oct-24*

Run ID :Run Order: **SEAL AA500_240927A: 22** SampType: **Method Blank** Lab ID: **MB-74157** Method: **E365.1**

Analysis Date: **09/27/24 17:28** Units: **mg/L** **Prep Info:** Prep Date: **9/27/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.002									

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

Run ID :Run Order: **SEAL AA500_240927A: 31** SampType: **Laboratory Control Sample** Lab ID: **LCS-74157** Method: **E365.1**

Analysis Date: **09/27/24 17:38** Units: **mg/L** **Prep Info:** Prep Date: **9/27/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.387	0.010	0.4	0	**97**	90	110				

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

Run ID :Run Order: **SEAL AA500_240927A: 272** SampType: **Sample Matrix Spike** Lab ID: **H24090533-008EMS** Method: **E365.1**

Analysis Date: **09/29/24 11:58** Units: **mg/L** **Prep Info:** Prep Date: **9/27/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.248	0.010	0.2	0.0486	**100**	90	110				

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

Run ID :Run Order: **SEAL AA500_240927A: 273** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24090533-008EMSD** Method: **E365.1**

Analysis Date: **09/29/24 11:59** Units: **mg/L** **Prep Info:** Prep Date: **9/27/2024** Prep Method: **E365.1**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.250	0.010	0.2	0.0486	**101**	90	110	0.2485	**0.7**	20	

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24090532
BatchID: R198685
Date: *08-Oct-24*

Run ID :Run Order: **PHSC_101-H_240920A: 98** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **09/20/24 15:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	600	4.0	600	0	100	90	110				

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **PHSC_101-H_240920A: 99** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **09/20/24 15:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **PHSC_101-H_240920A: 102** SampType: **Sample Duplicate** Lab ID: **H24090477-009ADUP** Method: **A2320 B**

Analysis Date: **09/20/24 15:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	170	4.0		0				168.3	0.1	10	
Bicarbonate as HCO3	210	4.0		0				204.7	0.1	10	

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **PHSC_101-H_240920A: 142** SampType: **Sample Duplicate** Lab ID: **H24090533-006ADUP** Method: **A2320 B**

Analysis Date: **09/20/24 17:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	120	4.0		0				120.6	0.1	10	
Bicarbonate as HCO3	130	4.0		0				126.3	0.6	10	

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24090532
BatchID: **R198744**
Date: *08-Oct-24*

Run ID :Run Order: **ICPMS206-H_240920A: 111** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **09/20/24 20:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0605	0.0050	0.06	0	101	90	110				
Cadmium	0.0304	0.0010	0.03	0	101	90	110				
Calcium	3.00	0.50	3	0	100	90	110				
Copper	0.0629	0.010	0.06	0	105	90	110				
Lead	0.0597	0.010	0.06	0	100	90	110				
Magnesium	3.13	0.50	3	0	104	90	110				
Potassium	3.00	0.50	3	0	100	90	110				
Sodium	3.09	0.50	3	0	103	90	110				
Zinc	0.0611	0.010	0.06	0	102	90	110				

Associated samples: **H24090532-001C, H24090532-001D, H24090532-002C, H24090532-002D, H24090532-003C, H24090532-003D, H24090532-004C, H24090532-004D, H24090532-005C, H24090532-005D, H24090532-006C, H24090532-006D, H24090532-007C, H24090532-007D, H24090532-008C, H24090532-008D, H24090532-009C, H24090532-009D, H24090532-010C, H24090532-010D**

Run ID :Run Order: **ICPMS206-H_240920A: 121** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **09/20/24 21:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.00001									
Cadmium	ND	7E-06									
Copper	ND	0.00004									
Lead	ND	0.00002									
Zinc	ND	0.0007									

Associated samples: **H24090532-001C, H24090532-002C, H24090532-003C, H24090532-004C, H24090532-005C, H24090532-006C, H24090532-007C, H24090532-008C, H24090532-009C, H24090532-010C**

Run ID :Run Order: **ICPMS206-H_240920A: 122** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **09/20/24 21:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0486	0.0050	0.05	0	97	85	115				
Cadmium	0.0482	0.0010	0.05	0	96	85	115				
Copper	0.0503	0.010	0.05	0	101	85	115				
Lead	0.0476	0.010	0.05	0	95	85	115				
Zinc	0.0510	0.010	0.05	0	102	85	115				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: R198744** **Date:** *08-Oct-24*

Run ID :Run Order: **ICPMS206-H_240920A: 122** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **09/20/24 21:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24090532-001C, H24090532-002C, H24090532-003C, H24090532-004C, H24090532-005C, H24090532-006C, H24090532-007C, H24090532-008C, H24090532-009C, H24090532-010C**

Run ID :Run Order: **ICPMS206-H_240920A: 138** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/20/24 22:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0482	0.0050	0.05	0	96	90	110				
Cadmium	0.0481	0.0010	0.05	0	96	90	110				
Calcium	12.6	0.50	12.5	0	101	90	110				
Copper	0.0489	0.010	0.05	0	98	90	110				
Lead	0.0477	0.010	0.05	0	95	90	110				
Magnesium	12.1	0.50	12.5	0	97	90	110				
Potassium	12.1	0.50	12.5	0	97	90	110				
Sodium	12.5	0.50	12.5	0	100	90	110				
Zinc	0.0492	0.010	0.05	0	98	90	110				

Associated samples: **H24090532-001C, H24090532-001D, H24090532-002C, H24090532-002D, H24090532-003C, H24090532-003D, H24090532-004C, H24090532-004D, H24090532-005C, H24090532-005D, H24090532-006C, H24090532-006D, H24090532-007C, H24090532-007D, H24090532-008C, H24090532-008D, H24090532-009C, H24090532-009D, H24090532-010C, H24090532-010D**

Run ID :Run Order: **ICPMS206-H_240920A: 154** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/20/24 23:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0491	0.0050	0.05	0	98	90	110				
Cadmium	0.0490	0.0010	0.05	0	98	90	110				
Calcium	12.0	0.50	12.5	0	96	90	110				
Copper	0.0505	0.010	0.05	0	101	90	110				
Lead	0.0483	0.010	0.05	0	97	90	110				
Magnesium	12.3	0.50	12.5	0	99	90	110				
Potassium	12.3	0.50	12.5	0	98	90	110				
Sodium	12.6	0.50	12.5	0	101	90	110				
Zinc	0.0509	0.010	0.05	0	102	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: R198744** **Date:** *08-Oct-24*

Run ID :Run Order: **ICPMS206-H_240920A: 154** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/20/24 23:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24090532-001C, H24090532-001D, H24090532-002C, H24090532-002D, H24090532-003C, H24090532-003D, H24090532-004C, H24090532-004D, H24090532-005C, H24090532-005D, H24090532-006C, H24090532-006D, H24090532-007C, H24090532-007D, H24090532-008C, H24090532-008D, H24090532-009C, H24090532-009D, H24090532-010C, H24090532-010D**

Run ID :Run Order: **ICPMS206-H_240920A: 164** SampType: **Sample Matrix Spike** Lab ID: **H24090532-007CMS** Method: **E200.8**

Analysis Date: **09/20/24 23:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0510	0.0010	0.05	0.002682	97	70	130				
Cadmium	0.0478	0.0010	0.05	0.0000112	96	70	130				
Copper	0.0508	0.0050	0.05	0.001718	98	70	130				
Lead	0.0487	0.0010	0.05	0.00002289	97	70	130				
Zinc	0.0525	0.010	0.05	0.00203	101	70	130				

Associated samples: **H24090532-001C, H24090532-002C, H24090532-003C, H24090532-004C, H24090532-005C, H24090532-006C, H24090532-007C, H24090532-008C, H24090532-009C, H24090532-010C**

Run ID :Run Order: **ICPMS206-H_240920A: 165** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24090532-007CMSD** Method: **E200.8**

Analysis Date: **09/21/24 00:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0511	0.0010	0.05	0.002682	97	70	130	0.051	0.2	20	
Cadmium	0.0485	0.0010	0.05	0.0000112	97	70	130	0.04777	1.5	20	
Copper	0.0509	0.0050	0.05	0.001718	98	70	130	0.05075	0.3	20	
Lead	0.0490	0.0010	0.05	0.00002289	98	70	130	0.04871	0.6	20	
Zinc	0.0523	0.010	0.05	0.00203	100	70	130	0.05252	0.5	20	

Associated samples: **H24090532-001C, H24090532-002C, H24090532-003C, H24090532-004C, H24090532-005C, H24090532-006C, H24090532-007C, H24090532-008C, H24090532-009C, H24090532-010C**

Run ID :Run Order: **ICPMS206-H_240920A: 169** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/21/24 00:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0484	0.0050	0.05	0	97	90	110				
Cadmium	0.0487	0.0010	0.05	0	97	90	110				
Calcium	12.2	0.50	12.5	0	98	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: R198744** **Date:** *08-Oct-24*

Run ID :Run Order: **ICPMS206-H_240920A: 169** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **09/21/24 00:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0494	0.010	0.05	0	**99**	90	110				
Lead	0.0484	0.010	0.05	0	**97**	90	110				
Magnesium	12.4	0.50	12.5	0	**100**	90	110				
Potassium	11.9	0.50	12.5	0	**95**	90	110				
Sodium	12.9	0.50	12.5	0	**103**	90	110				
Zinc	0.0496	0.010	0.05	0	**99**	90	110				

Associated samples: **H24090532-001C, H24090532-001D, H24090532-002C, H24090532-002D, H24090532-003C, H24090532-003D, H24090532-004C, H24090532-004D, H24090532-005C, H24090532-005D, H24090532-006C, H24090532-006D, H24090532-007C, H24090532-007D, H24090532-008C, H24090532-008D, H24090532-009C, H24090532-009D, H24090532-010C, H24090532-010D**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: R198856** **Date:** *08-Oct-24*

Run ID :Run Order: **IC METROHM_240924A: 1** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **09/24/24 14:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.03									

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **IC METROHM_240924A: 2** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **09/24/24 14:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	99.9	1.0	100	0	100	90	110				
Sulfate	390	1.0	400	0	98	90	110				

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **IC METROHM_240924A: 3** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **09/24/24 14:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.5	1.0	25	0	98	90	110				
Sulfate	99.1	1.0	100	0	99	90	110				

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **IC METROHM_240924A: 102** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **09/25/24 18:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	52.2	1.0	50	0	104	90	110				
Sulfate	207	1.0	200	0	103	90	110				

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24090532
BatchID: R198856
Date: *08-Oct-24*

Run ID :Run Order: **IC METROHM_240924A: 114** SampType: **Sample Matrix Spike** Lab ID: **H24090532-009AMS** Method: **E300.0**

Analysis Date: **09/25/24 21:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	39.9	1.0	25	12.98	**108**	90	110				
Sulfate	207	1.0	100	102.6	**105**	90	110				

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

Run ID :Run Order: **IC METROHM_240924A: 115** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24090532-009AMSD** Method: **E300.0**

Analysis Date: **09/25/24 21:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	39.8	1.0	25	12.98	**107**	90	110	39.88	**0.2**	20	
Sulfate	208	1.0	100	102.6	**106**	90	110	207.3	**0.5**	20	

Associated samples: **H24090532-001A, H24090532-002A, H24090532-003A, H24090532-004A, H24090532-005A, H24090532-006A, H24090532-007A, H24090532-008A, H24090532-009A, H24090532-010A**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: R198963** **Date:** *08-Oct-24*

Run ID :Run Order: **SEAL AA500_240926A: 12** SampType: **Method Blank** Lab ID: **ICB** Method: **E353.2**

Analysis Date: **09/26/24 16:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	ND	0.007									

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

Run ID :Run Order: **SEAL AA500_240926A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E353.2**

Analysis Date: **09/26/24 16:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.04	0.010	1	0	104	90	110				

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

Run ID :Run Order: **SEAL AA500_240926A: 15** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E353.2**

Analysis Date: **09/26/24 16:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.985	0.011	1	0	99	90	110				

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

Run ID :Run Order: **SEAL AA500_240926A: 228** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **09/26/24 20:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.976	0.010	1	0	98	90	110				

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

Run ID :Run Order: **SEAL AA500_240926A: 242** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **09/26/24 21:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.978	0.010	1	0	98	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund — Prepared by Helena, MT Branch

Work Order: H24090532 **BatchID: R198963** **Date:** *08-Oct-24*

Run ID :Run Order: **SEAL AA500_240926A: 242** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **09/26/24 21:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

Run ID :Run Order: **SEAL AA500_240926A: 246** SampType: **Sample Matrix Spike** Lab ID: **H24090532-009EMS** Method: **E353.2**

Analysis Date: **09/26/24 21:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.947	0.011	1	0.016	**93**	90	110				

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

Run ID :Run Order: **SEAL AA500_240926A: 247** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24090532-009EMSD** Method: **E353.2**

Analysis Date: **09/26/24 21:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.954	0.011	1	0.016	**94**	90	110	0.9469	**0.7**	10	

Associated samples: **H24090532-001E, H24090532-002E, H24090532-003E, H24090532-004E, H24090532-005E, H24090532-006E, H24090532-007E, H24090532-008E, H24090532-009E, H24090532-010E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H24090532
BatchID: R199118
Date: *08-Oct-24*

Run ID :Run Order: **FIA203-HE_241002A: 9** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E350.1**
Analysis Date: **10/02/24 12:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.961	0.050	1	0	96	90	110				

Associated samples: **H24090532-008E**

Run ID :Run Order: **FIA203-HE_241002A: 10** SampType: **Method Blank** Lab ID: **MBLK** Method: **E350.1**
Analysis Date: **10/02/24 12:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	ND	0.03									

Associated samples: **H24090532-008E**

Run ID :Run Order: **FIA203-HE_241002A: 12** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E350.1**
Analysis Date: **10/02/24 12:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	1.01	0.050	1	0	101	90	110				

Associated samples: **H24090532-008E**

Run ID :Run Order: **FIA203-HE_241002A: 39** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E350.1**
Analysis Date: **10/02/24 12:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.516	0.050	0.5	0	103	90	110				

Associated samples: **H24090532-008E**

Run ID :Run Order: **FIA203-HE_241002A: 42** SampType: **Sample Matrix Spike** Lab ID: **H24090509-031FMS** Method: **E350.1**
Analysis Date: **10/02/24 12:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.976	0.050	1	0	98	80	120				

Associated samples: **H24090532-008E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24090532
BatchID: R199118
Date: *08-Oct-24*

Run ID :Run Order: **FIA203-HE_241002A: 43** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24090509-031FMSD** Method: **E350.1**

Analysis Date: **10/02/24 12:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.974	0.050	1	0	**97**	80	120	0.9764	**0.2**	10	

Associated samples: **H24090532-008E**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch
Work Order: H24090532
BatchID: R199288
Date: *08-Oct-24*

Run ID :Run Order: **ICPMS205-H_241008A: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**
Analysis Date: **10/08/24 12:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.0614	0.010	0.06	0	102	90	110				

Associated samples: **H24090532-002C**

Run ID :Run Order: **ICPMS205-H_241008A: 20** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**
Analysis Date: **10/08/24 12:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.0498	0.010	0.05	0	100	90	110				

Associated samples: **H24090532-002C**

Run ID :Run Order: **ICPMS205-H_241008A: 29** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **E200.8**
Analysis Date: **10/08/24 13:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.0519	0.010	0.05	0	104	90	110				

Associated samples: **H24090532-002C**

Run ID :Run Order: **ICPMS205-H_241008A: 31** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**
Analysis Date: **10/08/24 13:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	ND	0.001									

Associated samples: **H24090532-002C**

Run ID :Run Order: **ICPMS205-H_241008A: 32** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**
Analysis Date: **10/08/24 13:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.0559	0.010	0.05	0	112	85	115				

Associated samples: **H24090532-002C**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24090532
BatchID: R199288
Date: *08-Oct-24*

Run ID :Run Order: **ICPMS205-H_241008A: 39** SampType: **Sample Matrix Spike** Lab ID: **H24100217-001BMS** Method: **E200.8**

Analysis Date: **10/08/24 13:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.388	0.010	0.05	0.3379		70	130				A

Associated samples: **H24090532-002C**

Run ID :Run Order: **ICPMS205-H_241008A: 40** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24100217-001BMSD** Method: **E200.8**

Analysis Date: **10/08/24 13:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.384	0.010	0.05	0.3379		70	130	0.3876	**1.0**	20	A

Associated samples: **H24090532-002C**

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

ANALYTICAL QC SUMMARY REPORT

Client: MT DEQ-Federal Superfund
Prepared by Helena, MT Branch

Work Order: H24090532
BatchID: **TSS20240918B**
Date: *08-Oct-24*

Run ID :Run Order: **Sartorius-BCA124-1S_240918A: 1** SampType: **Method Blank** Lab ID: **MBLK_20240918-7** Method: **A2540 D**

Analysis Date: **09/18/24 14:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H24090532-001B, H24090532-002B, H24090532-003B, H24090532-004B, H24090532-005B, H24090532-006B, H24090532-007B, H24090532-008B, H24090532-009B, H24090532-010B**

Run ID :Run Order: **Sartorius-BCA124-1S_240918A: 2** SampType: **Laboratory Control Sample** Lab ID: **LCS_20240918-5** Method: **A2540 D**

Analysis Date: **09/18/24 14:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	98.0	25	100	0	**98**	80	120				

Associated samples: **H24090532-001B, H24090532-002B, H24090532-003B, H24090532-004B, H24090532-005B, H24090532-006B, H24090532-007B, H24090532-008B, H24090532-009B, H24090532-010B**

Run ID :Run Order: **Sartorius-BCA124-1S_240918A: 4** SampType: **Sample Duplicate** Lab ID: **H24090559-001ADUP** Method: **A2540 D**

Analysis Date: **09/18/24 14:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	277	83		0				266.7	**3.7**	10	

Associated samples: **H24090532-001B, H24090532-002B, H24090532-003B, H24090532-004B, H24090532-005B, H24090532-006B, H24090532-007B, H24090532-008B, H24090532-009B, H24090532-010B**

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

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H24090532

Login completed by: Rebecca A. Tooke
Date Received: 9/14/2024

Reviewed by: tjones
Received by: JH

Reviewed Date: 9/17/2024
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	2.4°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

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

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

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

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.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

The temperature blank temperature in shipping container 1 was 2.3°C, shipping container 2 was 2.4°C, shipping container 5 was 2.3°C, shipping container 6 was 1.3°C and shipping container 7 was 2.0°C.

Work Order Receipt Checklist - Continued

MT DEQ-Federal Superfund H24090532

The temperature of the sample(s) in shipping container 3 was 2.3°C, shipping container 4 was 1.9°C.
TKJ 09/17/24

Chain of Custody & Analytical Request Record

ENERGY LABORATORIES — Trust our People. Trust our Data.

www.energylab.com

Page _____ of _____

Account Information (Billing information)

Company/Name	Montana DEQ
Contact	J. Banaszak
Phone	(406) 431-2252
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	Jessica.Banaszak@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email
Special Report/Formats:	☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other_____

Comments

Metals list:
As, Cd, Cu, Pb, Zn

Project Information

Project Name, PWSID, Permit, etc.	CFROU - SURFACE WATER
Sampler Name	J. Naughton
Sampler Phone	(406) 214-4478
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

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

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	TSS	Alkalinity, Bicarb, Cl-, SO4-, Hardness	NO3+NO2, TN, TP	Dissolved Metals: see list	TR Metals: see list	NH4	Ions: Ca, Mg, K, Na			See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	CFR-34	9/12/24	1000	5	W	✓	✓	✓	✓	✓		✓					A24090532
2	CFR-27H		1100	5	W	✓	✓	✓	✓	✓		✓					
3	CFR-18		1145	5	W	✓	✓	✓	✓	✓		✓					
4	CFR-11F	1500	[redacted]	5	W	✓	✓	✓	✓	✓		✓					
5	CFR-07D	1245	[redacted]	5	W	✓	✓	✓	✓	✓		✓					
6	CFR-03A	1400	[redacted]	5	W	✓	✓	✓	✓	✓		✓					
7	WSC-SBC		1630	5	W	✓	✓	✓	✓	✓		✓					
8	SS-25		1715	5	W	✓	✓	✓	✓	✓	✓	✓					
9	CFR-03A QC-FD		1400	5	W	✓	✓	✓	✓	✓		✓					
10	CFR-[redacted] QC-FB		1500	5	W	✓	✓	✓	✓	✓		✓					

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Joe Naughton	9/13/24 2030				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Jonathan Hayes	9/14/2024 10:30	

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)
Hand Del		Y N C B	Y N		Y N	Y N			

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

ANALYTICAL SUMMARY REPORT

October 31, 2024

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

Work Order: H24090536 Quote ID: H1525

Project Name: CFROU-SEDIMENT

Energy Laboratories Inc Helena MT received the following 9 samples for MT DEQ-Federal Superfund on 9/14/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H24090536-001	CFR-34	09/12/24 10:00	09/14/24	Sediment	Metals by ICP/ICPMS, Total Percent Moisture Total Metals Digestion by SW3050B Sieve Analysis, Wet
H24090536-002	CFR-27H	09/12/24 11:00	09/14/24	Sediment	Same As Above
H24090536-003	CFR-18	09/12/24 11:45	09/14/24	Sediment	Same As Above
H24090536-004	CFR-11F	09/12/24 15:00	09/14/24	Sediment	Same As Above
H24090536-005	CFR-07D	09/12/24 12:45	09/14/24	Sediment	Same As Above
H24090536-006	CFR-03A	09/12/24 14:00	09/14/24	Sediment	Same As Above
H24090536-007	WSC-SBC	09/12/24 16:30	09/14/24	Sediment	Same As Above
H24090536-008	SS-25	09/12/24 17:15	09/14/24	Sediment	Same As Above
H24090536-009	CFR-18 QC-FD	09/12/24 11:45	09/14/24	Sediment	Same As Above

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

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

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.

CLIENT: MT DEQ-Federal Superfund
Project: CFROU-SEDIMENT
Work Order: H24090536

Report Date: 10/31/24

CASE NARRATIVE

The difference in results between samples CFR-18 and CFR-18 QC-FD is mostly likely attributed to the differences in moisture content between the two samples. JCS 103124

All "J" qualified analyte concentrations are below the laboratory minimum recommended Reporting Limit (RL) and above the calculated method detection limit (MDL). Inorganic analytes reported with "J" qualifiers should be verified against the corresponding method blank and continuing calibration blanks. Inorganic "J" quantitations near the MDL may be suspect due to possible method background levels, sample matrix effects, and/or daily variability in instrument signal-to-noise levels.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-34
Project: CFROU-SEDIMENT
Matrix: Sediment

Lab ID: H24090536-001
Collection Date: 09/12/24 10:00
DateReceived: 09/14/24
Report Date: 10/31/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	58.7	wt%		0.2	0.02	D2974	10/30/24 14:46 / jjp			L DRYING OVEN 2_241030A : 1		PMOIST_241030_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	2.1	wt%-wet		0.1		SSSA 15-2	10/24/24 18:16 / OS			MISC SOILS_241024B : 1		R199826
METALS, TOTAL - EPA SW846												
Arsenic	92	mg/kg-dry		2	2	SW6020	10/29/24 18:37 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B : 27		74716
Cadmium	7.9	mg/kg-dry		0.2	0.09	SW6020	10/29/24 18:37 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B : 27		74716
Copper	1170	mg/kg-dry		5	2	SW6020	10/29/24 18:37 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B : 27		74716
Lead	236	mg/kg-dry		5	1	SW6020	10/29/24 18:37 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B : 27		74716
Zinc	1160	mg/kg-dry		6	6	SW6020	10/29/24 18:37 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B : 27		74716

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-27H
Project: CFROU-SEDIMENT
Matrix: Sediment

Lab ID: H24090536-002
Collection Date: 09/12/24 11:00
DateReceived: 09/14/24
Report Date: 10/31/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	54.8	wt%		0.2	0.02	D2974	10/30/24 14:46 / jjp			L DRYING OVEN 2_241030A	3	PMOIST_241030_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	4.0	wt%-wet		0.1		SSSA 15-2	10/24/24 18:16 / OS			MISC SOILS_241024B	2	R199826
METALS, TOTAL - EPA SW846												
Arsenic	111	mg/kg-dry		2	2	SW6020	10/29/24 18:54 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	32	74716
Cadmium	7.6	mg/kg-dry		0.2	0.08	SW6020	10/29/24 18:54 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	32	74716
Copper	1440	mg/kg-dry		5	1	SW6020	10/29/24 18:54 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	32	74716
Lead	254	mg/kg-dry		5	1	SW6020	10/29/24 18:54 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	32	74716
Zinc	1240	mg/kg-dry		5	5	SW6020	10/29/24 18:54 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	32	74716

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-18
Project: CFROU-SEDIMENT
Matrix: Sediment

Lab ID: H24090536-003
Collection Date: 09/12/24 11:45
DateReceived: 09/14/24
Report Date: 10/31/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	76.2	wt%		0.2	0.02	D2974	10/30/24 14:47 / jjp			L DRYING OVEN 2_241030A	5	PMOIST_241030_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	6.5	wt%-wet		0.1		SSSA 15-2	10/24/24 18:16 / OS			MISC SOILS_241024B	3	R199826
METALS, TOTAL - EPA SW846												
Arsenic	201	mg/kg-dry		3	3	SW6020	10/29/24 18:57 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	33	74716
Cadmium	12.5	mg/kg-dry		0.2	0.2	SW6020	10/29/24 18:57 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	33	74716
Copper	2110	mg/kg-dry		5	3	SW6020	10/29/24 18:57 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	33	74716
Lead	405	mg/kg-dry		5	2	SW6020	10/29/24 18:57 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	33	74716
Zinc	2080	mg/kg-dry		10	10	SW6020	10/29/24 18:57 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	33	74716

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-11F
Project: CFROU-SEDIMENT
Matrix: Sediment

Lab ID: H24090536-004
Collection Date: 09/12/24 15:00
DateReceived: 09/14/24
Report Date: 10/31/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	68.9	wt%		0.2	0.02	D2974	10/30/24 14:47 / jjp			L DRYING OVEN 2_241030A	7	PMOIST_241030_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	5.6	wt%-wet		0.1		SSSA 15-2	10/24/24 18:16 / OS			MISC SOILS_241024B	4	R199826
METALS, TOTAL - EPA SW846												
Arsenic	136	mg/kg-dry		2	2	SW6020	10/29/24 19:01 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	34	74716
Cadmium	7.3	mg/kg-dry		0.2	0.1	SW6020	10/29/24 19:01 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	34	74716
Copper	1400	mg/kg-dry		5	2	SW6020	10/29/24 19:01 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	34	74716
Lead	266	mg/kg-dry		5	2	SW6020	10/29/24 19:01 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	34	74716
Zinc	1370	mg/kg-dry		8	8	SW6020	10/29/24 19:01 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	34	74716

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-07D
Project: CFROU-SEDIMENT
Matrix: Sediment

Lab ID: H24090536-005
Collection Date: 09/12/24 12:45
DateReceived: 09/14/24
Report Date: 10/31/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	68.9	wt%		0.2	0.02	D2974	10/30/24 14:47 / jjp			L DRYING OVEN 2_241030A	9	PMOIST_241030_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	9.3	wt%-wet		0.1		SSSA 15-2	10/24/24 18:16 / OS			MISC SOILS_241024B	5	R199826
METALS, TOTAL - EPA SW846												
Arsenic	242	mg/kg-dry		2	2	SW6020	10/29/24 19:04 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	35	74716
Cadmium	6.3	mg/kg-dry		0.2	0.1	SW6020	10/29/24 19:04 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	35	74716
Copper	2270	mg/kg-dry		5	2	SW6020	10/29/24 19:04 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	35	74716
Lead	324	mg/kg-dry		5	2	SW6020	10/29/24 19:04 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	35	74716
Zinc	1520	mg/kg-dry		7	7	SW6020	10/29/24 19:04 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	35	74716

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-03A
Project: CFROU-SEDIMENT
Matrix: Sediment

Lab ID: H24090536-006
Collection Date: 09/12/24 14:00
DateReceived: 09/14/24
Report Date: 10/31/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	72.8	wt%		0.2	0.02	D2974	10/30/24 14:47 / jjp			DRYING OVEN 2_241030A	11	PMOIST_241030_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	3.4	wt%-wet		0.1		SSSA 15-2	10/24/24 18:16 / OS			MISC SOILS_241024B	6	R199826
METALS, TOTAL - EPA SW846												
Arsenic	207	mg/kg-dry		3	3	SW6020	10/29/24 19:08 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	36	74716
Cadmium	6.7	mg/kg-dry		0.2	0.1	SW6020	10/29/24 19:08 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	36	74716
Copper	1570	mg/kg-dry		5	2	SW6020	10/29/24 19:08 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	36	74716
Lead	305	mg/kg-dry		5	2	SW6020	10/29/24 19:08 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	36	74716
Zinc	1600	mg/kg-dry		9	9	SW6020	10/29/24 19:08 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	36	74716

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: WSC-SBC
Project: CFROU-SEDIMENT
Matrix: Sediment

Lab ID: H24090536-007
Collection Date: 09/12/24 16:30
DateReceived: 09/14/24
Report Date: 10/31/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	63.8	wt%		0.2	0.02	D2974	10/30/24 14:48 / jjp			DRYING OVEN 2_241030A	13	PMOIST_241030_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	12.0	wt%-wet		0.1		SSSA 15-2	10/24/24 18:16 / OS			MISC SOILS_241024B	7	R199826
METALS, TOTAL - EPA SW846												
Arsenic	69	mg/kg-dry		2	2	SW6020	10/29/24 19:11 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	37	74716
Cadmium	3.3	mg/kg-dry		0.2	0.1	SW6020	10/29/24 19:11 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	37	74716
Copper	864	mg/kg-dry		5	2	SW6020	10/29/24 19:11 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	37	74716
Lead	102	mg/kg-dry		5	1	SW6020	10/29/24 19:11 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	37	74716
Zinc	464	mg/kg-dry		7	7	SW6020	10/29/24 19:11 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	37	74716

Report Definitions: RL - Analyte Reporting Limit | MCL - Maximum Contaminant Level | ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-25
Project: CFROU-SEDIMENT
Matrix: Sediment

Lab ID: H24090536-008
Collection Date: 09/12/24 17:15
DateReceived: 09/14/24
Report Date: 10/31/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	82.7	wt%		0.2	0.02	D2974	10/30/24 14:48 / jjp			DRYING OVEN 2_241030A	17	PMOIST_241030_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	2.4	wt%-wet		0.1		SSSA 15-2	10/24/24 18:16 / OS			MISC SOILS_241024B	8	R199826
METALS, TOTAL - EPA SW846												
Arsenic	144	mg/kg-dry		4	4	SW6020	10/29/24 19:14 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	38	74716
Cadmium	8.9	mg/kg-dry		0.2	0.2	SW6020	10/29/24 19:14 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	38	74716
Copper	338	mg/kg-dry		5	4	SW6020	10/29/24 19:14 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	38	74716
Lead	173	mg/kg-dry		5	3	SW6020	10/29/24 19:14 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	38	74716
Zinc	1740	mg/kg-dry		10	10	SW6020	10/29/24 19:14 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	38	74716

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-18 QC-FD
Project: CFROU-SEDIMENT
Matrix: Sediment

Lab ID: H24090536-009
Collection Date: 09/12/24 11:45
DateReceived: 09/14/24
Report Date: 10/31/24

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS												
Moisture	60.9	wt%		0.2	0.02	D2974	10/30/24 14:48 / jjp			DRYING OVEN 2_241030A	19	PMOIST_241030_A
SIEVE ANALYSIS												
No. 230 (63 um), Passed	6.8	wt%-wet		0.1		SSSA 15-2	10/24/24 18:16 / OS			MISC SOILS_241024B	9	R199826
METALS, TOTAL - EPA SW846												
Arsenic	138	mg/kg-dry		2	2	SW6020	10/29/24 19:18 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	39	74716
Cadmium	6.1	mg/kg-dry		0.2	0.09	SW6020	10/29/24 19:18 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	39	74716
Copper	1230	mg/kg-dry		5	2	SW6020	10/29/24 19:18 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	39	74716
Lead	224	mg/kg-dry		5	1	SW6020	10/29/24 19:18 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	39	74716
Zinc	1230	mg/kg-dry		6	6	SW6020	10/29/24 19:18 / dck	10/25/24 07:38	SW3050 B	ICPMS206-H_241028B	39	74716

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24090536 **BatchID:** 74716 **Date:** *31-Oct-24*

Run ID :Run Order: **ICPMS206-H_241028B: 24** SampType: **Method Blank** Lab ID: **MB-74716** Method: **SW6020**

Analysis Date: **10/29/24 18:26** Units: **mg/kg** **Prep Info:** Prep Date: **10/25/2024** Prep Method: **SW3050 B**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.7									
Cadmium	ND	0.04									
Copper	ND	0.6									
Lead	ND	0.5									
Zinc	ND	2									

Associated samples:

Run ID :Run Order: **ICPMS206-H_241028B: 25** SampType: **Laboratory Control Sample** Lab ID: **LCS-74716** Method: **SW6020**

Analysis Date: **10/29/24 18:30** Units: **mg/kg** **Prep Info:** Prep Date: **10/25/2024** Prep Method: **SW3050 B**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	174	1.0	201.9	0	**86**	66.4	104				
Cadmium	103	1.0	102	0	**101**	79.2	121				
Copper	130	1.0	141.1	0	**92**	73.9	113				
Lead	109	1.0	108.2	0	**101**	71.6	128				
Zinc	256	2.4	237.9	0	**107**	83.1	125				

Associated samples:

Run ID :Run Order: **ICPMS206-H_241028B: 26** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-74716** Method: **SW6020**

Analysis Date: **10/29/24 18:33** Units: **mg/kg** **Prep Info:** Prep Date: **10/25/2024** Prep Method: **SW3050 B**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.0	1.0	49	0	**102**	80	120				
Cadmium	26.6	1.0	24.5	0	**109**	80	120				
Copper	52.0	1.0	49	0	**106**	80	120				
Lead	50.7	1.0	49	0	**103**	80	120				
Zinc	50.3	2.3	49	0	**103**	80	120				

Associated samples:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24090536 **BatchID:** 74716 **Date:** *31-Oct-24*

Run ID :Run Order: **ICPMS206-H_241028B: 28** SampType: **Serial Dilution** Lab ID: **H24090536-001ADIL** Method: **SW6020**

Analysis Date: **10/29/24 18:40** Units: **mg/kg-dry** **Prep Info:** Prep Date: **10/25/2024** Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	94.8	8.8		0		0	0	91.9	**3.1**	10	
Cadmium	7.89	1.0		0		0	0	7.863	**0.4**	10	
Copper	1150	7.5		0		0	0	1173	**2.2**	10	
Lead	233	5.9		0		0	0	236	**1.4**	10	
Zinc	1220	28		0		0	0	1161	**5.0**	10	

Associated samples:

Run ID :Run Order: **ICPMS206-H_241028B: 29** SampType: **Post Digestion/Distillation Spike** Lab ID: **H24090536-001APDS1** Method: **SW6020**

Analysis Date: **10/29/24 18:44** Units: **mg/kg-dry** **Prep Info:** Prep Date: **10/25/2024** Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	152	1.8	58.72	91.9	**103**	75	125				
Cadmium	72.0	1.0	58.72	7.863	**109**	75	125				
Copper	1210	1.5	58.72	1173		75	125				A
Lead	292	1.2	58.72	236		75	125				A
Zinc	1200	5.5	58.72	1161		75	125				A

Associated samples:

Run ID :Run Order: **ICPMS206-H_241028B: 30** SampType: **Sample Matrix Spike** Lab ID: **H24090536-001AMS** Method: **SW6020**

Analysis Date: **10/29/24 18:47** Units: **mg/kg-dry** **Prep Info:** Prep Date: **10/25/2024** Prep Method: **SW3050 B**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	211	1.8	116.5	91.9	**103**	75	125				
Cadmium	69.4	1.0	58.23	7.863	**106**	75	125				
Copper	1290	1.5	116.5	1173		75	125				A
Lead	360	1.2	116.5	236	**107**	75	125				
Zinc	1290	5.5	116.5	1161		75	125				A

Associated samples:

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24090536 **BatchID: 74716** **Date:** *31-Oct-24*

Run ID :Run Order: **ICPMS206-H_241028B: 31** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24090536-001AMSD** Method: **SW6020**

Analysis Date: **10/29/24 18:50** Units: **mg/kg-dry** **Prep Info:** Prep Date: **10/25/2024** Prep Method: **SW3050 B**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	214	1.7	115.3	91.9	106	75	125	211.4	1.5	20	
Cadmium	72.5	1.0	57.63	7.863	112	75	125	69.42	4.3	20	
Copper	1510	1.5	115.3	1173		75	125	1289	15	20	A
Lead	384	1.1	115.3	236	128	75	125	360.3	6.2	20	S
Zinc	1420	5.4	115.3	1161		75	125	1286	9.8	20	A

Associated samples:

Run ID :Run Order: **ICPMS206-H_241028B: 43** SampType: **Serial Dilution** Lab ID: **H24100799-001ADIL** Method: **SW6020**

Analysis Date: **10/29/24 19:32** Units: **mg/kg-dry** **Prep Info:** Prep Date: **10/25/2024** Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	4.3		0		0	0	3.738		10	
Cadmium	ND	1.0		0		0	0	0.09296		10	
Copper	14.7	3.6		0		0	0	13.37		10	N
Lead	12.2	2.8		0		0	0	12.69		10	N
Zinc	53.7	13		0		0	0	47.14		10	N

Associated samples:

Run ID :Run Order: **ICPMS206-H_241028B: 44** SampType: **Post Digestion/Distillation Spike** Lab ID: **H24100799-001APDS1** Method: **SW6020**

Analysis Date: **10/29/24 19:36** Units: **mg/kg-dry** **Prep Info:** Prep Date: **10/25/2024** Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	35.3	1.0	28.2	3.738	112	75	125				
Cadmium	34.6	1.0	28.2	0.09296	122	75	125				
Copper	46.6	1.0	28.2	13.37	118	75	125				
Lead	46.9	1.0	28.2	12.69	121	75	125				
Zinc	80.4	2.7	28.2	47.14	118	75	125				

Associated samples:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24090536 **BatchID: 74716** **Date:** *31-Oct-24*

Run ID :Run Order: **ICPMS206-H_241028B: 45** SampType: **Sample Matrix Spike** Lab ID: **H24100799-001AMS** Method: **SW6020**

Analysis Date: **10/29/24 19:39** Units: **mg/kg-dry** **Prep Info:** Prep Date: **10/25/2024** Prep Method: **SW3050 B**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	60.9	1.0	58.08	3.738	**98**	75	125				
Cadmium	30.8	1.0	29.04	0.09296	**106**	75	125				
Copper	72.9	1.0	58.08	13.37	**102**	75	125				
Lead	68.5	1.0	58.08	12.69	**96**	75	125				
Zinc	110	2.7	58.08	47.14	**108**	75	125				

Associated samples:

Run ID :Run Order: **ICPMS206-H_241028B: 46** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24100799-001AMSD** Method: **SW6020**

Analysis Date: **10/29/24 19:43** Units: **mg/kg-dry** **Prep Info:** Prep Date: **10/25/2024** Prep Method: **SW3050 B**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	59.6	1.0	55.85	3.738	**100**	75	125	60.93	**2.2**	20	
Cadmium	29.9	1.0	27.92	0.09296	**107**	75	125	30.78	**2.8**	20	
Copper	70.1	1.0	55.85	13.37	**102**	75	125	72.86	**3.8**	20	
Lead	66.7	1.0	55.85	12.69	**97**	75	125	68.49	**2.6**	20	
Zinc	105	2.6	55.85	47.14	**104**	75	125	109.9	**4.3**	20	

Associated samples:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24090536 **BatchID:** PMOIST_241030_A **Date:** *31-Oct-24*

Run ID :Run Order: **SOIL DRYING OVEN 2_241030A: 1** SampType: **Sample Duplicate** Lab ID: **H24090536-007A DUP** Method: **D2974**

Analysis Date: **10/30/24 14:48** Units: **wt%** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture	63.0	0.20		0				63.8	**1.3**	20	

Associated samples:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24090536 **BatchID:** **R199997** **Date:** *31-Oct-24*

Run ID :Run Order: **ICPMS206-H_241028B: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **SW6020**

Analysis Date: **10/29/24 16:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0614	0.0010	0.06	0	102	90	110				
Cadmium	0.0313	0.0010	0.03	0	104	90	110				
Copper	0.0640	0.0010	0.06	0	107	90	110				
Lead	0.0601	0.0010	0.06	0	100	90	110				
Zinc	0.0631	0.0010	0.06	0	105	90	110				

Associated samples:

Run ID :Run Order: **ICPMS206-H_241028B: 17** SampType: **Interference Check Sample A** Lab ID: **ICSA** Method: **SW6020**

Analysis Date: **10/29/24 16:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.0000112	0.0010		0							
Cadmium	0.000151	0.0010		0							
Copper	0.0000453	0.0010		0							
Lead	0.0000313	0.0010		0							
Zinc	0.000999	0.0010		0							

Associated samples:

Run ID :Run Order: **ICPMS206-H_241028B: 19** SampType: **Interference Check Sample AB** Lab ID: **ICSAB** Method: **SW6020**

Analysis Date: **10/29/24 16:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0104	0.0010	0.01	0	104	70	130				
Cadmium	0.0107	0.0010	0.01	0	107	70	130				
Copper	0.0207	0.0010	0.02	0	104	70	130				
Lead	0.0000290	0.0010		0		0	0				
Zinc	0.0120	0.0010	0.01	0	120	70	130				

Associated samples:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24090536 **BatchID:** **R199997** **Date:** *31-Oct-24*

Run ID :Run Order: **ICPMS206-H_241028B: 22** SampType: **Continuing Calibration Verification Standar** Lab ID: **CCV** Method: **SW6020**

Analysis Date: **10/29/24 18:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0509	0.0010	0.05	0	**102**	90	110				
Cadmium	0.0521	0.0010	0.05	0	**104**	90	110				
Copper	0.0520	0.0010	0.05	0	**104**	90	110				
Lead	0.0487	0.0010	0.05	0	**97**	90	110				
Zinc	0.0518	0.0010	0.05	0	**104**	90	110				

Associated samples:

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

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H24090536

Login completed by: Taylor K. Jones
Date Received: 9/14/2024

Reviewed by: cjohnson
Received by: JH

Reviewed Date: 9/21/2024
Carrier name: Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	2.4°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

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

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

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

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.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

The temperature blank temperature in shipping container 1 was 2.3°C, shipping container 2 was 2.4°C, shipping container 5 was 2.3°C, shipping container 6 was 1.3°C and shipping container 7 was 2.0°C.

