Memorandum

2121 Innovation Court, Suite 100
P.O. Box 5095
De Pere, WI 54115-5095
(920) 497-2500
foth.com

February 18, 2025

TO: Stephen Bourn – Rio Tinto

CC: Leland Roberts – Rio Tinto
Steve Donohue – Foth Infrastructure & Environment, LLC

FR: Mark Ciardelli – Foth Infrastructure & Environment, LLC
Nick Glander – Foth Infrastructure & Environment, LLC
Bill Adams – Red Cap Consulting
Bob Gensemer – GEI Consultant, Inc.
Jennifer Lynch – GEI Consultants, Inc.
Ashley Romero – GEI Consultants, Inc.

RE: 2024 Stream C Data Evaluation
Reclaimed Flambeau Mine – Ladysmith, Wisconsin

1. Introduction

Foth Infrastructure & Environment, LLC (Foth) and GEI Consultants, Inc. (GEI) prepared a plan to evaluate Stream C, located on the Reclaimed Flambeau Mine site in Ladysmith, Wisconsin (WI). Figure 1 provides the location of the Reclaimed Flambeau Mine. The *Stream C Evaluation Work Plan – Revision 2* (*Work Plan*) (Foth and GEI, 2024) was submitted to the Wisconsin Department of Natural Resources (Department) on August 30, 2024.

As outlined in the *Work Plan*, the 2024 scope of work included the following:

- Flow monitoring
- Water chemistry

This memorandum presents the activities and results from the Stream C 2024 sampling year. The memorandum is organized into the following sections:

- Section 2 provides an overview of the data collection and results.
- Section 3 provides the data assessment.
- Section 4 provides the conclusions and recommendations.
- Section 5 list the references uses in development of this memorandum.

1.1 Flow

Flow monitoring consisted of visual observations and flow rate determination. Visual observations were conducted at a frequency of twice per month from April through June 2024 – prior to increasing the frequency to weekly starting in July 2024 using a combination of field notes and photos.

When flow was present, the flow rate was manually monitored near the mouth of Stream C with a hand-held velocimeter unit (one velocity measurement collected at the deepest point within the stream). The location of flow monitoring near the mouth of Stream C, at SW-STM, was established during the first event based on field observations; and the same location was used during subsequent flow monitoring. Its location is shown on Figure 2.

Dedicated transducers were installed at the Highway (Hwy) 27 and Copper Park Lane culverts to allow for continuous monitoring (Figure 2). The pressure transducers were installed on the eastern side of the Hwy 27 culvert and the northern side of the Copper Park Lane culvert at the location of the existing staff gauge brackets.

1.2 Water Chemistry

When there was visible surface flow within Stream C, water quality monitoring was completed at 10 locations approximately every 14 days. The monitoring locations are shown on Figure 2. Based on flow conditions in 2024, water quality samples were collected twice in May, once in July, once in August, and once in November. One duplicate sample was collected during each sampling event.

Water quality sampling protocols consist of two subsections:

- Collecting a surface water sample
- Measuring the field parameters

Field and analytical laboratory analysis were utilized to assess the quality of surface water for the parameters as summarized in Tables 2 and 3 of the *Work Plan*. The four main Stream C locations (SW-C9, SW-C5, SW-C1, and SW-STM) were analyzed for parameters summarized in Table 2, and the remaining six locations were analyzed for parameters summarized in Table 3 of the Work Plan.

Laboratory analytical activities were performed by Pace Analytical Services (Pace), located in Green Bay, Wisconsin. Pace is a Wis. Admin. Code NR 149-certified laboratory.

Where appropriate, elements of the 2020 *Quality Assurance Project Plan* (*QAPP*) (Foth, 2020) was utilized to manage quality through all phases of each sampling event including sample collection, sample custody and transportation, and data validation and management.

1.3 Toxicity

Toxicity testing occurred once during the spring and once during fall 2024 on water samples collected at four Stream C locations (SW-C9, SW-C5, SW-C1, and SW-STM coinciding with water quality sampling events. Toxicity tests were conducted using two standard testing species, the water flea *Ceriodaphnia dubia (C. dubia)*, and the fathead minnow *Pimephales promelas (P. promelas)*. Whole Effluent Toxicity (WET) testing was performed by Cove Environmental, located

in Stillwater, Oklahoma, following the State of Wisconsin's *Aquatic Life Toxicity Testing Methods Manual* (Wisconsin Department of Natural Resources [WDNR], 2004) and *Whole Effluent Toxicity (WET) Program Guidance Document* (WDNR, 2022a). While this study does not entail toxicity testing in waters collected from a regulated effluent outfall, standard WET testing methods are widely used and recommended for conducting reliable tests in ambient waters.

1.3.1 Acute Toxicity Criterion (ATC)

Surface water quality data collected were used to calculate the ATC, which is calculated based on water hardness, as prescribed in Wisconsin Administrative Code (Wis. Admin. Code) NR 105 Table 2. ATC is defined within Wis. Admin. Code NR 105 as "the maximum daily concentration of a substance which ensures adequate protection of sensitive species of aquatic life from the acute toxicity of that substance and will adequately protect the designated fish and aquatic life use of the surface water if not exceeded more than once every 3 years." ATC were assessed for both copper and zinc. For instances where measured hardness is below the copper and zinc ATC applicable range (Wis. Admin. Code NR 105 Table 2A), the lower bound of the range were utilized for hardness within the calculation.