Work Order Receipt Checklist - Continued

MT DEQ-Federal Superfund H24090536

The temperature of the sample(s) in shipping container 3 was 2.3°C, shipping container 4 was 1.9°C.
The collection times were not provided on the chain of custody for samples WSC-SBC and SS-25. WSC-SBC was collected at 16:30 and SS-25 was collected at 17:15 per the sample containers.
TKJ 09/16/24

Laboratory Certifications and Accreditations

Current certificates are available at www.energylab.com website:

	Agency	Number
Billings, MT	Alaska	17-023
	California	3087
	Colorado	MT00005
	Department of Defense (DoD)/ISO17025	ADE-2588
	Florida (Primary NELAP)	E87668
	Idaho	MT00005
	Louisiana	05079
	Montana	CERT0044
	Nebraska	NE-OS-13-04
	Nevada	NV-C24-00250
	North Dakota	R-007
	National Radon Proficiency	109383-RMP
	Oregon	4184
	South Dakota	ARSD 74:04:07
	Texas	TX-C24-00302
	US EPA Region VIII	Reciprocal
	USDA Soil Permit	P330-20-00170
	Washington	C1039
Casper, WY	Alaska	20-006
	California	3021
	Colorado	WY00002
	Florida (Primary NELAP)	E87641
	Idaho	WY00002
	Louisiana	05083
	Montana	CERT0002
	Nebraska	NE-OS-08-04
	Nevada	NV-C24-00245
	North Dakota	R-125
	Oregon	WY200001
	South Dakota	WY00002
	Texas	T104704181-23-21
	US EPA Region VIII	WY00002
	USNRC License	49-26846-01
	Washington	C1012
Gillette, WY	US EPA Region VIII	WY00006
Helena, MT	Colorado	MT00945
	Montana	CERT0079
	Nevada	NV-C24-00119
	US EPA Region VIII	Reciprocal
	USDA Soil Permit	P330-20-00090

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information (Billing information)

Company/Name	Montana DEQ
Contact	J. Banaszak
Phone	(406) 431-2252
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	Jessica.Banaszak@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other_____

Comments

Metals list:
As, Cd, Cu, Pb, Zn

Dry weight concentrations

Lab sieve to <0.063 mm size fraction

Project Information

Project Name, PWSID, Permit, etc.	CFROU - SEDIMENT
Sampler Name	J. Naughton
Sampler Phone	(406) 214-4478
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ ~~Byproduct 11 (e)2 material~~ ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

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

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Analysis Requested: Total Metals: see list	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	CFR-34	9/12/24	1000	1	S	✓			H240905 36
2	CFR-27H		1100	1	S	✓			
3	CFR-18		1145	1	S	✓			
4	CFR-11F 1500		[redacted]	1	S	✓			
5	CFR-07D 1245		[redacted]	1	S	✓			
6	CFR-03A [redacted]		1400	1	S	✓			
7	WSC-SBC			1	S	✓			
8	SS-25			1	S	✓			
9	CFR-18 QC-FD	9/12/24	1145	1	S	✓			
10	1			1	S	✓			

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Joe Naughton	9/13/24 2030				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Jonathan Haga	9/16/24 10:30	

LABORATORY USE ONLY

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

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

ANALYTICAL SUMMARY REPORT

March 13, 2025

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

Work Order: H24110734 Quote ID: H1525

Project Name: CFROU-SURFACE WATER

Energy Laboratories Inc Helena MT received the following 10 samples for MT DEQ-Federal Superfund on 11/26/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H24110734-001	CFR-34	11/25/24 9:20	11/26/24	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Hardness Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H24110734-002	CFR-27H	11/25/24 10:30	11/26/24	Surface Water	Same As Above
H24110734-003	CFR-18	11/25/24 11:20	11/26/24	Surface Water	Same As Above
H24110734-004	CFR-11F	11/25/24 12:00	11/26/24	Surface Water	Same As Above
H24110734-005	CFR-07D	11/25/24 12:40	11/26/24	Surface Water	Same As Above
H24110734-006	CFR-03A	11/25/24 13:15	11/26/24	Surface Water	Same As Above
H24110734-007	WSC-SBC	11/25/24 14:00	11/26/24	Surface Water	Same As Above
H24110734-008	SS-25	11/25/24 14:40	11/26/24	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended

ANALYTICAL SUMMARY REPORT

H24110734-009	CFR-03A QC-FD	11/25/24 13:15	11/26/24	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity to pH 4.5 Hardness Anions by Ion Chromatography Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by E200.2 E365.1 Digestion, Total P Nitrogen, Total Persulfate A4500 N-C Phosphorus, Total Solids, Total Suspended
H24110734-010	CFR-27H QC-FB	11/25/24 10:45	11/26/24	Surface Water	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise 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.

CLIENT: MT DEQ-Federal Superfund
Project: CFROU-SURFACE WATER
Work Order: H24110734

Revised Date: 03/13/25
Report Date: 12/23/24

CASE NARRATIVE

Joe Naughton contacted laboratory regarding results for sample WSC-SBC-007 Cadmium results due to higher than historically. Sample was re-digested and analyzed again for Cadmium. Attached is the revised report with the corrected value for Cadmium. WJJ 03/13/25

All "J" qualified analyte concentrations are below the laboratory minimum recommended Reporting Limit (RL) and above the calculated method detection limit (MDL). Inorganic analytes reported with "J" qualifiers should be verified against the corresponding method blank and continuing calibration blanks. Inorganic "J" quantitations near the MDL may be suspect due to possible method background levels, sample matrix effects, and/or daily variability in instrument signal-to-noise levels.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-34
Project: CFROU-SURFACE WATER
Matrix: Surface Water

Lab ID: H24110734-001
Collection Date: 11/25/24 09:20
DateReceived: 11/26/24
Report Date: 12/23/24 **Revised Date:** 03/13/25

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	9	mg/L		2	1	A2540 D	11/27/24 11:47 / eer			torius-BCA124-1S_241127A : 14		TSS20241127A
INORGANICS												
Alkalinity, Total as CaCO3	160	mg/L		4	2	A2320 B	11/27/24 17:19 / dpw			PHSC_101-H_241127A : 129		R200837
Bicarbonate as HCO3	190	mg/L		4	3	A2320 B	11/27/24 17:19 / dpw			PHSC_101-H_241127A : 129		R200837
Chloride	11	mg/L		1	0.02	E300.0	11/27/24 15:46 / eer			IC METROHM_241127A : 22		R200944
Sulfate	87	mg/L		1	0.03	E300.0	11/27/24 15:46 / eer			IC METROHM_241127A : 22		R200944
Hardness as CaCO3	233	mg/L		1	1	A2340 B	12/09/24 11:02 / slj			WATERCALC_241209A : 41		R201096
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.25	mg/L		0.02	0.007	E353.2	12/03/24 17:07 / JAR			SEAL AA500_241203C : 37		R200948
Nitrogen, Total	0.45	mg/L		0.05	0.02	A4500 N-C	12/03/24 11:32 / JAR	12/01/24 12:08	A4500 N-	FIA203-HE_241203A : 34		75357
Phosphorus, Total as P	0.022	mg/L		0.003	0.002	E365.1	12/02/24 11:19 / JAR	11/27/24 09:32	E365.1	SEAL AA500_241202A : 44		75347
METALS, DISSOLVED												
Arsenic	0.007	mg/L		0.001	0.0002	E200.8	12/06/24 15:49 / dck			ICPMS205-H_241205A : 251		R201060
Cadmium	0.00004	mg/L		0.00003	0.00002	E200.8	12/06/24 15:49 / dck			ICPMS205-H_241205A : 251		R201060
Copper	0.003	mg/L		0.001	0.0001	E200.8	12/06/24 15:49 / dck			ICPMS205-H_241205A : 251		R201060
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/06/24 15:49 / dck			ICPMS205-H_241205A : 251		R201060
Zinc	0.009	mg/L		0.008	0.001	E200.8	12/06/24 15:49 / dck			ICPMS205-H_241205A : 251		R201060
METALS, TOTAL RECOVERABLE												
Arsenic	0.008	mg/L		0.001	0.0001	E200.8	12/06/24 16:04 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 255		75360
Cadmium	0.00010	mg/L		0.00003	0.00003	E200.8	12/06/24 16:04 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 255		75360
Calcium	69	mg/L		1	0.2	E200.7	12/03/24 16:22 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 91		75360
Copper	0.013	mg/L		0.001	0.0003	E200.8	12/06/24 16:04 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 255		75360
Lead	0.0015	mg/L		0.0003	0.0001	E200.8	12/06/24 16:04 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 255		75360
Magnesium	15	mg/L		1	0.2	E200.7	12/03/24 16:22 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 91		75360
Potassium	3	mg/L		1	0.6	E200.7	12/03/24 16:22 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 91		75360
Sodium	19	mg/L		1	0.05	E200.7	12/03/24 16:22 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 91		75360
Zinc	0.018	mg/L		0.008	0.001	E200.8	12/06/24 16:04 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 255		75360

Report Definitions: RL - Analyte Reporting Limit MCL - Maximum Contaminant Level ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-27H
Project: CFROU-SURFACE WATER
Matrix: Surface Water

Lab ID: H24110734-002
Collection Date: 11/25/24 10:30
DateReceived: 11/26/24
Report Date: 12/23/24 **Revised Date:** 03/13/25

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	13	mg/L		2	1	A2540 D	11/27/24 11:47 / eer			torius-BCA124-1S_241127A : 15		TSS20241127A
INORGANICS												
Alkalinity, Total as CaCO3	160	mg/L		4	2	A2320 B	11/27/24 17:25 / dpw			PHSC_101-H_241127A : 131		R200837
Bicarbonate as HCO3	190	mg/L		4	3	A2320 B	11/27/24 17:25 / dpw			PHSC_101-H_241127A : 131		R200837
Chloride	12	mg/L		1	0.02	E300.0	11/27/24 16:00 / eer			IC METROHM_241127A : 23		R200944
Sulfate	92	mg/L		1	0.03	E300.0	11/27/24 16:00 / eer			IC METROHM_241127A : 23		R200944
Hardness as CaCO3	234	mg/L		1	1	A2340 B	12/09/24 11:02 / slj			WATERCALC_241209A : 42		R201096
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.27	mg/L		0.02	0.007	E353.2	12/03/24 17:08 / JAR			SEAL AA500_241203C : 38		R200948
Nitrogen, Total	0.48	mg/L		0.05	0.02	A4500 N-C	12/03/24 11:33 / JAR	12/01/24 12:08	A4500 N-	FIA203-HE_241203A : 35		75357
Phosphorus, Total as P	0.016	mg/L		0.003	0.002	E365.1	12/02/24 11:23 / JAR	11/27/24 09:32	E365.1	SEAL AA500_241202A : 48		75347
METALS, DISSOLVED												
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	12/06/24 16:08 / dck			ICPMS205-H_241205A : 256		R201060
Cadmium	0.00003	mg/L	J	0.00003	0.00002	E200.8	12/06/24 16:08 / dck			ICPMS205-H_241205A : 256		R201060
Copper	0.003	mg/L		0.001	0.0001	E200.8	12/06/24 16:08 / dck			ICPMS205-H_241205A : 256		R201060
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/06/24 16:08 / dck			ICPMS205-H_241205A : 256		R201060
Zinc	0.008	mg/L	J	0.008	0.001	E200.8	12/06/24 16:08 / dck			ICPMS205-H_241205A : 256		R201060
METALS, TOTAL RECOVERABLE												
Arsenic	0.008	mg/L		0.001	0.0001	E200.8	12/06/24 16:11 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 257		75360
Cadmium	0.00010	mg/L		0.00003	0.00003	E200.8	12/06/24 16:11 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 257		75360
Calcium	69	mg/L		1	0.2	E200.7	12/03/24 16:25 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 92		75360
Copper	0.015	mg/L		0.001	0.0003	E200.8	12/06/24 16:11 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 257		75360
Lead	0.0018	mg/L		0.0003	0.0001	E200.8	12/06/24 16:11 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 257		75360
Magnesium	15	mg/L		1	0.2	E200.7	12/03/24 16:25 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 92		75360
Potassium	3	mg/L		1	0.6	E200.7	12/03/24 16:25 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 92		75360
Sodium	18	mg/L		1	0.05	E200.7	12/03/24 16:25 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 92		75360
Zinc	0.019	mg/L		0.008	0.001	E200.8	12/06/24 16:11 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 257		75360

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-18
Project: CFROU-SURFACE WATER
Matrix: Surface Water

Lab ID: H24110734-003
Collection Date: 11/25/24 11:20
DateReceived: 11/26/24
Report Date: 12/23/24 **Revised Date:** 03/13/25

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	7	mg/L		2	1	A2540 D	11/27/24 11:48 / eer			torius-BCA124-1S_241127A : 16		TSS20241127A
INORGANICS												
Alkalinity, Total as CaCO3	150	mg/L		4	2	A2320 B	11/27/24 17:36 / dpw			PHSC_101-H_241127A : 135		R200837
Bicarbonate as HCO3	180	mg/L		4	3	A2320 B	11/27/24 17:36 / dpw			PHSC_101-H_241127A : 135		R200837
Chloride	10	mg/L		1	0.02	E300.0	11/27/24 16:15 / eer			IC METROHM_241127A : 24		R200944
Sulfate	97	mg/L		1	0.03	E300.0	11/27/24 16:15 / eer			IC METROHM_241127A : 24		R200944
Hardness as CaCO3	231	mg/L		1	1	A2340 B	12/09/24 11:02 / slj			WATERCALC_241209A : 43		R201096
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.14	mg/L		0.02	0.007	E353.2	12/03/24 17:09 / JAR			SEAL AA500_241203C : 39		R200948
Nitrogen, Total	0.29	mg/L		0.05	0.02	A4500 N-C	12/03/24 11:35 / JAR	12/01/24 12:08	A4500 N-	FIA203-HE_241203A : 36		75357
Phosphorus, Total as P	0.011	mg/L		0.003	0.002	E365.1	12/02/24 11:24 / JAR	11/27/24 09:32	E365.1	SEAL AA500_241202A : 49		75347
METALS, DISSOLVED												
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	12/06/24 16:15 / dck			ICPMS205-H_241205A : 258		R201060
Cadmium	0.00002	mg/L	J	0.00003	0.00002	E200.8	12/06/24 16:15 / dck			ICPMS205-H_241205A : 258		R201060
Copper	0.003	mg/L		0.001	0.0001	E200.8	12/06/24 16:15 / dck			ICPMS205-H_241205A : 258		R201060
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/06/24 16:15 / dck			ICPMS205-H_241205A : 258		R201060
Zinc	0.005	mg/L	J	0.008	0.001	E200.8	12/06/24 16:15 / dck			ICPMS205-H_241205A : 258		R201060
METALS, TOTAL RECOVERABLE												
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	12/06/24 16:19 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 259		75360
Cadmium	0.00006	mg/L		0.00003	0.00003	E200.8	12/06/24 16:19 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 259		75360
Calcium	68	mg/L		1	0.2	E200.7	12/03/24 16:29 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 93		75360
Copper	0.009	mg/L		0.001	0.0003	E200.8	12/06/24 16:19 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 259		75360
Lead	0.0009	mg/L		0.0003	0.0001	E200.8	12/06/24 16:19 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 259		75360
Magnesium	15	mg/L		1	0.2	E200.7	12/03/24 16:29 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 93		75360
Potassium	3	mg/L		1	0.6	E200.7	12/03/24 16:29 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 93		75360
Sodium	16	mg/L		1	0.05	E200.7	12/03/24 16:29 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 93		75360
Zinc	0.011	mg/L		0.008	0.001	E200.8	12/06/24 16:19 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 259		75360

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-11F
Project: CFROU-SURFACE WATER
Matrix: Surface Water

Lab ID: H24110734-004
Collection Date: 11/25/24 12:00
DateReceived: 11/26/24
Report Date: 12/23/24 **Revised Date:** 03/13/25

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	4	mg/L		2	1	A2540 D	11/27/24 11:48 / eer			torius-BCA124-1S_241127A : 17		TSS20241127A
INORGANICS												
Alkalinity, Total as CaCO3	150	mg/L		4	2	A2320 B	11/27/24 17:41 / dpw			PHSC_101-H_241127A : 137		R200837
Bicarbonate as HCO3	180	mg/L		4	3	A2320 B	11/27/24 17:41 / dpw			PHSC_101-H_241127A : 137		R200837
Chloride	11	mg/L		1	0.02	E300.0	11/27/24 16:29 / eer			IC METROHM_241127A : 25		R200944
Sulfate	104	mg/L		1	0.03	E300.0	11/27/24 16:29 / eer			IC METROHM_241127A : 25		R200944
Hardness as CaCO3	245	mg/L		1	1	A2340 B	12/09/24 11:02 / slj			WATERCALC_241209A : 44		R201096
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.11	mg/L		0.02	0.007	E353.2	12/03/24 17:10 / JAR			SEAL AA500_241203C : 40		R200948
Nitrogen, Total	0.26	mg/L		0.05	0.02	A4500 N-C	12/03/24 11:36 / JAR	12/01/24 12:08	A4500 N-	FIA203-HE_241203A : 37		75357
Phosphorus, Total as P	0.009	mg/L		0.003	0.002	E365.1	12/02/24 11:25 / JAR	11/27/24 09:32	E365.1	SEAL AA500_241202A : 50		75347
METALS, DISSOLVED												
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	12/06/24 16:23 / dck			ICPMS205-H_241205A : 260		R201060
Cadmium	0.00002	mg/L	J	0.00003	0.00002	E200.8	12/06/24 16:23 / dck			ICPMS205-H_241205A : 260		R201060
Copper	0.002	mg/L		0.001	0.0001	E200.8	12/06/24 16:23 / dck			ICPMS205-H_241205A : 260		R201060
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/06/24 16:23 / dck			ICPMS205-H_241205A : 260		R201060
Zinc	0.004	mg/L	J	0.008	0.001	E200.8	12/06/24 16:23 / dck			ICPMS205-H_241205A : 260		R201060
METALS, TOTAL RECOVERABLE												
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	12/06/24 16:27 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 261		75360
Cadmium	0.00003	mg/L	J	0.00003	0.00003	E200.8	12/06/24 16:27 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 261		75360
Calcium	71	mg/L		1	0.2	E200.7	12/03/24 16:41 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 96		75360
Copper	0.006	mg/L		0.001	0.0003	E200.8	12/06/24 16:27 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 261		75360
Lead	0.0006	mg/L		0.0003	0.0001	E200.8	12/06/24 16:27 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 261		75360
Magnesium	16	mg/L		1	0.2	E200.7	12/03/24 16:41 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 96		75360
Potassium	4	mg/L		1	0.1	E200.7	12/04/24 14:42 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241204A : 37		75360
Sodium	16	mg/L		1	0.05	E200.7	12/03/24 16:41 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 96		75360
Zinc	0.008	mg/L	J	0.008	0.001	E200.8	12/06/24 16:27 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 261		75360

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-07D
Project: CFROU-SURFACE WATER
Matrix: Surface Water

Lab ID: H24110734-005
Collection Date: 11/25/24 12:40
DateReceived: 11/26/24
Report Date: 12/23/24 **Revised Date:** 03/13/25

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	3	mg/L		2	1	A2540 D	11/27/24 11:48 / eer			torius-BCA124-1S_241127A : 18		TSS20241127A
INORGANICS												
Alkalinity, Total as CaCO3	140	mg/L		4	2	A2320 B	11/27/24 17:47 / dpw			PHSC_101-H_241127A : 139		R200837
Bicarbonate as HCO3	170	mg/L		4	3	A2320 B	11/27/24 17:47 / dpw			PHSC_101-H_241127A : 139		R200837
Chloride	11	mg/L		1	0.02	E300.0	11/27/24 16:44 / eer			IC METROHM_241127A : 26		R200944
Sulfate	104	mg/L		1	0.03	E300.0	11/27/24 16:44 / eer			IC METROHM_241127A : 26		R200944
Hardness as CaCO3	230	mg/L		1	1	A2340 B	12/09/24 11:02 / slj			WATERCALC_241209A : 45		R201096
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.13	mg/L		0.02	0.007	E353.2	12/03/24 17:11 / JAR			SEAL AA500_241203C : 41		R200948
Nitrogen, Total	0.26	mg/L		0.05	0.02	A4500 N-C	12/03/24 11:37 / JAR	12/01/24 12:08	A4500 N-	FIA203-HE_241203A : 38		75357
Phosphorus, Total as P	0.008	mg/L		0.003	0.002	E365.1	12/02/24 11:30 / JAR	11/27/24 09:32	E365.1	SEAL AA500_241202A : 54		75347
METALS, DISSOLVED												
Arsenic	0.006	mg/L		0.001	0.0002	E200.8	12/06/24 16:30 / dck			ICPMS205-H_241205A : 262		R201060
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	12/06/24 16:30 / dck			ICPMS205-H_241205A : 262		R201060
Copper	0.002	mg/L		0.001	0.0001	E200.8	12/06/24 16:30 / dck			ICPMS205-H_241205A : 262		R201060
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/06/24 16:30 / dck			ICPMS205-H_241205A : 262		R201060
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	12/06/24 16:30 / dck			ICPMS205-H_241205A : 262		R201060
METALS, TOTAL RECOVERABLE												
Arsenic	0.007	mg/L		0.001	0.0001	E200.8	12/06/24 16:34 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 263		75360
Cadmium	0.00003	mg/L	J	0.00003	0.00002	E200.8	12/06/24 16:34 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 263		75360
Calcium	67	mg/L		1	0.2	E200.7	12/03/24 16:45 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 97		75360
Copper	0.004	mg/L		0.001	0.0003	E200.8	12/06/24 16:34 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 263		75360
Lead	0.0004	mg/L		0.0003	0.0001	E200.8	12/06/24 16:34 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 263		75360
Magnesium	15	mg/L		1	0.2	E200.7	12/03/24 16:45 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 97		75360
Potassium	3	mg/L		1	0.1	E200.7	12/04/24 14:46 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241204A : 38		75360
Sodium	15	mg/L		1	0.05	E200.7	12/03/24 16:45 / kjb	12/02/24 07:56	E200.2	ICP2-HE_241203A : 97		75360
Zinc	0.006	mg/L	J	0.008	0.001	E200.8	12/06/24 16:34 / dck	12/02/24 07:56	E200.2	ICPMS205-H_241205A : 263		75360

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-03A
Project: CFROU-SURFACE WATER
Matrix: Surface Water

Lab ID: H24110734-006
Collection Date: 11/25/24 13:15
DateReceived: 11/26/24
Report Date: 12/23/24 **Revised Date:** 03/13/25

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	2	mg/L		2	1	A2540 D	11/27/24 11:48 / eer			torius-BCA124-1S_241127A : 19		TSS20241127A
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	11/27/24 17:52 / dpw			PHSC_101-H_241127A : 141		R200837
Bicarbonate as HCO3	140	mg/L		4	3	A2320 B	11/27/24 17:52 / dpw			PHSC_101-H_241127A : 141		R200837
Chloride	14	mg/L		1	0.02	E300.0	11/27/24 16:58 / eer			IC METROHM_241127A : 27		R200944
Sulfate	97	mg/L		1	0.03	E300.0	11/27/24 16:58 / eer			IC METROHM_241127A : 27		R200944
Hardness as CaCO3	208	mg/L		1	1	A2340 B	12/09/24 11:02 / slj			WATERCALC_241209A : 46		R201096
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.01	mg/L	J	0.02	0.007	E353.2	12/03/24 17:12 / JAR			SEAL AA500_241203C : 42		R200948
Nitrogen, Total	0.17	mg/L		0.05	0.02	A4500 N-C	12/03/24 11:38 / JAR	12/01/24 12:08	A4500 N-	FIA203-HE_241203A : 39		75357
Phosphorus, Total as P	0.008	mg/L		0.003	0.002	E365.1	12/02/24 11:31 / JAR	11/27/24 09:32	E365.1	SEAL AA500_241202A : 55		75348
METALS, DISSOLVED												
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	12/06/24 16:57 / dck			ICPMS205-H_241205A : 269		R201060
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	12/06/24 16:57 / dck			ICPMS205-H_241205A : 269		R201060
Copper	0.001	mg/L		0.001	0.0001	E200.8	12/06/24 16:57 / dck			ICPMS205-H_241205A : 269		R201060
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/06/24 16:57 / dck			ICPMS205-H_241205A : 269		R201060
Zinc	0.003	mg/L	J	0.008	0.001	E200.8	12/06/24 16:57 / dck			ICPMS205-H_241205A : 269		R201060
METALS, TOTAL RECOVERABLE												
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	12/06/24 17:01 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 270		75361
Cadmium	0.00003	mg/L	J	0.00003	0.00003	E200.8	12/06/24 17:01 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 270		75361
Calcium	61	mg/L		1	0.2	E200.7	12/03/24 16:56 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 100		75361
Copper	0.003	mg/L		0.001	0.0003	E200.8	12/06/24 17:01 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 270		75361
Lead	0.0003	mg/L		0.0003	0.0001	E200.8	12/06/24 17:01 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 270		75361
Magnesium	14	mg/L		1	0.2	E200.7	12/03/24 16:56 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 100		75361
Potassium	4	mg/L		1	0.1	E200.7	12/04/24 15:05 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241204A : 43		75361
Sodium	16	mg/L		1	0.05	E200.7	12/03/24 16:56 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 100		75361
Zinc	0.005	mg/L	J	0.008	0.001	E200.8	12/06/24 17:01 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 270		75361

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: WSC-SBC
Project: CFROU-SURFACE WATER
Matrix: Surface Water

Lab ID: H24110734-007
Collection Date: 11/25/24 14:00
DateReceived: 11/26/24
Report Date: 12/23/24 **Revised Date:** 03/13/25

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	2	mg/L	JL	2	1	A2540 D	11/27/24 11:49 / eer			torius-BCA124-1S_241127A : 20		TSS20241127A
INORGANICS												
Alkalinity, Total as CaCO3	130	mg/L		4	2	A2320 B	11/27/24 18:04 / dpw			PHSC_101-H_241127A : 145		R200837
Bicarbonate as HCO3	160	mg/L		4	3	A2320 B	11/27/24 18:04 / dpw			PHSC_101-H_241127A : 145		R200837
Chloride	1	mg/L		1	0.02	E300.0	11/27/24 17:13 / eer			IC METROHM_241127A : 28		R200944
Sulfate	28	mg/L		1	0.03	E300.0	11/27/24 17:13 / eer			IC METROHM_241127A : 28		R200944
Hardness as CaCO3	160	mg/L		1	1	A2340 B	12/09/24 11:02 / slj			WATERCALC_241209A : 47		R201096
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	0.05	mg/L		0.02	0.007	E353.2	12/03/24 17:16 / JAR			SEAL AA500_241203C : 45		R200948
Nitrogen, Total	0.13	mg/L		0.05	0.02	A4500 N-C	12/03/24 11:39 / JAR	12/01/24 12:08	A4500 N-	FIA203-HE_241203A : 40		75357
Phosphorus, Total as P	0.003	mg/L		0.003	0.002	E365.1	12/02/24 11:37 / JAR	11/27/24 09:32	E365.1	SEAL AA500_241202A : 61		75348
METALS, DISSOLVED												
Arsenic	0.003	mg/L		0.001	0.0002	E200.8	12/06/24 17:19 / dck			ICPMS205-H_241205A : 275		R201060
Cadmium	0.00002	mg/L	J	0.00003	0.00002	E200.8	12/06/24 17:19 / dck			ICPMS205-H_241205A : 275		R201060
Copper	0.0009	mg/L	J	0.001	0.0001	E200.8	12/06/24 17:19 / dck			ICPMS205-H_241205A : 275		R201060
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/06/24 17:19 / dck			ICPMS205-H_241205A : 275		R201060
Zinc	0.004	mg/L	J	0.008	0.001	E200.8	12/06/24 17:19 / dck			ICPMS205-H_241205A : 275		R201060
METALS, TOTAL RECOVERABLE												
Arsenic	0.003	mg/L		0.001	0.0001	E200.8	12/06/24 17:23 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 276		75361
Cadmium	ND	mg/L		0.00003	0.00003	E200.8	03/12/25 17:14 / dck	03/12/25 09:44	E200.2	ICPMS205-H_250311A : 327		76643
Calcium	47	mg/L		1	0.2	E200.7	12/03/24 17:15 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 105		75361
Copper	0.003	mg/L		0.001	0.0003	E200.8	12/06/24 17:23 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 276		75361
Lead	0.0002	mg/L	J	0.0003	0.0001	E200.8	12/06/24 17:23 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 276		75361
Magnesium	10	mg/L		1	0.2	E200.7	12/03/24 17:15 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 105		75361
Potassium	2	mg/L		1	0.1	E200.7	12/04/24 15:24 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241204A : 48		75361
Sodium	4	mg/L		1	0.05	E200.7	12/03/24 17:15 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 105		75361
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	12/06/24 17:23 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 276		75361

Report Definitions:
RL - Analyte Reporting Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
L -Lowest available reporting limit for the analytical method used and/or volume submitted
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: SS-25
Project: CFROU-SURFACE WATER
Matrix: Surface Water

Lab ID: H24110734-008
Collection Date: 11/25/24 14:40
DateReceived: 11/26/24
Report Date: 12/23/24 **Revised Date:** 03/13/25

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	6	mg/L		3	1	A2540 D	11/27/24 11:49 / eer			torius-BCA124-1S_241127A : 21		TSS20241127A
INORGANICS												
Alkalinity, Total as CaCO3	110	mg/L		4	2	A2320 B	11/27/24 18:09 / dpw			PHSC_101-H_241127A : 147		R200837
Bicarbonate as HCO3	130	mg/L		4	3	A2320 B	11/27/24 18:09 / dpw			PHSC_101-H_241127A : 147		R200837
Chloride	32	mg/L		1	0.02	E300.0	11/27/24 17:41 / eer			IC METROHM_241127A : 30		R200944
Sulfate	180	mg/L		1	0.03	E300.0	11/27/24 17:41 / eer			IC METROHM_241127A : 30		R200944
Hardness as CaCO3	279	mg/L		1	1	A2340 B	12/09/24 11:02 / slj			WATERCALC_241209A : 48		R201096
NUTRIENTS												
Nitrogen, Ammonia as N	ND	mg/L		0.05	0.02	E350.1	12/02/24 12:59 / JAR			SEAL AA500 II_241202A : 37		R200906
Nitrogen, Nitrate+Nitrite as N	0.01	mg/L	J	0.02	0.007	E353.2	12/03/24 17:19 / JAR			SEAL AA500_241203C : 48		R200948
Nitrogen, Total	0.39	mg/L		0.05	0.02	A4500 N-C	12/03/24 11:41 / JAR	12/01/24 12:08	A4500 N-	FIA203-HE_241203A : 41		75357
Phosphorus, Total as P	0.020	mg/L		0.003	0.002	E365.1	12/02/24 11:38 / JAR	11/27/24 09:32	E365.1	SEAL AA500_241202A : 62		75348
METALS, DISSOLVED												
Arsenic	0.008	mg/L		0.001	0.0002	E200.8	12/06/24 17:27 / dck			ICPMS205-H_241205A : 277		R201060
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	12/06/24 17:27 / dck			ICPMS205-H_241205A : 277		R201060
Copper	0.002	mg/L		0.001	0.0001	E200.8	12/06/24 17:27 / dck			ICPMS205-H_241205A : 277		R201060
Lead	0.0001	mg/L	J	0.0003	0.0001	E200.8	12/06/24 17:27 / dck			ICPMS205-H_241205A : 277		R201060
Zinc	0.005	mg/L	J	0.008	0.001	E200.8	12/06/24 17:27 / dck			ICPMS205-H_241205A : 277		R201060
METALS, TOTAL RECOVERABLE												
Arsenic	0.010	mg/L		0.001	0.0001	E200.8	12/06/24 17:31 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 278		75361
Cadmium	0.00012	mg/L		0.00003	0.00003	E200.8	12/06/24 17:31 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 278		75361
Calcium	82	mg/L		1	0.2	E200.7	12/03/24 17:26 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 108		75361
Copper	0.007	mg/L		0.001	0.0003	E200.8	12/06/24 17:31 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 278		75361
Lead	0.0013	mg/L		0.0003	0.0001	E200.8	12/06/24 17:31 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 278		75361
Magnesium	18	mg/L		1	0.2	E200.7	12/03/24 17:26 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 108		75361
Potassium	7	mg/L		1	0.1	E200.7	12/04/24 15:28 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241204A : 49		75361
Sodium	32	mg/L		1	0.05	E200.7	12/03/24 17:26 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 108		75361
Zinc	0.016	mg/L		0.008	0.001	E200.8	12/06/24 17:31 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 278		75361

Report Definitions:
RL - Analyte Reporting Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
J - Estimated value - analyte was present but less than the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-03A QC-FD
Project: CFROU-SURFACE WATER
Matrix: Surface Water