1.3.2 Biotic Ligand Model (BLM)

Surface water quality data collected for Stream C locations SW-C9, SW-C5, SW-C1, and SW-STM were further assessed for copper toxicity using the U.S. Environmental Protection Agency (USEPA) BLM, as described in the USEPA water quality criteria for copper (USEPA, 2007).

The BLM uses the dissolved chemistry of the receiving water body to develop site-specific water quality criteria based on predicted metal bioavailability. The BLM generates a set of site-specific surface water copper criteria, including the Criterion Maximum Concentration (CMC), and the Criterion Continuous Concentration (CCC). The CMC is the applicable criteria to be utilized for comparison to the ATC at the site.

2. Data Collection and Results

2.1 Sample Collection Summary

When there was visible surface flow within Stream C, water quality monitoring was completed at 10 locations. The monitoring locations are shown on Figure 2. In 2024, water quality samples were collected on the following dates:

- May 8, 2024 (WET testing completed)
- May 23, 2024
- July 24, 2024
- August 30, 2024
- November 21, 2024 (WET testing completed)

The May, July and August 2024 water quality sample collection event summaries and analytical reports were submitted in the Stream C April – August 2024 Sampling Result Summary Memorandum.

On November 21, 2024, a sampling event was completed following 1.01 inches of rain that started on November 19, 2024. This provided enough precipitation volume to induce flow

throughout Stream C. Field parameters and surface water samples were collected from the 10 sample locations. The WET testing samples were also collected during this event.

Field parameters were measured and recorded using a water quality meter. Water samples were collected using a peristaltic pump and new tubing for each sample was used to minimize the potential for sediment disturbance and cross-contamination between samples following the guidance outlined in the *Work Plan*.

2.2 Flow Results

Flow observations were completed on a frequency of twice per month from April through June 2024 and then increased to a frequency to weekly starting in July 2024. The inspection forms for April through August 2024 were provided in the Stream C April – August 2024 Sampling Result Summary Memorandum. Flow was monitored with a hand-held velocimeter unit during inspections when flow was present. The September 2024 through December 2024 inspection forms are provided in Attachment 1.

The pressure transducers were installed on April 12, 2024, in the existing staff gauge brackets at the two culverts and were set to record water depth every 15 minutes. Pressure-to-flow conversion was accomplished with a combination of continuous depth monitoring and known flow hydraulics associated with the culvert characteristics using the standard operating procedure (SOP) established in the *Work Plan*. The 2024 Hwy 27 culvert flow graph is provided on Figure 3, and the Copper Park Lane culvert flow graph is provided on Figure 4.

Some points to note are as follows:

- The daily cycling observed in the Hwy 27 culvert is most likely explained by a temperature-related effect related to evapotranspiration.
- No daily cycling is observed at the Copper Park Lane culvert. This is likely because there is no standing water in or adjacent to this culvert; therefore, evapotranspiration effects are not as prominent.
- The storm events noted show a maximum flow of about 5 cubic feet per second (cfs) in the Hwy 27 culvert and are relatively short-lived.
- The Copper Park Lane culvert shows low flow during the runoff events, and events last for only a few hours at most. The maximum flow noted was about 4.55 cfs. Zero flow is observed during the majority of the season.
- The flow observed at Copper Park Lane during storm events compared to Hwy 27 suggests that flow dissipates (infiltrates, evaporates, gets lost to storage, etc.) between the two culverts.

2.3 Water Chemistry Results

The analytical laboratory water samples were collected first to assure the sample was clean and no residual contamination could occur from the field instrumentation. Field parameters were measured and recorded using a water quality meter. Water samples were collected using a peristaltic pump with new tubing at each sample to minimize the potential for sediment disturbance and cross-contamination between samples.

The water quality data (field parameters and analytical data) collected during the five 2024 sampling events are tabulated in Table 1. The field forms related to the November sampling event are provided in Attachment 2. The Pace analytical laboratory report, dated November 21, 2024, is provided in Attachment 3. Note that the field forms and analytical reports relating to the May, July, and August 2024 events were provided previously in the Stream C April – August 2024 Sampling Result Summary Memorandum.

Surface water quality data collected (to date) was used to calculate the ATC which is provided in Table 2.

2.4 Whole-Effluent Toxicity Results

The WET testing samples were collected on May 9, 2024 and November 21, 2024, from sample locations SW-C9, -C5, -C1, and -STM. The samples were sent to Cove Environmental for analysis. The May 2024 analysis results show 100% survival for the *C. dubia* and *P. promelas* species at all locations. The May 2024 Cove Environmental WET test report forms were provided in the Stream C April – August 2024 Sampling Result Summary Memorandum.

The November 2024 Cove Environmental WET test report forms are provided in Attachment 4.

3. Data Assessment

3.1 ATC

Surface water quality data collected under Section 2.3 was used to calculate the ATC, which is a hardness-based water quality criterion as prescribed in Wis. Admin. Code NR 105 Table 2. ATC is defined within Wis. Admin. Code NR 105 as “the maximum daily concentration of a substance which ensures adequate protection of sensitive species of aquatic life from the acute toxicity of that substance and will adequately protect the designated fish and aquatic life use of the surface water if not exceeded more than once every 3 years.” ATC was assessed for both total copper and zinc concentrations from April 2023 through November 2024 and are summarized in Table 2. For instances where measured hardness is below the copper and zinc ATC applicable range (Wis. Admin. Code NR 105 Table 2A), the lower bound of the range was utilized for hardness within the calculation.

The total copper concentrations of all 10 monitoring locations exceeded the acute ATC on April 10, 2023 and May 8, 2024. In general, the majority of the sites exceeded the acute ATC in all timeframes with sites SW-NB and SW-NBOUT more consistently meeting the copper criterion. The zinc acute ATC was exceeded only five times with one exceedance occurring on April 19 and April 29, 2023, at sites SW-C9 and -HWY27E, respectively, and three exceedances occurring on November 21, 2024, at the SW-C9, -HWY27E, and -HWY27W sites. The acute ATC was then compared to dissolved copper concentrations in Table 3 from April 29, 2023 through November 21, 2024. Multiple exceedances occurred for all samples, however, the SW-STM site only exceeded two of the six sampling events.

3.2 BLM

Surface water quality data collected under Section 2.3 were also evaluated through the use of the BLM as described in the USEPA water quality criteria for copper (USEPA, 2007). The copper

BLM derives site-specific water quality criteria by taking into account the influences of several water quality parameters on copper bioavailability and toxicity. These water parameters include: temperature, pH, dissolved organic carbon (DOC), humic acid, calcium, magnesium, sodium (Na), potassium (K), sulfate (SO_4), chloride (Cl), alkalinity, and sulfide. Humic acid was estimated to be 10% of DOC as recommended by the BLM guidance document (Windward, 2015). These data in dissolved form were input into the BLM to generate a set of site-specific surface copper criteria, including the CMC and the CCC. For this evaluation, the resulting CMC was used to compare to the copper ATC summarized in Table 2.

Water quality data for all BLM parameters were assessed from four monitoring locations: SW-C9, SW-C5, SW-C1, and SW-STM and collected between April 2023 and November 2024 generating a total of six samples. All BLM parameters were also collected for the SW-HWY27W and -HWY27E locations between April 2023 and May 2024, however, analysis was reduced to a limited set of parameters for the remaining three sampling events as it was determined in a meeting with the Department on May 8, 2024 that analysis of all BLM parameters were necessary for only four locations north and south of Copper Park Lane. The results of the BLM analysis and predicted criteria are presented in Table 3.

For the SW-C1, SW-C5, and SW-C9 monitoring locations, fewer exceedances of the BLM derived CMC occurred as compared to exceedances of the ATC, which occurred in all timeframes with the exception of the SW-C1 sampled in July of 2024. Every sample collected at these sites from May 2024 to November 2024, with the exception of SW-C5 site in November, resulted in BLM-based criteria concentrations being greater (i.e., less stringent) than the current hardness-based ATC. In contrast, samples in April 2023 from these three locations did have BLM-based criteria less than the ATC. There were no exceedances of the BLM derived CMC criteria in all timeframes at the SW-STM monitoring location whereas two out of six samples exceeded the ATC criteria in May 2024. In addition, BLM-based criteria were much higher than the ATC in all timeframes.

The parameters that are most influential to copper bioavailability and have come to be considered of primary importance for bioavailability modeling are organic carbon, pH, and hardness (Mebane, 2023). Therefore, DOC, pH, and calcium and magnesium concentrations, which are the primary contributors to water hardness, were assessed to further evaluate the potential impacts of these parameters on copper bioavailability at each site. As noted on Figures 5 through 8, calcium and magnesium concentrations from the site furthest upstream, SW-C9, to the site furthest downstream, SW-STM, significantly increased, with average concentrations three to four times higher at the STM site compared to the C9 site. The pH also significantly increased from sites upstream to downstream (1-way ANOVA, $p < 0.05$), with the STM site having a pH that was significantly higher than at the SW-C1 site (one-tailed t-test, $p < 0.05$), and that was 1 SU above the C9 and C5 sites on average (Figure 7). The DOC concentrations at all four sites were similar with little apparent gradient from upstream to downstream sites. (Figure 8). Therefore, most of the spatial differences in BLM-based criteria concentrations result from a decreasing trend in copper bioavailability owing to increases in pH and hardness cations.

3.3 WET

Concurrent acute WET testing using the *C. dubia* and *P. promelas* species was conducted on samples from the SW-C9, -C5, -C1, and -STM monitoring locations where all BLM parameters were analyzed on May 8, 2024 and November 21, 2024. As summarized in Section 2.4, the May

2024 analysis results show 100% survival for the *C. dubia* and *P. promelas* species at all locations.

The November 2024 analysis results show a 100% survival for the *C. dubia* species at all locations. The analysis results show 100% survival for *P. promelas* at sample location SW-C9, 95% survival at sample locations SW-C5 and -STM, and 90% survival at SW-C1.

4. Conclusions and Recommendations

In general, the BLM copper criteria concentrations were higher, i.e. less stringent, than hardness-based ATC at all locations and sampling dates. This is because in addition to hardness, the BLM takes into account all water quality parameters that control copper bioavailability, most importantly pH, DOC, calcium, and magnesium cations. Dissolved copper concentrations exceeded both hardness- and BLM-based criteria at the same three to four monitoring locations in the April 2023 and November 2024 sampling events. However, copper concentrations exceeded the BLM criteria at fewer locations compared to the ATC in all other timeframes, with no exceedances of the BLM criteria occurring in the July 2024 sampling event. There was only one exceedance of the zinc ATC which occurred in the November 2024 sampling event at the SW-C9 monitoring location.