Lab ID: H24110734-009
Collection Date: 11/25/24 13:15
DateReceived: 11/26/24
Report Date: 12/23/24 **Revised Date:** 03/13/25

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	2	mg/L	JL	2	1	A2540 D	11/27/24 11:49 / eer			torius-BCA124-1S_241127A : 22		TSS20241127A
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		4	2	A2320 B	11/27/24 18:14 / dpw			PHSC_101-H_241127A : 149		R200837
Bicarbonate as HCO3	140	mg/L		4	3	A2320 B	11/27/24 18:14 / dpw			PHSC_101-H_241127A : 149		R200837
Chloride	14	mg/L		1	0.02	E300.0	11/27/24 18:54 / eer			IC METROHM_241127A : 35		R200944
Sulfate	96	mg/L		1	0.03	E300.0	11/27/24 18:54 / eer			IC METROHM_241127A : 35		R200944
Hardness as CaCO3	213	mg/L		1	1	A2340 B	12/09/24 11:02 / slj			WATERCALC_241209A : 49		R201096
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.007	E353.2	12/03/24 17:20 / JAR			SEAL AA500_241203C : 49		R200948
Nitrogen, Total	0.17	mg/L		0.05	0.02	A4500 N-C	12/03/24 11:42 / JAR	12/01/24 12:08	A4500 N-	FIA203-HE_241203A : 42		75357
Phosphorus, Total as P	0.009	mg/L		0.003	0.002	E365.1	12/02/24 11:39 / JAR	11/27/24 09:32	E365.1	SEAL AA500_241202A : 63		75348
METALS, DISSOLVED												
Arsenic	0.005	mg/L		0.001	0.0002	E200.8	12/06/24 17:42 / dck			ICPMS205-H_241205A : 281		R201060
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	12/06/24 17:42 / dck			ICPMS205-H_241205A : 281		R201060
Copper	0.001	mg/L		0.001	0.0001	E200.8	12/06/24 17:42 / dck			ICPMS205-H_241205A : 281		R201060
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/06/24 17:42 / dck			ICPMS205-H_241205A : 281		R201060
Zinc	0.002	mg/L	J	0.008	0.001	E200.8	12/06/24 17:42 / dck			ICPMS205-H_241205A : 281		R201060
METALS, TOTAL RECOVERABLE												
Arsenic	0.006	mg/L		0.001	0.0001	E200.8	12/06/24 17:46 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 282		75361
Cadmium	0.00003	mg/L	J	0.00003	0.00003	E200.8	12/06/24 17:46 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 282		75361
Calcium	63	mg/L		1	0.2	E200.7	12/03/24 17:30 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 109		75361
Copper	0.003	mg/L		0.001	0.0003	E200.8	12/06/24 17:46 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 282		75361
Lead	0.0003	mg/L		0.0003	0.0001	E200.8	12/06/24 17:46 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 282		75361
Magnesium	14	mg/L		1	0.2	E200.7	12/03/24 17:30 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 109		75361
Potassium	4	mg/L		1	0.1	E200.7	12/04/24 15:32 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241204A : 50		75361
Sodium	17	mg/L		1	0.05	E200.7	12/03/24 17:30 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 109		75361
Zinc	0.004	mg/L	J	0.008	0.001	E200.8	12/06/24 17:46 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 282		75361

Report Definitions:
RL - Analyte Reporting Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
L -Lowest available reporting limit for the analytical method used and/or volume submitted
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund
Client Sample ID: CFR-27H QC-FB
Project: CFROU-SURFACE WATER
Matrix: Surface Water

Lab ID: H24110734-010
Collection Date: 11/25/24 10:45
DateReceived: 11/26/24
Report Date: 12/23/24 **Revised Date:** 03/13/25

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
Solids, Total Suspended TSS @ 105 C	ND	mg/L	L	2	1	A2540 D	11/27/24 11:49 / eer			torius-BCA124-1S_241127A : 23		TSS20241127A
INORGANICS												
Alkalinity, Total as CaCO3	3	mg/L	J	4	2	A2320 B	11/27/24 18:20 / dpw			PHSC_101-H_241127A : 151		R200837
Bicarbonate as HCO3	3	mg/L	J	4	3	A2320 B	11/27/24 18:20 / dpw			PHSC_101-H_241127A : 151		R200837
Chloride	ND	mg/L		1	0.02	E300.0	11/27/24 17:27 / eer			IC METROHM_241127A : 29		R200944
Sulfate	ND	mg/L		1	0.03	E300.0	11/27/24 17:27 / eer			IC METROHM_241127A : 29		R200944
Hardness as CaCO3	ND	mg/L		1	1	A2340 B	12/09/24 11:02 / slj			WATERCALC_241209A : 50		R201096
NUTRIENTS												
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02	0.007	E353.2	12/03/24 17:21 / JAR			SEAL AA500_241203C : 50		R200948
Nitrogen, Total	ND	mg/L		0.05	0.02	A4500 N-C	12/03/24 11:48 / JAR	12/01/24 12:09	A4500 N-	FIA203-HE_241203A : 47		75358
Phosphorus, Total as P	ND	mg/L		0.003	0.002	E365.1	12/19/24 16:43 / JAR	12/19/24 12:38	E365.1	SEAL AA500_241219A : 25		75634
METALS, DISSOLVED												
Arsenic	ND	mg/L		0.001	0.0002	E200.8	12/06/24 17:50 / dck			ICPMS205-H_241205A : 283		R201060
Cadmium	ND	mg/L		0.00003	0.00002	E200.8	12/06/24 17:50 / dck			ICPMS205-H_241205A : 283		R201060
Copper	0.0004	mg/L	J	0.001	0.0001	E200.8	12/06/24 17:50 / dck			ICPMS205-H_241205A : 283		R201060
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/06/24 17:50 / dck			ICPMS205-H_241205A : 283		R201060
Zinc	ND	mg/L		0.008	0.001	E200.8	12/06/24 17:50 / dck			ICPMS205-H_241205A : 283		R201060
METALS, TOTAL RECOVERABLE												
Arsenic	ND	mg/L		0.001	0.0001	E200.8	12/06/24 17:54 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 284		75361
Cadmium	ND	mg/L		0.00003	0.00003	E200.8	12/06/24 17:54 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 284		75361
Calcium	ND	mg/L		1	0.2	E200.7	12/03/24 17:34 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 110		75361
Copper	ND	mg/L		0.001	0.0003	E200.8	12/06/24 17:54 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 284		75361
Lead	ND	mg/L		0.0003	0.0001	E200.8	12/06/24 17:54 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 284		75361
Magnesium	ND	mg/L		1	0.2	E200.7	12/03/24 17:34 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 110		75361
Potassium	0.1	mg/L	J	1	0.1	E200.7	12/04/24 15:43 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241204A : 53		75361
Sodium	0.08	mg/L	J	1	0.05	E200.7	12/03/24 17:34 / kjb	12/02/24 08:03	E200.2	ICP2-HE_241203A : 110		75361
Zinc	ND	mg/L		0.008	0.001	E200.8	12/06/24 17:54 / dck	12/02/24 08:03	E200.2	ICPMS205-H_241205A : 284		75361

Report Definitions:
RL - Analyte Reporting Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
L -Lowest available reporting limit for the analytical method used and/or volume submitted
ND - Not detected at the Reporting Limit (RL)

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 50660** **Date:** *13-Mar-25*

Run ID :Run Order: **SEAL AA500_241202A: 32** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **12/02/24 11:04** Units: **mg/L** **Prep Info:** Prep Date: **3/20/2020** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.0987	0.010	0.1	0	**99**	90	110				

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E**

Run ID :Run Order: **SEAL AA500_241202A: 51** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E365.1**

Analysis Date: **12/02/24 11:26** Units: **mg/L** **Prep Info:** Prep Date: **3/20/2020** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.0985	0.010	0.1	0	**98**	90	110				

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E**

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 50868** **Date:** *13-Mar-25*

Run ID :Run Order: **FIA203-HE_241203A: 45** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **12/03/24 11:45** Units: **mg/L** **Prep Info:** Prep Date: **4/8/2020** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.470	0.10	0.5	0	**94**	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 55893** **Date:** *13-Mar-25*

Run ID :Run Order: **SEAL AA500_241202A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **12/02/24 10:44** Units: **mg/L** **Prep Info:** Prep Date: **4/16/2021** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.263	0.010	0.25	0	**105**	90	110				

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E**

Run ID :Run Order: **SEAL AA500_241219A: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E365.1**

Analysis Date: **12/19/24 16:31** Units: **mg/L** **Prep Info:** Prep Date: **4/16/2021** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.259	0.010	0.25	0	**103**	90	110				

Associated samples: **H24110734-010E**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 62392** **Date:** *13-Mar-25*

Run ID :Run Order: **FIA203-HE_241203A: 31** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **A4500 N-C**

Analysis Date: **12/03/24 11:29** Units: **mg/L** **Prep Info:** Prep Date: **7/15/2022** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.480	0.10	0.5	0	**96**	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75347** **Date:** *13-Mar-25*

Run ID :Run Order: **SEAL AA500_241202A: 16** SampType: **Method Blank** Lab ID: **MB-75347** Method: **E365.1**

Analysis Date: **12/02/24 10:46** Units: **mg/L** **Prep Info:** Prep Date: **11/27/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.002									

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E**

Run ID :Run Order: **SEAL AA500_241202A: 18** SampType: **Laboratory Control Sample** Lab ID: **LCS-75347** Method: **E365.1**

Analysis Date: **12/02/24 10:48** Units: **mg/L** **Prep Info:** Prep Date: **11/27/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.417	0.010	0.4	0	**104**	90	110				

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E**

Run ID :Run Order: **SEAL AA500_241202A: 45** SampType: **Sample Matrix Spike** Lab ID: **H24110734-001Ems** Method: **E365.1**

Analysis Date: **12/02/24 11:20** Units: **mg/L** **Prep Info:** Prep Date: **11/27/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.238	0.010	0.2	0.022	**108**	90	110				

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E**

Run ID :Run Order: **SEAL AA500_241202A: 46** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-001Emsd** Method: **E365.1**

Analysis Date: **12/02/24 11:21** Units: **mg/L** **Prep Info:** Prep Date: **11/27/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.238	0.010	0.2	0.022	**108**	90	110	0.238	**0**	20	

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E**

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75348** **Date:** *13-Mar-25*

Run ID :Run Order: **SEAL AA500_241202A: 17** SampType: **Method Blank** Lab ID: **MB-75348** Method: **E365.1**

Analysis Date: **12/02/24 10:47** Units: **mg/L** **Prep Info:** Prep Date: **11/27/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.002									

Associated samples: **H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E**

Run ID :Run Order: **SEAL AA500_241202A: 20** SampType: **Laboratory Control Sample** Lab ID: **LCS-75348** Method: **E365.1**

Analysis Date: **12/02/24 10:51** Units: **mg/L** **Prep Info:** Prep Date: **11/27/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.418	0.010	0.4	0	105	90	110				

Associated samples: **H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E**

Run ID :Run Order: **SEAL AA500_241202A: 56** SampType: **Sample Matrix Spike** Lab ID: **H24110734-006Ems** Method: **E365.1**

Analysis Date: **12/02/24 11:32** Units: **mg/L** **Prep Info:** Prep Date: **11/27/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.229	0.010	0.2	0.008	110	90	110				

Associated samples: **H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E**

Run ID :Run Order: **SEAL AA500_241202A: 57** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-006Emsd** Method: **E365.1**

Analysis Date: **12/02/24 11:33** Units: **mg/L** **Prep Info:** Prep Date: **11/27/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.231	0.010	0.2	0.008	111	90	110	0.2286	1.0	20	S

Associated samples: **H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E**

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75357** **Date:** *13-Mar-25*

Run ID :Run Order: **FIA203-HE_241203A: 11** SampType: **Method Blank** Lab ID: **MB-75357** Method: **A4500 N-C**
Analysis Date: **12/03/24 11:05** Units: **mg/L** **Prep Info:** Prep Date: **12/1/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A**

Run ID :Run Order: **FIA203-HE_241203A: 13** SampType: **Laboratory Control Sample** Lab ID: **LCS-75357** Method: **A4500 N-C**
Analysis Date: **12/03/24 11:07** Units: **mg/L** **Prep Info:** Prep Date: **12/1/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.05	0.10	1	0	105	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A**

Run ID :Run Order: **FIA203-HE_241203A: 15** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-75357** Method: **A4500 N-C**
Analysis Date: **12/03/24 11:10** Units: **mg/L** **Prep Info:** Prep Date: **12/3/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.01	0.10	1	0	101	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A**

Run ID :Run Order: **FIA203-HE_241203A: 43** SampType: **Sample Matrix Spike** Lab ID: **H24110734-009Ams** Method: **A4500 N-C**
Analysis Date: **12/03/24 11:43** Units: **mg/L** **Prep Info:** Prep Date: **12/3/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.14	0.10	1	0.1662	97	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A**

Run ID :Run Order: **FIA203-HE_241203A: 44** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-009Amsd** Method: **A4500 N-C**
Analysis Date: **12/03/24 11:44** Units: **mg/L** **Prep Info:** Prep Date: **12/3/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.15	0.10	1	0.1662	98	90	110	1.136	1.0	20	

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75358** **Date:** *13-Mar-25*

Run ID :Run Order: **FIA203-HE_241203A: 12** SampType: **Method Blank** Lab ID: **MB-75358** Method: **A4500 N-C**
Analysis Date: **12/03/24 11:06** Units: **mg/L** **Prep Info:** Prep Date: **12/1/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	ND	0.02									

Associated samples: **H24110734-010A**

Run ID :Run Order: **FIA203-HE_241203A: 14** SampType: **Laboratory Control Sample** Lab ID: **LCS-75358** Method: **A4500 N-C**
Analysis Date: **12/03/24 11:08** Units: **mg/L** **Prep Info:** Prep Date: **12/1/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.03	0.10	1	0	103	90	110				

Associated samples: **H24110734-010A**

Run ID :Run Order: **FIA203-HE_241203A: 16** SampType: **Laboratory Fortified Blank** Lab ID: **LFB-75358** Method: **A4500 N-C**
Analysis Date: **12/03/24 11:11** Units: **mg/L** **Prep Info:** Prep Date: **12/3/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	1.08	0.10	1	0	108	90	110				

Associated samples: **H24110734-010A**

Run ID :Run Order: **FIA203-HE_241203A: 48** SampType: **Sample Matrix Spike** Lab ID: **H24110734-010Ams** Method: **A4500 N-C**
Analysis Date: **12/03/24 11:49** Units: **mg/L** **Prep Info:** Prep Date: **12/3/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.974	0.10	1	0	97	90	110				

Associated samples: **H24110734-010A**

Run ID :Run Order: **FIA203-HE_241203A: 49** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-010Amsd** Method: **A4500 N-C**
Analysis Date: **12/03/24 11:50** Units: **mg/L** **Prep Info:** Prep Date: **12/3/2024** Prep Method: **A4500 N-C**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.950	0.10	1	0	95	90	110	0.9737	2.5	20	

Associated samples: **H24110734-010A**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75360** **Date:** *13-Mar-25*

Run ID :Run Order: **ICP2-HE_241203A: 58** SampType: **Method Blank** Lab ID: **MB-75360** Method: **E200.7**

Analysis Date: **12/03/24 14:15** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.2									
Magnesium	ND	0.2									
Potassium	0.1	0.1									
Sodium	0.06	0.05									

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Run ID :Run Order: **ICP2-HE_241203A: 59** SampType: **Laboratory Control Sample** Lab ID: **LCS-75360** Method: **E200.7**

Analysis Date: **12/03/24 14:19** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.9	1.0	25	0	103	85	115				
Magnesium	26.5	1.0	25	0	106	85	115				
Potassium	25.5	1.0	25	0	102	85	115				
Sodium	26.7	1.0	25	0	107	85	115				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Run ID :Run Order: **ICP2-HE_241203A: 74** SampType: **Serial Dilution** Lab ID: **H24110733-007DDIL** Method: **E200.7**

Analysis Date: **12/03/24 15:16** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method:

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	55.8	1.2		0		0	0	54.48	2.3	10	
Magnesium	15.6	1.1		0		0	0	15.38	1.4	10	
Potassium	7.29	1.0		0		0	0	7.054	3.3	10	
Sodium	41.5	1.0		0		0	0	40.95	1.4	10	

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Run ID :Run Order: **ICP2-HE_241203A: 86** SampType: **Sample Matrix Spike** Lab ID: **H24110733-007DMS3** Method: **E200.7**

Analysis Date: **12/03/24 16:03** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	79.3	1.0	25	54.48	99	70	130				
Magnesium	40.3	1.0	25	15.38	100	70	130				
Potassium	32.7	1.0	25	7.054	103	70	130				

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** 75360 **Date:** *13-Mar-25*

Run ID :Run Order: **ICP2-HE_241203A: 86** SampType: **Sample Matrix Spike** Lab ID: **H24110733-007DMS3** Method: **E200.7**

Analysis Date: **12/03/24 16:03** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	65.6	1.0	25	40.95	**99**	70	130				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Run ID :Run Order: **ICP2-HE_241203A: 87** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110733-007DMSD3** Method: **E200.7**

Analysis Date: **12/03/24 16:06** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	82.8	1.0	25	54.48	**113**	70	130	79.33	**4.3**	20	
Magnesium	42.0	1.0	25	15.38	**107**	70	130	40.3	**4.2**	20	
Potassium	34.2	1.0	25	7.054	**109**	70	130	32.72	**4.5**	20	
Sodium	68.6	1.0	25	40.95	**111**	70	130	65.64	**4.4**	20	

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Run ID :Run Order: **ICP2-HE_241204A: 30** SampType: **Method Blank** Lab ID: **MB-75360** Method: **E200.7**

Analysis Date: **12/04/24 14:16** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.2									
Magnesium	ND	0.2									
Potassium	ND	0.1									
Sodium	ND	0.05									

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Run ID :Run Order: **ICP2-HE_241204A: 31** SampType: **Laboratory Control Sample** Lab ID: **LCS-75360** Method: **E200.7**

Analysis Date: **12/04/24 14:20** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.9	1.0	25	0	**99**	85	115				
Magnesium	24.8	1.0	25	0	**99**	85	115				
Potassium	26.0	1.0	25	0	**104**	85	115				
Sodium	25.6	1.0	25	0	**102**	85	115				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75360** **Date:** *13-Mar-25*

Run ID :Run Order: **ICP2-HE_241204A: 33** SampType: **Serial Dilution** Lab ID: **H24110733-007DDIL** Method: **E200.7**

Analysis Date: **12/04/24 14:27** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method:

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	56.8	1.2		0		0	0	53.38	**6.3**	10	
Magnesium	15.4	1.1		0		0	0	14.6	**5.6**	10	
Potassium	7.14	1.0		0		0	0	6.605	**7.7**	10	
Sodium	40.5	1.0		0		0	0	39.68	**2.0**	10	

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Run ID :Run Order: **ICP2-HE_241204A: 35** SampType: **Sample Matrix Spike** Lab ID: **H24110733-007DMS3** Method: **E200.7**

Analysis Date: **12/04/24 14:35** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	81.3	1.0	25	53.38	**112**	70	130				
Magnesium	41.2	1.0	25	14.6	**106**	70	130				
Potassium	32.6	1.0	25	6.605	**104**	70	130				
Sodium	65.4	1.0	25	39.68	**103**	70	130				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Run ID :Run Order: **ICP2-HE_241204A: 36** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110733-007DMSD3** Method: **E200.7**

Analysis Date: **12/04/24 14:38** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	78.8	1.0	25	53.38	**102**	70	130	81.32	**3.1**	20	
Magnesium	40.3	1.0	25	14.6	**103**	70	130	41.16	**2.2**	20	
Potassium	32.4	1.0	25	6.605	**103**	70	130	32.6	**0.7**	20	
Sodium	64.4	1.0	25	39.68	**99**	70	130	65.35	**1.4**	20	

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75360** **Date:** *13-Mar-25*

Run ID :Run Order: **ICPMS205-H_241205A: 239** SampType: **Method Blank** Lab ID: **MB-75360** Method: **E200.8**

Analysis Date: **12/06/24 15:03** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0001									
Cadmium	ND	0.00003									
Copper	ND	0.0003									
Lead	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Run ID :Run Order: **ICPMS205-H_241205A: 240** SampType: **Laboratory Control Sample** Lab ID: **LCS-75360** Method: **E200.8**

Analysis Date: **12/06/24 15:07** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.501	0.0010	0.5	0	**100**	85	115				
Cadmium	0.253	0.0010	0.25	0	**101**	85	115				
Copper	0.487	0.0050	0.5	0	**97**	85	115				
Lead	0.473	0.0010	0.5	0	**95**	85	115				
Zinc	0.489	0.010	0.5	0	**98**	85	115				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Run ID :Run Order: **ICPMS205-H_241205A: 244** SampType: **Sample Matrix Spike** Lab ID: **H24110694-001CMS3** Method: **E200.8**

Analysis Date: **12/06/24 15:22** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.512	0.0010	0.5	0.002646	**102**	70	130				
Cadmium	0.252	0.0010	0.25	0	**101**	70	130				
Copper	0.538	0.0050	0.5	0.05836	**96**	70	130				
Lead	0.478	0.0010	0.5	0.0003317	**95**	70	130				
Zinc	0.611	0.010	0.5	0.1308	**96**	70	130				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75360** **Date:** *13-Mar-25*

Run ID :Run Order: **ICPMS205-H_241205A: 245** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110694-001CMSD3** Method: **E200.8**

Analysis Date: **12/06/24 15:26** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.512	0.0010	0.5	0.002646	**102**	70	130	0.5119	**0.1**	20	
Cadmium	0.253	0.0010	0.25	0	**101**	70	130	0.2519	**0.5**	20	
Copper	0.539	0.0050	0.5	0.05836	**96**	70	130	0.538	**0.1**	20	
Lead	0.481	0.0010	0.5	0.0003317	**96**	70	130	0.4778	**0.7**	20	
Zinc	0.615	0.010	0.5	0.1308	**97**	70	130	0.6108	**0.7**	20	

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D**

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75361** **Date:** *13-Mar-25*

Run ID :Run Order: **ICP2-HE_241203A: 98** SampType: **Method Blank** Lab ID: **MB-75361** Method: **E200.7**

Analysis Date: **12/03/24 16:48** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.2									
Magnesium	ND	0.2									
Potassium	ND	0.1									
Sodium	0.07	0.05									

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241203A: 99** SampType: **Laboratory Control Sample** Lab ID: **LCS-75361** Method: **E200.7**

Analysis Date: **12/03/24 16:52** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.1	1.0	25	0	104	85	115				
Magnesium	26.3	1.0	25	0	105	85	115				
Potassium	27.4	1.0	25	0	110	85	115				
Sodium	26.4	1.0	25	0	106	85	115				

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241203A: 101** SampType: **Serial Dilution** Lab ID: **H24110734-006DDIL** Method: **E200.7**

Analysis Date: **12/03/24 17:00** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method:

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	63.3	1.2		0		0	0	61.08	3.5	10	
Magnesium	13.7	1.1		0		0	0	13.5	1.2	10	
Potassium	4.00	1.0		0		0	0	3.751		10	N
Sodium	16.6	1.0		0		0	0	16.29	1.6	10	

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241203A: 103** SampType: **Sample Matrix Spike** Lab ID: **H24110734-006DMS3** Method: **E200.7**

Analysis Date: **12/03/24 17:08** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	86.8	1.0	25	61.08	103	70	130				
Magnesium	39.6	1.0	25	13.5	105	70	130				
Potassium	29.7	1.0	25	3.751	104	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** 75361 **Date:** *13-Mar-25*

Run ID :Run Order: **ICP2-HE_241203A: 103** SampType: **Sample Matrix Spike** Lab ID: **H24110734-006DMS3** Method: **E200.7**

Analysis Date: **12/03/24 17:08** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	41.2	1.0	25	16.29	**100**	70	130				

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241203A: 104** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-006DMSD3** Method: **E200.7**

Analysis Date: **12/03/24 17:11** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	87.1	1.0	25	61.08	**104**	70	130	86.8	**0.4**	20	
Magnesium	39.3	1.0	25	13.5	**103**	70	130	39.64	**0.7**	20	
Potassium	30.2	1.0	25	3.751	**106**	70	130	29.7	**1.6**	20	
Sodium	41.9	1.0	25	16.29	**102**	70	130	41.23	**1.6**	20	

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241204A: 41** SampType: **Method Blank** Lab ID: **MB-75361** Method: **E200.7**

Analysis Date: **12/04/24 14:57** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.2									
Magnesium	ND	0.2									
Potassium	ND	0.1									
Sodium	0.05	0.05									

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241204A: 42** SampType: **Laboratory Control Sample** Lab ID: **LCS-75361** Method: **E200.7**

Analysis Date: **12/04/24 15:01** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.2	1.0	25	0	**105**	85	115				
Magnesium	26.6	1.0	25	0	**106**	85	115				
Potassium	25.9	1.0	25	0	**104**	85	115				
Sodium	24.8	1.0	25	0	**99**	85	115				

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75361** **Date:** *13-Mar-25*

Run ID :Run Order: **ICP2-HE_241204A: 44** SampType: **Serial Dilution** Lab ID: **H24110734-006DDIL** Method: **E200.7**

Analysis Date: **12/04/24 15:09** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method:

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	64.5	1.2		0		0	0	63.1	**2.2**	10	
Magnesium	13.6	1.1		0		0	0	13.93	**2.4**	10	
Potassium	4.08	1.0		0		0	0	3.861		10	N
Sodium	16.7	1.0		0		0	0	16.41	**1.7**	10	

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241204A: 46** SampType: **Sample Matrix Spike** Lab ID: **H24110734-006DMS3** Method: **E200.7**

Analysis Date: **12/04/24 15:16** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	89.5	1.0	25	63.1	**105**	70	130				
Magnesium	40.6	1.0	25	13.93	**107**	70	130				
Potassium	31.5	1.0	25	3.861	**111**	70	130				
Sodium	43.4	1.0	25	16.41	**108**	70	130				

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241204A: 47** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-006DMSD3** Method: **E200.7**

Analysis Date: **12/04/24 15:20** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	92.2	1.0	25	63.1	**117**	70	130	89.46	**3.1**	20	
Magnesium	42.0	1.0	25	13.93	**112**	70	130	40.58	**3.4**	20	
Potassium	31.5	1.0	25	3.861	**110**	70	130	31.5	**0.1**	20	
Sodium	43.2	1.0	25	16.41	**107**	70	130	43.36	**0.3**	20	

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75361** **Date:** *13-Mar-25*

Run ID :Run Order: **ICPMS205-H_241205A: 266** SampType: **Method Blank** Lab ID: **MB-75361** Method: **E200.8**

Analysis Date: **12/06/24 16:45** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0001									
Cadmium	ND	0.00003									
Copper	ND	0.0003									
Lead	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICPMS205-H_241205A: 267** SampType: **Laboratory Control Sample** Lab ID: **LCS-75361** Method: **E200.8**

Analysis Date: **12/06/24 16:49** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.492	0.0010	0.5	0	**98**	85	115				
Cadmium	0.253	0.0010	0.25	0	**101**	85	115				
Copper	0.486	0.0050	0.5	0	**97**	85	115				
Lead	0.479	0.0010	0.5	0	**96**	85	115				
Zinc	0.479	0.010	0.5	0	**96**	85	115				

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICPMS205-H_241205A: 271** SampType: **Sample Matrix Spike** Lab ID: **H24110734-006DMS3** Method: **E200.8**

Analysis Date: **12/06/24 17:04** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.504	0.0010	0.5	0.005738	**100**	70	130				
Cadmium	0.254	0.0010	0.25	0.00002853	**102**	70	130				
Copper	0.478	0.0050	0.5	0.002953	**95**	70	130				
Lead	0.480	0.0010	0.5	0.0003402	**96**	70	130				
Zinc	0.478	0.010	0.5	0.005429	**94**	70	130				

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75361** **Date:** *13-Mar-25*

Run ID :Run Order: **ICPMS205-H_241205A: 272** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-006DMSD3** Method: **E200.8**

Analysis Date: **12/06/24 17:08** Units: **mg/L** **Prep Info:** Prep Date: **12/2/2024** Prep Method: **E200.2**

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.509	0.0010	0.5	0.005738	**101**	70	130	0.5039	**1.0**	20	
Cadmium	0.257	0.0010	0.25	0.00002853	**103**	70	130	0.2542	**1.3**	20	
Copper	0.484	0.0050	0.5	0.002953	**96**	70	130	0.4784	**1.2**	20	
Lead	0.482	0.0010	0.5	0.0003402	**96**	70	130	0.4805	**0.2**	20	
Zinc	0.483	0.010	0.5	0.005429	**96**	70	130	0.4775	**1.1**	20	

Associated samples: **H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 75634** **Date:** *13-Mar-25*

Run ID :Run Order: **SEAL AA500_241219A: 16** SampType: **Method Blank** Lab ID: **MB-75634** Method: **E365.1**

Analysis Date: **12/19/24 16:33** Units: **mg/L** **Prep Info:** Prep Date: **12/19/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.002									

Associated samples: **H24110734-010E**

Run ID :Run Order: **SEAL AA500_241219A: 19** SampType: **Laboratory Control Sample** Lab ID: **LCS-75634** Method: **E365.1**

Analysis Date: **12/19/24 16:36** Units: **mg/L** **Prep Info:** Prep Date: **12/19/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.406	0.010	0.4	0	**101**	90	110				

Associated samples: **H24110734-010E**

Run ID :Run Order: **SEAL AA500_241219A: 26** SampType: **Sample Duplicate** Lab ID: **H24110734-010EDUP** Method: **E365.1**

Analysis Date: **12/19/24 16:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	ND	0.010		0				0		20	

Associated samples: **H24110734-010E**

Run ID :Run Order: **SEAL AA500_241219A: 27** SampType: **Sample Matrix Spike** Lab ID: **H24110734-010Ems** Method: **E365.1**

Analysis Date: **12/19/24 16:45** Units: **mg/L** **Prep Info:** Prep Date: **12/19/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.210	0.010	0.2	0	**105**	90	110				

Associated samples: **H24110734-010E**

Run ID :Run Order: **SEAL AA500_241219A: 28** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-010Emsd** Method: **E365.1**

Analysis Date: **12/19/24 16:46** Units: **mg/L** **Prep Info:** Prep Date: **12/19/2024** Prep Method: **E365.1**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.210	0.010	0.2	0	**105**	90	110	0.21	**0.1**	20	

Associated samples: **H24110734-010E**

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: 76643** **Date:** *13-Mar-25*

Run ID :Run Order: **ICPMS205-H_250311A: 315** SampType: **Method Blank** Lab ID: **MB-76643** Method: **E200.8**
Analysis Date: **03/12/25 16:30** Units: **mg/L** **Prep Info:** Prep Date: **3/12/2025** Prep Method: **E200.2**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.00003									

Associated samples: **H24110734-007D**

Run ID :Run Order: **ICPMS205-H_250311A: 316** SampType: **Laboratory Control Sample** Lab ID: **LCS-76643** Method: **E200.8**
Analysis Date: **03/12/25 16:33** Units: **mg/L** **Prep Info:** Prep Date: **3/12/2025** Prep Method: **E200.2**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.246	0.0010	0.25	0	**99**	85	115				

Associated samples: **H24110734-007D**

Run ID :Run Order: **ICPMS205-H_250311A: 328** SampType: **Sample Matrix Spike** Lab ID: **H24110734-007DMS3** Method: **E200.8**
Analysis Date: **03/12/25 17:18** Units: **mg/L** **Prep Info:** Prep Date: **3/12/2025** Prep Method: **E200.2**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.250	0.0010	0.25	0	**100**	70	130				

Associated samples: **H24110734-007D**

Run ID :Run Order: **ICPMS205-H_250311A: 329** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-007DMSD3** Method: **E200.8**
Analysis Date: **03/12/25 17:21** Units: **mg/L** **Prep Info:** Prep Date: **3/12/2025** Prep Method: **E200.2**

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.250	0.0010	0.25	0	**100**	70	130	0.2505	**0.2**	20	

Associated samples: **H24110734-007D**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** R200837 **Date:** *13-Mar-25*

Run ID :Run Order: **PHSC_101-H_241127A: 127** SampType: **Method Blank** Lab ID: **MBLK** Method: **A2320 B**

Analysis Date: **11/27/24 17:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	2									

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **PHSC_101-H_241127A: 128** SampType: **Laboratory Control Sample** Lab ID: **LCS** Method: **A2320 B**

Analysis Date: **11/27/24 17:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	630	4.0	600	0	**105**	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **PHSC_101-H_241127A: 133** SampType: **Sample Duplicate** Lab ID: **H24110734-002ADUP** Method: **A2320 B**

Analysis Date: **11/27/24 17:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	160	4.0		0				157.6	**0.8**	10	
Bicarbonate as HCO3	190	4.0		0				191.7	**0.8**	10	

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **PHSC_101-H_241127A: 143** SampType: **Sample Duplicate** Lab ID: **H24110734-006ADUP** Method: **A2320 B**

Analysis Date: **11/27/24 17:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	120	4.0		0				121.8	**0.6**	10	
Bicarbonate as HCO3	140	4.0		0				144.2	**0.3**	10	

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** R200906 **Date:** *13-Mar-25*

Run ID :Run Order: **SEAL AA500 II_241202A: 11** SampType: **Method Blank** Lab ID: **ICB** Method: **E350.1**

Analysis Date: **12/02/24 12:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	ND	0.02									

Associated samples: **H24110734-008E**

Run ID :Run Order: **SEAL AA500 II_241202A: 12** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E350.1**

Analysis Date: **12/02/24 12:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.992	0.050	1	0	**99**	90	110				

Associated samples: **H24110734-008E**

Run ID :Run Order: **SEAL AA500 II_241202A: 13** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E350.1**

Analysis Date: **12/02/24 12:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.997	0.050	1	0	**100**	90	110				

Associated samples: **H24110734-008E**

Run ID :Run Order: **SEAL AA500 II_241202A: 27** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E350.1**

Analysis Date: **12/02/24 12:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	0.502	0.050	0.5	0	**100**	90	110				

Associated samples: **H24110734-008E**

Run ID :Run Order: **SEAL AA500 II_241202A: 30** SampType: **Sample Matrix Spike** Lab ID: **H24110733-005EMS** Method: **E350.1**

Analysis Date: **12/02/24 12:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	1.05	0.050	1	0	**105**	80	120				

Associated samples: **H24110734-008E**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: R200906** **Date:** *13-Mar-25*

Run ID :Run Order: **SEAL AA500 II_241202A: 31** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110733-005EMSD** Method: **E350.1**

Analysis Date: **12/02/24 12:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia as N	1.07	0.050	1	0	**107**	80	120	1.049	**1.7**	10	

Associated samples: **H24110734-008E**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** R200944 **Date:** *13-Mar-25*

Run ID :Run Order: **IC METROHM_241127A: 1** SampType: **Method Blank** Lab ID: **ICB** Method: **E300.0**

Analysis Date: **11/27/24 10:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.02									
Sulfate	ND	0.03									

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **IC METROHM_241127A: 2** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E300.0**

Analysis Date: **11/27/24 10:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	99.2	1.0	100	0	99	90	110				
Sulfate	385	1.0	400	0	96	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **IC METROHM_241127A: 3** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E300.0**

Analysis Date: **11/27/24 10:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.0	1.0	25	0	96	90	110				
Sulfate	98.6	1.0	100	0	99	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **IC METROHM_241127A: 17** SampType: **Sample Matrix Spike** Lab ID: **H24110733-009AMS** Method: **E300.0**

Analysis Date: **11/27/24 14:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	84.9	1.0	25	59.97	100	90	110				
Sulfate	190	1.0	100	89.42	101	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** R200944 **Date:** *13-Mar-25*

Run ID :Run Order: **IC METROHM_241127A: 18** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110733-009AMSD** Method: **E300.0**

Analysis Date: **11/27/24 14:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	85.1	1.0	25	59.97	101	90	110	84.9	0.3	20	
Sulfate	192	1.0	100	89.42	102	90	110	190.4	0.7	20	

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **IC METROHM_241127A: 19** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **11/27/24 15:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.7	1.0	50	0	99	90	110				
Sulfate	199	1.0	200	0	100	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **IC METROHM_241127A: 31** SampType: **Sample Matrix Spike** Lab ID: **H24110734-008AMS** Method: **E300.0**

Analysis Date: **11/27/24 17:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	57.1	1.0	25	31.64	102	90	110				
Sulfate	284	1.0	100	180.2	103	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **IC METROHM_241127A: 32** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-008AMSD** Method: **E300.0**

Analysis Date: **11/27/24 18:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	57.2	1.0	25	31.64	102	90	110	57.08	0.2	20	
Sulfate	286	1.0	100	180.2	105	90	110	283.5	0.7	20	

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: R200944** **Date:** *13-Mar-25*

Run ID :Run Order: **IC METROHM_241127A: 33** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E300.0**

Analysis Date: **11/27/24 18:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.8	1.0	50	0	100	90	110				
Sulfate	201	1.0	200	0	100	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **IC METROHM_241127A: 36** SampType: **Sample Matrix Spike** Lab ID: **H24110734-009AMS** Method: **E300.0**

Analysis Date: **11/27/24 19:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	40.2	1.0	25	14.28	104	90	110				
Sulfate	198	1.0	100	96.47	102	90	110				

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

Run ID :Run Order: **IC METROHM_241127A: 37** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-009AMSD** Method: **E300.0**

Analysis Date: **11/27/24 19:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	40.3	1.0	25	14.28	104	90	110	40.23	0.1	20	
Sulfate	200	1.0	100	96.47	103	90	110	198.2	0.7	20	

Associated samples: **H24110734-001A, H24110734-002A, H24110734-003A, H24110734-004A, H24110734-005A, H24110734-006A, H24110734-007A, H24110734-008A, H24110734-009A, H24110734-010A**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** R200948 **Date:** *13-Mar-25*

Run ID :Run Order: **SEAL AA500_241203C: 12** SampType: **Method Blank** Lab ID: **ICB** Method: **E353.2**

Analysis Date: **12/03/24 16:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	ND	0.007									

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E, H24110734-010E**

Run ID :Run Order: **SEAL AA500_241203C: 14** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E353.2**

Analysis Date: **12/03/24 16:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.998	0.010	1	0	100	90	110				

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E, H24110734-010E**

Run ID :Run Order: **SEAL AA500_241203C: 15** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E353.2**

Analysis Date: **12/03/24 16:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.974	0.011	1	0	97	90	110				

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E, H24110734-010E**

Run ID :Run Order: **SEAL AA500_241203C: 28** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **12/03/24 16:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.996	0.010	1	0	100	90	110				

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E, H24110734-010E**

Run ID :Run Order: **SEAL AA500_241203C: 33** SampType: **Sample Matrix Spike** Lab ID: **H24110733-008EMS** Method: **E353.2**

Analysis Date: **12/03/24 17:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	2.62	0.011	1	1.633	99	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** R200948 **Date:** *13-Mar-25*

Run ID :Run Order: **SEAL AA500_241203C: 33** SampType: **Sample Matrix Spike** Lab ID: **H24110733-008EMS** Method: **E353.2**

Analysis Date: **12/03/24 17:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E, H24110734-010E**

Run ID :Run Order: **SEAL AA500_241203C: 34** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110733-008EMSD** Method: **E353.2**

Analysis Date: **12/03/24 17:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	2.63	0.011	1	1.633	100	90	110	2.623	0.3	10	

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E, H24110734-010E**

Run ID :Run Order: **SEAL AA500_241203C: 43** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E353.2**

Analysis Date: **12/03/24 17:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	0.980	0.010	1	0	98	90	110				

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E, H24110734-010E**

Run ID :Run Order: **SEAL AA500_241203C: 46** SampType: **Sample Matrix Spike** Lab ID: **H24110734-007EMS** Method: **E353.2**

Analysis Date: **12/03/24 17:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.03	0.011	1	0.0482	98	90	110				

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E, H24110734-010E**

Run ID :Run Order: **SEAL AA500_241203C: 47** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-007EMSD** Method: **E353.2**

Analysis Date: **12/03/24 17:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+Nitrite as N	1.03	0.011	1	0.0482	99	90	110	1.028	0.5	10	

Associated samples: **H24110734-001E, H24110734-002E, H24110734-003E, H24110734-004E, H24110734-005E, H24110734-006E, H24110734-007E, H24110734-008E, H24110734-009E, H24110734-010E**

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: R200954** **Date:** *13-Mar-25*

Run ID :Run Order: **ICP2-HE_241203A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **12/03/24 10:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	38.9	1.0	40	0	**97**	95	105				
Magnesium	39.3	1.0	40	0	**98**	95	105				
Potassium	39.8	1.0	40	0	**100**	95	105				
Sodium	39.6	1.0	40	0	**99**	95	105				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D, H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241203A: 7** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **12/03/24 10:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.1	1.0	25	0	**100**	95	105				
Magnesium	25.2	1.0	25	0	**101**	95	105				
Potassium	26.2	1.0	25	0	**105**	95	105				
Sodium	25.9	1.0	25	0	**104**	95	105				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D, H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241203A: 82** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/03/24 15:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.2	1.0	25	0	**105**	90	110				
Magnesium	25.9	1.0	25	0	**104**	90	110				
Potassium	25.2	1.0	25	0	**101**	90	110				
Sodium	25.3	1.0	25	0	**101**	90	110				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D, H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241203A: 94** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/03/24 16:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.1	1.0	25	0	**104**	90	110				

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: R200954** **Date:** *13-Mar-25*

Run ID :Run Order: **ICP2-HE_241203A: 94** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/03/24 16:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 4	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	25.9	1.0	25	0	**104**	90	110				
Potassium	27.3	1.0	25	0	**109**	90	110				
Sodium	27.5	1.0	25	0	**110**	90	110				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D, H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241203A: 106** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/03/24 17:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.0	1.0	25	0	**104**	90	110				
Magnesium	26.3	1.0	25	0	**105**	90	110				
Sodium	27.4	1.0	25	0	**109**	90	110				

Associated samples: **H24110734-001D, H24110734-002D, H24110734-003D, H24110734-004D, H24110734-005D, H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: R200970** **Date:** *13-Mar-25*

Run ID :Run Order: **ICP2-HE_241204A: 6** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.7**

Analysis Date: **12/04/24 12:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	38.4	1.0	40	0	96	95	105				

Associated samples: **H24110734-004D, H24110734-005D, H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241204A: 7** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV-1** Method: **E200.7**

Analysis Date: **12/04/24 12:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	24.8	1.0	25	0	99	95	105				

Associated samples: **H24110734-004D, H24110734-005D, H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241204A: 27** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/04/24 14:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	23.6	1.0	25	0	94	90	110				

Associated samples: **H24110734-004D, H24110734-005D, H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241204A: 39** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/04/24 14:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	26.4	1.0	25	0	106	90	110				

Associated samples: **H24110734-004D, H24110734-005D, H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

Run ID :Run Order: **ICP2-HE_241204A: 51** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.7**

Analysis Date: **12/04/24 15:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	27.1	1.0	25	0	109	90	110				

Associated samples: **H24110734-004D, H24110734-005D, H24110734-006D, H24110734-007D, H24110734-008D, H24110734-009D, H24110734-010D**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: R201060** **Date:** *13-Mar-25*

Run ID :Run Order: **ICPMS205-H_241205A: 23** SampType: **Laboratory Fortified Blank** Lab ID: **LFB** Method: **E200.8**

Analysis Date: **12/05/24 19:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0507	0.0050	0.05	0	101	85	115				
Cadmium	0.0504	0.0010	0.05	0	101	85	115				
Copper	0.0520	0.010	0.05	0	104	85	115				
Lead	0.0490	0.010	0.05	0	98	85	115				
Zinc	0.0535	0.010	0.05	0	107	85	115				

Associated samples: **H24110734-001C, H24110734-002C, H24110734-003C, H24110734-004C, H24110734-005C, H24110734-006C, H24110734-007C, H24110734-008C, H24110734-009C, H24110734-010C**

Run ID :Run Order: **ICPMS205-H_241205A: 188** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **12/06/24 10:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0617	0.0050	0.06	0	103	90	110				
Cadmium	0.0321	0.0010	0.03	0	107	90	110				
Copper	0.0635	0.010	0.06	0	106	90	110				
Lead	0.0614	0.010	0.06	0	102	90	110				
Zinc	0.0630	0.010	0.06	0	105	90	110				

Associated samples: **H24110734-001C, H24110734-001D, H24110734-002C, H24110734-002D, H24110734-003C, H24110734-003D, H24110734-004C, H24110734-004D, H24110734-005C, H24110734-005D, H24110734-006C, H24110734-006D, H24110734-007C, H24110734-007D, H24110734-008C, H24110734-008D, H24110734-009C, H24110734-009D, H24110734-010C, H24110734-010D**

Run ID :Run Order: **ICPMS205-H_241205A: 198** SampType: **Method Blank** Lab ID: **LRB** Method: **E200.8**

Analysis Date: **12/06/24 12:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0002									
Cadmium	ND	0.00002									
Copper	ND	0.0001									
Lead	ND	0.0001									
Zinc	ND	0.001									

Associated samples: **H24110734-001C, H24110734-002C, H24110734-003C, H24110734-004C, H24110734-005C, H24110734-006C, H24110734-007C, H24110734-008C, H24110734-009C, H24110734-010C**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: R201060** **Date:** *13-Mar-25*

Run ID :Run Order: **ICPMS205-H_241205A: 249** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **12/06/24 15:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0508	0.0050	0.05	0	102	90	110				
Cadmium	0.0509	0.0010	0.05	0	102	90	110				
Copper	0.0502	0.010	0.05	0	100	90	110				
Lead	0.0492	0.010	0.05	0	98	90	110				
Zinc	0.0504	0.010	0.05	0	101	90	110				

Associated samples: **H24110734-001C, H24110734-001D, H24110734-002C, H24110734-002D, H24110734-003C, H24110734-003D, H24110734-004C, H24110734-004D, H24110734-005C, H24110734-005D, H24110734-006C, H24110734-006D, H24110734-007C, H24110734-007D, H24110734-008C, H24110734-008D, H24110734-009C, H24110734-009D, H24110734-010C, H24110734-010D**

Run ID :Run Order: **ICPMS205-H_241205A: 252** SampType: **Sample Matrix Spike** Lab ID: **H24110734-001CMS** Method: **E200.8**

Analysis Date: **12/06/24 15:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0590	0.0010	0.05	0.006524	105	70	130				
Cadmium	0.0518	0.0010	0.05	0.00003601	104	70	130				
Copper	0.0533	0.0050	0.05	0.003239	100	70	130				
Lead	0.0506	0.0010	0.05	0	101	70	130				
Zinc	0.0619	0.010	0.05	0.009269	105	70	130				

Associated samples: **H24110734-001C, H24110734-002C, H24110734-003C, H24110734-004C, H24110734-005C, H24110734-006C, H24110734-007C, H24110734-008C, H24110734-009C, H24110734-010C**

Run ID :Run Order: **ICPMS205-H_241205A: 253** SampType: **Sample Matrix Spike Duplicate** Lab ID: **H24110734-001CMSD** Method: **E200.8**

Analysis Date: **12/06/24 15:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0604	0.0010	0.05	0.006524	108	70	130	0.059	2.3	20	
Cadmium	0.0518	0.0010	0.05	0.00003601	104	70	130	0.05182	0	20	
Copper	0.0542	0.0050	0.05	0.003239	102	70	130	0.05334	1.6	20	
Lead	0.0517	0.0010	0.05	0	103	70	130	0.05061	2.2	20	
Zinc	0.0618	0.010	0.05	0.009269	105	70	130	0.06186	0.1	20	

Associated samples: **H24110734-001C, H24110734-002C, H24110734-003C, H24110734-004C, H24110734-005C, H24110734-006C, H24110734-007C, H24110734-008C, H24110734-009C, H24110734-010C**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** **R201060** **Date:** *13-Mar-25*

Run ID :Run Order: **ICPMS205-H_241205A: 264** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **12/06/24 16:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0508	0.0050	0.05	0	102	90	110				
Cadmium	0.0523	0.0010	0.05	0	105	90	110				
Copper	0.0506	0.010	0.05	0	101	90	110				
Lead	0.0489	0.010	0.05	0	98	90	110				
Zinc	0.0512	0.010	0.05	0	102	90	110				

Associated samples: **H24110734-001C, H24110734-001D, H24110734-002C, H24110734-002D, H24110734-003C, H24110734-003D, H24110734-004C, H24110734-004D, H24110734-005C, H24110734-005D, H24110734-006C, H24110734-006D, H24110734-007C, H24110734-007D, H24110734-008C, H24110734-008D, H24110734-009C, H24110734-009D, H24110734-010C, H24110734-010D**

Run ID :Run Order: **ICPMS205-H_241205A: 279** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **12/06/24 17:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0509	0.0050	0.05	0	102	90	110				
Cadmium	0.0521	0.0010	0.05	0	104	90	110				
Copper	0.0514	0.010	0.05	0	103	90	110				
Lead	0.0491	0.010	0.05	0	98	90	110				
Zinc	0.0508	0.010	0.05	0	102	90	110				

Associated samples: **H24110734-001C, H24110734-001D, H24110734-002C, H24110734-002D, H24110734-003C, H24110734-003D, H24110734-004C, H24110734-004D, H24110734-005C, H24110734-005D, H24110734-006C, H24110734-006D, H24110734-007C, H24110734-007D, H24110734-008C, H24110734-008D, H24110734-009C, H24110734-009D, H24110734-010C, H24110734-010D**

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID: R203366** **Date:** *13-Mar-25*

Run ID :Run Order: **ICPMS205-H_250311A: 92** SampType: **Initial Calibration Verification Standard** Lab ID: **ICV** Method: **E200.8**

Analysis Date: **03/11/25 21:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0300	0.0010	0.03	0	**100**	90	110				

Associated samples: **H24110734-007D**

Run ID :Run Order: **ICPMS205-H_250311A: 325** SampType: **Continuing Calibration Verification Standard** Lab ID: **CCV** Method: **E200.8**

Analysis Date: **03/12/25 17:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0514	0.0010	0.05	0	**103**	90	110				

Associated samples: **H24110734-007D**

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** TSS20241127A **Date:** *13-Mar-25*

Run ID :Run Order: **Sartorius-BCA124-1S_241127A: 1** SampType: **Method Blank** Lab ID: **MBLK_20241127-3** Method: **A2540 D**

Analysis Date: **11/27/24 11:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H24110734-001B, H24110734-002B, H24110734-003B, H24110734-004B, H24110734-005B, H24110734-006B, H24110734-007B, H24110734-008B, H24110734-009B, H24110734-010B**

Run ID :Run Order: **Sartorius-BCA124-1S_241127A: 2** SampType: **Laboratory Control Sample** Lab ID: **LCS_20241127-1** Method: **A2540 D**

Analysis Date: **11/27/24 11:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	99.0	25	100	0	99	80	120				

Associated samples: **H24110734-001B, H24110734-002B, H24110734-003B, H24110734-004B, H24110734-005B, H24110734-006B, H24110734-007B, H24110734-008B, H24110734-009B, H24110734-010B**

Run ID :Run Order: **Sartorius-BCA124-1S_241127A: 4** SampType: **Sample Duplicate** Lab ID: **H24110733-003BDUP** Method: **A2540 D**

Analysis Date: **11/27/24 11:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	23.8	10		0				22.89	3.8	10	

Associated samples: **H24110734-001B, H24110734-002B, H24110734-003B, H24110734-004B, H24110734-005B, H24110734-006B, H24110734-007B, H24110734-008B, H24110734-009B, H24110734-010B**

Run ID :Run Order: **Sartorius-BCA124-1S_241127A: 24** SampType: **Method Blank** Lab ID: **MBLK_20241127-4** Method: **A2540 D**

Analysis Date: **11/27/24 11:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H24110734-001B, H24110734-002B, H24110734-003B, H24110734-004B, H24110734-005B, H24110734-006B, H24110734-007B, H24110734-008B, H24110734-009B, H24110734-010B**

Run ID :Run Order: **Sartorius-BCA124-1S_241127A: 27** SampType: **Sample Duplicate** Lab ID: **H24110742-001ADUP** Method: **A2540 D**

Analysis Date: **11/27/24 13:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	513	170		0				513.3	0.0	10	

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

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

Work Order: H24110734 **BatchID:** **TSS20241127A** **Date:** *13-Mar-25*

Run ID :Run Order: **Sartorius-BCA124-1S_241127A: 27** SampType: **Sample Duplicate** Lab ID: **H24110742-001ADUP** Method: **A2540 D**

Analysis Date: **11/27/24 13:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H24110734-001B, H24110734-002B, H24110734-003B, H24110734-004B, H24110734-005B, H24110734-006B, H24110734-007B, H24110734-008B, H24110734-009B, H24110734-010B**

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

MT DEQ-Federal Superfund

H24110734

Login completed by:	Taylor K. Jones	Date Received:	11/26/2024
Reviewed by:	rtooke	Received by:	WJJ
Reviewed Date:	11/27/2024	Carrier name:	Hand Deliver

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	3.0°C On Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

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

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

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

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.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

The temperature blank temperature in shipping container 1 was 0.1°C and shipping container 2 was 3.0°C. TKJ 11/26/24

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Chain of Custody & Analytical Request Record

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Account Information (Billing information)

Company/Name	Montana DEQ
Contact	J. Banaszak
Phone	(406) 431-2252
Mailing Address	P.O. Box 200901
City, State, Zip	Helena, MT 59620-0901
Email	Jessica.Banaszak@mt.gov
Receive Invoice	☐Hard Copy ■Email
Receive Report	☐Hard Copy ■Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	RESPEC
Contact	Joe Naughton
Phone	(406) 214-4478
Mailing Address	815 East Front Street, Suite 3
City, State, Zip	Missoula, MT 59802
Email	joe.naughton@respec.com
Receive Report	☐Hard Copy ■Email
Special Report/Formats:	☐ LEVEL IV ☐ NELAC ■ EDD/EDT (contact laboratory) ☐ Other

Comments

Metals list:
As, Cd, Cu, Pb, Zn

Cl - 0.1 } TB
C2 - 3.0 }

Project Information

Project Name, PWSID, Permit, etc.	CFROU - SURFACE WATER
Sampler Name	J. Naughton
Sampler Phone	(406) 214-4478
Sample Origin State	Montana
EPA/State Compliance	■ Yes ☐ No

MINING CLIENTS, please indicate sample type.
*If ore has been processed or refined, call before sending.
☐ Byproduct 11 (e)2 material ☐ Unprocessed ore (NOT ground or refined)*

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

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

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	TSS	Alkalinity, Bicarb, Cl-, SO4-, Hardness	NO3+NO2, TN, TP	Dissolved Metals: see list	TR Metals: see list	NH4	Ions: Ca, Mg, K, Na			See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	CFR-34	11/25/24	0920	5	W	✓	✓	✓	✓	✓		✓					#24110734
2	CFR-27H		1030	5	W	✓	✓	✓	✓	✓		✓					
3	CFR-18		1120	5	W	✓	✓	✓	✓	✓		✓					
4	CFR-11F		1200	5	W	✓	✓	✓	✓	✓		✓					
5	CFR-07D		1240	5	W	✓	✓	✓	✓	✓		✓					
6	CFR-03A		1315	5	W	✓	✓	✓	✓	✓		✓					
7	WSC-SBC		1400	5	W	✓	✓	✓	✓	✓		✓					
8	SS-25		1440	5	W	✓	✓	✓	✓	✓	✓	✓					
9	CFR-03A QC-FD		1315	5	W	✓	✓	✓	✓	✓		✓					
10	CFR-27H QC-FB	↓	1045	5	W	✓	✓	✓	✓	✓		✓					

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Scott Tessler	11/26/24 1653				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
					11/26/24 1637	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
hand	1	Y (N) C B	Y N	5ep °C	(Y) N	(Y) N	CC Cash Check	$	

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

APPENDIX C

SURFACE WATER DATA

Table C-1. Surface water data for the Clark Fork River Operable Unit, 2024.

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-03A	19-Mar-24	S-ROUTINE	Alkalinity, total	Total		100		2	4
CFR-03A	29-May-24	S-ROUTINE	Alkalinity, total	Total		98		2	4
CFR-07D	19-Mar-24	QC-FD	Alkalinity, total	Total		120		2	4
CFR-07D	19-Mar-24	S-ROUTINE	Alkalinity, total	Total		120		2	4
CFR-07D	29-May-24	S-ROUTINE	Alkalinity, total	Total		110		2	4
CFR-11F	19-Mar-24	S-ROUTINE	Alkalinity, total	Total		130		2	4
CFR-11F	29-May-24	QC-FB	Alkalinity, total	Total		2	J	2	4
CFR-11F	29-May-24	S-ROUTINE	Alkalinity, total	Total		120		2	4
CFR-18	19-Mar-24	QC-FB	Alkalinity, total	Total		3	J	2	4
CFR-18	19-Mar-24	S-ROUTINE	Alkalinity, total	Total		130		2	4
CFR-18	29-May-24	S-ROUTINE	Alkalinity, total	Total		120		2	4
CFR-27H	19-Mar-24	S-ROUTINE	Alkalinity, total	Total		140		2	4
CFR-27H	29-May-24	S-ROUTINE	Alkalinity, total	Total		140		2	4
CFR-34	19-Mar-24	S-ROUTINE	Alkalinity, total	Total		140		2	4
CFR-34	29-May-24	S-ROUTINE	Alkalinity, total	Total		150		2	4
SS-25	19-Mar-24	S-ROUTINE	Alkalinity, total	Total		89		2	4
SS-25	29-May-24	S-ROUTINE	Alkalinity, total	Total		89		2	4
WSC-SBC	19-Mar-24	S-ROUTINE	Alkalinity, total	Total		130		2	4
WSC-SBC	29-May-24	QC-FD	Alkalinity, total	Total		96		2	4
WSC-SBC	29-May-24	S-ROUTINE	Alkalinity, total	Total		96		2	4
SS-25	19-Mar-24	S-ROUTINE	Ammonia	Unfiltered		0.02	J	0.02	0.05
SS-25	29-May-24	S-ROUTINE	Ammonia	Unfiltered	Not Detected			0.02	0.05

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-03A	19-Mar-24	S-ROUTINE	Arsenic	Dissolved		0.006		0.0002	0.001
CFR-03A	29-May-24	S-ROUTINE	Arsenic	Dissolved		0.009		0.0002	0.001
CFR-07D	19-Mar-24	QC-FD	Arsenic	Dissolved		0.007		0.0002	0.001
CFR-07D	19-Mar-24	S-ROUTINE	Arsenic	Dissolved		0.007		0.0002	0.001
CFR-07D	29-May-24	S-ROUTINE	Arsenic	Dissolved		0.01		0.0002	0.001
CFR-11F	19-Mar-24	S-ROUTINE	Arsenic	Dissolved		0.008		0.0002	0.001
CFR-11F	29-May-24	QC-FB	Arsenic	Dissolved	Not Detected			0.0002	0.001
CFR-11F	29-May-24	S-ROUTINE	Arsenic	Dissolved		0.011		0.0002	0.001
CFR-18	19-Mar-24	QC-FB	Arsenic	Dissolved	Not Detected			0.0002	0.001
CFR-18	19-Mar-24	S-ROUTINE	Arsenic	Dissolved		0.007		0.0002	0.001
CFR-18	29-May-24	S-ROUTINE	Arsenic	Dissolved		0.011		0.0002	0.001
CFR-27H	19-Mar-24	S-ROUTINE	Arsenic	Dissolved		0.007		0.0002	0.001
CFR-27H	29-May-24	S-ROUTINE	Arsenic	Dissolved		0.011		0.0002	0.001
CFR-34	19-Mar-24	S-ROUTINE	Arsenic	Dissolved		0.008		0.0002	0.001
CFR-34	29-May-24	S-ROUTINE	Arsenic	Dissolved		0.012		0.0002	0.001
SS-25	19-Mar-24	S-ROUTINE	Arsenic	Dissolved		0.008		0.0002	0.001
SS-25	29-May-24	S-ROUTINE	Arsenic	Dissolved		0.017		0.0002	0.001
WSC-SBC	19-Mar-24	S-ROUTINE	Arsenic	Dissolved		0.003		0.0002	0.001
WSC-SBC	29-May-24	QC-FD	Arsenic	Dissolved		0.003		0.0002	0.001
WSC-SBC	29-May-24	S-ROUTINE	Arsenic	Dissolved		0.003		0.0002	0.001
CFR-03A	19-Mar-24	S-ROUTINE	Arsenic	Total Recv		0.007		0.0001	0.001
CFR-03A	29-May-24	S-ROUTINE	Arsenic	Total Recv		0.011		0.0001	0.001
CFR-07D	19-Mar-24	QC-FD	Arsenic	Total Recv		0.01		0.0001	0.001

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-07D	19-Mar-24	S-ROUTINE	Arsenic	Total Recv		0.01		0.0001	0.001
CFR-07D	29-May-24	S-ROUTINE	Arsenic	Total Recv		0.011		0.0001	0.001
CFR-11F	19-Mar-24	S-ROUTINE	Arsenic	Total Recv		0.009		0.0001	0.001
CFR-11F	29-May-24	QC-FB	Arsenic	Total Recv	Not Detected			0.0001	0.001
CFR-11F	29-May-24	S-ROUTINE	Arsenic	Total Recv		0.012		0.0001	0.001
CFR-18	19-Mar-24	QC-FB	Arsenic	Total Recv	Not Detected			0.0001	0.001
CFR-18	19-Mar-24	S-ROUTINE	Arsenic	Total Recv		0.009		0.0001	0.001
CFR-18	29-May-24	S-ROUTINE	Arsenic	Total Recv		0.012		0.0001	0.001
CFR-27H	19-Mar-24	S-ROUTINE	Arsenic	Total Recv		0.01		0.0001	0.001
CFR-27H	29-May-24	S-ROUTINE	Arsenic	Total Recv		0.012		0.0001	0.001
CFR-34	19-Mar-24	S-ROUTINE	Arsenic	Total Recv		0.01		0.0001	0.001
CFR-34	29-May-24	S-ROUTINE	Arsenic	Total Recv		0.013		0.0001	0.001
SS-25	19-Mar-24	S-ROUTINE	Arsenic	Total Recv		0.009		0.0001	0.001
SS-25	29-May-24	S-ROUTINE	Arsenic	Total Recv		0.019		0.0001	0.001
WSC-SBC	19-Mar-24	S-ROUTINE	Arsenic	Total Recv		0.003		0.0001	0.001
WSC-SBC	29-May-24	QC-FD	Arsenic	Total Recv		0.005		0.0001	0.001
WSC-SBC	29-May-24	S-ROUTINE	Arsenic	Total Recv		0.005		0.0001	0.001
CFR-03A	19-Mar-24	S-ROUTINE	Bicarbonate	Total		120		3	4
CFR-03A	29-May-24	S-ROUTINE	Bicarbonate	Total		120		3	4
CFR-07D	19-Mar-24	QC-FD	Bicarbonate	Total		150		3	4
CFR-07D	19-Mar-24	S-ROUTINE	Bicarbonate	Total		150		3	4
CFR-07D	29-May-24	S-ROUTINE	Bicarbonate	Total		130		3	4
CFR-11F	19-Mar-24	S-ROUTINE	Bicarbonate	Total		160		3	4

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-11F	29-May-24	QC-FB	Bicarbonate	Total	Not Detected			3	4
CFR-11F	29-May-24	S-ROUTINE	Bicarbonate	Total		140		3	4
CFR-18	19-Mar-24	QC-FB	Bicarbonate	Total		3	J	3	4
CFR-18	19-Mar-24	S-ROUTINE	Bicarbonate	Total		160		3	4
CFR-18	29-May-24	S-ROUTINE	Bicarbonate	Total		150		3	4
CFR-27H	19-Mar-24	S-ROUTINE	Bicarbonate	Total		170		3	4
CFR-27H	29-May-24	S-ROUTINE	Bicarbonate	Total		170		3	4
CFR-34	19-Mar-24	S-ROUTINE	Bicarbonate	Total		170		3	4
CFR-34	29-May-24	S-ROUTINE	Bicarbonate	Total		180		3	4
SS-25	19-Mar-24	S-ROUTINE	Bicarbonate	Total		110		3	4
SS-25	29-May-24	S-ROUTINE	Bicarbonate	Total		110		3	4
WSC-SBC	19-Mar-24	S-ROUTINE	Bicarbonate	Total		150		3	4
WSC-SBC	29-May-24	QC-FD	Bicarbonate	Total		120		3	4
WSC-SBC	29-May-24	S-ROUTINE	Bicarbonate	Total		120		3	4
CFR-03A	19-Mar-24	S-ROUTINE	Cadmium	Dissolved		0.00004		0.00002	0.00003
CFR-03A	29-May-24	S-ROUTINE	Cadmium	Dissolved	Not Detected			0.00002	0.00003
CFR-07D	19-Mar-24	QC-FD	Cadmium	Dissolved		0.00005		0.00002	0.00003
CFR-07D	19-Mar-24	S-ROUTINE	Cadmium	Dissolved		0.00003		0.00002	0.00003
CFR-07D	29-May-24	S-ROUTINE	Cadmium	Dissolved	Not Detected			0.00002	0.00003
CFR-11F	19-Mar-24	S-ROUTINE	Cadmium	Dissolved		0.00004		0.00002	0.00003
CFR-11F	29-May-24	QC-FB	Cadmium	Dissolved	Not Detected			0.00002	0.00003
CFR-11F	29-May-24	S-ROUTINE	Cadmium	Dissolved	Not Detected			0.00002	0.00003
CFR-18	19-Mar-24	QC-FB	Cadmium	Dissolved	Not Detected			0.00002	0.00003

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-18	19-Mar-24	S-ROUTINE	Cadmium	Dissolved		0.00004		0.00002	0.00003
CFR-18	29-May-24	S-ROUTINE	Cadmium	Dissolved		0.00002	J	0.00002	0.00003
CFR-27H	19-Mar-24	S-ROUTINE	Cadmium	Dissolved		0.00006		0.00002	0.00003
CFR-27H	29-May-24	S-ROUTINE	Cadmium	Dissolved		0.00002	J	0.00002	0.00003
CFR-34	19-Mar-24	S-ROUTINE	Cadmium	Dissolved		0.00006		0.00002	0.00003
CFR-34	29-May-24	S-ROUTINE	Cadmium	Dissolved		0.00003	J	0.00002	0.00003
SS-25	19-Mar-24	S-ROUTINE	Cadmium	Dissolved		0.00006		0.00002	0.00003
SS-25	29-May-24	S-ROUTINE	Cadmium	Dissolved	Not Detected			0.00002	0.00003
WSC-SBC	19-Mar-24	S-ROUTINE	Cadmium	Dissolved	Not Detected			0.00002	0.00003
WSC-SBC	29-May-24	QC-FD	Cadmium	Dissolved	Not Detected			0.00002	0.00003
WSC-SBC	29-May-24	S-ROUTINE	Cadmium	Dissolved	Not Detected			0.00002	0.00003
CFR-03A	19-Mar-24	S-ROUTINE	Cadmium	Total Recv		0.00007		0.00003	0.00003
CFR-03A	29-May-24	S-ROUTINE	Cadmium	Total Recv		0.00004		0.00002	0.00003
CFR-07D	19-Mar-24	QC-FD	Cadmium	Total Recv		0.00011		0.00003	0.00003
CFR-07D	19-Mar-24	S-ROUTINE	Cadmium	Total Recv		0.00009		0.00003	0.00003
CFR-07D	29-May-24	S-ROUTINE	Cadmium	Total Recv		0.00004		0.00003	0.00003
CFR-11F	19-Mar-24	S-ROUTINE	Cadmium	Total Recv		0.0001		0.00003	0.00003
CFR-11F	29-May-24	QC-FB	Cadmium	Total Recv	Not Detected			0.00003	0.00003
CFR-11F	29-May-24	S-ROUTINE	Cadmium	Total Recv		0.00005		0.00003	0.00003
CFR-18	19-Mar-24	QC-FB	Cadmium	Total Recv	Not Detected			0.00003	0.00003
CFR-18	19-Mar-24	S-ROUTINE	Cadmium	Total Recv		0.00012		0.00002	0.00003
CFR-18	29-May-24	S-ROUTINE	Cadmium	Total Recv		0.00006		0.00002	0.00003
CFR-27H	19-Mar-24	S-ROUTINE	Cadmium	Total Recv		0.00012		0.00003	0.00003

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-27H	29-May-24	S-ROUTINE	Cadmium	Total Recv		0.00008		0.00002	0.00003
CFR-34	19-Mar-24	S-ROUTINE	Cadmium	Total Recv		0.00014		0.00003	0.00003
CFR-34	29-May-24	S-ROUTINE	Cadmium	Total Recv		0.00009		0.00002	0.00003
SS-25	19-Mar-24	S-ROUTINE	Cadmium	Total Recv		0.00008		0.00002	0.00003
SS-25	29-May-24	S-ROUTINE	Cadmium	Total Recv		0.00006		0.00002	0.00003
WSC-SBC	19-Mar-24	S-ROUTINE	Cadmium	Total Recv		0.00003	J	0.00003	0.00003
WSC-SBC	29-May-24	QC-FD	Cadmium	Total Recv		0.00006		0.00003	0.00003
WSC-SBC	29-May-24	S-ROUTINE	Cadmium	Total Recv		0.00005		0.00002	0.00003
CFR-03A	19-Mar-24	S-ROUTINE	Calcium	Total Recv		76		0.1	1
CFR-03A	29-May-24	S-ROUTINE	Calcium	Total Recv		50		0.1	1
CFR-07D	19-Mar-24	QC-FD	Calcium	Total Recv		78		0.1	1
CFR-07D	19-Mar-24	S-ROUTINE	Calcium	Total Recv		78		0.1	1
CFR-07D	29-May-24	S-ROUTINE	Calcium	Total Recv		56		0.1	1
CFR-11F	19-Mar-24	S-ROUTINE	Calcium	Total Recv		80		0.1	1
CFR-11F	29-May-24	QC-FB	Calcium	Total Recv	Not Detected			0.1	1
CFR-11F	29-May-24	S-ROUTINE	Calcium	Total Recv		60		0.1	1
CFR-18	19-Mar-24	QC-FB	Calcium	Total Recv	Not Detected			0.1	1
CFR-18	19-Mar-24	S-ROUTINE	Calcium	Total Recv		74		0.1	1
CFR-18	29-May-24	S-ROUTINE	Calcium	Total Recv		62		0.1	1
CFR-27H	19-Mar-24	S-ROUTINE	Calcium	Total Recv		71		0.1	1
CFR-27H	29-May-24	S-ROUTINE	Calcium	Total Recv		64		0.1	1
CFR-34	19-Mar-24	S-ROUTINE	Calcium	Total Recv		70		0.1	1
CFR-34	29-May-24	S-ROUTINE	Calcium	Total Recv		66		0.1	1

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
SS-25	19-Mar-24	S-ROUTINE	Calcium	Total Recv		86		0.1	1
SS-25	29-May-24	S-ROUTINE	Calcium	Total Recv		71		0.1	1
WSC-SBC	19-Mar-24	S-ROUTINE	Calcium	Total Recv		47		0.1	1
WSC-SBC	29-May-24	QC-FD	Calcium	Total Recv		38		0.1	1
WSC-SBC	29-May-24	S-ROUTINE	Calcium	Total Recv		38		0.1	1
CFR-03A	19-Mar-24	S-ROUTINE	Chloride	Total		22		0.02	1
CFR-03A	29-May-24	S-ROUTINE	Chloride	Total		10		0.02	1
CFR-07D	19-Mar-24	QC-FD	Chloride	Total		17		0.02	1
CFR-07D	19-Mar-24	S-ROUTINE	Chloride	Total		17		0.02	1
CFR-07D	29-May-24	S-ROUTINE	Chloride	Total		10		0.02	1
CFR-11F	19-Mar-24	S-ROUTINE	Chloride	Total		16		0.02	1
CFR-11F	29-May-24	QC-FB	Chloride	Total		0.04	J	0.02	1
CFR-11F	29-May-24	S-ROUTINE	Chloride	Total		11		0.02	1
CFR-18	19-Mar-24	QC-FB	Chloride	Total	Not Detected			0.02	1
CFR-18	19-Mar-24	S-ROUTINE	Chloride	Total		14		0.02	1
CFR-18	29-May-24	S-ROUTINE	Chloride	Total		10		0.02	1
CFR-27H	19-Mar-24	S-ROUTINE	Chloride	Total		13		0.02	1
CFR-27H	29-May-24	S-ROUTINE	Chloride	Total		11		0.02	1
CFR-34	19-Mar-24	S-ROUTINE	Chloride	Total		13		0.02	1
CFR-34	29-May-24	S-ROUTINE	Chloride	Total		12		0.02	1
SS-25	19-Mar-24	S-ROUTINE	Chloride	Total		30		0.02	1
SS-25	29-May-24	S-ROUTINE	Chloride	Total		19		0.02	1
WSC-SBC	19-Mar-24	S-ROUTINE	Chloride	Total		2		0.02	1

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
WSC-SBC	29-May-24	QC-FD	Chloride	Total		0.7	J	0.02	1
WSC-SBC	29-May-24	S-ROUTINE	Chloride	Total		0.7	J	0.02	1
CFR-03A	19-Mar-24	S-ROUTINE	Copper	Dissolved		0.004		0.0001	0.001
CFR-03A	29-May-24	S-ROUTINE	Copper	Dissolved		0.002		0.0001	0.001
CFR-07D	19-Mar-24	QC-FD	Copper	Dissolved		0.003		0.0001	0.001
CFR-07D	19-Mar-24	S-ROUTINE	Copper	Dissolved		0.003		0.0001	0.001
CFR-07D	29-May-24	S-ROUTINE	Copper	Dissolved		0.003		0.0001	0.001
CFR-11F	19-Mar-24	S-ROUTINE	Copper	Dissolved		0.003		0.0001	0.001
CFR-11F	29-May-24	QC-FB	Copper	Dissolved		0.0004	J	0.0001	0.001
CFR-11F	29-May-24	S-ROUTINE	Copper	Dissolved		0.003		0.0001	0.001
CFR-18	19-Mar-24	QC-FB	Copper	Dissolved	Not Detected			0.0001	0.001
CFR-18	19-Mar-24	S-ROUTINE	Copper	Dissolved		0.004		0.0001	0.001
CFR-18	29-May-24	S-ROUTINE	Copper	Dissolved		0.004		0.0001	0.001
CFR-27H	19-Mar-24	S-ROUTINE	Copper	Dissolved		0.006		0.0001	0.001
CFR-27H	29-May-24	S-ROUTINE	Copper	Dissolved		0.006		0.0001	0.001
CFR-34	19-Mar-24	S-ROUTINE	Copper	Dissolved		0.006		0.0001	0.001
CFR-34	29-May-24	S-ROUTINE	Copper	Dissolved		0.007		0.0001	0.001
SS-25	19-Mar-24	S-ROUTINE	Copper	Dissolved		0.003		0.0001	0.001
SS-25	29-May-24	S-ROUTINE	Copper	Dissolved		0.002		0.0001	0.001
WSC-SBC	19-Mar-24	S-ROUTINE	Copper	Dissolved		0.002		0.0001	0.001
WSC-SBC	29-May-24	QC-FD	Copper	Dissolved		0.002		0.0001	0.001
WSC-SBC	29-May-24	S-ROUTINE	Copper	Dissolved		0.002		0.0001	0.001
CFR-03A	19-Mar-24	S-ROUTINE	Copper	Total Recv		0.007		0.0003	0.001