With respect to water quality, there was a notable downstream trend of increasing pH and hardness cation concentrations from sites SW-C9 down to SW-STM. This was particularly evident with pH which exhibited a significant increasing trend, with pH at the most downstream monitoring location, SW-STM, being significantly higher than any of the upstream sites. As a result, the BLM-based copper criteria were not exceeded at the SW-STM site in any timeframe, as opposed to the hardness-based ATC which were exceeded in the two May 2024 sampling events. Given that water quality data for the main stem of Stream C is only represented by two locations at the lower and upper most ends of the segment, it is unknown how much of the stream segment exhibits pH conditions which favor low copper bioavailability and no BLM criteria exceedances (i.e., higher pH at the SW-STM site), as opposed to conditions that favor higher copper bioavailability and some BLM criteria exceedances (i.e., lower pH at the SW-C1 site)..

Therefore, additional data collection is needed to better characterize how much of the lower Stream C segment would be in attainment with BLM-based criteria for copper. It is recommended that a field pH survey first be conducted with a handheld pH probe to establish pH conditions along the entire mainstem of Stream C south of Copper Park Lane rather than just relying on data from sites SW-C1 and SW-STM. Based on this pH gradient, 2-3 additional sampling locations could be selected for full BLM water quality parameter monitoring to better establish how much of Stream C would attain BLM-based copper criteria.

5. References

Foth Infrastructure & Environment, LLC, 2020. *Quality Assurance Project Plan*: *Long Term Care Monitoring for the Reclaimed Flambeau Mine*. August 10, 2020.

Foth Infrastructure & Environment, LLC and GEI Consultants, Inc., 2024. *Stream C Evaluation Work Plan – Revision 2.* August 30, 2024.

Mebane, C.A., 2023. Bioavailability and Toxicity Models of Copper to Freshwater Life: The State of Regulatory Science. *Environmental Toxicology and Chemistry*, 42(12):2529-2563.

U.S. Environmental Protection Agency, 2007. Aquatic Life Ambient Freshwater Quality Criteria – Copper; EPA/822/R-07/001; 544 USEPA, Office of Water: Washington, D.C., 545 2007; p 204 pp. February 2007.

Windward Environmental LLC, 2015. BLM User's Guide and Reference Manual Research Version 3.1.2.37. Seattle, Washington.

Wisconsin Department of Natural Resources, 2004. *Aquatic Life Toxicity Testing Methods Manual*, 2nd Edition. November 2004.

Wisconsin Department of Natural Resources, 2012. *Surface Water Quality Assessment of the Flambeau Mine Site*. April 2012.

Wisconsin Department of Natural Resources, 2022a. Whole Effluent Toxicity (WET) Program Guidance Document, Edition No. 13. October 13, 2022.

Attachments:

Tables	Table 1 – 2024 Analytical Data Summary
	Table 2 – ATC Summary
	Table 3 – BLM Summary
Figures	Figure 1 – Site Location Map
	Figure 2 – Stream C Evaluation Locations
	Figure 3 – HWY 27 Culvert Flow Graph
	Figure 4 – Copper Park Lane Culvert Flow Graph
	Figure 5 – Summary of Dissolved Calcium Data
	Figure 6 – Summary of Dissolved Magnesium Data
	Figure 7 – Summary of pH Data
	Figure 8 – Summary of Dissolved Organic Carbon Data
Attachment 1	Flow Inspection Forms
Attachment 2	Field Forms – November 2024
Attachment 3	Pace Laboratory Analytical Reports
Attachment 4	Cove Environmental WET Test Report Forms