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-03A	29-May-24	S-ROUTINE	Copper	Total Recv		0.009		0.0003	0.001
CFR-07D	19-Mar-24	QC-FD	Copper	Total Recv		0.017		0.0003	0.001
CFR-07D	19-Mar-24	S-ROUTINE	Copper	Total Recv		0.015		0.0003	0.001
CFR-07D	29-May-24	S-ROUTINE	Copper	Total Recv		0.009		0.0003	0.001
CFR-11F	19-Mar-24	S-ROUTINE	Copper	Total Recv		0.014		0.0003	0.001
CFR-11F	29-May-24	QC-FB	Copper	Total Recv	Not Detected			0.0003	0.001
CFR-11F	29-May-24	S-ROUTINE	Copper	Total Recv		0.008		0.0003	0.001
CFR-18	19-Mar-24	QC-FB	Copper	Total Recv	Not Detected			0.0003	0.001
CFR-18	19-Mar-24	S-ROUTINE	Copper	Total Recv		0.021		0.0003	0.001
CFR-18	29-May-24	S-ROUTINE	Copper	Total Recv		0.011		0.0003	0.001
CFR-27H	19-Mar-24	S-ROUTINE	Copper	Total Recv		0.025		0.0003	0.001
CFR-27H	29-May-24	S-ROUTINE	Copper	Total Recv		0.015		0.0003	0.001
CFR-34	19-Mar-24	S-ROUTINE	Copper	Total Recv		0.03		0.0003	0.001
CFR-34	29-May-24	S-ROUTINE	Copper	Total Recv		0.015		0.0003	0.001
SS-25	19-Mar-24	S-ROUTINE	Copper	Total Recv		0.004		0.0003	0.001
SS-25	29-May-24	S-ROUTINE	Copper	Total Recv		0.004		0.0003	0.001
WSC-SBC	19-Mar-24	S-ROUTINE	Copper	Total Recv		0.005		0.0003	0.001
WSC-SBC	29-May-24	QC-FD	Copper	Total Recv		0.023		0.0003	0.001
WSC-SBC	29-May-24	S-ROUTINE	Copper	Total Recv		0.018		0.0003	0.001
CFR-03A	19-Mar-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		11.1			
CFR-03A	29-May-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		8.6			
CFR-03A	12-Sep-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		11.85			
CFR-07D	19-Mar-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		11.2			

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-07D	29-May-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		8.9			
CFR-07D	12-Sep-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		11.37			
CFR-11F	19-Mar-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		11			
CFR-11F	29-May-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		8.7			
CFR-11F	12-Sep-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		12.31			
CFR-18	19-Mar-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		11.4			
CFR-18	29-May-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		8.2			
CFR-18	12-Sep-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		11.15			
CFR-27H	19-Mar-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		11.2			
CFR-27H	29-May-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		8.4			
CFR-27H	12-Sep-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		10.26			
CFR-34	19-Mar-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		10.7			
CFR-34	29-May-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		8.1			
CFR-34	12-Sep-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		10.4			
SS-25	19-Mar-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		11.2			
SS-25	29-May-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		8.1			
SS-25	12-Sep-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		9.06			
WSC-SBC	19-Mar-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		11.1			
WSC-SBC	29-May-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		8.3			
WSC-SBC	12-Sep-24	F-MSR/OBS	Dissolved oxygen (DO)	NA		9.98			
CFR-03A	19-Mar-24	F-MSR/OBS	Flow	NA		163			
CFR-03A	29-May-24	F-MSR/OBS	Flow	NA		160			
CFR-03A	12-Sep-24	F-MSR/OBS	Flow	NA		68.6			

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-07D	19-Mar-24	F-MSR/OBS	Flow	NA		218.19			
CFR-07D	29-May-24	F-MSR/OBS	Flow	NA		188			
CFR-07D	12-Sep-24	F-MSR/OBS	Flow	NA		81.8			
CFR-11F	19-Mar-24	F-MSR/OBS	Flow	NA		234.24			
CFR-11F	29-May-24	F-MSR/OBS	Flow	NA		142.2			
CFR-11F	12-Sep-24	F-MSR/OBS	Flow	NA		64.4			
CFR-18	19-Mar-24	F-MSR/OBS	Flow	NA		257.15			
CFR-18	29-May-24	F-MSR/OBS	Flow	NA		144.43			
CFR-18	12-Sep-24	F-MSR/OBS	Flow	NA		39.8			
CFR-27H	19-Mar-24	F-MSR/OBS	Flow	NA		288			
CFR-27H	29-May-24	F-MSR/OBS	Flow	NA		167			
CFR-27H	12-Sep-24	F-MSR/OBS	Flow	NA		83			
CFR-34	19-Mar-24	F-MSR/OBS	Flow	NA		307.8			
CFR-34	29-May-24	F-MSR/OBS	Flow	NA		191.25			
CFR-34	12-Sep-24	F-MSR/OBS	Flow	NA		106			
SS-25	19-Mar-24	F-MSR/OBS	Flow	NA		122			
SS-25	29-May-24	F-MSR/OBS	Flow	NA		80.7			
SS-25	12-Sep-24	F-MSR/OBS	Flow	NA		16.3			
WSC-SBC	19-Mar-24	F-MSR/OBS	Flow	NA		45.5			
WSC-SBC	29-May-24	F-MSR/OBS	Flow	NA		85.7			
WSC-SBC	12-Sep-24	F-MSR/OBS	Flow	NA		36.1			
CFR-03A	19-Mar-24	S-ROUTINE	Hardness, Ca, Mg	NA		242		1	1
CFR-03A	29-May-24	S-ROUTINE	Hardness, Ca, Mg	NA		166		1	1

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-07D	19-Mar-24	QC-FD	Hardness, Ca, Mg	NA		254		1	1
CFR-07D	19-Mar-24	S-ROUTINE	Hardness, Ca, Mg	NA		252		1	1
CFR-07D	29-May-24	S-ROUTINE	Hardness, Ca, Mg	NA		190		1	1
CFR-11F	19-Mar-24	S-ROUTINE	Hardness, Ca, Mg	NA		261		1	1
CFR-11F	29-May-24	QC-FB	Hardness, Ca, Mg	NA	Not Detected			1	1
CFR-11F	29-May-24	S-ROUTINE	Hardness, Ca, Mg	NA		203		1	1
CFR-18	19-Mar-24	QC-FB	Hardness, Ca, Mg	NA	Not Detected			1	1
CFR-18	19-Mar-24	S-ROUTINE	Hardness, Ca, Mg	NA		240		1	1
CFR-18	29-May-24	S-ROUTINE	Hardness, Ca, Mg	NA		209		1	1
CFR-27H	19-Mar-24	S-ROUTINE	Hardness, Ca, Mg	NA		230		1	1
CFR-27H	29-May-24	S-ROUTINE	Hardness, Ca, Mg	NA		214		1	1
CFR-34	19-Mar-24	S-ROUTINE	Hardness, Ca, Mg	NA		230		1	1
CFR-34	29-May-24	S-ROUTINE	Hardness, Ca, Mg	NA		224		1	1
SS-25	19-Mar-24	S-ROUTINE	Hardness, Ca, Mg	NA		271		1	1
SS-25	29-May-24	S-ROUTINE	Hardness, Ca, Mg	NA		226		1	1
WSC-SBC	19-Mar-24	S-ROUTINE	Hardness, Ca, Mg	NA		158		1	1
WSC-SBC	29-May-24	QC-FD	Hardness, Ca, Mg	NA		115		1	1
WSC-SBC	29-May-24	S-ROUTINE	Hardness, Ca, Mg	NA		115		1	1
CFR-03A	19-Mar-24	S-ROUTINE	Lead	Dissolved	Not Detected			0.0001	0.0003
CFR-03A	29-May-24	S-ROUTINE	Lead	Dissolved		0.0001	J	0.0001	0.0003
CFR-07D	19-Mar-24	QC-FD	Lead	Dissolved	Not Detected			0.0001	0.0003
CFR-07D	19-Mar-24	S-ROUTINE	Lead	Dissolved	Not Detected			0.0001	0.0003
CFR-07D	29-May-24	S-ROUTINE	Lead	Dissolved		0.0001	J	0.0001	0.0003

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-11F	19-Mar-24	S-ROUTINE	Lead	Dissolved	Not Detected			0.0001	0.0003
CFR-11F	29-May-24	QC-FB	Lead	Dissolved	Not Detected			0.0001	0.0003
CFR-11F	29-May-24	S-ROUTINE	Lead	Dissolved		0.0001	J	0.0001	0.0003
CFR-18	19-Mar-24	QC-FB	Lead	Dissolved	Not Detected			0.0001	0.0003
CFR-18	19-Mar-24	S-ROUTINE	Lead	Dissolved	Not Detected			0.0001	0.0003
CFR-18	29-May-24	S-ROUTINE	Lead	Dissolved		0.0001	J	0.0001	0.0003
CFR-27H	19-Mar-24	S-ROUTINE	Lead	Dissolved	Not Detected			0.0001	0.0003
CFR-27H	29-May-24	S-ROUTINE	Lead	Dissolved		0.0002	J	0.0001	0.0003
CFR-34	19-Mar-24	S-ROUTINE	Lead	Dissolved		0.0001	J	0.0001	0.0003
CFR-34	29-May-24	S-ROUTINE	Lead	Dissolved		0.0002	J	0.0001	0.0003
SS-25	19-Mar-24	S-ROUTINE	Lead	Dissolved	Not Detected			0.0001	0.0003
SS-25	29-May-24	S-ROUTINE	Lead	Dissolved		0.0002	J	0.0001	0.0003
WSC-SBC	19-Mar-24	S-ROUTINE	Lead	Dissolved	Not Detected			0.0001	0.0003
WSC-SBC	29-May-24	QC-FD	Lead	Dissolved	Not Detected			0.0001	0.0003
WSC-SBC	29-May-24	S-ROUTINE	Lead	Dissolved	Not Detected			0.0001	0.0003
CFR-03A	19-Mar-24	S-ROUTINE	Lead	Total Recv		0.0007		0.0001	0.0003
CFR-03A	29-May-24	S-ROUTINE	Lead	Total Recv		0.001		0.0001	0.0003
CFR-07D	19-Mar-24	QC-FD	Lead	Total Recv		0.0017		0.0001	0.0003
CFR-07D	19-Mar-24	S-ROUTINE	Lead	Total Recv		0.0017		0.0001	0.0003
CFR-07D	29-May-24	S-ROUTINE	Lead	Total Recv		0.0009		0.0001	0.0003
CFR-11F	19-Mar-24	S-ROUTINE	Lead	Total Recv		0.0014		0.0001	0.0003
CFR-11F	29-May-24	QC-FB	Lead	Total Recv	Not Detected			0.0001	0.0003
CFR-11F	29-May-24	S-ROUTINE	Lead	Total Recv		0.0008		0.0001	0.0003

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-18	19-Mar-24	QC-FB	Lead	Total Recv	Not Detected			0.0001	0.0003
CFR-18	19-Mar-24	S-ROUTINE	Lead	Total Recv		0.0024		0.0001	0.0003
CFR-18	29-May-24	S-ROUTINE	Lead	Total Recv		0.0009		0.0001	0.0003
CFR-27H	19-Mar-24	S-ROUTINE	Lead	Total Recv		0.0032		0.0001	0.0003
CFR-27H	29-May-24	S-ROUTINE	Lead	Total Recv		0.0014		0.0001	0.0003
CFR-34	19-Mar-24	S-ROUTINE	Lead	Total Recv		0.0037		0.0001	0.0003
CFR-34	29-May-24	S-ROUTINE	Lead	Total Recv		0.0012		0.0001	0.0003
SS-25	19-Mar-24	S-ROUTINE	Lead	Total Recv		0.0002	J	0.0001	0.0003
SS-25	29-May-24	S-ROUTINE	Lead	Total Recv		0.0008		0.0001	0.0003
WSC-SBC	19-Mar-24	S-ROUTINE	Lead	Total Recv		0.0003	J	0.0001	0.0003
WSC-SBC	29-May-24	QC-FD	Lead	Total Recv		0.0022		0.0001	0.0003
WSC-SBC	29-May-24	S-ROUTINE	Lead	Total Recv		0.0018		0.0001	0.0003
CFR-03A	19-Mar-24	S-ROUTINE	Magnesium	Total Recv		13		0.05	1
CFR-03A	29-May-24	S-ROUTINE	Magnesium	Total Recv		10		0.05	1
CFR-07D	19-Mar-24	QC-FD	Magnesium	Total Recv		14		0.05	1
CFR-07D	19-Mar-24	S-ROUTINE	Magnesium	Total Recv		14		0.05	1
CFR-07D	29-May-24	S-ROUTINE	Magnesium	Total Recv		12		0.05	1
CFR-11F	19-Mar-24	S-ROUTINE	Magnesium	Total Recv		15		0.05	1
CFR-11F	29-May-24	QC-FB	Magnesium	Total Recv	Not Detected			0.05	1
CFR-11F	29-May-24	S-ROUTINE	Magnesium	Total Recv		13		0.05	1
CFR-18	19-Mar-24	QC-FB	Magnesium	Total Recv	Not Detected			0.05	1
CFR-18	19-Mar-24	S-ROUTINE	Magnesium	Total Recv		14		0.05	1
CFR-18	29-May-24	S-ROUTINE	Magnesium	Total Recv		13		0.05	1

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-27H	19-Mar-24	S-ROUTINE	Magnesium	Total Recv		13		0.05	1
CFR-27H	29-May-24	S-ROUTINE	Magnesium	Total Recv		13		0.05	1
CFR-34	19-Mar-24	S-ROUTINE	Magnesium	Total Recv		13		0.05	1
CFR-34	29-May-24	S-ROUTINE	Magnesium	Total Recv		14		0.05	1
SS-25	19-Mar-24	S-ROUTINE	Magnesium	Total Recv		14		0.05	1
SS-25	29-May-24	S-ROUTINE	Magnesium	Total Recv		11		0.05	1
WSC-SBC	19-Mar-24	S-ROUTINE	Magnesium	Total Recv		10		0.05	1
WSC-SBC	29-May-24	QC-FD	Magnesium	Total Recv		7		0.05	1
WSC-SBC	29-May-24	S-ROUTINE	Magnesium	Total Recv		7		0.05	1
CFR-03A	19-Mar-24	S-ROUTINE	Mercury	Total Recv		0.006		0.00003	0.005
CFR-07D	19-Mar-24	QC-FD	Mercury	Total Recv		0.01		0.00003	0.005
CFR-07D	19-Mar-24	S-ROUTINE	Mercury	Total Recv		0.011		0.00003	0.005
CFR-11F	19-Mar-24	S-ROUTINE	Mercury	Total Recv		0.011		0.00003	0.005
CFR-18	19-Mar-24	QC-FB	Mercury	Total Recv		0.0005	J	0.00003	0.005
CFR-18	19-Mar-24	S-ROUTINE	Mercury	Total Recv		0.017		0.00003	0.005
CFR-27H	19-Mar-24	S-ROUTINE	Mercury	Total Recv		0.018		0.00003	0.005
CFR-34	19-Mar-24	S-ROUTINE	Mercury	Total Recv		0.025		0.00003	0.005
SS-25	19-Mar-24	S-ROUTINE	Mercury	Total Recv		0.003	J	0.00003	0.005
WSC-SBC	19-Mar-24	S-ROUTINE	Mercury	Total Recv		0.002	J	0.00003	0.005
CFR-03A	19-Mar-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.01	J	0.01	0.02
CFR-03A	29-May-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered	Not Detected			0.01	0.02
CFR-07D	19-Mar-24	QC-FD	Nitrate + Nitrite	Unfiltered		0.08		0.01	0.02
CFR-07D	19-Mar-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.08		0.01	0.02

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-07D	29-May-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.01	J	0.01	0.02
CFR-11F	19-Mar-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.09		0.01	0.02
CFR-11F	29-May-24	QC-FB	Nitrate + Nitrite	Unfiltered	Not Detected			0.01	0.02
CFR-11F	29-May-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.01	J	0.01	0.02
CFR-18	19-Mar-24	QC-FB	Nitrate + Nitrite	Unfiltered	Not Detected			0.01	0.02
CFR-18	19-Mar-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.12		0.01	0.02
CFR-18	29-May-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.02	J	0.01	0.02
CFR-27H	19-Mar-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.17		0.01	0.02
CFR-27H	29-May-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.05		0.01	0.02
CFR-34	19-Mar-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.17		0.01	0.02
CFR-34	29-May-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered	Not Detected			0.01	0.02
SS-25	19-Mar-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered	Not Detected			0.01	0.02
SS-25	29-May-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered	Not Detected			0.01	0.02
WSC-SBC	19-Mar-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered		0.01	J	0.01	0.02
WSC-SBC	29-May-24	QC-FD	Nitrate + Nitrite	Unfiltered	Not Detected			0.01	0.02
WSC-SBC	29-May-24	S-ROUTINE	Nitrate + Nitrite	Unfiltered	Not Detected			0.01	0.02
CFR-03A	19-Mar-24	F-MSR/OBS	pH	NA		8.69			
CFR-03A	29-May-24	F-MSR/OBS	pH	NA		8.62			
CFR-03A	12-Sep-24	F-MSR/OBS	pH	NA		8.84			
CFR-07D	19-Mar-24	F-MSR/OBS	pH	NA		8.52			
CFR-07D	29-May-24	F-MSR/OBS	pH	NA		8.69			
CFR-07D	12-Sep-24	F-MSR/OBS	pH	NA		8.66			
CFR-11F	19-Mar-24	F-MSR/OBS	pH	NA		8.45			

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-11F	29-May-24	F-MSR/OBS	pH	NA		8.5			
CFR-11F	12-Sep-24	F-MSR/OBS	pH	NA		8.88			
CFR-18	19-Mar-24	F-MSR/OBS	pH	NA		8.44			
CFR-18	29-May-24	F-MSR/OBS	pH	NA		8.39			
CFR-18	12-Sep-24	F-MSR/OBS	pH	NA		8.63			
CFR-27H	19-Mar-24	F-MSR/OBS	pH	NA		8.37			
CFR-27H	29-May-24	F-MSR/OBS	pH	NA		8.23			
CFR-27H	12-Sep-24	F-MSR/OBS	pH	NA		8.29			
CFR-34	19-Mar-24	F-MSR/OBS	pH	NA		8.31			
CFR-34	29-May-24	F-MSR/OBS	pH	NA		8.11			
CFR-34	12-Sep-24	F-MSR/OBS	pH	NA		8.27			
SS-25	19-Mar-24	F-MSR/OBS	pH	NA		8.83			
SS-25	29-May-24	F-MSR/OBS	pH	NA		8.9			
SS-25	12-Sep-24	F-MSR/OBS	pH	NA		8.32			
WSC-SBC	19-Mar-24	F-MSR/OBS	pH	NA		8.78			
WSC-SBC	29-May-24	F-MSR/OBS	pH	NA		8.4			
WSC-SBC	12-Sep-24	F-MSR/OBS	pH	NA		8.68			
CFR-03A	19-Mar-24	S-ROUTINE	Potassium	Total Recv		5		0.1	1
CFR-03A	29-May-24	S-ROUTINE	Potassium	Total Recv		3		0.1	1
CFR-07D	19-Mar-24	QC-FD	Potassium	Total Recv		4		0.1	1
CFR-07D	19-Mar-24	S-ROUTINE	Potassium	Total Recv		4		0.1	1
CFR-07D	29-May-24	S-ROUTINE	Potassium	Total Recv		4		0.1	1
CFR-11F	19-Mar-24	S-ROUTINE	Potassium	Total Recv		4		0.1	1

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-11F	29-May-24	QC-FB	Potassium	Total Recv	Not Detected			0.1	1
CFR-11F	29-May-24	S-ROUTINE	Potassium	Total Recv		4		0.1	1
CFR-18	19-Mar-24	QC-FB	Potassium	Total Recv	Not Detected			0.1	1
CFR-18	19-Mar-24	S-ROUTINE	Potassium	Total Recv		4		0.1	1
CFR-18	29-May-24	S-ROUTINE	Potassium	Total Recv		4		0.1	1
CFR-27H	19-Mar-24	S-ROUTINE	Potassium	Total Recv		4		0.1	1
CFR-27H	29-May-24	S-ROUTINE	Potassium	Total Recv		4		0.1	1
CFR-34	19-Mar-24	S-ROUTINE	Potassium	Total Recv		4		0.1	1
CFR-34	29-May-24	S-ROUTINE	Potassium	Total Recv		4		0.1	1
SS-25	19-Mar-24	S-ROUTINE	Potassium	Total Recv		6		0.1	1
SS-25	29-May-24	S-ROUTINE	Potassium	Total Recv		5		0.1	1
WSC-SBC	19-Mar-24	S-ROUTINE	Potassium	Total Recv		2		0.1	1
WSC-SBC	29-May-24	QC-FD	Potassium	Total Recv		1		0.1	1
WSC-SBC	29-May-24	S-ROUTINE	Potassium	Total Recv		1		0.1	1
CFR-03A	19-Mar-24	S-ROUTINE	Sodium	Total Recv		21		0.05	1
CFR-03A	29-May-24	S-ROUTINE	Sodium	Total Recv		13		0.05	1
CFR-07D	19-Mar-24	QC-FD	Sodium	Total Recv		19		0.05	1
CFR-07D	19-Mar-24	S-ROUTINE	Sodium	Total Recv		19		0.05	1
CFR-07D	29-May-24	S-ROUTINE	Sodium	Total Recv		15		0.05	1
CFR-11F	19-Mar-24	S-ROUTINE	Sodium	Total Recv		18		0.05	1
CFR-11F	29-May-24	QC-FB	Sodium	Total Recv		0.08	J	0.05	1
CFR-11F	29-May-24	S-ROUTINE	Sodium	Total Recv		16		0.05	1
CFR-18	19-Mar-24	QC-FB	Sodium	Total Recv		0.07	J	0.05	1

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-18	19-Mar-24	S-ROUTINE	Sodium	Total Recv		17		0.05	1
CFR-18	29-May-24	S-ROUTINE	Sodium	Total Recv		15		0.05	1
CFR-27H	19-Mar-24	S-ROUTINE	Sodium	Total Recv		17		0.05	1
CFR-27H	29-May-24	S-ROUTINE	Sodium	Total Recv		17		0.05	1
CFR-34	19-Mar-24	S-ROUTINE	Sodium	Total Recv		17		0.05	1
CFR-34	29-May-24	S-ROUTINE	Sodium	Total Recv		19		0.05	1
SS-25	19-Mar-24	S-ROUTINE	Sodium	Total Recv		28		0.05	1
SS-25	29-May-24	S-ROUTINE	Sodium	Total Recv		22		0.05	1
WSC-SBC	19-Mar-24	S-ROUTINE	Sodium	Total Recv		4		0.05	1
WSC-SBC	29-May-24	QC-FD	Sodium	Total Recv		3		0.05	1
WSC-SBC	29-May-24	S-ROUTINE	Sodium	Total Recv		3		0.05	1
CFR-03A	19-Mar-24	F-MSR/OBS	Specific conductance	NA		565			
CFR-03A	29-May-24	F-MSR/OBS	Specific conductance	NA		389			
CFR-03A	12-Sep-24	F-MSR/OBS	Specific conductance	NA		436			
CFR-07D	19-Mar-24	F-MSR/OBS	Specific conductance	NA		376			
CFR-07D	29-May-24	F-MSR/OBS	Specific conductance	NA		439			
CFR-07D	12-Sep-24	F-MSR/OBS	Specific conductance	NA		471			
CFR-11F	19-Mar-24	F-MSR/OBS	Specific conductance	NA		562			
CFR-11F	29-May-24	F-MSR/OBS	Specific conductance	NA		470			
CFR-11F	12-Sep-24	F-MSR/OBS	Specific conductance	NA		483			
CFR-18	19-Mar-24	F-MSR/OBS	Specific conductance	NA		502			
CFR-18	29-May-24	F-MSR/OBS	Specific conductance	NA		464			
CFR-18	12-Sep-24	F-MSR/OBS	Specific conductance	NA		469			

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-27H	19-Mar-24	F-MSR/OBS	Specific conductance	NA		507			
CFR-27H	29-May-24	F-MSR/OBS	Specific conductance	NA		481.9			
CFR-27H	12-Sep-24	F-MSR/OBS	Specific conductance	NA		483			
CFR-34	19-Mar-24	F-MSR/OBS	Specific conductance	NA		509			
CFR-34	29-May-24	F-MSR/OBS	Specific conductance	NA		501			
CFR-34	12-Sep-24	F-MSR/OBS	Specific conductance	NA		483			
SS-25	19-Mar-24	F-MSR/OBS	Specific conductance	NA		655			
SS-25	29-May-24	F-MSR/OBS	Specific conductance	NA		490			
SS-25	12-Sep-24	F-MSR/OBS	Specific conductance	NA		656			
WSC-SBC	19-Mar-24	F-MSR/OBS	Specific conductance	NA		301			
WSC-SBC	29-May-24	F-MSR/OBS	Specific conductance	NA		226.5			
WSC-SBC	12-Sep-24	F-MSR/OBS	Specific conductance	NA		261			
CFR-03A	19-Mar-24	S-ROUTINE	Sulfate	Total		155		0.03	1
CFR-03A	29-May-24	S-ROUTINE	Sulfate	Total		82		0.03	1
CFR-07D	19-Mar-24	QC-FD	Sulfate	Total		143		0.03	1
CFR-07D	19-Mar-24	S-ROUTINE	Sulfate	Total		142		0.03	1
CFR-07D	29-May-24	S-ROUTINE	Sulfate	Total		97		0.03	1
CFR-11F	19-Mar-24	S-ROUTINE	Sulfate	Total		139		0.03	1
CFR-11F	29-May-24	QC-FB	Sulfate	Total	Not Detected			0.03	1
CFR-11F	29-May-24	S-ROUTINE	Sulfate	Total		104		0.03	1
CFR-18	19-Mar-24	QC-FB	Sulfate	Total	Not Detected			0.03	1
CFR-18	19-Mar-24	S-ROUTINE	Sulfate	Total		120		0.03	1
CFR-18	29-May-24	S-ROUTINE	Sulfate	Total		96		0.03	1

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-27H	19-Mar-24	S-ROUTINE	Sulfate	Total		110		0.03	1
CFR-27H	29-May-24	S-ROUTINE	Sulfate	Total		92		0.03	1
CFR-34	19-Mar-24	S-ROUTINE	Sulfate	Total		105		0.03	1
CFR-34	29-May-24	S-ROUTINE	Sulfate	Total		88		0.03	1
SS-25	19-Mar-24	S-ROUTINE	Sulfate	Total		207		0.03	1
SS-25	29-May-24	S-ROUTINE	Sulfate	Total		141		0.03	1
WSC-SBC	19-Mar-24	S-ROUTINE	Sulfate	Total		30		0.03	1
WSC-SBC	29-May-24	QC-FD	Sulfate	Total		18		0.03	1
WSC-SBC	29-May-24	S-ROUTINE	Sulfate	Total		18		0.03	1
CFR-03A	19-Mar-24	F-MSR/OBS	Temperature, water	NA		7.7			
CFR-03A	29-May-24	F-MSR/OBS	Temperature, water	NA		12.8			
CFR-03A	12-Sep-24	F-MSR/OBS	Temperature, water	NA		12.5			
CFR-07D	19-Mar-24	F-MSR/OBS	Temperature, water	NA		7.2			
CFR-07D	29-May-24	F-MSR/OBS	Temperature, water	NA		13.2			
CFR-07D	12-Sep-24	F-MSR/OBS	Temperature, water	NA		13.1			
CFR-11F	19-Mar-24	F-MSR/OBS	Temperature, water	NA		6.6			
CFR-11F	29-May-24	F-MSR/OBS	Temperature, water	NA		13.1			
CFR-11F	12-Sep-24	F-MSR/OBS	Temperature, water	NA		14			
CFR-18	19-Mar-24	F-MSR/OBS	Temperature, water	NA		5.4			
CFR-18	29-May-24	F-MSR/OBS	Temperature, water	NA		13.9			
CFR-18	12-Sep-24	F-MSR/OBS	Temperature, water	NA		12.8			
CFR-27H	19-Mar-24	F-MSR/OBS	Temperature, water	NA		5.6			
CFR-27H	29-May-24	F-MSR/OBS	Temperature, water	NA		12.9			

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-27H	12-Sep-24	F-MSR/OBS	Temperature, water	NA		11.8			
CFR-34	19-Mar-24	F-MSR/OBS	Temperature, water	NA		5.4			
CFR-34	29-May-24	F-MSR/OBS	Temperature, water	NA		12.9			
CFR-34	12-Sep-24	F-MSR/OBS	Temperature, water	NA		11.5			
SS-25	19-Mar-24	F-MSR/OBS	Temperature, water	NA		7.4			
SS-25	29-May-24	F-MSR/OBS	Temperature, water	NA		15			
SS-25	12-Sep-24	F-MSR/OBS	Temperature, water	NA		13.4			
WSC-SBC	19-Mar-24	F-MSR/OBS	Temperature, water	NA		8.3			
WSC-SBC	29-May-24	F-MSR/OBS	Temperature, water	NA		11.2			
WSC-SBC	12-Sep-24	F-MSR/OBS	Temperature, water	NA		10.3			
CFR-03A	19-Mar-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.21		0.02	0.05
CFR-03A	29-May-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.19		0.02	0.05
CFR-07D	19-Mar-24	QC-FD	Total nitrogen, mixed forms	Unfiltered		0.26		0.02	0.05
CFR-07D	19-Mar-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.26		0.02	0.05
CFR-07D	29-May-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.2		0.02	0.05
CFR-11F	19-Mar-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.28		0.02	0.05
CFR-11F	29-May-24	QC-FB	Total nitrogen, mixed forms	Unfiltered	Not Detected			0.02	0.05
CFR-11F	29-May-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.22		0.02	0.05
CFR-18	19-Mar-24	QC-FB	Total nitrogen, mixed forms	Unfiltered	Not Detected			0.02	0.05
CFR-18	19-Mar-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.3		0.02	0.05
CFR-18	29-May-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.23		0.02	0.05
CFR-27H	19-Mar-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.35		0.02	0.05
CFR-27H	29-May-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.28		0.02	0.05

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-34	19-Mar-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.35		0.02	0.05
CFR-34	29-May-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.25		0.02	0.05
SS-25	19-Mar-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.23		0.02	0.05
SS-25	29-May-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.33		0.02	0.05
WSC-SBC	19-Mar-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.09		0.02	0.05
WSC-SBC	29-May-24	QC-FD	Total nitrogen, mixed forms	Unfiltered		0.09		0.02	0.05
WSC-SBC	29-May-24	S-ROUTINE	Total nitrogen, mixed forms	Unfiltered		0.1		0.02	0.05
CFR-03A	19-Mar-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.016		0.001	0.003
CFR-03A	29-May-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.049		0.001	0.003
CFR-07D	19-Mar-24	QC-FD	Total Phosphorus, mixed forms	Unfiltered		0.018		0.001	0.003
CFR-07D	19-Mar-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.019		0.001	0.003
CFR-07D	29-May-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.04		0.001	0.003
CFR-11F	19-Mar-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.019		0.001	0.003
CFR-11F	29-May-24	QC-FB	Total Phosphorus, mixed forms	Unfiltered	Not Detected			0.001	0.003
CFR-11F	29-May-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.037		0.001	0.003
CFR-18	19-Mar-24	QC-FB	Total Phosphorus, mixed forms	Unfiltered	Not Detected			0.001	0.003
CFR-18	19-Mar-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.021		0.001	0.003
CFR-18	29-May-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.03		0.001	0.003
CFR-27H	19-Mar-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.024		0.001	0.003
CFR-27H	29-May-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.024		0.001	0.003
CFR-34	19-Mar-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.029		0.001	0.003
CFR-34	29-May-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.031		0.001	0.003
SS-25	19-Mar-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.013		0.001	0.003

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
SS-25	29-May-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.082		0.001	0.003
WSC-SBC	19-Mar-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.005		0.001	0.003
WSC-SBC	29-May-24	QC-FD	Total Phosphorus, mixed forms	Unfiltered		0.017		0.001	0.003
WSC-SBC	29-May-24	S-ROUTINE	Total Phosphorus, mixed forms	Unfiltered		0.02		0.001	0.003
CFR-03A	19-Mar-24	S-ROUTINE	Total suspended solids	NA		6		0.3	2
CFR-03A	29-May-24	S-ROUTINE	Total suspended solids	NA		8		0.3	2
CFR-07D	19-Mar-24	QC-FD	Total suspended solids	NA		12		0.3	2
CFR-07D	19-Mar-24	S-ROUTINE	Total suspended solids	NA		10		0.3	2
CFR-07D	29-May-24	S-ROUTINE	Total suspended solids	NA		6		0.3	3
CFR-11F	19-Mar-24	S-ROUTINE	Total suspended solids	NA		11		0.3	2
CFR-11F	29-May-24	QC-FB	Total suspended solids	NA	Not Detected		L	0.3	2
CFR-11F	29-May-24	S-ROUTINE	Total suspended solids	NA		5		0.3	3
CFR-18	19-Mar-24	QC-FB	Total suspended solids	NA	Not Detected		L	0.3	2
CFR-18	19-Mar-24	S-ROUTINE	Total suspended solids	NA		14		0.3	2
CFR-18	29-May-24	S-ROUTINE	Total suspended solids	NA		5		0.3	3
CFR-27H	19-Mar-24	S-ROUTINE	Total suspended solids	NA		18		0.3	2
CFR-27H	29-May-24	S-ROUTINE	Total suspended solids	NA		7		0.3	3
CFR-34	19-Mar-24	S-ROUTINE	Total suspended solids	NA		20		0.3	3
CFR-34	29-May-24	S-ROUTINE	Total suspended solids	NA		7		0.3	3
SS-25	19-Mar-24	S-ROUTINE	Total suspended solids	NA		2	JL	0.3	2
SS-25	29-May-24	S-ROUTINE	Total suspended solids	NA		7		0.3	2
WSC-SBC	19-Mar-24	S-ROUTINE	Total suspended solids	NA		4		0.3	2
WSC-SBC	29-May-24	QC-FD	Total suspended solids	NA		20		0.3	2

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
WSC-SBC	29-May-24	S-ROUTINE	Total suspended solids	NA		18		0.3	2
CFR-03A	19-Mar-24	F-MSR/OBS	Turbidity	NA		2.4			
CFR-03A	29-May-24	F-MSR/OBS	Turbidity	NA		4.5			
CFR-03A	12-Sep-24	F-MSR/OBS	Turbidity	NA		2.03			
CFR-07D	19-Mar-24	F-MSR/OBS	Turbidity	NA		4.5			
CFR-07D	29-May-24	F-MSR/OBS	Turbidity	NA		3.7			
CFR-07D	12-Sep-24	F-MSR/OBS	Turbidity	NA		1.47			
CFR-11F	19-Mar-24	F-MSR/OBS	Turbidity	NA		5			
CFR-11F	29-May-24	F-MSR/OBS	Turbidity	NA		3.2			
CFR-11F	12-Sep-24	F-MSR/OBS	Turbidity	NA		2.48			
CFR-18	19-Mar-24	F-MSR/OBS	Turbidity	NA		6.2			
CFR-18	29-May-24	F-MSR/OBS	Turbidity	NA		3			
CFR-18	12-Sep-24	F-MSR/OBS	Turbidity	NA		1.69			
CFR-27H	19-Mar-24	F-MSR/OBS	Turbidity	NA		7.5			
CFR-27H	29-May-24	F-MSR/OBS	Turbidity	NA		3.4			
CFR-27H	12-Sep-24	F-MSR/OBS	Turbidity	NA		3.21			
CFR-34	19-Mar-24	F-MSR/OBS	Turbidity	NA		7.7			
CFR-34	29-May-24	F-MSR/OBS	Turbidity	NA		4.2			
CFR-34	12-Sep-24	F-MSR/OBS	Turbidity	NA		4.98			
SS-25	19-Mar-24	F-MSR/OBS	Turbidity	NA		1.2			
SS-25	29-May-24	F-MSR/OBS	Turbidity	NA		3.5			
SS-25	12-Sep-24	F-MSR/OBS	Turbidity	NA		2.19			
WSC-SBC	19-Mar-24	F-MSR/OBS	Turbidity	NA		1.9			

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
WSC-SBC	29-May-24	F-MSR/OBS	Turbidity	NA		6			
WSC-SBC	12-Sep-24	F-MSR/OBS	Turbidity	NA		1.5			
CFR-03A	19-Mar-24	S-ROUTINE	Zinc	Dissolved		0.008	J	0.001	0.008
CFR-03A	29-May-24	S-ROUTINE	Zinc	Dissolved		0.003	J	0.001	0.008
CFR-07D	19-Mar-24	QC-FD	Zinc	Dissolved		0.005	J	0.001	0.008
CFR-07D	19-Mar-24	S-ROUTINE	Zinc	Dissolved		0.006	J	0.001	0.008
CFR-07D	29-May-24	S-ROUTINE	Zinc	Dissolved		0.002	J	0.001	0.008
CFR-11F	19-Mar-24	S-ROUTINE	Zinc	Dissolved		0.006	J	0.001	0.008
CFR-11F	29-May-24	QC-FB	Zinc	Dissolved	Not Detected			0.001	0.008
CFR-11F	29-May-24	S-ROUTINE	Zinc	Dissolved		0.003	J	0.001	0.008
CFR-18	19-Mar-24	QC-FB	Zinc	Dissolved	Not Detected			0.001	0.008
CFR-18	19-Mar-24	S-ROUTINE	Zinc	Dissolved		0.007	J	0.001	0.008
CFR-18	29-May-24	S-ROUTINE	Zinc	Dissolved		0.003	J	0.001	0.008
CFR-27H	19-Mar-24	S-ROUTINE	Zinc	Dissolved		0.009		0.001	0.008
CFR-27H	29-May-24	S-ROUTINE	Zinc	Dissolved		0.005	J	0.001	0.008
CFR-34	19-Mar-24	S-ROUTINE	Zinc	Dissolved		0.01		0.001	0.008
CFR-34	29-May-24	S-ROUTINE	Zinc	Dissolved		0.006	J	0.001	0.008
SS-25	19-Mar-24	S-ROUTINE	Zinc	Dissolved		0.009		0.001	0.008
SS-25	29-May-24	S-ROUTINE	Zinc	Dissolved		0.002	J	0.001	0.008
WSC-SBC	19-Mar-24	S-ROUTINE	Zinc	Dissolved		0.002	J	0.001	0.008
WSC-SBC	29-May-24	QC-FD	Zinc	Dissolved		0.002	J	0.001	0.008
WSC-SBC	29-May-24	S-ROUTINE	Zinc	Dissolved		0.003	J	0.001	0.008
CFR-03A	19-Mar-24	S-ROUTINE	Zinc	Total Recv		0.01		0.001	0.008

Station ID	Activity Start Date	Activity Type	Characteristic Name	Sample Fraction	Result Detection Condition	Result Value	Result Qualifier	Method Detection Limit Value	Lower Reporting Limit Value
CFR-03A	29-May-24	S-ROUTINE	Zinc	Total Recv		0.007	J	0.001	0.008
CFR-07D	19-Mar-24	QC-FD	Zinc	Total Recv		0.016		0.001	0.008
CFR-07D	19-Mar-24	S-ROUTINE	Zinc	Total Recv		0.016		0.001	0.008
CFR-07D	29-May-24	S-ROUTINE	Zinc	Total Recv		0.007	J	0.001	0.008
CFR-11F	19-Mar-24	S-ROUTINE	Zinc	Total Recv		0.016		0.001	0.008
CFR-11F	29-May-24	QC-FB	Zinc	Total Recv		0.006	J	0.001	0.008
CFR-11F	29-May-24	S-ROUTINE	Zinc	Total Recv		0.007	J	0.001	0.008
CFR-18	19-Mar-24	QC-FB	Zinc	Total Recv	Not Detected			0.001	0.008
CFR-18	19-Mar-24	S-ROUTINE	Zinc	Total Recv		0.021		0.001	0.008
CFR-18	29-May-24	S-ROUTINE	Zinc	Total Recv		0.01		0.001	0.008
CFR-27H	19-Mar-24	S-ROUTINE	Zinc	Total Recv		0.023		0.001	0.008
CFR-27H	29-May-24	S-ROUTINE	Zinc	Total Recv		0.014		0.001	0.008
CFR-34	19-Mar-24	S-ROUTINE	Zinc	Total Recv		0.03		0.001	0.008
CFR-34	29-May-24	S-ROUTINE	Zinc	Total Recv		0.014		0.001	0.008
SS-25	19-Mar-24	S-ROUTINE	Zinc	Total Recv		0.009		0.001	0.008
SS-25	29-May-24	S-ROUTINE	Zinc	Total Recv		0.006	J	0.001	0.008
WSC-SBC	19-Mar-24	S-ROUTINE	Zinc	Total Recv		0.003	J	0.001	0.008
WSC-SBC	29-May-24	QC-FD	Zinc	Total Recv		0.01		0.001	0.008
WSC-SBC	29-May-24	S-ROUTINE	Zinc	Total Recv		0.01		0.001	0.008

APPENDIX D

SEDIMENT DATA

Table D-1. Sediment data for the Clark Fork River Operable Unit, 2024.