Tables

Table 1 – 2024 Analytical Data Summary

Table 2 – ATC Summary

Table 3 – BLM Summary

Table 1
2024 Analytical Data Summary

		Location	CP-04	CP-04	CP-04	CP-04	CP-04	CP-04	CP-04	SW-C1	SW-C1	SW-C1
Chemical Name	**Total / Dissolved**	**Units**	**4/19/2023**	**4/29/2023**	**5/8/2024**	**5/23/2024**	**7/24/2024**	**8/30/2024**	**11/21/2024**	**4/19/2023**	**4/29/2023**	**5/8/2024**
Alkalinity as $CaCO_3$	Total	mg/L	60.0	39.5	154	141				10	17.3	15.9
Alkalinity as $CaCO_3$	Dissolved	mg/L		34.5	148	143					15.6	13.0
Calcium	Total	ug/L	5370	12900	16800	13100				3160	6470	5150
Calcium	Dissolved	ug/L		11900	19100	14800					6320	5350
Chloride	Total	mg/L	52.3	167	127	66.0				15.0	27.0	8.1
Chloride	Dissolved	mg/L		165	128	69.9					27.2	7.6
Copper	Total	ug/L	19.0	12.7	28.4	28.0	33.7	6.1	30.5	6.3	7.3	16.8
Copper	Dissolved	ug/L		10.1	22.8	24.7	22.2	5.4	21.8		5.8	14.5
Dissolved Organic Carbon	Dissolved	mg/L		9.4	13.0	18.1	24.0	10.5	12.4		7.8	15.6
Dissolved Oxygen	Total	mg/L	7.56	1.64	1.78	2.28	1.63	0.9	1.33	11.01	9.71	6.76
Hardness	Total	mg/L	27.7	60.5	78.8	59.5	61.0	87.8	64.2	13.1	27.4	21.0
Hardness	Dissolved	mg/L		58.9	86.9	67.5	62.8	90.4	59.6		26.9	21.4
Iron	Total	ug/L	577	478	720	736				681	291	915
Iron	Dissolved	ug/L		< 58.0	95.7	190					130	324
Magnesium	Total	ug/L	3480	6860	8970	6500				1270	2720	1980
Magnesium	Dissolved	ug/L		7060	9510	7400					2700	1960
Manganese	Total	ug/L	21.2	103	33.0	95.3				13.8	17.8	18.8
Manganese	Dissolved	ug/L		89.9	22.2	18.1					14.5	9.3
pH	Total	s.u.	7.66	6.13	6.99	7.28	7.19	7.34	7	6.63	6.19	6.57
Potassium	Total	ug/L	1130	2300	1670	1400				994	1090	792
Potassium	Dissolved	ug/L		2240	1690	1500					1040	741
Redox Potential	Total	mV	42.9	54.3	168.7	178.7	163.6	165.6	137.7	37.6	74.3	178.4
Sodium	Total	ug/L	40900	101000	126000	78600				9650	16500	6870
Sodium	Dissolved	ug/L		104000	129000	93500					17000	7320
Specific Conductance	Total	umhos/cm	287	784	736	462	376	288	294	74	130	66
Sulfate	Total	mg/L	5.0	8.2	4.5	2.8				2.6	3.7	1.5
Sulfate	Dissolved	mg/L		7.5	4.5	< 2.2					3.7	1.4
Sulfide	Total	mg/L	< 1.2	< 1.2	1.6	< 1.2				< 1.2	< 1.2	1.2
Sulfide	Dissolved	mg/L		< 1.2	< 1.2	1.2					< 1.2	< 1.2
Temperature	Total	deg c	1.17	7.83	15.8	13.02	19.76	18.47	3.11	2.01	6.57	15.88
Total Suspended Solids	Total	mg/L	2.9	5.2	3.0	4.6				3.8	0.93	4.0
Zinc	Total	ug/L	15.2	10.4	< 10.3	< 10.3	16.6	< 10.3	< 10.3	< 10.3	< 10.3	12.8
Zinc	Dissolved	ug/L		< 10.3	< 10.3	< 10.3	< 10.3	< 10.3	< 10.3		< 10.3	12.2
Comment - Sample Color	Total	None	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown
Comment - Sample Odor	Total	None	None	None	None	None	None	None	None	None	None	None
Comment - Sample Turbidity	Total	None	None	Slight	Slight	Slight	Slight	Slight	Slight	None	None	Slight

Table 1 (continued)

		Location	SW-C1	SW-C1	SW-C1	SW-C1	SW-C1	SW-C5	SW-C5	SW-C5	SW-C5	SW-C5
Chemical Name	**Total / Dissolved**	**Units**	**5/23/2024**	**7/24/2024**	**8/30/2024**	**11/21/2024**	**5/8/2024**	**4/19/2023**	**4/29/2023**	**5/8/2024**	**5/23/2024**	**7/24/2024**
Alkalinity as $CaCO_3$	Total	mg/L	11.1	35.1	29.2	24.2	17.3	8.6	11.1	16.3	10	43.2
Alkalinity as $CaCO_3$	Dissolved	mg/L	10.8	32.2	31.0	25.3	13.1		14.9	11.0	8.6	20.5
Calcium	Total	ug/L	4910	11700	8920	11800	5230	2900	4650	4150	3980	5930
Calcium	Dissolved	ug/L	5270	12000	8880	12600	5490		4760	4700	4400	6040
Chloride	Total	mg/L	5.4	29.3	23.0	35.5	7.9	12.5	20.8	6.5	3.6	12.0
Chloride	Dissolved	mg/L	5.4	28.4	22.3	37.4	7.9		24.2	6.4	3.9	11.4
Copper	Total	ug/L	13.6	11.8	12.9	14.7	17.1	7.6	6.7	15.9	13.2	12.5
Copper	Dissolved	ug/L	12.5	6.7	8.5	11.8	14.5		6.4	13.9	11.8	5.0
Dissolved Organic Carbon	Dissolved	mg/L	16.2	10.3	11.3	8.2	15.6		7.6	15.8	16.6	11.0
Dissolved Oxygen	Total	mg/L	3.93	2.68	1.25	1.33		10.78	8.07	6.14	3.37	1.15
Hardness	Total	mg/L	19.5	48.8	37.8	50.4	21.4	12.2	19.7	17.3	15.7	24.2
Hardness	Dissolved	mg/L	21.0	49.7	37.6	53.7	22.3		20.4	18.8	17.3	24.8
Iron	Total	ug/L	914	2320	1740	1280	841	972	265	866	865	1700
Iron	Dissolved	ug/L	557	603	427	307	308		126	350	528	661
Magnesium	Total	ug/L	1770	4730	3760	5100	2030	1220	1970	1680	1410	2280
Magnesium	Dissolved	ug/L	1900	4790	3750	5390	2090		2080	1720	1540	2350
Manganese	Total	ug/L	27.3	562	116	64.4	20.5	33.9	7.5	14.3	22.0	571
Manganese	Dissolved	ug/L	21.2	557	102	52.2	9.2		5.0	7.2	16.3	586
pH	Total	s.u.	6.41	6.64	6.72	6.74		6.43	6.01	6.54	6.17	6.31
Potassium	Total	ug/L	418	556	1690	2150	804	1030	976	721	349	377
Potassium	Dissolved	ug/L	414	534	1590	2260	784		1020	715	358	378
Redox Potential	Total	mV	174.4	160.7	101.2	145		31.1	78.1	232.3	183.4	88
Sodium	Total	ug/L	3590	11200	12700	14900	7080	8650	13600	5900	2880	7010
Sodium	Dissolved	ug/L	3970	11200	12800	17000	7210		14900	6470	3130	7240
Specific Conductance	Total	umhos/cm	48	159	140	175		65	103	56	39	84
Sulfate	Total	mg/L	< 2.2	3.3	2.4	8.5	1.5	2.2	3.1	1.4	< 2.2	2.1
Sulfate	Dissolved	mg/L	< 2.2	3.5	2.3	8.8	1.5		3.2	1.3	< 2.2	2.2
Sulfide	Total	mg/L	1.8	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	1.2	< 1.2	< 1.2
Sulfide	Dissolved	mg/L	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2		< 1.2	< 1.2	< 1.2	< 1.2
Temperature	Total	deg c	13.29	17.33	18.04	4.15		2.16	6.85	15.26	13.52	17.6
Total Suspended Solids	Total	mg/L	1.7	6.9	5.3	1.8	4.1	10.5	0.51	1.8	1.6	4.8
Zinc	Total	ug/L	14.7	18.7	< 10.3	19.9	13.8	11.7	< 10.3	13.9	13.9	19.3
Zinc	Dissolved	ug/L	14.4	14.9	< 10.3	19.2	< 10.3		< 10.3	24.4	13.7	20.8
Comment - Sample Color	Total	None	Stained light brown	Stained light brown	Stained light brown	Stained light brown		Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown
Comment - Sample Odor	Total	None	None	None	None	None		None	None	None	None	None
Comment - Sample Turbidity	Total	None	Slight	Slight	Slight	Slight		None	None	None	None	None

Table 1 (continued)

		Location	SW-C5	SW-C5	SW-C5	SW-C5	SW-C9	SW-C9	SW-C9	SW-C9	SW-C9	SW-C9
Chemical Name	**Total / Dissolved**	**Units**	**8/30/2024**	**11/21/2024**	**4/29/2023**	**7/24/2024**	**4/19/2023**	**4/29/2023**	**5/8/2024**	**5/23/2024**	**7/24/2024**	**8/30/2024**
Alkalinity as $CaCO_3$	Total	mg/L	23.6	14.4	12.9	18.5	7.2	< 7.4	10.3	< 7.4	10.3	10.7
Alkalinity as $CaCO_3$	Dissolved	mg/L	27.2	14.9	12.1	19.7		< 7.4	< 7.4	< 7.4	8.4	12.0
Calcium	Total	ug/L	7610	6930	4760	6470	2220	2520	3370	3100	2930	2750
Calcium	Dissolved	ug/L	7410	7370	4440	6100		2400	3460	2890	2860	2630
Chloride	Total	mg/L	19.0	24.4	21.2	11.9	49.2	11.0	3.7	< 3.0	7.9	5.2
Chloride	Dissolved	mg/L	19.4	25.3	23.8	11.5		10.6	3.2	< 3.0	7.5	5.1
Copper	Total	ug/L	12.2	15.8	7.2	13.1	17.7	5.0	9.7	6.5	16.6	14.0
Copper	Dissolved	ug/L	8.5	12.9	6.1	5.2		3.8	8.2	4.6	11.7	11.4
Dissolved Organic Carbon	Dissolved	mg/L	10.9	8.5	8.2	10.9		8.7	15.8	17.2	12.3	13.5
Dissolved Oxygen	Total	mg/L	1.18	1.48			11.49	7.77	4.9	3.88	3.16	1.17
Hardness	Total	mg/L	31.5	30.7	19.9	26.0	8.4	10.3	13.4	12.0	11.4	10.8
Hardness	Dissolved	mg/L	31.2	32.5	19.3	24.7		9.8	13.5	11.5	11.1	10.1
Iron	Total	ug/L	1530	1300	268	1760	689	741	1300	1260	3100	2610
Iron	Dissolved	ug/L	536	329	153	690		290	587	459	960	1000
Magnesium	Total	ug/L	3030	3260	1940	2400	684	983	1220	1020	990	954
Magnesium	Dissolved	ug/L	3070	3420	2000	2310		919	1190	1040	953	859
Manganese	Total	ug/L	91.6	30.3	7.2	598	31.6	24.9	45.7	57.7	143	117
Manganese	Dissolved	ug/L	84.0	16.0	4.9	583		17.5	24.4	46.6	90.3	99.6
pH	Total	s.u.	6.36	6.27			6.76	5.55	6.31	6.15	6.29	6.05
Potassium	Total	ug/L	1530	2120	1000	384	738	770	938	797	668	1250
Potassium	Dissolved	ug/L	1530	2190	955	389		684	854	764	629	1160
Redox Potential	Total	mV	32.2	177.2			74.7	85.7	174	214.5	89.7	197.6
Sodium	Total	ug/L	11100	12000	13600	7250	29000	7010	3910	1840	7420	6410
Sodium	Dissolved	ug/L	11300	13500	14000	6980		7140	4180	1950	7700	6530
Specific Conductance	Total	umhos/cm	119	126			52	54	36	26	170	41
Sulfate	Total	mg/L	1.8	7.8	3.2	2.1	6.4	1.3	0.74	< 2.2	1.7	1.4
Sulfate	Dissolved	mg/L	1.9	8.2	3.3	2.2		1.3	0.72	< 2.2	1.6	1.3
Sulfide	Total	mg/L	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Sulfide	Dissolved	mg/L	< 1.2	< 1.2	< 1.2	< 1.2		< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Temperature	Total	deg c	18.11	4.09			4.12	6.77	11.94	13.69	18.97	18.13
Total Suspended Solids	Total	mg/L	3.6	1.2	1.3	6.4	3.3	6.4	6.6	3.4	9.2	5.2
Zinc	Total	ug/L	11.9	23.4	16.3	21.3	20.7	11.6	15.5	15.5	< 10.3	13.6
Zinc	Dissolved	ug/L	< 10.3	22.8	< 10.3	19.6		< 10.3	13.6	15.4	< 10.3	13.2
Comment - Sample Color	Total	None	Stained light brown	Stained light brown	Stained light brown		Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown
Comment - Sample Odor	Total	None	None	None	None		None	None	None	None	Slight organic	None
Comment - Sample Turbidity	Total	None	None	None	None		None	None	Moderate	Moderate	Slight	Slight