Station ID	Activity Start Date	Activity Type	Characteristic Name	Activity Comment	Sample Fraction	Result Value	Result Qualifier	Result Value Unit	Lower Reporting Limit Value
CFR-34	19-Mar-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	153		mg/kg	5
CFR-34	19-Mar-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	102		mg/kg	2
CFR-34	19-Mar-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	4.9		mg/kg	0.3
CFR-34	19-Mar-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1080		mg/kg	7
CFR-34	19-Mar-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1010		mg/kg	30
CFR-34	19-Mar-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	50		% by wt	0.2
CFR-34	19-Mar-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	8.5		% by wt	0.1
CFR-27H	19-Mar-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	189		mg/kg	5
CFR-27H	19-Mar-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	119		mg/kg	2
CFR-27H	19-Mar-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	4.7		mg/kg	0.3
CFR-27H	19-Mar-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1240		mg/kg	9
CFR-27H	19-Mar-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1010		mg/kg	40
CFR-27H	19-Mar-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	60.4		% by wt	0.2
CFR-27H	19-Mar-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	3.5		% by wt	0.1
CFR-18	19-Mar-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	152		mg/kg	5
CFR-18	19-Mar-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	101		mg/kg	2
CFR-18	19-Mar-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	4.5		mg/kg	0.3
CFR-18	19-Mar-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1020		mg/kg	8
CFR-18	19-Mar-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	899		mg/kg	30
CFR-18	19-Mar-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	54.1		% by wt	0.2

CFR-18	19-Mar-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	10.7		% by wt	0.1
CFR-11F	19-Mar-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	159		mg/kg	6
CFR-11F	19-Mar-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	103		mg/kg	2
CFR-11F	19-Mar-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	4.4		mg/kg	0.4
CFR-11F	19-Mar-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	994		mg/kg	10
CFR-11F	19-Mar-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	882		mg/kg	40
CFR-11F	19-Mar-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	64.6		% by wt	0.2
CFR-11F	19-Mar-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	7		% by wt	0.1
CFR-07D	19-Mar-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	201		mg/kg	8
CFR-07D	19-Mar-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	155		mg/kg	3
CFR-07D	19-Mar-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	5.4		mg/kg	0.5
CFR-07D	19-Mar-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1360		mg/kg	10
CFR-07D	19-Mar-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1010		mg/kg	60
CFR-07D	19-Mar-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	72.2		% by wt	0.2
CFR-07D	19-Mar-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	8.8		% by wt	0.1
CFR-03A	19-Mar-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	120		mg/kg	6
CFR-03A	19-Mar-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	154		mg/kg	2
CFR-03A	19-Mar-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	4.4		mg/kg	0.4
CFR-03A	19-Mar-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	815		mg/kg	10
CFR-03A	19-Mar-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	878		mg/kg	50
CFR-03A	19-Mar-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	66		% by wt	0.2
CFR-03A	19-Mar-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	2.5		% by wt	0.1
WSC-SBC	19-Mar-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	82		mg/kg	5
WSC-SBC	19-Mar-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	66		mg/kg	2

WSC-SBC	19-Mar-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	2.1		mg/kg	0.3
WSC-SBC	19-Mar-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	661		mg/kg	8
WSC-SBC	19-Mar-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	356		mg/kg	30
WSC-SBC	19-Mar-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	53.3		% by wt	0.2
WSC-SBC	19-Mar-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	8.6		% by wt	0.1
SS-25	19-Mar-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	155		mg/kg	7
SS-25	19-Mar-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	168		mg/kg	3
SS-25	19-Mar-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	10.2		mg/kg	0.4
SS-25	19-Mar-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	298		mg/kg	10
SS-25	19-Mar-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	2100		mg/kg	50
SS-25	19-Mar-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	69.5		% by wt	0.2
SS-25	19-Mar-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	1.4		% by wt	0.1
SS-25	19-Mar-24	QC-FD	Lead	SED_SIEVE_<0.063mm	Total	137		mg/kg	7
SS-25	19-Mar-24	QC-FD	Arsenic	SED_SIEVE_<0.063mm	Total	126		mg/kg	2
SS-25	19-Mar-24	QC-FD	Cadmium	SED_SIEVE_<0.063mm	Total	8.7		mg/kg	0.4
SS-25	19-Mar-24	QC-FD	Copper	SED_SIEVE_<0.063mm	Total	272		mg/kg	10
SS-25	19-Mar-24	QC-FD	Zinc	SED_SIEVE_<0.063mm	Total	1680		mg/kg	50
SS-25	19-Mar-24	QC-FD	Moisture content	SED_SIEVE_<0.063mm	NA	67.7		% by wt	0.2
SS-25	19-Mar-24	QC-FD	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	2		% by wt	0.1
CFR-03A	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	207		mg/kg	3
CFR-03A	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	6.7		mg/kg	0.2
CFR-03A	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1570		mg/kg	5
CFR-03A	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	305		mg/kg	5
CFR-03A	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1600		mg/kg	9

CFR-03A	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	3.4		% by wt	0.1
CFR-03A	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	72.8		% by wt	0.2
CFR-03A	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	207		mg/kg	3
CFR-03A	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	6.7	J	mg/kg	0.2
CFR-03A	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1570	J	mg/kg	5
CFR-03A	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	305	J	mg/kg	5
CFR-03A	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1600	J	mg/kg	9
CFR-03A	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	3.4		% by wt	0.1
CFR-03A	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	72.8		% by wt	0.2
WSC-SBC	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	69		mg/kg	2
WSC-SBC	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	3.3		mg/kg	0.2
WSC-SBC	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	864		mg/kg	5
WSC-SBC	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	102		mg/kg	5
WSC-SBC	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	464		mg/kg	7
WSC-SBC	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	12		% by wt	0.1
WSC-SBC	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	63.8		% by wt	0.2
WSC-SBC	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	69		mg/kg	2
WSC-SBC	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	3.3	J	mg/kg	0.2
WSC-SBC	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	864	J	mg/kg	5
WSC-SBC	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	102	J	mg/kg	5
WSC-SBC	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	464	J	mg/kg	7
WSC-SBC	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	12		% by wt	0.1
WSC-SBC	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	63.8		% by wt	0.2
SS-25	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	144		mg/kg	4

SS-25	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	8.9		mg/kg	0.2
SS-25	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	338		mg/kg	5
SS-25	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	173		mg/kg	5
SS-25	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1740		mg/kg	10
SS-25	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	2.4		% by wt	0.1
SS-25	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	144		mg/kg	4
SS-25	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	8.9	J	mg/kg	0.2
SS-25	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	338	J	mg/kg	5
SS-25	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	173	J	mg/kg	5
SS-25	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1740	J	mg/kg	10
SS-25	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	2.4		% by wt	0.1
SS-25	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	82.7		% by wt	0.2
SS-25	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	82.7		% by wt	0.2
CFR-18	12-Sep-24	QC-FD	Arsenic	SED_SIEVE_<0.063mm	Total	138		mg/kg	2
CFR-18	12-Sep-24	QC-FD	Cadmium	SED_SIEVE_<0.063mm	Total	6.1		mg/kg	0.2
CFR-18	12-Sep-24	QC-FD	Copper	SED_SIEVE_<0.063mm	Total	1230		mg/kg	5
CFR-18	12-Sep-24	QC-FD	Lead	SED_SIEVE_<0.063mm	Total	224		mg/kg	5
CFR-18	12-Sep-24	QC-FD	Zinc	SED_SIEVE_<0.063mm	Total	1230		mg/kg	6
CFR-18	12-Sep-24	QC-FD	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	6.8		% by wt	0.1
CFR-18	12-Sep-24	QC-FD	Arsenic	SED_SIEVE_<0.063mm	Total	138		mg/kg	2
CFR-18	12-Sep-24	QC-FD	Cadmium	SED_SIEVE_<0.063mm	Total	6.1		mg/kg	0.2
CFR-18	12-Sep-24	QC-FD	Copper	SED_SIEVE_<0.063mm	Total	1230		mg/kg	5
CFR-18	12-Sep-24	QC-FD	Lead	SED_SIEVE_<0.063mm	Total	224		mg/kg	5
CFR-18	12-Sep-24	QC-FD	Zinc	SED_SIEVE_<0.063mm	Total	1230		mg/kg	6

CFR-18	12-Sep-24	QC-FD	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	6.8		% by wt	0.1
CFR-18	12-Sep-24	QC-FD	Moisture content	SED_SIEVE_<0.063mm	NA	60.9		% by wt	0.2
CFR-18	12-Sep-24	QC-FD	Moisture content	SED_SIEVE_<0.063mm	NA	60.9		% by wt	0.2
CFR-34	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	92		mg/kg	2
CFR-34	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	7.9		mg/kg	0.2
CFR-34	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1170		mg/kg	5
CFR-34	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	236		mg/kg	5
CFR-34	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1160		mg/kg	6
CFR-34	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	2.1		% by wt	0.1
CFR-34	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	58.7		% by wt	0.2
CFR-34	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	92		mg/kg	2
CFR-34	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	7.9	J	mg/kg	0.2
CFR-34	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1170	J	mg/kg	5
CFR-34	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	236	J	mg/kg	5
CFR-34	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1160	J	mg/kg	6
CFR-34	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	2.1		% by wt	0.1
CFR-34	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	58.7		% by wt	0.2
CFR-27H	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	111		mg/kg	2
CFR-27H	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	7.6		mg/kg	0.2
CFR-27H	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1440		mg/kg	5
CFR-27H	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	254		mg/kg	5
CFR-27H	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1240		mg/kg	5
CFR-27H	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	4		% by wt	0.1
CFR-27H	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	54.8		% by wt	0.2

CFR-27H	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	111		mg/kg	2
CFR-27H	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	7.6	J	mg/kg	0.2
CFR-27H	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1440	J	mg/kg	5
CFR-27H	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	254	J	mg/kg	5
CFR-27H	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1240	J	mg/kg	5
CFR-27H	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	4		% by wt	0.1
CFR-27H	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	54.8		% by wt	0.2
CFR-18	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	201		mg/kg	3
CFR-18	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	12.5		mg/kg	0.2
CFR-18	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	2110		mg/kg	5
CFR-18	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	405		mg/kg	5
CFR-18	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	2080		mg/kg	10
CFR-18	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	6.5		% by wt	0.1
CFR-18	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	76.2		% by wt	0.2
CFR-18	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	201		mg/kg	3
CFR-18	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	12.5	J	mg/kg	0.2
CFR-18	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	2110	J	mg/kg	5
CFR-18	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	405	J	mg/kg	5
CFR-18	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	2080	J	mg/kg	10
CFR-18	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	6.5		% by wt	0.1
CFR-18	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	76.2		% by wt	0.2
CFR-11F	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	136		mg/kg	2
CFR-11F	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	7.3		mg/kg	0.2
CFR-11F	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1400		mg/kg	5
CFR-11F	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	266		mg/kg	5

CFR-11F	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	68.9		% by wt	0.2
CFR-11F	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	136		mg/kg	2
CFR-11F	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	7.3	J	mg/kg	0.2
CFR-11F	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	1400	J	mg/kg	5
CFR-11F	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	266	J	mg/kg	5
CFR-11F	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1370	J	mg/kg	8
CFR-11F	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	5.6		% by wt	0.1
CFR-11F	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	68.9		% by wt	0.2
CFR-11F	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1370		mg/kg	8
CFR-11F	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	5.6		% by wt	0.1
CFR-07D	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	324		mg/kg	5
CFR-07D	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1520		mg/kg	7
CFR-07D	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	9.3		% by wt	0.1
CFR-07D	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	68.9		% by wt	0.2
CFR-07D	12-Sep-24	S-ROUTINE	Lead	SED_SIEVE_<0.063mm	Total	324	J	mg/kg	5
CFR-07D	12-Sep-24	S-ROUTINE	Zinc	SED_SIEVE_<0.063mm	Total	1520	J	mg/kg	7
CFR-07D	12-Sep-24	S-ROUTINE	Particle size, Sieve No.230, 250 mesh, (0.063mm)	SED_SIEVE_<0.063mm	NA	9.3		% by wt	0.1
CFR-07D	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	242		mg/kg	2
CFR-07D	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	6.3	J	mg/kg	0.2
CFR-07D	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	2270	J	mg/kg	5
CFR-07D	12-Sep-24	S-ROUTINE	Moisture content	SED_SIEVE_<0.063mm	NA	68.9		% by wt	0.2
CFR-07D	12-Sep-24	S-ROUTINE	Arsenic	SED_SIEVE_<0.063mm	Total	242		mg/kg	2
CFR-07D	12-Sep-24	S-ROUTINE	Cadmium	SED_SIEVE_<0.063mm	Total	6.3		mg/kg	0.2
CFR-07D	12-Sep-24	S-ROUTINE	Copper	SED_SIEVE_<0.063mm	Total	2270		mg/kg	5

APPENDIX E

VEGETATION MONITORING PHOTOS

GROUND COVER PLOTS

PHASE 1

TRANSECT TW25



Figure H-1. Ground cover Plot P01_Y10_TW25-10-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-2. Ground cover Plot P01_Y10_TW25-10-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-3. Ground cover Plot P01_Y10_TW25-30-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-4. Ground cover Plot P01_Y10_TW25-30-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-5. Ground cover Plot P01_Y10_TW25-50-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-6. Ground cover Plot P01_Y10_TW25-50-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-7. Ground cover Plot P01_Y10_TW25-70-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-8. Ground cover Plot P01_Y10_TW25-70-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-9. Ground cover Plot P01_Y10_TW25-90-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.

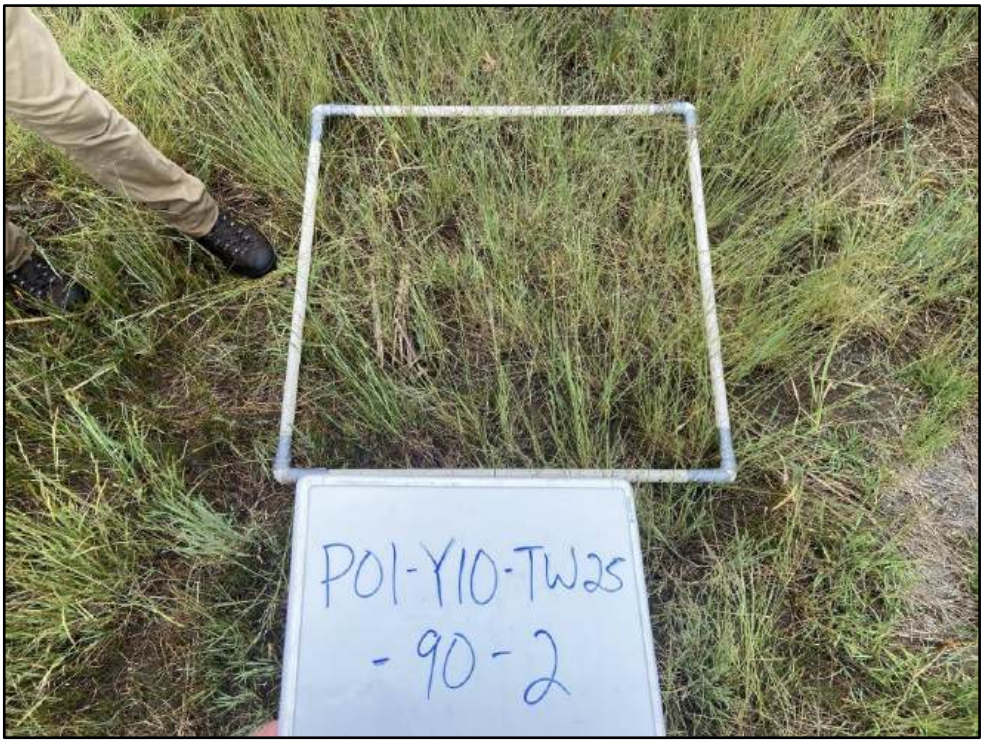


Figure H-10. Ground cover Plot P01_Y10_TW25-90-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.

TRANSECT TW50



Figure H-11. Ground cover Plot P01_Y10_TW50-10-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-12. Ground cover Plot P01_Y10_TW50-10-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-13. Ground cover Plot P01_Y10_TW50-30-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-14. Ground cover Plot P01_Y10_TW50-30-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-15. Ground cover Plot P01_Y10_TW50-50-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-16. Ground cover Plot P01_Y10_TW50-50-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-17. Ground cover Plot P01_Y10_TW50-70-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-18. Ground cover Plot P01_Y10_TW50-70-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-19. Ground cover Plot P01_Y10_TW50-90-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-20. Ground cover Plot P01_Y10_TW50-90-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.

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Figure H-21. Ground cover Plot P01_Y10_TW75-10-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-22. Ground cover Plot P01_Y10_TW75-10-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-23. Ground cover Plot P01_Y10_TW75-30-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-24. Ground cover Plot P01_Y10_TW75-30-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-25. Ground cover Plot P01_Y10_TW75-50-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-26. Ground cover Plot P01_Y10_TW75-50-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-27. Ground cover Plot P01_Y10_TW75-70-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.

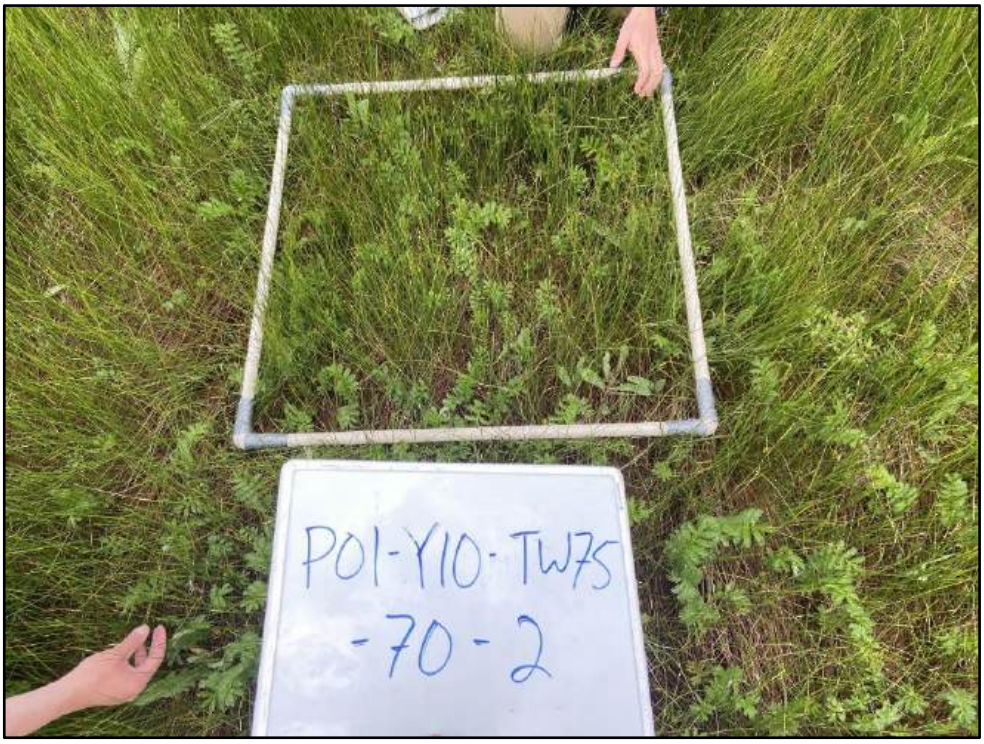


Figure H-28. Ground cover Plot P01_Y10_TW75-70-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-29. Ground cover Plot P01_Y10_TW75-90-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-30. Ground cover Plot P01_Y10_TW75-90-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.

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Figure H-31. Ground cover Plot P01_Y10_TE25-10-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-32. Ground cover Plot P01_Y10_TE25-10-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.

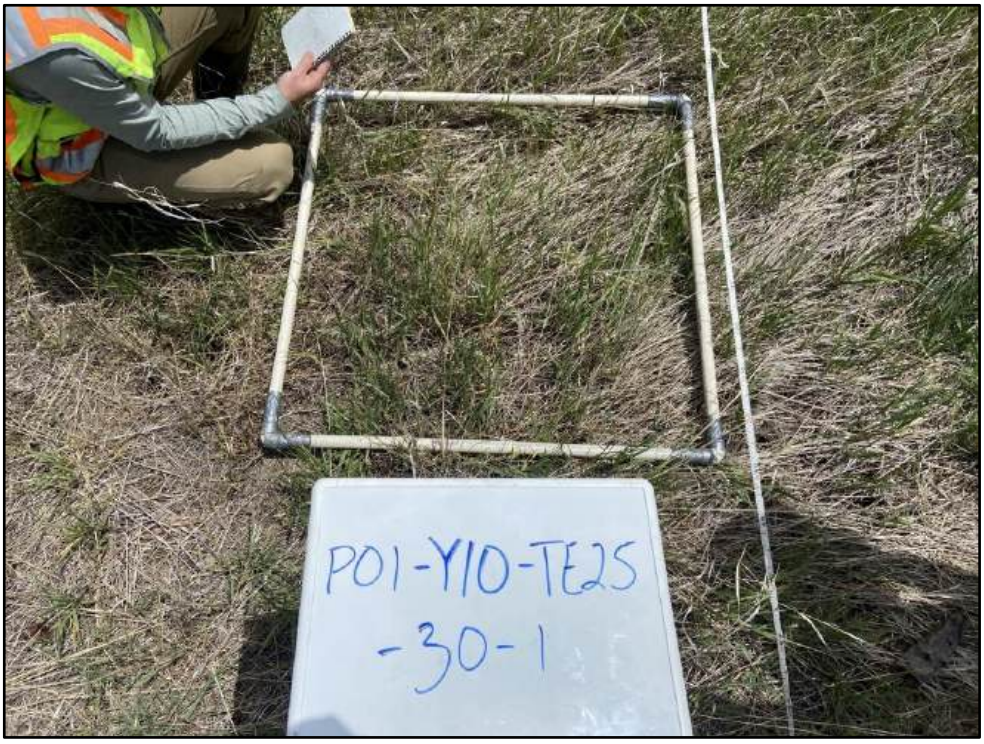


Figure H-33. Ground cover Plot P01_Y10_TE25-30-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-34. Ground cover Plot P01_Y10_TE25-30-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.

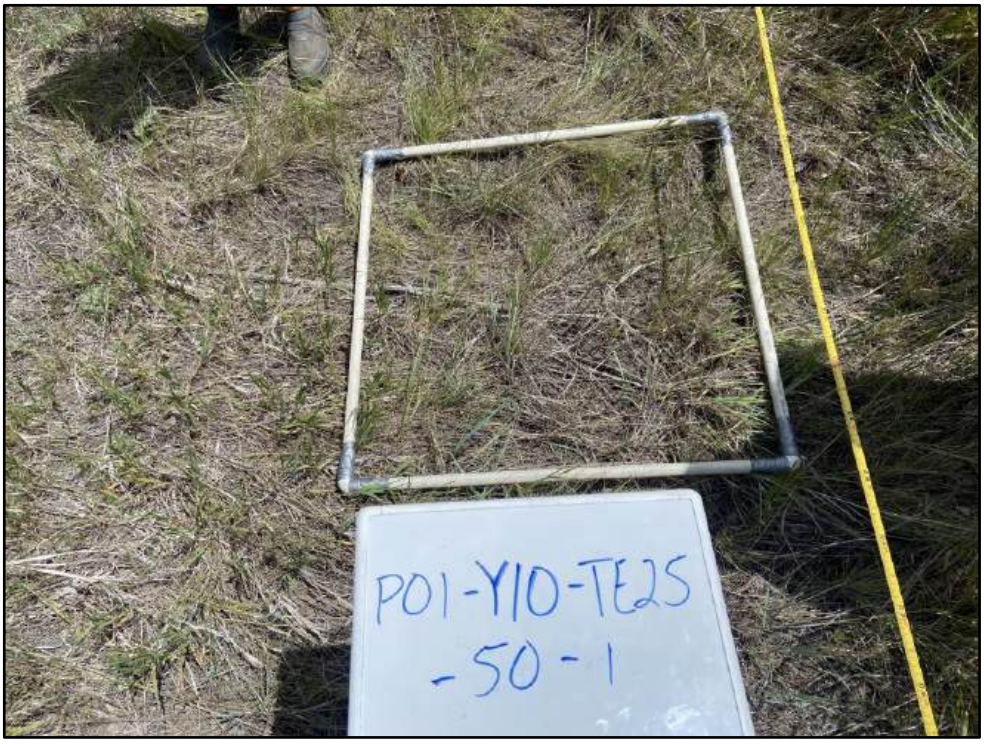


Figure H-35. Ground cover Plot P01_Y10_TE25-50-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-36. Ground cover Plot P01_Y10_TE25-50-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.

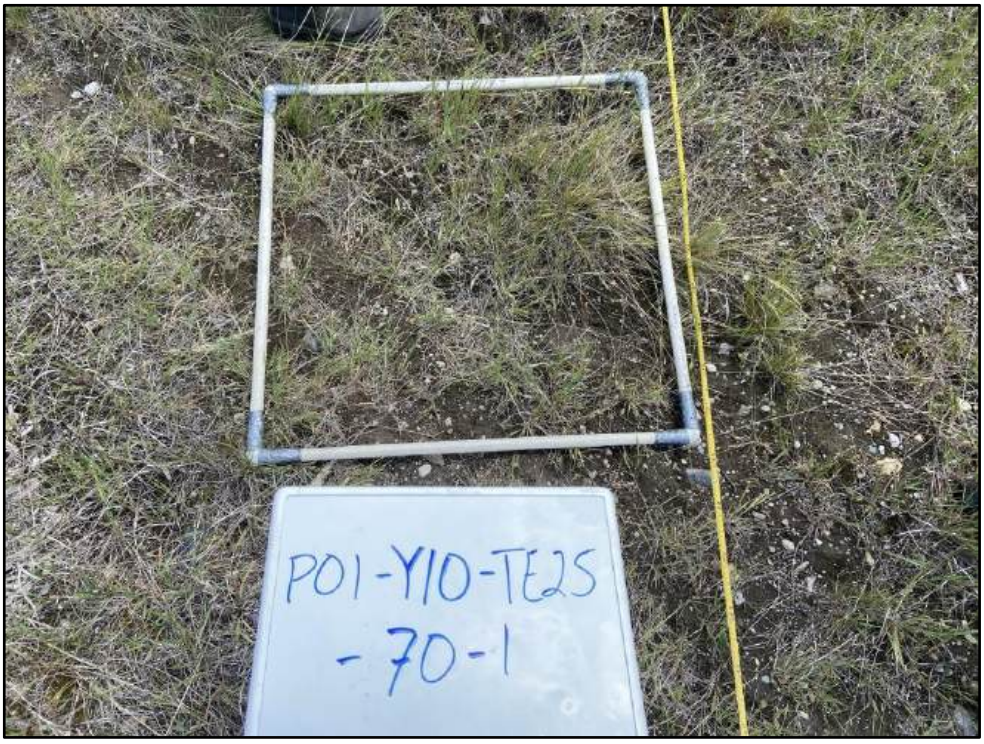


Figure H-37. Ground cover Plot P01_Y10_TE25-70-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-38. Ground cover Plot P01_Y10_TE25-70-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-39. Ground cover Plot P01_Y10_TE25-90-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-40. Ground cover Plot P01_Y10_TE25-90-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.

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Figure H-41. Ground cover Plot P01_Y10_TE50-10-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-42. Ground cover Plot P01_Y10_TE50-10-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-43. Ground cover Plot P01_Y10_TE50-30-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-44. Ground cover Plot P01_Y10_TE50-30-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-45. Ground cover Plot P01_Y10_TE50-50-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-46. Ground cover Plot P01_Y10_TE50-50-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-47. Ground cover Plot P01_Y10_TE50-70-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-48. Ground cover Plot P01_Y10_TE50-70-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-49. Ground cover Plot P01_Y10_TE50-90-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-50. Ground cover Plot P01_Y10_TE50-90-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.

TRANSECT TE75



Figure H-51. Ground cover Plot P01_Y10_TE75-10-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.

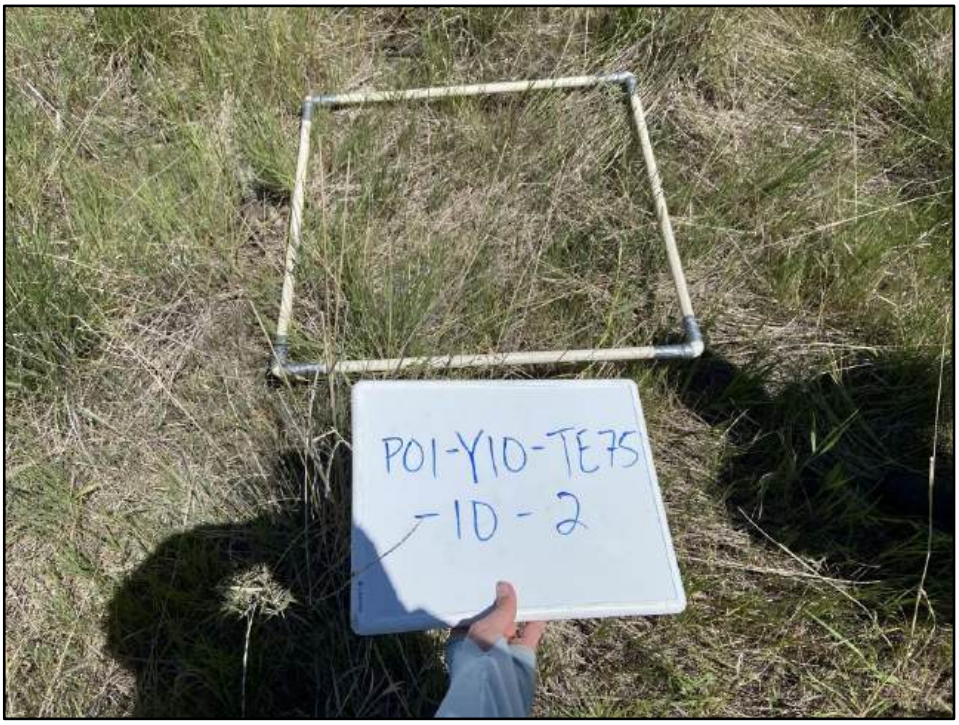


Figure H-52. Ground cover Plot P01_Y10_TE75-10-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-53. Ground cover Plot P01_Y10_TE75-30-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-54. Ground cover Plot P01_Y10_TE75-30-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-55. Ground cover Plot P01_Y10_TE75-50-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-56. Ground cover Plot P01_Y10_TE75_50-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-57. Ground cover Plot P01_Y10_TE75-70-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-58. Ground cover Plot P01_Y10_TE75-70-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-59. Ground cover Plot P01_Y10_TE75-90-1 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure H-60. Ground cover Plot P01_Y10_TE75-90-2 in Phase 1 of the Clark Fork River Operable Unit, 2024.

PHASE 3

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Figure H-61. Ground cover Plot P03_Y01_TW25-10-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-62. Ground cover Plot P03_Y01_TW25-10-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-63. Ground cover Plot P03_Y01_TW25-30-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-64. Ground cover Plot P03_Y01_TW25-30-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-65. Ground cover Plot P03_Y01_TW25-50-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-66. Ground cover Plot P03_Y01_TW25-50-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-67. Ground cover Plot P03_Y01_TW25-70-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-68. Ground cover Plot P03_Y01_TW25-70-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-69. Ground cover Plot P03_Y01_TW25-90-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-70. Ground cover Plot P03_Y01_TW25-90-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.

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Figure H-71. Ground cover Plot P03_Y01_TW50-10-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-72. Ground cover Plot P03_Y01_TW50-10-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-73. Ground cover Plot P03_Y01_TW50-30-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-74. Ground cover Plot P03_Y01_TW50-30-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-75. Ground cover Plot P03_Y01_TW50-50-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-76. Ground cover Plot P03_Y01_TW50-50-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-77. Ground cover Plot P03_Y01_TW50-70-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-78. Ground cover Plot P03_Y01_TW50-70-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-79. Ground cover Plot P03_Y01_TW50-90-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-80. Ground cover Plot P03_Y01_TW50-90-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-81. Ground cover Plot P03_Y01_TW75-10-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-82. Ground cover Plot P03_Y01_TW75-10-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-83. Ground cover Plot P03_Y01_TW75-30-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-84. Ground cover Plot P03_Y01_TW75-30-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-85. Ground cover Plot P03_Y01_TW75-50-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-86. Ground cover Plot P03_Y01_TW75-50-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-87. Ground cover Plot P03_Y01_TW75-70-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-88. Ground cover Plot P03_Y01_TW75-70-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-89. Ground cover Plot P03_Y01_TW75-90-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-90. Ground cover Plot P03_Y01_TW75-90-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.

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Figure H-91. Ground cover Plot P03_Y01_TE25-10-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-92. Ground cover Plot P03_Y01_TE25-10-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-93. Ground cover Plot P03_Y01_TE25-30-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-94. Ground cover Plot P03_Y01_TE25-30-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-95. Ground cover Plot P03_Y01_TE25-50-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-96. Ground cover Plot P03_Y01_TE25-50-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-97. Ground cover Plot P03_Y01_TE25-70-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-98. Ground cover Plot P03_Y01_TE25-70-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-99. Ground cover Plot P03_Y01_TE25-90-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-100. Ground cover Plot P03_Y01_TE25-90-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.

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Figure H-101. Ground cover Plot P03_Y01_TE50-10-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-102. Ground cover Plot P03_Y01_TE50-10-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-103. Ground cover Plot P03_Y01_TE50-30-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-104. Ground cover Plot P03_Y01_TE50-30-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-105. Ground cover Plot P03_Y01_TE50-50-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-106. Ground cover Plot P03_Y01_TE50-50-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-107. Ground cover Plot P03_Y01_TE50-70-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-108. Ground cover Plot P03_Y01_TE50-70-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.