Table 1 (continued)

		Location	SW-C9	SW-C9	SW-EB	SW-EB	SW-EB	SW-EB	SW-EB	SW-EB	SW-EB	SW-EB
Chemical Name	**Total / Dissolved**	**Units**	**11/21/2024**	**5/23/2024**	**4/19/2023**	**4/29/2023**	**5/8/2024**	**5/23/2024**	**7/24/2024**	**8/30/2024**	**11/21/2024**	**11/21/2024**
Alkalinity as $CaCO_3$	Total	mg/L	14.2	< 7.4	17.5	36.0	33.0	29.4				
Alkalinity as $CaCO_3$	Dissolved	mg/L	< 7.4	< 7.4		35.5	31.2	31.7				
Calcium	Total	ug/L	2340	3120	6300	11200	8850	9220				
Calcium	Dissolved	ug/L	2550	2950		10800	10500	10000				
Chloride	Total	mg/L	9.9	3.2	36.1	61.1	25.2	12.3				
Chloride	Dissolved	mg/L	10.1	< 3.0		68.0	12.7	11.6				
Copper	Total	ug/L	18.1	6.6	6.9	6.3	14.1	11.3	3.7	12.4	7.8	8.0
Copper	Dissolved	ug/L	15.2	5.2		4.9	11.8	9.2	3.0	7.5	6.3	5.3
Dissolved Organic Carbon	Dissolved	mg/L	9.9	17.2		7.2	11.0	18.4	12.4	7.7	7.4	7.5
Dissolved Oxygen	Total	mg/L	1.44		10.77	10.18	7.69	3.79	1.21	1.22	1.81	
Hardness	Total	mg/L	9.9	12.0	25.8	47.6	36.5	39.8	54.5	49.8	60.7	61.6
Hardness	Dissolved	mg/L	9.9	11.5		46.9	43.5	42.0	56.2	50.3	58.2	56.7
Iron	Total	ug/L	2250	1290	707	480	1170	1470				
Iron	Dissolved	ug/L	1200	442		93.6	547	708				
Magnesium	Total	ug/L	976	1030	2460	4740	3500	4060				
Magnesium	Dissolved	ug/L	858	1010		4810	4220	4140				
Manganese	Total	ug/L	59.2	59.8	27.7	24.1	29.3	99.5				
Manganese	Dissolved	ug/L	46.6	49.4		17.8	8.3	92.6				
pH	Total	s.u.	6.14		6.68	6.75	7.15	7.02	6.48	6.81	6.91	
Potassium	Total	ug/L	2020	807	1730	1560	1100	957				
Potassium	Dissolved	ug/L	1960	764		1470	1130	954				
Redox Potential	Total	mV	133.9		22.3	28.3	228.4	161.8	49.2	59.3	170.2	
Sodium	Total	ug/L	7290	1890	19700	37000	14800	9440				
Sodium	Dissolved	ug/L	8100	2400		37600	7870	9950				
Specific Conductance	Total	umhos/cm	64		164	273	121	107	214	156	240	
Sulfate	Total	mg/L	4.0	< 2.2	4.1	6.8	2.1	< 2.2				
Sulfate	Dissolved	mg/L	4.6	< 2.2		6.9	4.5	< 2.2				
Sulfide	Total	mg/L	< 1.2	< 1.2	< 1.2	< 1.2	1.8	< 1.2				
Sulfide	Dissolved	mg/L	< 1.2	< 1.2		< 1.2	< 1.2	< 1.2				
Temperature	Total	deg c	4.54		2.45	7.50	14.86	13.62	21.16	19.51	3.29	
Total Suspended Solids	Total	mg/L	4.3	2.9	4.3	2.8	3.4	4.1				
Zinc	Total	ug/L	23.8	17.7	< 10.3	< 10.3	14.6	10.4	< 10.3	< 10.3	< 10.3	< 10.3
Zinc	Dissolved	ug/L	19.6	18.4		< 10.3	< 10.3	< 10.3	< 10.3	< 10.3	< 10.3	< 10.3
Comment - Sample Color	Total	None	Stained light brown		Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	
Comment - Sample Odor	Total	None	None		None	Slight Organic	Slight organic	Slight organic	Slight organic	Slight organic	Slight organic	
Comment - Sample Turbidity	Total	None	Slight		Slight	Slight	Slight	Slight	Slight	Slight	Slight	

Table 1 (continued)