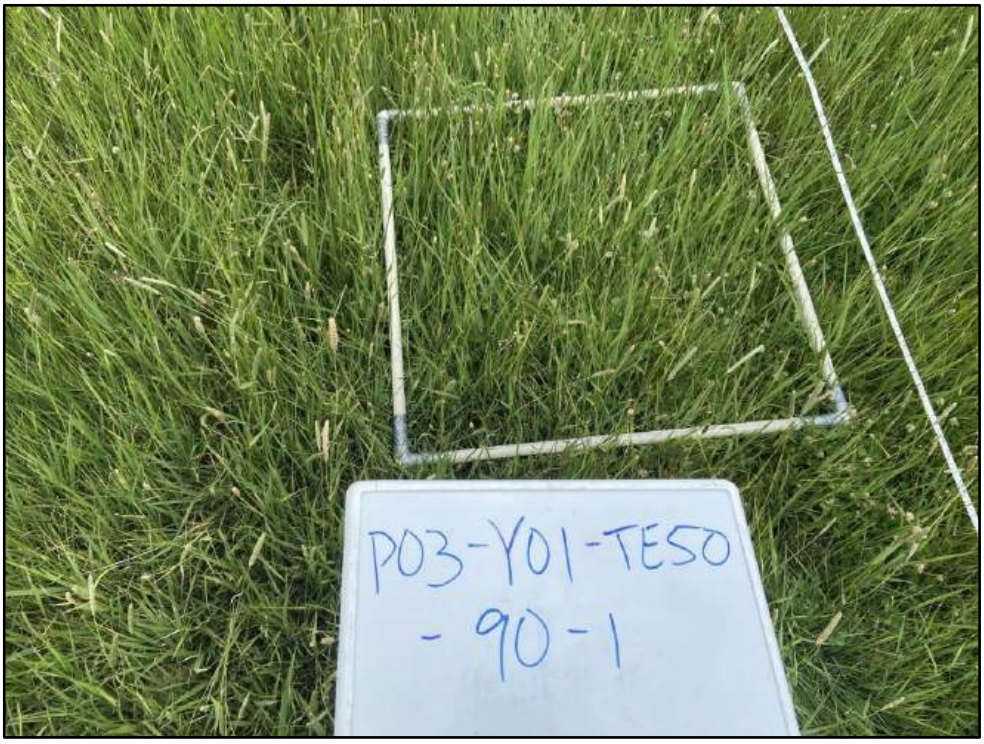


Figure H-109. Ground cover Plot P03_Y01_TE50-90-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.

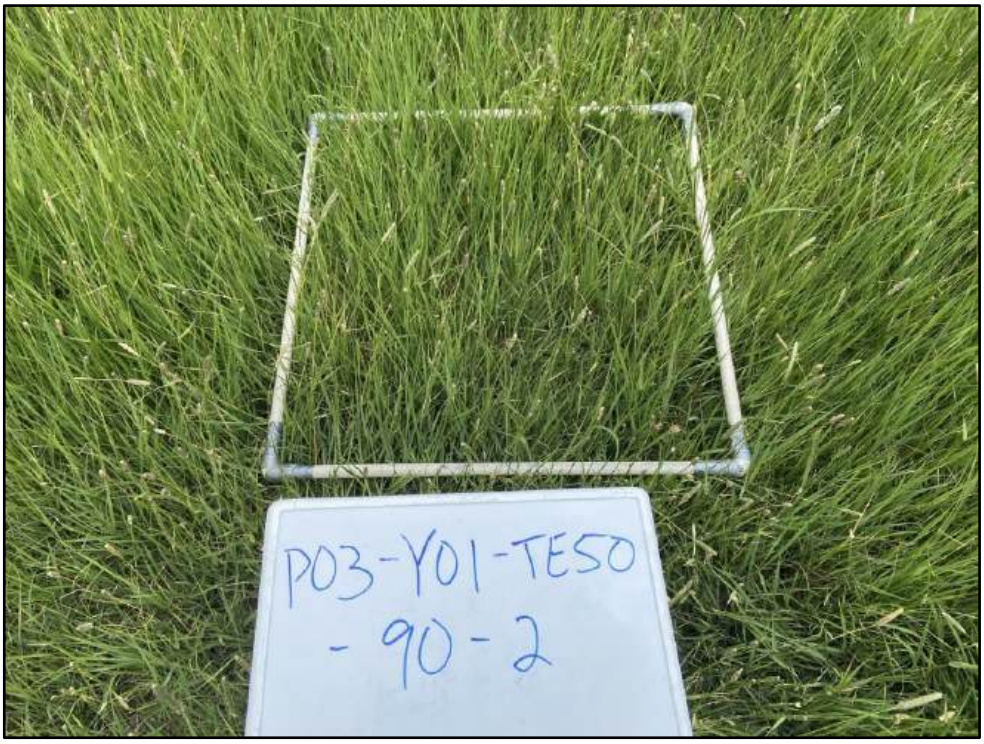


Figure H-110. Ground cover Plot P03_Y01_TE50-90-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-111. Ground cover Plot P03_Y01_TE75-10-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-112. Ground cover Plot P03_Y01_TE75-10-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-113. Ground cover Plot P03_Y01_TE75-30-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-114. Ground cover Plot P03_Y01_TE75-30-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-115. Ground cover Plot P03_Y01_TE75-50-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-116. Ground cover Plot P03_Y01_TE75_50-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-117. Ground cover Plot P03_Y01_TE75-70-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-118. Ground cover Plot P03_Y01_TE75-70-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.



Figure H-119. Ground cover Plot P03_Y01_TE75-90-1 in Phase 3 of the Clark Fork River Operable Unit, 2024.

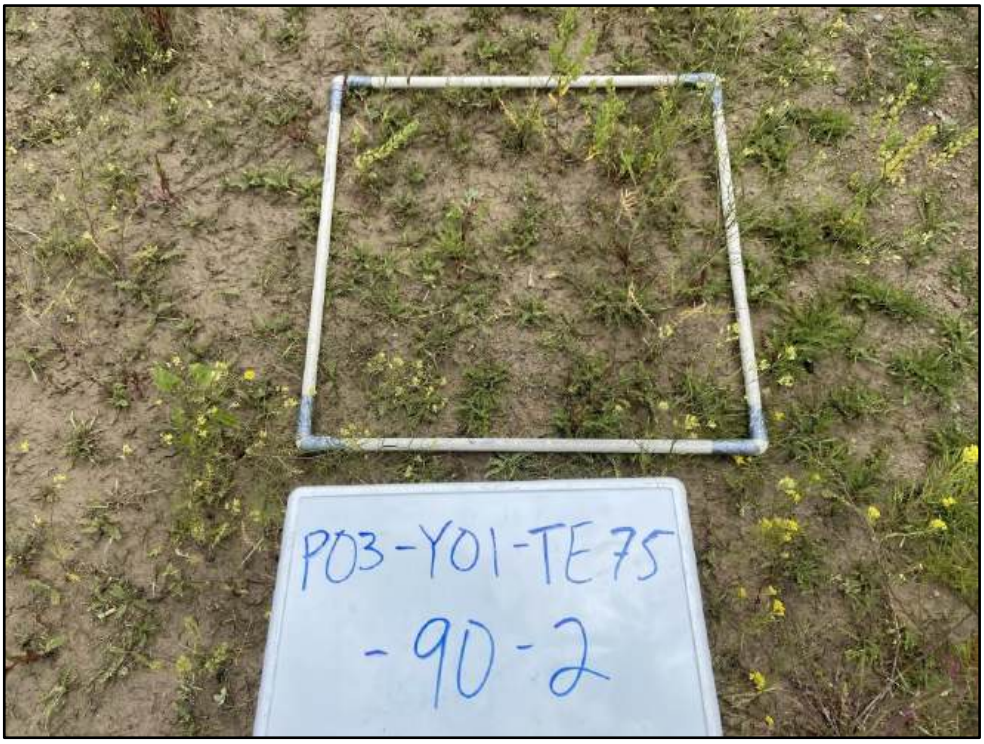


Figure H-120. Ground cover Plot P03_Y01_TE75-90-2 in Phase 3 of the Clark Fork River Operable Unit, 2024.

APPENDIX F

WETLAND DELINEATION – PHASE 1

WETLAND DELINEATION AND FUNCTIONAL ASSESSMENT

PHASE 1 - CLARK FORK RIVER OPERABLE UNIT

PREPARED FOR

Montana Department of Environmental Quality
Waste Management and Remediation Division
Federal Superfund and Construction Bureau
1225 Cedar St. | P.O. Box 200901
Helena, MT 59620-0901

AND

U.S. Environmental Protection Agency
Federal Building
10 West 15th Street | Helena, MT 59626

RESPEC

NOVEMBER 2024

RESPEC.COM

WETLAND DELINEATION AND FUNCTIONAL ASSESSMENT

PHASE 1 - CLARK FORK RIVER OPERABLE UNIT

PREPARED BY

RESPEC
815 East Front Street, Suite 3
Missoula, Montana 59802

PREPARED FOR

Montana Department of Environmental Quality
Waste Management and Remediation Division
Federal Superfund and Construction Bureau
1225 Cedar St. | P.O. Box 200901
Helena, MT 59620-0901

AND

U.S. Environmental Protection Agency
Federal Building
10 West 15th Street | Helena, MT 59626

NOVEMBER 2024

Project Number W0014.24015

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1.0 INTRODUCTION

This report provides detailed methods and results for the wetland delineation and functional assessment conducted by RESPEC for Phase 1 of the Clark Fork River Operable Unit (CFROU) to satisfy Year-10 post-remediation monitoring requirements as described in the CFROU Record of Decision (ROD) [EPA, 2004]. The ROD states that after 10 years, there should be "no net loss of wetlands" compared to pre-project conditions in any CFROU project phases in order to meet U.S. Army Corps of Engineers (USACE) criteria [EPA, 2004]. For Phase 1, a total of 0.47 acres of wetlands were identified prior to the remedy [Geum Environmental Consulting, Inc., 2012]. Additionally, the ROD stated that the Functionally Effective Wetland Area (FEWA) assessment method should be applied to wetlands within the CFROU [EA Engineering, Science, and Technology, 1992]. According to Geum Environmental Consulting, Inc. [2012], a reference wetland FEWA score of 2.3 was developed for the CFROU. This report considers the pre-remediation wetland area of 0.47 acres and the reference FEWA score of 2.3 as the Year-10 performance targets for Phase 1 of the CFROU.

2.0 METHODS

RESPEC conducted a wetland delineation of Phase 1 from July 1-3, 2024. The study area included the entire 134.42-acre Phase 1 remediation area. The delineation was conducted in accordance with USACE [Environmental Laboratory, 1987; USACE, 2010]. The wetland indicator status for each plant species was derived from national status archives [USACE, 2020], and the plant nomenclature for the delineation followed that established for Montana plants [Lesica, 2012]. Wetlands were classified according to standard protocols for the U.S. [Cowardin et al., 1979] and A hydrogeomorphic classification system [Smith et al., 1995]. Wetlands observed during the field survey were mapped using a resource-grade global navigation satellite system (Trimble R1) accurate to one-meter and companion electronic tablet with ArcGIS Field Maps software.

Soil data for the project area were acquired from the Natural Resource Conservation Service (NRCS) web soil survey [NRCS, 2024]. Hydric soil and wetland hydrology indicators, if observed, were recorded to a maximum depth of 20 inches at each wetland soil pit and matching upland soil pits. Wetland plot information for vegetation, hydrology, and soils was recorded on USACE wetland determination data forms. New data forms were completed at representative locations throughout the phase. Photographs were taken of each wetland and upland data point and at representative locations throughout the phase.

The FEWA assessment method was completed for wetlands identified within Phase 1 using the evaluation form provided by EA Engineering, Science, and Technology [1992]. The assessment area for the FEWA form consisted of the entirety of Phase 1; however, only wetlands delineated within the remediated soil removal area were considered as part of the functional assessment. Additional data used to complete the FEWA form included threatened and endangered Species records from the U.S. Fish and Wildlife Service Information for Planning and Consultation Database [U.S. Fish and Wildlife Service, 2024] as well as Montana Species of Concern occurrence records from the Montana Natural Heritage Program [2024].

3.0 RESULTS

3.1 WETLAND DELINEATION

A total of 53.96 acres of wetlands were delineated across the 134.42-acre Phase 1 remediation area. Additionally, 34.36 acres of wetlands were identified during the delineation outside of the remediated area and were not included in the functional assessment or used to determine if performance targets had been met. Wetlands occurring within the remediated area totaled 19.60 acres which exceeded the 0.47-acre pre-remedy wetland area. A map of all delineated wetlands, as well as the locations of wetland and upland data pits, is provided in Figure 1. Representative wetland photographs are provided in Appendix G. Completed wetland determination data forms are provided in Appendix H.

The dominant wetland class in Phase 1 was depressional [Cowardin et al., 1979]. The dominant hydrogeomorphic class was palustrine emergent with scrub-shrub, Aquatic bed and forested wetlands were also present within the phase [Smith et al., 1995]. The wetlands present within the Phase 1 remediated area included excavated depressions with hydrology primarily tied to groundwater and fringe wetlands that have developed along the river and expanded laterally over time. There was evidence of hydric soil development across the phase, but mottles were observed across soils found in excavated depressions and river margin wetlands. Wetland vegetation was dominated by cattails (*Typha latifolia*) and foxtail (*Alopecurus arundinaceus*) in the herbaceous stratum and sandbar willow (*Salix exigua*) in the shrub stratum. Vegetation in adjacent upland areas consisted of Great Basin wild rye (*Elymus cinerius*) and other grasses in the herbaceous stratum and buffaloberry (*Shepherdia canadensis*) in the shrub stratum.

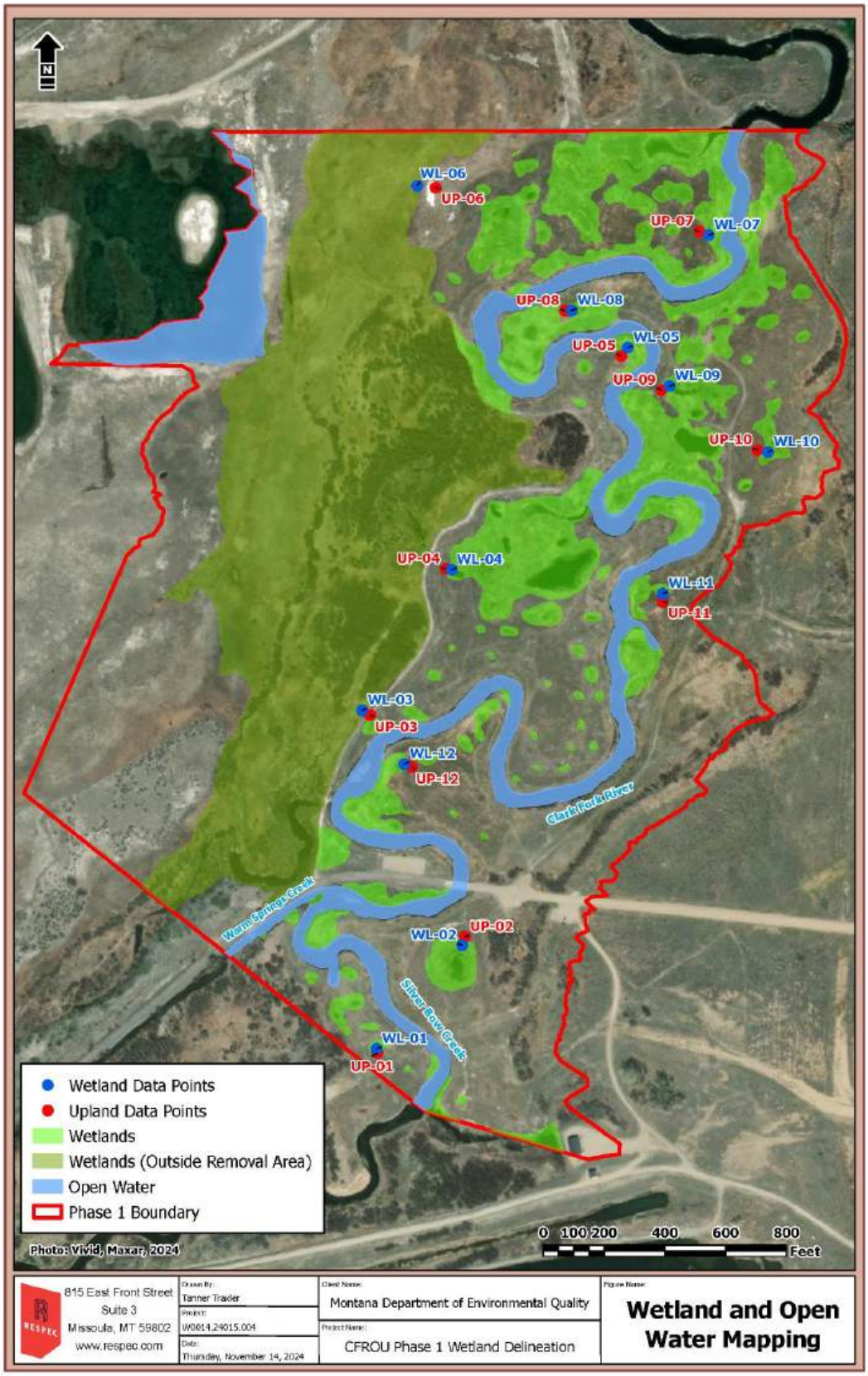


Figure 1. Wetlands and open water in Phase 1 of the Clark Fork River Operable Unit, 2024.

3.2 WETLAND FUNCTIONAL ASSESSMENT

A FEWA functional assessment form was completed for the 19.60 acres of wetlands delineated within the remediated area (Appendix I). One FEWA form was deemed appropriate for all wetlands considered as part of the assessment because the wetlands are all hydrologically connected and generally consist of similar soil types and vegetation species.

The total FEWA score for the wetlands identified within the remediated area of Phase 1 was at 2.55, exceeding the target score of 2.3. The site received functional ratings of "moderate" or "high" for each of the ten functional categories. Table 1 provides a summary of the functional ratings and overall FEWA assessment score for Phase 1.

Table 1. Summary of wetland functional ratings and overall score for Phase 1 of the Clark Fork River Operable Unit, 2024.

Functional Category[1]	Rating	Numeric Rating	Weight	Score
Hydrologic support	High	3	1.0	3.0
Floodflow alteration	Moderate	2	0.5	1.0
Sediment stabilization and erosion control	High	3	1.0	3.0
Water purification	Moderate	2	1.0	2.0
Production export and food-chain support	High	3	1.0	3.0
Aquatic diversity and abundance	High	3	1.5	4.5
Wildlife diversity and abundance: breeding	High	3	1.5	4.5
Wildlife diversity and abundance: migration	Moderate	2	1.5	3.0
Wildlife diversity and abundance: wintering	Moderate	2	1.0	2.0
Threatened, endangered or sensitive species habitat	Moderate	2	1.0	2.0
Total points				**28.0**
Maximum total points				**33.0**
Overall rating				**2.55**

4.0 DISCUSSION

A wetland delineation was conducted for Phase 1 of the CFROU July 2024 as part of the Year-10 post-remediation performance monitoring program. A total of 19.60 acres of wetlands were delineated across the remediated areas in Phase 1 which exceeded the pre-remediation wetland area of 0.47 acres. Additionally, the FEWA functional assessment method for the wetlands delineated was 2.55 which also exceeded the target reference score of 2.3. Wetlands observed throughout Phase 1 appeared to be ecologically functional and wetland area will likely to expand over time presuming the hydrologic system remains relatively stable.

[1] Refer to Appendix I for complete FEWA assessment form and explanation of methods and scores.

5.0 REFERENCES

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe, 1979. *Classification of wetlands and deepwater habitats of the United States,* prepared by U.S. Department of the Interior, U.S. Fish and Wildlife Service, Washington, DC.

EA Engineering, Science, and Technology, 1992. *Evaluation form for determining wetland functional value and effective wetland area in Upper Clark Fork River Superfund Sites*, prepared by E.A. Engineering, Science, and Technology, Redmond, WA, for ARCO, Anaconda, MT.

Environmental Laboratory, 1987. *Corps of Engineers Wetlands Delineation Manual,* Program Technical Report Y-87-1, prepared by Environmental Laboratory, Department of the Army, Waterways Experiment Station, Corps of Engineers, Vicksburg, MS, for the Department of the Army, US Army Corps of Engineers, Washington, DC.

Geum Environmental Consulting, Inc., 2012. *Final CFR Reach A, Phase 1 Geomorphology and vegetation monitoring plan*, prepared by Geum Environmental Consulting, Inc., Hamilton, MT, for the Montana Department of Environmental Quality, Helena, MT.

Lesica, P., 2012. *Manual of Montana vascular plants*. Brit Press, Fort Worth, TX.

Montana Natural Heritage Program, 2024. *Environmental summary report for latitude 46.16298 to 46.21027 and longitude -112.74504 to -112.80744*. Retrieved: November 5, 2024.

Smith, R. D., A. Ammann, C. Bartoldus, and M. M. Brinson, 1995. *An approach for assessing wetland functions using hydrogeomorphic classification, reference wetlands, and functional indices,* Technical Report WRP-DE-9, prepared by the US Army Engineer Waterways Experiment Station, Vicksburg, MS.

U.S. Army Corps of Engineers, 2020. *National wetland plant list*, *Version 3.5*, U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH. Available: http://wetland-plants.usace.army.mil/. (August 1, 2024).

U.S. Army Corps of Engineers, 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Western Mountains, Valleys, and Coast Region, Version 2.0, ERDC/EI TR-10-3*, J. S. Wakely, R. W. Lichvar, and C. V. Noble (eds.), prepared by the US Army Corps of Engineers, US Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS.

U.S. Department of Agriculture-Natural Resource Conservation Service, 2024. *Web Soil Survey for Deer Lodge County, Montana*. Available: https://websoilsurvey.nrcs.usda.gov/app/. (November 4, 2024).

U.S. Fish and Wildlife Service, 2024. *Information for Planning and Consultation*. Available: https://ipac.ecosphere.fws.gov/. (November 5, 2024).

APPENDIX G

WETLAND MONITORING PHOTOS



Figure 1. Wetland data point WL-01 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 2 Upland data point UP-01 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 3. Wetland data point WL-02 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 4. Upland data point UP-02 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 5. Wetland data point WL-03 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 6. Upland data point UP-03 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 7. Wetland data point WL-04 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 8. Upland data point UP-04 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 9. Wetland data point WL-05 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 10. Upland data point UP-05 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 11. Wetland data point WL-06 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 12. Upland data point UP-06 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 13. Wetland data point WL-07 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 14. Upland data point UP-07 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 15. Wetland data point WL-08 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 16. Upland data point UP-08 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 17. Wetland data point WL-09 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 18. Upland data point UP-09 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 19. Wetland data point WL-10 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 20. Upland data point UP-10 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 21. Wetland data point WL-11 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 22. Upland data point UP-11 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 23. Wetland data point WL-12 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 24. Upland data point UP-12 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 25. Floodplain facing northeast from data points WL-03 and UP-03 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 26. Floodplain facing east from data points WL-04 and UP-04 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 27. Floodplain facing north from data points WL-11 and UP-11 in Phase 1 of the Clark Fork River Operable Unit, 2024.



Figure 28. Floodplain facing south from data points WL-11 and UP-11 in Phase 1 of the Clark Fork River Operable Unit, 2024.

APPENDIX H

WETLAND DATA FORMS

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-01

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): LRR E Lat: 46.185643 Long: -112.771105 Datum: WGS84

Soil Map Unit Name: Slickens-Fluvaquentic Endoaquolls complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Representative pothole wetland. Many scattered across floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Typha latifolia*	45	Yes	OBL
2. *Alopecurus arundinaceus*	45	Yes	FAC
3. *Salix exigua*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	5	x 2 =	10
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		190 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Wetland grasses and young willows.

SOIL

Sampling Point: WL-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/1	85	10YR 5/8	15	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Dark, clay loam soil with mottles.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___		
Water Table Present?	Yes ___	No ___	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soil saturated to surface.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-01

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): LRR E Lat: 46.185605 Long: -112.771091 Datum: WGS84

Soil Map Unit Name: Slickens-Fluvaquentic Endoaquolls complex, 0 to 2 percent slopes, severely impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Matching upland plot to WL-01. Clark Fork River floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Leymus cinereus*	50	Yes	FAC
2. *Alopecurus arundinaceus*	10	No	FAC
3. *Agrostis stolonifera*	10	No	FAC
4. *Lactuca serriola*	10	No	FACU
5. *Achillea millefolium*	5	No	FACU
6. *Cirsium arvense*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	90 (A)		285 (B)
Prevalence Index = B/A =			3.17

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation considered hydrophytic due to dominance of FAC species.

SOIL

Sampling Point: UP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Loamy/Clayey	Silt Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed. Soil dry.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-02

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): LRR E Lat: 46.186575 Long: -112.769993 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Pothole wetland on east bank of Clark Fork.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Schoenoplectus tabernaemontani*	80	Yes	OBL
2. *Typha latifolia*	20	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Sedge also present.

SOIL

Sampling Point: WL-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	2.5Y 5/2	80	10YR 5/8	20	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Clay loam soil. Plant litter in top 2".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soil saturated to surface.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-02

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0.5

Subregion (LRR): LRR E Lat: 46.186650 Long: -112.769959 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: Nonje

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Matching upland plot to WL-02. Clark Fork River floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Elymus canadensis*	50	Yes	FAC
2. *Hordeum jubatum*	30	Yes	FAC
3. *Juncus balticus*	10	No	FACW
4. *Alopecurus arundinaceus*	10	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		290 (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ 5 - Wetland Non-Vascular Plants[1]
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Vegetation considered hydrophytic due to dominance of FAC species.

SOIL

Sampling Point: UP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Loamy/Clayey	Silt Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed. Soil dry.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-03

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): LRR E Lat: 46.188687 Long: -112.771292 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Data point in major wetland complex west of remediated area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Alopecurus arundinaceus*	70	Yes	FAC
2. *Typha latifolia*	30	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		240 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Portions of wetland dominated by willows.

SOIL

Sampling Point: WL-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					Loamy/Clayey	
4-20	10YR 4/1	95	10YR 5/8	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Clay loam soil with mottles below 4". Roots in top 4".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water in pit to surface.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-03

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR): LRR E Lat: 46.188642 Long: -112.771187 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Matching upland plot to WL-03. Hillside at west edge of remediated area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Leymus cinereus*	30	Yes	FAC
2. *Glycyrrhiza lepidota*	30	Yes	FAC
3. *Elymus canadensis*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		210 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ 5 - Wetland Non-Vascular Plants[1]
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation considered hydrophytic due to dominance of FAC species.

SOIL

Sampling Point: UP-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	100					Loamy/Clayey	Silt Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Soil dark but no mottles or other hydric soil indicators present. Rocks throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed. Soil dry.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-04

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): LRR E Lat: 46.189949 Long: -112.770131 Datum: WGS84

Soil Map Unit Name: Slickens-Fluvaquentic Endoaquolls complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Floodplain wetland on west bank of Clark Fork River.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Typha latifolia*	50	Yes	OBL
2. *Eleocharis palustris*	30	Yes	OBL
3. *Alopecurus arundinaceus*	15	No	FAC
4. *Salix bebbiana*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		135 (B)

Prevalence Index = B/A = 1.35

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Willows dominant in portions of wetland.

SOIL

Sampling Point: WL-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/1	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Clay loam soil with mottles.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___		
Water Table Present?	Yes X	No ___	Depth (inches): 8		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soil saturated to surface with water in pit at 8". Surface water in center of wetland.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-04

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0.5

Subregion (LRR): LRR E Lat: 46.189957 Long: -112.770207 Datum: WGS84

Soil Map Unit Name: Slickens-Fluvaquentic Endoaquolls complex, 0 to 2 percent slopes, severely impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Matching upland plot to WL-04. Clark Fork River floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Festuca rubra*	40	Yes	FAC
2. *Lactuca serriola*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 40

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	60 (A)		200 (B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ 5 - Wetland Non-Vascular Plants[1]
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:
Dominance of FAC and FACU species.

SOIL

Sampling Point: UP-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Loamy/Clayey	Clay Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soil moist from recent rain.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-05

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Riverbend Local relief (concave, convex, none): Concave Slope (%): 0.5

Subregion (LRR): LRR E Lat: 46.191946 Long: -112.767837 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Floodplain wetland along left bank of Clark Fork River.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix exigua*	10	Yes	FACW
2. *Salix bebbiana*	5	Yes	FACW
3. *Alnus incana*	5	Yes	FACW
4.			
5.			
	20 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Alopecurus arundinaceus*	90	Yes	FAC
2. *Juncus balticus*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120 (A)		330 (B)

Prevalence Index = B/A = 2.75

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Willows and alders in shrub stratum, wetland grasses in herb stratum.

SOIL

Sampling Point: WL-05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					Loamy/Clayey	Loam
4-20	10YR 4/2	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Clay loam with mottles below 4".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 4

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturation at 4".

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-05

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): LRR E Lat: 46.191871 Long: -112.767928 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Matching upland plot to WL-05. Clark Fork River floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix exigua*	20	Yes	FACW
2.			
3.			
4.			
5.			
	20 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Elymus canadensis*	50	Yes	FAC
2. *Alopecurus arundinaceus*	20	Yes	FAC
3. *Agrostis stolonifera*	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		310 (B)

Prevalence Index = B/A = 2.82

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation considered hydrophytic due to dominance of FAC and FACW species.

SOIL

Sampling Point: UP-05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Loamy/Clayey	Silt Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed. Soil moist but not saturated.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-06

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0.5

Subregion (LRR): LRR E Lat: 46.193399 Long: -112.770574 Datum: WGS84

Soil Map Unit Name: Tetonview loam, 0 to 4 percent slopes, rarely flooded, moderately impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Large rush/foxtail flat hydrologically connected to the large wetland complex to the southeast but outside of remediated area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Juncus balticus*	80	Yes	FACW
2. *Alopecurus arundinaceus*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		190 (B)

Prevalence Index = B/A = 2.11

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Wetland dominated by Baltic rush throughout.

SOIL

Sampling Point: WL-06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					Loamy/Clayey	Clay Loam
4-20	2.5YR 5/2	95	10YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Silt loam with mottles below 4".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 4

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soil saturated at 4".

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-06

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0.5

Subregion (LRR): LRR E Lat: 46.193382 Long: -112.770336 Datum: WGS84

Soil Map Unit Name: Tetonview loam, 0 to 4 percent slopes, rarely flooded, moderately impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Matching upland plot to WL-06. Clark Fork River floodplain. Data point outside of remediated area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Elymus canadensis*	60	Yes	FAC
2. *Plantago eriopoda*	25	Yes	FACW
3. *Ericameria nauseosa*	5	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	90 (A)		255 (B)

Prevalence Index = B/A = 2.83

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation considered hydrophytic due to dominance of FAC and FACW species.

SOIL

Sampling Point: UP-06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	100					Loamy/Clayey	Clay Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed. Soil dark but no mottles present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed. Soil moist but not saturated.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-07

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): LRR E Lat: 46.192958 Long: -112.766788 Datum: WGS84

Soil Map Unit Name: Slickens-Fluvaquentic Endoaquolls complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Floodplain wetland on left bank of Clark Fork River near north end of Phase 1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix exigua*	70	Yes	FACW
2.			
3.			
4.			
5.			
	70 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Juncus balticus*	80	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	150	x 2 =	300
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	150 (A)		300 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation dominated by willows in shrub stratum and Baltic rush in herb stratum.

SOIL

Sampling Point: WL-07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/1	100					Loamy/Clayey	Silt Loam
2-20	10YR 4/2	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Clay loam with mottles below 2".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soil saturated to surface.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-07

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): LRR E Lat: 46.192989 Long: -112.766910 Datum: WGS84

Soil Map Unit Name: Slickens-Fluvaquentic Endoaquolls complex, 0 to 2 percent slopes, severely impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Matching upland plot to WL-07. Clark Fork River floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Elymus canadensis*	70	Yes	FAC
2. *Leymus cinereus*	15	No	FAC
3. *Alopecurus arundinaceus*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		270 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation considered hydrophytic due to a dominance of FAC species.

SOIL

Sampling Point: UP-07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Loamy/Clayey	Silt Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed. Soil dry.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-08

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): LRR E Lat: 46.192279 Long: -112.768568 Datum: WGS84

Soil Map Unit Name: Eluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Floodplain wetland along right bank of Clark Fork River in large bend.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix exigua*	60	Yes	FACW
2.			
3.			
4.			
5.			
	60 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Alopecurus arundinaceus*	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	150 (A)		390 (B)

Prevalence Index = B/A = 2.60

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Foxtail in herb stratum and willow in shrub stratum.

SOIL

Sampling Point: WL-08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					Loamy/Clayey	Silt Loam
4-20	10YR 5/2	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Clay loam with mottles below 4".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 4

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soil saturated at 4".

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-08

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0.5

Subregion (LRR): LRR E Lat: 46.192276 Long: -112.768657 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Matching upland plot to WL-08. Clark Fork River floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Shepherdia argentea*	5	Yes	FACU
2.			
3.			
4.			
5.			
	5 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Elymus canadensis*	60	Yes	FAC
2. *Alopecurus arundinaceus*	40	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	105 (A)		320 (B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ 5 - Wetland Non-Vascular Plants[1]
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Vegetation considered hydrophytic due to a dominance of FAC species.

SOIL

Sampling Point: UP-08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					Loamy/Clayey	Silt Loam
3-20	10YR 5/4	100					Loamy/Clayey	Silt Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed. Soil dry.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-09

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): LRR E Lat: 46.191600 Long: -112.767299 Datum: WGS84

Soil Map Unit Name: Slickens-Fluvaquentic Endoaquolls complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Large pothole/floodplain wetland on right bank of Clark Fork River.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix exigua*	70	Yes	FACW
2.			
3.			
4.			
5.			
	70 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Schoenoplectus tabernaemontani*	50	Yes	OBL
2. *Juncus balticus*	40	Yes	FACW
3. *Typha latifolia*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	110	x 2 =	220
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	170 (A)		280 (B)

Prevalence Index = B/A = 1.65

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Rush and cattails dominant.

SOIL

Sampling Point: WL-09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/1	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Clay with mottles throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Standing water in center of wetland.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-09

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0.5

Subregion (LRR): LRR E Lat: 46.191565 Long: -112.767401 Datum: WGS84

Soil Map Unit Name: Slickens-Fluvaquentic Endoaquolls complex, 0 to 2 percent slopes, severely impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Matching upland plot to WL-09. Clark Fork River floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix exigua*	10	Yes	FACW
2. *Shepherdia argentea*	5	Yes	FACU
3.			
4.			
5.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Elymus canadensis*	60	Yes	FAC
2. *Lactuca serriola*	20	Yes	FACU
3. *Alopecurus arundinaceus*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____	=Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	70	x 3 =	210
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	105 (A)		330 (B)

Prevalence Index = B/A = 3.14

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ 5 - Wetland Non-Vascular Plants[1]
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:
FAC, FACU, and FACW species all dominant.

SOIL

Sampling Point: UP-09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Loamy/Clayey	Silt Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed. Soil dry.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-10

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): LRR E Lat: 46.191008 Long: -112.766019 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Pothole wetland on east side of Clark Fork River.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix exigua*	40	Yes	FACW
2.			
3.			
4.			
5.			
	40 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Juncus balticus*	50	Yes	FACW
2. *Carex aquatilis*	40	Yes	OBL
3. *Typha latifolia*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	140 (A)		230 (B)

Prevalence Index = B/A = 1.64

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Cattails dominant in portions of wetland.

SOIL

Sampling Point: WL-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Clay loam with mottles throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturated to surface.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-10

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): LRR E Lat: 46.191025 Long: -112.766153 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Matching upland plot to WL-10. Clark Fork River floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Elymus canadensis*	90	Yes	FAC
2. *Leymus cinereus*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation considered hydrophytic due to dominance of FAC species.

SOIL

Sampling Point: UP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Loamy/Clayey	Silt Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed. Soil dry.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-11

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): LRR E Lat: 46.189735 Long: -112.767382 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Pothole wetland along right bank of Clark Fork River.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix exigua*	50	Yes	FACW
2.			
3.			
4.			
5.			
	50 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Typha latifolia*	40	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 60

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		140 (B)

Prevalence Index = B/A = 1.56

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Cattails and willows.

SOIL

Sampling Point: WL-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2	100					Loamy/Clayey	Silt Loam
4-20	10YR 3/1	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Clay loam with mottles below 4".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 4

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturation beginning at 4".

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-11

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): LRR E Lat: 46.189659 Long: -112.767389 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Matching upland plot to WL-11. Clark Fork River floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Elymus canadensis*	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		270 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation considered hydrophytic due to a dominance of FAC species.

SOIL

Sampling Point: UP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Loamy/Clayey	Silt Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: WL-12

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): LRR E Lat: 46.188204 Long: -112.770745 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Pothole wetland on right bank of Clark Fork River.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix exigua*	70	Yes	FACW
2.			
3.			
4.			
5.			
	70 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Alopecurus arundinaceus*	60	Yes	FAC
2. *Typha latifolia*	40	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	70	x 2 =	140
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	170 (A)		360 (B)

Prevalence Index = B/A = 2.12

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Wetland vegetation dominant.

SOIL

Sampling Point: WL-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Clay loam with mottles throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 6

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturation beginning at 6".

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: CFROU Phase 1 City/County: Deer Lodge County Sampling Date: 7/3/24

Applicant/Owner: MTDEQ State: MT Sampling Point: UP-12

Investigator(s): T. & B. Traxler Section, Township, Range: S18, T05 N, R09 W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0.5

Subregion (LRR): LRR E Lat: 46.188175 Long: -112.770647 Datum: WGS84

Soil Map Unit Name: Fluvaquentic Endoaquolls-Slickens complex, 0 to 2 percent slopes, severely impacted NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Matching upland plot to WL-12. Clark Fork River Floodplain.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Elymus canadensis*	30	Yes	FAC
2. *Lactuca serriola*	30	Yes	FACU
3. *Alopecurus arundinaceus*	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	80 (A)		270 (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation considered hydrophytic due to a dominance of FAC species.

SOIL

Sampling Point: UP-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Loamy/Clayey	Silt Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed.

APPENDIX I

WETLAND ASSESSMENT FORMS

Evaluation Form

For Determining Wetland Functional Value and Effective Wetland Area

In Upper Clark Fork River Superfund Sites

CFRCU Phase I Evaluation Form completed on 11/11/24 by Tanner Traxler, Biologist, RESPEC

Prepared for:

ARCO

P.O. Box 1491
First Security Bank Building, Suite 400
307 E. Park Avenue
Anaconda, MT 59711

September 1992

Prepared by:

EA Engineering, Science, and Technology

Northwest Operations
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RECEIVED
SEP 29 1992
Montana Department of Health
and Environmental Sciences
Solid and Hazardous Waste Bureau

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Figure 2. Key for determination of hydroperiod (source: Adamus et al., 1987). 11

INTRODUCTION

This evaluation form is intended to be used for determining wetland functional value of wetlands located on Superfund Sites in the Upper Clark Fork River Basin (UCFR), Montana. This rating of wetland functional value is to be subsequently used in determining the amount of "functionally effective" wetlands, which is defined as delineated wetland acreage adjusted by an overall rating for wetland functional value. The method for arriving at this rating is detailed in Part D of this form.

The questions and organization of the procedure are adapted from the Wetland Evaluation Technique (WET 2.0) of Adamus et al. 1987. Although this evaluation uses many of the indicators and follows a similar structure as WET 2.0, it is significantly different in several important ways:

- it has been made more regionally specific to the range of conditions found in the Upper Clark Fork River Basin;
- it has been streamlined by having fewer indicators than WET 2.0;
- it has a simplified key to arriving at a particular rating;
- it is based primarily on a combination of the "effectiveness" and "opportunity" evaluations of WET 2.0, with very little use of a "social significance" evaluation; and
- it provides for an overall rating of wetland functional value.

The evaluation is divided into four parts. In Part A, the precise area to be evaluated, termed the Assessment Area (AA) is determined. Part B is a series of questions to generally characterize the AA. Part C is the evaluation, which depends largely on information filled out in Part A and B. It is made up of ten categories of wetland functional value:

- Hydrologic Support (Groundwater Recharge and Discharge)
- Floodflow Alteration
- Sediment Stabilization and Erosion Control
- Water Purification
- Production Export/Food Chain Support
- Aquatic Diversity and Abundance

- Wildlife Diversity and Abundance: Breeding
- Wildlife Diversity and Abundance: Migration
- Wildlife Diversity and Abundance: Wintering
- Habitat for Threatened, Endangered, or Sensitive Species

Part D is an analysis of the evaluation results, which includes a summary of the ratings in Part C over all ten categories, arriving at an overall wetland rating. This summary is followed by a description of how effective wetland area is to be calculated. An option for weighting the various categories is given, which if modified should be accompanied by an explanation for using different weights for any of the functional categories.

For categories dealing with wildlife diversity and abundance, waterfowl are given an emphasis in both this evaluation and WET 2.0, since waterfowl are typically the most abundant and common wetland dependent wildlife species. Although other types of wildlife, such as non-game birds and mammals, may also depend on wetlands, addressing their habitat requirements would make this evaluation considerably more complicated. Consequently, it was judged to be undesirable for the purposes of this form.

Like WET 2.0, the evaluation is based on indicators of wetland functional value. The determination of a rating is based on a key, where yes or no answers to indicator questions lead to ratings from **very low** to **high**. The key works in basically two ways: (1) an answer to one question can result in a particular rating or be necessary for a particular rating due to its major effect on wetland functions; or (2) the effect of several indicators together can result in a particular rating. Not all categories have a rating of **very low**. The **very low** rating was given only to the water purification and aquatic and wildlife habitat related functions, where the presence of a barren tailings surface results in a very low value. Other categories were given the **low**, **moderate**, and **high** ratings, similar to WET 2.0.

Since WET 2.0 is presently considered to be based on the most extensive and up-to-date synthesis of research on wetland functions, indicator questions were generally taken either directly or in modified form from that evaluation method. Although in some cases they may seem arbitrary, they were assumed to be based on the best available information and were used unless more site specific information deemed otherwise.

This evaluation includes use of the U.S. Fish and Wildlife Service " Classification of Wetland and Deep Water Habitat in the United States" (Cowardin et al. 1979) to describe wetland systems and classes. Using this evaluation will require some field data or at least a good on-the-ground familiarity with the assessment area.

Literature Cited

Adamus, P.R., E.J. Clairain, Jr., R.D. Smith, and R.E. Young. 1987. Wetland Evaluation Technique (WET); Volume II: Methodology. Operational Draft Technical Report Y-87. U.S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

Cowardin, L.W., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, Biological Services Program. FWS/OBS-79/31.

PART A: DEFINITION OF ASSESSMENT AREA

For each functional evaluation to be conducted, it is necessary to define the boundaries of the Assessment Area (AA). The geographical unit to be evaluated may be defined by both natural and administrative boundaries. Natural boundaries are likely to be associated with floodplain edges, stream reaches of similar characteristics, lake complexes, or general hydrological connectivity. Administrative boundaries are most likely to include boundaries of operable units or proposed remedial actions. The AA should be mostly composed of wetland area, although there may also be some non-wetland area intermixed or adjacent to the wetland.

For example, the AA could be an entire operable unit or, if the operable unit is large and complex, it could be subdivided according to physical or biological attributes. Subdividing an operable unit is probably most critical when levels of disturbance or negative impacts to the wetlands vary strongly within the operable unit. However the AA is defined, effective wetland area will be quantified at the level of the operable unit for purposes of accounting total wetland areas before and after remedial actions.

1. What name has been given to this AA? CFROU Phase 1

2. What is the total acreage of the AA? 134.42 of wetlands in the AA? 19.60

3. In what operable unit is the AA located? Clark Fork River OU

4. List any other AAs in this operable unit? Phases 2-22
Wetland assessments not yet completed for other Phases.

5. Have the boundaries of the AA wetlands been delineated? Yes
Title of delineation report: CFROU 2024 Annual Report - Phase 1 Wetland Report

6. Describe the boundaries of the AA and the location of the wetlands in the AA, including sketch map on following page. Provide a justification for determining the AA boundaries.

The boundary of the AA is the Phase 1 boundary. Only the wetlands delineated within the soil removal areas of Phase 1 were considered as part of the assessment.

See 2024 CFROU Annual Report

Sketch map of _____ Assessment Area, showing location of AA boundaries and wetlands within and adjacent to AA.

PART B: CHARACTERISTICS OF ASSESSMENT AREA (AA)

Area

1. Is the **surface area** of the wetland within the AA and any connected wetlands within one mile of the AA:

   a. ____ less than 5 acres?
   b. ____ between 5 and 40 acres?
   c. X between 40 and 200 acres?
   d. ____ greater than 200 acres?

2. The **watershed** of the AA is:

   a. ____ less than 1 square mile
   b. ____ 1-100 square miles
   c. X 101-2,500 square miles
   d. ____ greater than 2,500 square miles

Vegetation and Habitat

3. Which **wetland system** is dominant (D) and which are also present (P) in the AA?

   a. P Lacustrine
   b. D Palustrine
   c. P Riverine

4. Which **vegetation class** (as defined by Cowardin et al. 1979) is dominant (D) in the AA wetland and which comprise at least 10% or 1 acre of the AA wetland (P)?

		Percent of Wetland	Major Plant Species Present
a.	Forested		
b. P	Scrub-Shrub	25	Salix spp.
c. D	Emergent	70	Typha latifolia, Alopecurus arundinaceus
d. P	Aquatic Bed	5	Lemna sp.

Vegetative cover of wetland (in percent of total area) 95 %

5. **Vegetation/Water Interspersion**

If surface water is present in the AA, does the horizontal pattern of obligate emergent vegetation consist of:

a. X relatively few, continuous areas of vegetation with little interspersion with channels or pools, as in Example A of Figure 1? **(Low V/W Interspersion)**

b. ____ a condition intermediate between Examples A and B of Figure 1? **(Moderate V/W Interspersion)**

c. ____ a mosaic of relatively small patches of vegetation interspersed with channels or pools, as in Example B of Figure 1? **(High V/W Interspersion)**

6. **Vegetation Class Interspersion**

The horizontal pattern of vegetation classes in the AA consist of:

a. ____ relatively homogenous areas supporting a single vegetation class with little or no interspersion between these areas? **(Low Vegetation Class Interspersion)**

b. X a condition intermediate between (a) and (c)? **(Moderate Vegetation Class Interspersion)**

c. ____ a highly interspersed mosaic of relatively small areas (at least 100 sq. ft.) that support different vegetation classes? **(High Vegetation Class Interspersion)**

7. **Vegetation Form Richness**

Which of the following conditions best applies to the AA's wetland?

a. ____ one vegetation class present and fewer dominance types than in (b). **(Low Vegetation Form Richness)**

b. ____ two vegetation classes present; or at least two dominance types if under 10 acres, four dominance types if 10-100 acres, or six dominance types if greater than 100 acres. **(Moderate Vegetation Form Richness)**

c. X at least three vegetation classes present; or at least two vegetation classes and at least four dominance types if under 10 acres, six dominance types if 10-100 acres, or eight dominance types if greater than 100 acres. **(High Vegetation Form Richness)**

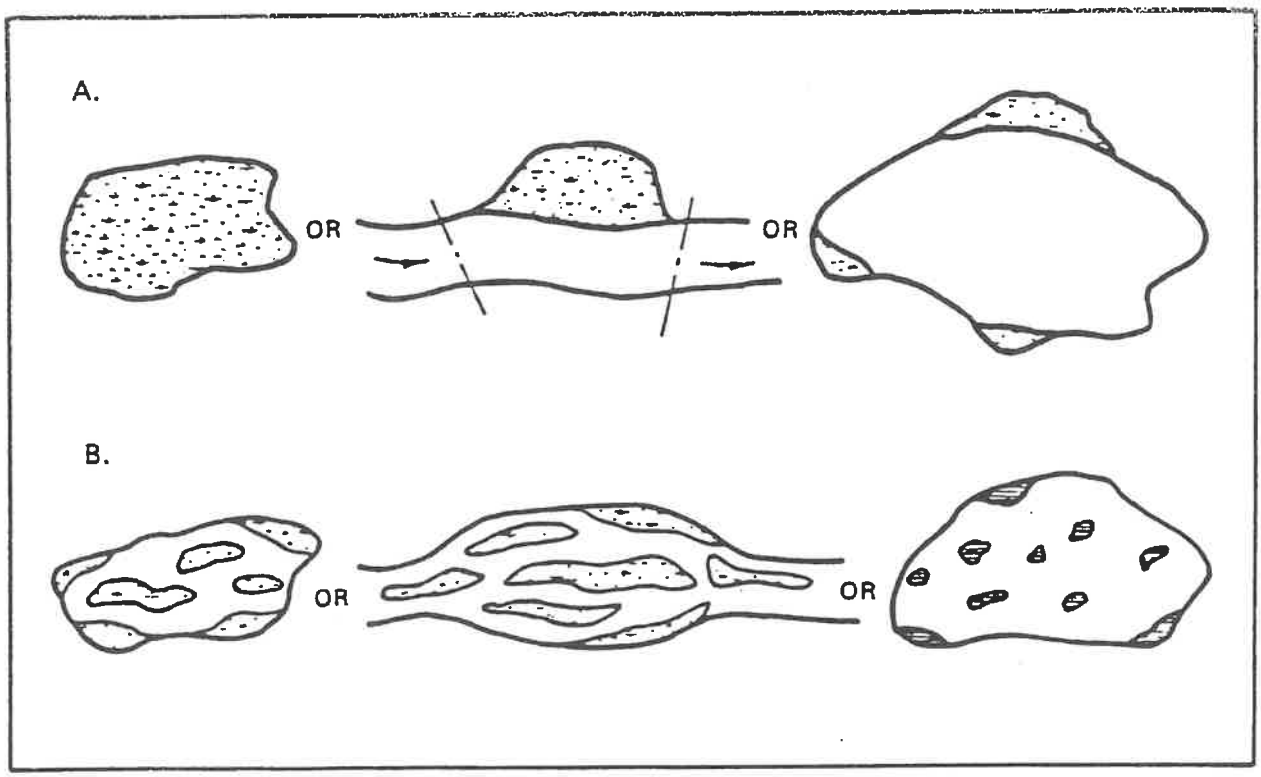


Figure 1. **Examples of low (A) and High (B) vegetation/water interspersion (source: Adamus et al., 1987).**

8. This question pertains to the context of the wetland in relation to any nearby wetlands. A wetland is a "cluster" wetland if together with nearby wetlands it has a certain minimum area of emergent or scrub-shrub vegetation. In contrast, it is an "oasis" wetland, if it is a relatively small and isolated amount of emergent or scrub-shrub vegetation (threshold areas for this question are taken directly from WET 2.0).

(a) Within 1,000 yd of the AA's center, is the acreage of emergent wetland greater than 4.6 acres or that of scrub-shrub wetland greater than 2.3 acres?
__X__ If so, the wetland is part of a **cluster** wetland.

(b) Within 1,000 yd of the AA's center, is the acreage of emergent wetland less than 0.8 acres or that of scrub-shrub wetland less than 0.4 acres?
_____ If so, the wetland is an **oasis** wetland.

9. Is the average **width of vegetation** dominated by obligate emergent, scrub/shrub, or forested vegetation greater than 20 ft (measured perpendicular to flow)? __X__

Hydrology

10. **Inlet/Outlet Conditions**

Does surface water (excluding precipitation or sheet flow) enter and/or exit the AA through an:

a. __X__ inlet with permanent flow
b. ____ inlet with intermittent flow
c. __X__ outlet with permanent flow
d. ____ outlet with intermittent flow

11. Does the AA contain a **channel** with at least seasonally flowing water? __X__

12. If channel flow is present, does **water velocity** average:

a. ____ 0-0.5 ft/sec
b. ____ 0.5-1.5 ft/sec
c. __X__ 1.5-3.3 ft/sec
d. ____ 3.3+ ft/sec

13. **Hydrologic Alteration**

(a) Have **ditches, canals, channels, or levees** been constructed in the AA that result in water flowing out of the AA at a significantly faster rate than would occur without these features? ____

(b) Has an outlet been added to the AA or an inlet been recently (i.e. within the last 10 years) blocked off, significantly **altering the hydroperiod** of the wetland? ____

(c) Is water level in the AA dependent on **artificial control** (other than for purposes of wildlife or fisheries management)? X

14. **Hydroperiod**

What is the dominant (D) and secondary (S) flooding regime in the AA (see Figure 2 and Cowardin et al. (1979) for key to hydroperiod)?

a. ____ permanently flooded
b. ____ intermittently exposed
c. D semipermanently flooded
d. S seasonally flooded
e. ____ saturated (no standing water)
f. ____ temporarily flooded
g. ____ intermittently flooded

Substrate

15. Is the **surface substrate** (upper 3 inches) in the AA predominantly:

a. ____ organic soil (peat or muck)?
b. X fine mineral soil (clay, silt, or loam)?
c. ____ sand?
d. ____ cobble-gravel?
e. ____ bedrock?
f. ____ rubble?

Disturbance

16. Is more than 75% of the AA wetland **barren tailings** surfaces? ____

17. Has the AA been **tilled, filled, bladed, or excavated** within the past three years? ____

18. Are there **sediment sources** upstream from the AA that may contribute substantial amounts of inorganic sediment to the AA? ____

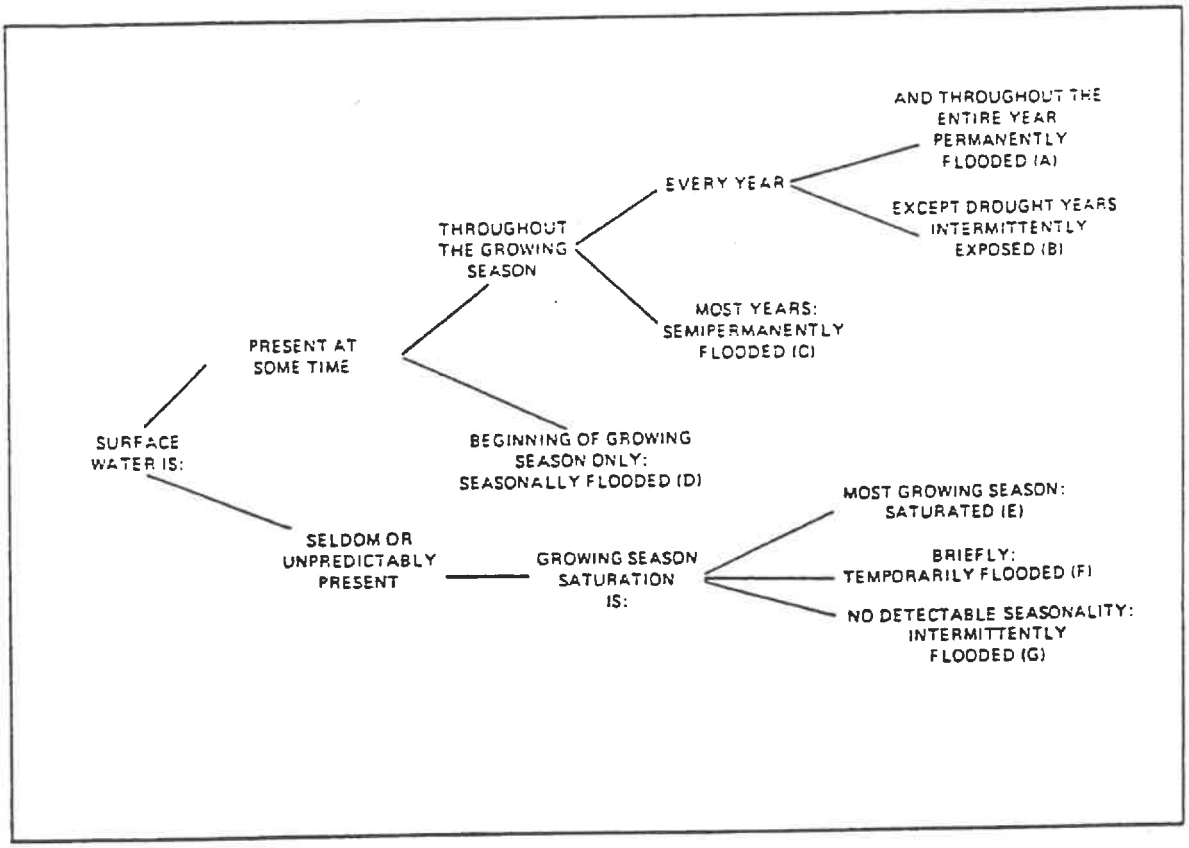


Figure 2. **Key for determination of hydroperiod (source: Adamus et al., 1987).**

19. Is the AA affected by **frequent human activity** due to:

(a) visits by people at least three times daily in the AA or areas adjacent and visible to the AA? X

(b) human activity common within 1,000 feet if surface water mostly less than 3 feet or within 600 feet if surface water greater than 3 feet deep? X

Although the site specific data requested in this question may not be directly known, the nature of land-use or institutional controls (e.g., zoning, land ownership, permitted land use, etc.) should be a good indicator of whether or not #19(a) or #19(b) are met.

PART C: FUNCTIONAL EVALUATION

Many questions in Part C are referred to by a three part notation, such as "B:1,a-b", where B refers to Part B, question #1, answer (a) or (b). Unless otherwise specified, this notation indicates a "yes" answer is needed to the referenced question in Part B. Other questions in Part C occur just once or were considered not pertinent in the general characterization of the AA wetland, and they were therefore not included in Part B.

Hydrologic Support (Groundwater Recharge and Discharge)

1. Is the AA in an area known to be a groundwater recharge area ? ____

2. Is the AA located immediately below a dam? ____

3. Does local topography favor groundwater discharge due to any of following? X

   a. ____ geologic fault oriented perpendicular to surface flow
   b. ____ decrease in soil permeability downslope of AA (e.g., bedrock, clay pan)
   c. ____ AA being at base of relatively steep slope
   d X stream adjacent or within AA known to be a "gaining stream"
   e. ____ other _____

4. AA has no inlet, but does have permanent outlet? ____

Rating for Hydrologic Support

#1 - #4 are all no:	**Low**
#4 is yes; #1, #2 and #3 are all no:	**Moderate**
#1, #2, or #3 are yes:	**High**

Floodflow Alteration

5. How many of the following are true of the AA? (0-2) (3-4) (5-6)

   a. X wetland is within 100 year floodplain of a stream channel
   b. X hydroperiod is not permanently flooded or intermittently exposed (B:14,c-g)
   c. X potential for ponding of high flows is apparent
   d. ____ total area of wetland is greater than 200 acres (B:1,d)
   e. ____ forest or scrub/shrub vegetation covers greater than 30% of AA (B:4)
   f. ____ inlet is wider than outlet

Rating for Floodflow Alteration

0-2 of #5 are yes:
3-4 of #5 are yes:
5-6 of #5 are yes:

Low
(Moderate)
High

Sediment Stabilization and Erosion Control

6. Are potential erosive forces present in AA (e.g., channel flow of high velocity (B:12,d) or open water wider than 100 feet) or are eroding areas adjacent to wetland? X

7. Does AA have wetland vegetation that can effectively buffer effects of erosive forces (e.g., well-vegetated stream banks, bands of erect vegetation greater than 20 ft. wide (B:9) adjacent to wide open water, moderate to high water/vegetation interspersion (B:5,b-c))? X

Rating for Sediment Stabilization and Erosion Control

Both #6 or #7 are no:
Only #7 is yes:
Both #6 and #7 are yes:

Low
Moderate
(High)

Water Purification (Sediment/Toxicant Reduction, Nutrient Removal/Transformation)

8. Is the AA characterized by any of the following? X

   a. ___ no outlet present (B:10,c and d are both no) or impoundment is by artificial or natural dam
   b. X dominated by erect, persistent vegetation that has a hydroperiod of seasonally flooded or wetter (B:14,a-d)
   c. ___ direct evidence of accretion (i.e. accumulation of organic matter or sediment) from historic photos or field sampling and accretion continues to occur
   d. X depositional environments with erect vegetation greater than 20 feet wide (B:9)

9. Is the AA characterized by three or more of the following? X

   a. ___ constricted outlet
   b. ___ slow-velocity flow (B:12,a but less than 0.3 feet/sec)
   c. X riverine system with good pool-riffle ratios or pools and instream debris
   d. X relatively long-duration and extent of seasonal flooding (B:14,a-d)
   e. X having a zone of obligate erect vegetation greater than 20 feet wide (B:9)

10. Is the AA characterized by three or more of the following? ____

a. ____ slow-velocity flow (B:12,a but less than 0.3 feet/sec) and AA wetland has greater than 50% vegetation cover (B:4)
b. X fine mineral soils
c. ____ 50% or greater vegetation cover in the AA wetland (B:4) and nutrient (nitrogen and phosphorus) sources are present upgradient from the AA (B:18,A)
d. X hydroperiod permanently flooded or saturated or nearly so (B:14,a-e)
e. ____ vegetation form richness is high (B:7,c)

11. Is the AA characterized by artificial channelization (B:13,a) or tillage (B:17)? ____

12. (a) Are there potentially significant non-point or point sources of sediment (B:18), toxicants, or high nitrogen/phosphorus levels upstream within 10 miles? ____
(b) Is AA dominated by barren, tailings surface (B:16)? ____

13. Is channel flow present in the AA or contiguous with the AA (B:11)? X

Rating for Water Purification

#12(b) is yes:	**Very Low**
#12(b) is no and #11 is yes:	**Low**
#12(b) and #11 are no and #8, #9, and #10 are all no:	**Low**
#8, #9, or #10 are yes; #12(a) or #13 is no:	**Moderate**
#8, #9, or #10 are yes and #12(a) and #13 are yes:	**High**

Production Export / Food Chain Support

14. For whatever wetland system is dominant in the AA, how many of the characteristics listed below under that system are present in the AA? (all) (more than half) (half or less)

Riverine:

a. ____ aquatic habitat is potentially eutrophic
b. ____ significant areas of erect or submerged vegetation are present
c. ____ watershed greater than 100 square miles (B:2,c-d)

Lacustrine:

a. ____ aquatic habitat is potentially eutrophic
b. ____ significant areas of erect or submerged vegetation are present
c. ____ pH not acidic
d. ____ plant productivity high
e. ____ potential for erosion or substantial flooding

Palustrine:

a. X significant areas of erect or submerged vegetation are present
b. X plant productivity high
c. X potential for erosion or substantial flooding
d. X channel flow (B:11) or open water occurs within or adjacent to AA

15. The AA has permanent or intermittent outlet (B:10,c-d)? X

Rating for Production Export / Food Chain Support

#15 is no	**Low**
#15 is yes and	
#14 is (half or less):	**Low**
#14 is (more than half):	**Moderate**
#14 is (all):	**High**

Aquatic Diversity and Abundance

16. An aquatic bed class is present within the AA (B:4,d) or hydroperiod is permanently flooded or intermittently exposed (B:14,a-b)? X

17. Are toxic substances known to enter the aquatic habitat more than once in a year in concentrations high enough to severely depress fish or aquatic invertebrate populations? ____

18. For whatever wetland system is dominant in the AA, how many of the characteristics listed below under that system are present in the AA? (all) (half or more) (less than half)

Riverine:

List A

a. ____ ditches, channels, canals, levees are not present in the AA (B:13,a = no)
b. ____ water velocity is mostly less than 1.5 feet/sec (B:12,a-b)
c. ____ summer water temperatures are less than 20° C

List B

a. ____ a substantial portion of the stream channel is shaded
b. ____ significant areas of good fish cover occur in the stream (e.g., moderately dense aquatic vegetation, crevices, undercut banks,

submerged logs and stumps, tree roots, boulders, overhanging vegetation, good pool/riffle ratio)

c. ____ suspended solid concentrations are generally not high (as judged by visual observations or documented measurements)

Lacustrine:

a. ____ has permanent inlet and outlet (B:10,a and B:10,c)
b. ____ not dominated by sand bottom (B:15,c = no)
c. ____ high plant form richness (B:7,c) or vegetation/water interspersion (B:5,c)
d. ____ water temperatures greater than 10° C during summer
e. ____ water level not controlled artificially (B:13,c)

Palustrine:

a. X has permanent inlet or outlet (B:10,a or B:10,c) or is fringe or island situation (Note: a fringe wetland is defined as (1) a wetland adjacent to a stream having a width of both channel sides combined less than 1/3 the width of the channel; or (2) a wetland adjacent to a body of open water having a cumulative surface area less than 1/3 the surface area of open water.)
b. X aquatic habitat has some aquatic bed present (B:4,d) or does not have entirely sand substrate (B:15,c = no) or some fish cover present
c. X high plant form richness (B:7,c) or high vegetation/water interspersion (B:5,c)
d. ____ AA wetland is 30-60% open water and emergent vegetation is generally obligate wetland species (B:4,c with obligate wetland species)
e. X inorganic sediment input does not seriously impact water quality

Rating for Aquatic Diversity and Abundance

#16 is no or #17 is yes — **Low**

#16 is yes and #17 is no and

Riverine:

Any from List A in #18 are no — **Low**

All from List A are yes and less than two from List B in #18 are yes — **Moderate**

All from List A are yes and at least two from List B in #18 are yes — **High**

Lacustrine and Palustrine:

Less than two from list in #18 are yes — **Low**

Two to three from list in #18 are yes — **Moderate**

At least four from list in #18 are yes — **High**

Wildlife Diversity and Abundance: Breeding

19. Is AA wetland dominated by barren, tailings surface (B:16)? ____

20. Are any of the following true? ____

    a. ____ AA has been tilled, filled, bladed, excavated (B:17)
    b. ____ AA has been drained or its water supply cut off
    c. ____ AA wetland and any adjacent wetland total less than 5 acres in surface area (B:1,a) and AA wetland has frequent human activity (B:19,a-b)
    d. ____ substrate is bedrock, rubble, or cobble/gravel (B:16,d-f)
    e. ____ low vegetation/water interspersion (B:5,a), low vegetation interspersion (B:6,a), and low plant form richness (B:7,a)

21. For whatever wetland system is dominant in the AA, how many of the characteristics listed below under that system are present in the AA? _____

    Riverine:
    a. ____ AA and any adjacent wetland total greater than 5 acres (B:1,b-d)
    b. ____ vegetation/water interspersion is moderate to high (B:5,b-c) or vegetation interspersion is high (B:6,c) or plant form richness is high (B:7,c)
    c. ____ wooded areas (forest or shrub) occur adjacent or connected to AA
    d. ____ water velocity is less than 1.5 feet/sec (B:12,a-b)
    e. ____ adjacent upland vegetation provides suitable nesting sites for dry nesting waterfowl

    Lacustrine:
    a. ____ AA and any adjacent wetland total greater than 5 acres (B:1,b-d)
    b. ____ AA is cluster or oasis wetland (B:8,a-b)
    c. ____ area of mostly obligate emergent species and shallow water (less than 6.6 feet) comprises at least 10% of AA wetland (B:4)
    d. ____ other wetlands having strongly different hydroperiods are present within 1 mile (B:14,e-g for wetlands within 1 mile)
    e. ____ presence of small island (at least 50 feet from shore) or moderate to high vegetation/water interspersion (B:5,b-c) or moderate to high vegetation interspersion (B:6,b-c) or high plant form richness (B:7,c)
    f. ____ adjacent upland vegetation provides suitable nesting sites for dry nesting waterfowl

    Palustrine:
    a. X AA wetland and any adjacent wetland total greater than 5 acres (B:1,b-d)
    b. X wetlands with a hydroperiod of permanently flooded, intermittently exposed, or seasonally flooded occur within 1 mile of AA (B:14,a-d for wetlands within 1 mile)

c. X high vegetation/water interspersion (B:5,c) or high vegetation interspersion (B:6,c) or high plant form richness (B:7,c)

d. X wooded areas (forest or shrub) occur adjacent or connected to AA or there is a band of mostly obligate emergent vegetation at least 20 feet wide (B:9)

Rating for Wildlife Diversity and Abundance: Breeding

#19 is yes	Very Low
#19 is no and #20 is yes	Low
#19 and #20 are no and	
less than two of #21 are yes	Low
two to three #21 are yes	Moderate
at least four of #21 are yes	High

Wildlife Diversity and Abundance: Migration

22. Is AA wetland dominated by barren, tailings surface (B:16)? ____

23. Is either of the following true? ____

a. ____ AA and any adjacent wetland total less than 5 acres in surface area (B:1,a) and frequent human activity occurs in AA (B:19,a-b)

b. ____ wetland has no outlet (B:10,c and d are no) and has toxic inputs

24. How many of the following are true of the AA? ____

a. ____ 30-60% of the AA wetland is open water and emergent vegetation is generally obligate

b. X high plant form richness (B:7,c)

c. ____ high vegetation/water interspersion (B:5,c) or high vegetation interspersion (B:6,c)

d. X wetland vegetation or hydrology not recently (i.e., within last 10 years) disturbed (B:13,a-c or B:7,c all no)

e. ____ wetland in AA and any connected wetlands within one mile of the AA are greater than 200 acres (B:1,d)

f. ____ wet mud flat or open water area greater than 20 acres is present

Rating for Wildlife Diversity and Abundance: Migration

#22 is yes:	Very Low
#22 is no and #23 is yes:	Low
#22 and #23 are no and	
Less than two #24 are yes:	Low
Two to three of #24 are yes:	Moderate

Four to six of #24 are yes: **High**

Wildlife Diversity and Abundance: Wintering

25. Is AA dominated by barren, tailings surface (B:16)? ____

26. Are any of the following true? ____

    a. ____ all of wetland freezes over for more than one month/year
    b. ____ AA and any adjacent wetland total less than 5 acres in surface area (B:1,a) and no permanent outlet (B:10,c is no) and AA has little or poor shelter for wildlife
    c. ____ AA and any adjacent wetland total less than 5 acres in surface area (B:1,a) and has frequent human activity during winter (B:19, a-b in winter) and no wooded areas (forest or shrub) in or adjacent to AA

27. Wetland in AA and any adjacent wetland total greater than 5 acres (B:1,b-d) and AA wetland is oasis or part of cluster wetland (B:8,a-b)? X

28. How many of the following are true of the AA? ____

    a. ____ 30-60% of AA wetland is open water and emergent vegetation is generally obligate wetland species
    b. X high plant form richness (B:7,c)
    c. ____ high vegetation/water interspersion (B:5,c) or high vegetation interspersion (B:6,c)
    d. ____ wetland vegetation or hydrology not recently disturbed (B:13,a-c and B:17 are all no)
    e. ____ frequent human activity does not occur in AA (B: 19,a-b are no)
    f. X substrate is not bedrock, rubble, or cobble-gravel (B:15,d-f are no)
    g. ____ open water with adjacent grain fields is present in AA

Rating for Wildlife Diversity and Abundance: Wintering

#25 is yes:	**Very Low**
#25 is no and #26 is yes:	**Low**
#25 and #26 are no and	
Less than four of #28 are true:	**Moderate**
#27 is true and at least four of #28 are true:	**High**

Threatened, Endangered, or Sensitive (TES) Species Habitat

29. Are there any Federally listed threatened or endangered plant or animal species that are known to regularly or frequently occur in the AA? _____

30. Are there any Federally listed threatened or endangered plant or animal species that are known to occur occasionally in the AA? X

31. Are there any state listed threatened, endangered, or sensitive plant or animal species (Montana Natural Heritage Program status of S1, S2, or S3) that are known to occur regularly or frequently in the AA? X

32. No federal or state listed threatened, endangered, or sensitive plant or animal species are known to occur in the AA? _____

Rating for Threatened, Endangered, or Sensitive (TES) Species Habitat

#29, #30, and #31 are all no; #32 is yes
#30 or #31 is yes
#29 is yes

Low
Moderate
High

PART D: ANALYSIS OF EVALUATION RESULTS

Summary of Ratings for All Functional Categories

The following procedure should be used to summarize ratings over the ten categories covered in this evaluation, with results entered on the rating sheet on next page:

(1) in column (a) list the ratings (very low, low, moderate, or high) in the evaluation for each category;

(2) in column (b) fill in the numeric rating as **very low = 0.5, low = 1, moderate = 2, and high = 3**;

(3) if considered necessary, modify given weighting values in column (c) for any category (provide justification below);

(4) multiply numeric rating in column (b) by weight in column (c) and record in column (d);

(5) total scores from all ten categories and enter as "Total";

(6) determine maximum possible score by multiplying weight in column (c) by 3 and total scores from all ten categories, and enter as "Maximum Total" (default = 33);

(7) divide "Total" by "Maximum Total" and multiply by 3; enter as "Overall Wetland Rating".

RATING SHEET FOR SUMMARIZING RESULTS OF WETLAND FUNCTIONAL EVALUATION

Functional Category	(a) Rating	(b) Numeric Rating	(c) Weight[a]	(d) Score
			Column	
Hydrologic Support	High	3	1.0	3
Floodflow Alteration	Mod	2	0.5	1
Sediment Stabilization and Erosion Control	High	3	1.0	3
Water Purification	Mod	2	1.0	2
Production Export / Food Chain Support	High	3	1.0	3
Aquatic Diversity/Abundance	High	3	1.5	4.5
Wildlife Diversity/Abundance: Breeding	High	3	1.5	4.5
Wildlife Diversity/Abundance: Migration	Mod	2	1.5	3
Wildlife Diversity/Abundance: Wintering	Mod	2	1.0	2
TES Species Habitat	Mod	2	1.0	2
Total (sum of column (d))				28
Maximum Total				33
OVERALL RATING FOR AA WETLAND				2.55

[a] The category weight of 0.5 for floodflow alteration is based on the rationale that the floodflow function is generally of less importance on most Superfund site wetlands in the Upper Clark Fork basin due to their position lower down in the watershed; and category weights higher than 1.0 are based on the importance given by regional natural resource agencies to Upper Clark Fork Basin wetlands for wildlife migration/breeding and fisheries habitat. If different weights are used, the rationale for these weightings should be included with this evaluation.

Calculation of Effective Wetland Area

As described in the introduction, effective wetland area is the wetland area (in acres) delineated in an operable unit adjusted by its Overall Rating for functional value, as determined on the previous page. This adjustment would be made using the following formula

$$\text{Functionally Effective Wetland Area} = \frac{\text{Actual Wetland Area X Overall Rating}}{3}$$

It should be noted that functionally effective wetland area is a relative area value, i.e. it is some fraction of actual wetland area having an Overall Rating of 3.0. Obviously, an acre value for functionally effective wetland area can only be compared to other such values determined by this method. Functionally effective wetland areas calculated by this formula are intended to be used for comparing pre- and post- remediation wetlands and are not be considered as actual acres of physical area.

It is evident that choice of the Assessment Area is critical to determining the functionally effective wetland area, since the Overall Rating for each evaluation applies to the entire AA evaluated. Consequently, if the area to be evaluated is made up of areas that have experienced very different levels of disturbance or negative impacts, they should be evaluated separately.

For all AAs within an operable unit, the acres of functionally effective wetland are to be summed to arrive at a total functionally effective wetland area for that operable unit. This value can then be used as a baseline value for comparison to post-remediation changes in area of functionally effective wetlands. Post-remediation wetland areas can be determined on a preliminary basis using projected outcomes of remediation designs, but a re-evaluation of effective wetland areas should be conducted after remedial actions have taken place. This re-evaluation ideally should be about 10 years following remediation, after any wetlands created or modified as a result of remedial actions have had the opportunity to develop. Preferably, the method described in this form will also be used in the re-evaluation subsequent to remediation actions.

$$FEWA = \frac{19.60 \times 2.55}{3} = 16.66 \text{ acres}$$