		Location	SW-HWY27E	SW-HWY27E	SW-HWY27E	SW-HWY27E	SW-HWY27E	SW-HWY27E	SW-HWY27E	SW-HWY27W	SW-HWY27W	SW-HWY27W
Chemical Name	**Total / Dissolved**	**Units**	**4/19/2023**	**4/29/2023**	**5/8/2024**	**5/23/2024**	**7/24/2024**	**8/30/2024**	**11/21/2024**	**4/19/2023**	**4/29/2023**	**5/8/2024**
Alkalinity as $CaCO_3$	Total	mg/L	5.4	< 7.4	10	< 7.4				5.5	< 7.4	10.4
Alkalinity as $CaCO_3$	Dissolved	mg/L		< 7.4	< 7.4	< 7.4					< 7.4	8.1
Calcium	Total	ug/L	2120	2220	2830	2750				6890	10200	5690
Calcium	Dissolved	ug/L		1930	3090	2990					10200	5700
Chloride	Total	mg/L	5.9	4.1	2.1	< 3.0				95.6	121	51.7
Chloride	Dissolved	mg/L		4.8	2.5	< 3.0					131	51.8
Copper	Total	ug/L	4.1	4.1	8.9	5.4	8.2	13.7	13.3	6.0	4.2	16.5
Copper	Dissolved	ug/L		3.6	7.5	5.0	6.8	9.5	9.8		3.6	14.0
Dissolved Organic Carbon	Dissolved	mg/L		8.3	15.5	17.7	9.1	10.1	6.9		10.8	28.1
Dissolved Oxygen	Total	mg/L	10.63	11.02	3.43	4.23	3.17	1.22	1.69	9.66	8.62	3.58
Hardness	Total	mg/L	8.5	9.1	11.6	10.9	8.9	8.1	44.9	26.2	40.5	21.4
Hardness	Dissolved	mg/L		7.9	12.2	11.5	8.5	6.5	41.4		40.4	21.3
Iron	Total	ug/L	683	584	1150	930				431	528	1930
Iron	Dissolved	ug/L		214	450	611					284	1270
Magnesium	Total	ug/L	780	856	1110	972				2180	3660	1740
Magnesium	Dissolved	ug/L		756	1080	974					3640	1710
Manganese	Total	ug/L	15.1	17.6	24.3	33.5				77.3	63.1	23.4
Manganese	Dissolved	ug/L		11.5	14.5	29.8					57.0	19.6
pH	Total	s.u.	6.13	5.73	6.38	6.12	6.17	6.03	6.28	5.92	6.55	6.29
Potassium	Total	ug/L	922	699	1010	697				1790	1760	1250
Potassium	Dissolved	ug/L		635	996	679					1640	1250
Redox Potential	Total	mV	68.2	83.1	177	210.6	21.4	176.6	151.4	71.8	64.4	174.4
Sodium	Total	ug/L	4340	3680	2490	932				49100	59000	36500
Sodium	Dissolved	ug/L		3080	2840	998					58400	35900
Specific Conductance	Total	umhos/cm	23	30	25	21	31	25	39	324	387	200
Sulfate	Total	mg/L	1.6	1.2	0.84	< 2.2				5.0	3.2	0.94
Sulfate	Dissolved	mg/L		1.4	0.88	< 2.2					3.1	0.92
Sulfide	Total	mg/L	< 1.2	< 1.2	< 1.2	< 1.2				< 1.2	< 1.2	< 1.2
Sulfide	Dissolved	mg/L		< 1.2	< 1.2	< 1.2					< 1.2	< 1.2
Temperature	Total	deg c	4.09	6.56	11.6	15.08	19.17	17.86	4.41	2.68	6.77	12.56
Total Suspended Solids	Total	mg/L	2.4	1.4	4.0	1.7				0.80	3.3	1.1
Zinc	Total	ug/L	< 10.3	25.5	12.0	12.9	12.4	13.9	99.3	24.8	30.3	30.4
Zinc	Dissolved	ug/L		< 10.3	< 10.3	13.3	11.0	< 10.3	92.8		30.2	27.7
Comment - Sample Color	Total	None	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown
Comment - Sample Odor	Total	None	None	None	Slight organic	Slight organic	Slight organic	Slight organic	Slight organic	None	Slight Organic	Slight organic
Comment - Sample Turbidity	Total	None	Slight	Slight	Moderate	Moderate	Moderate	Moderate	Moderate	Slight	Slight	None

Table 1 (continued)

		Location	SW-HWY27W	SW-HWY27W	SW-HWY27W	SW-HWY27W	SW-HWY27W	SW-NB	SW-NB	SW-NB	SW-NB	SW-NB
Chemical Name	**Total / Dissolved**	**Units**	**5/23/2024**	**7/24/2024**	**8/30/2024**	**11/21/2024**	**8/30/2024**	**4/19/2023**	**4/29/2023**	**5/8/2024**	**5/23/2024**	**7/24/2024**
Alkalinity as $CaCO_3$	Total	mg/L	10.1					6.7	< 7.4	10.5	15.3	
Alkalinity as $CaCO_3$	Dissolved	mg/L	9.2						< 7.4	10.1	15.4	
Calcium	Total	ug/L	5490					7000	8800	7340	7500	
Calcium	Dissolved	ug/L	5990						8250	7760	7400	
Chloride	Total	mg/L	24.2					74.9	75.4	38.4	19.1	
Chloride	Dissolved	mg/L	23.2						86.0	38.4	17.7	
Copper	Total	ug/L	9.8	14.7	20.4	9.5	19.8	15.3	5.6	18.0	16.8	4.6
Copper	Dissolved	ug/L	8.0	7.1	11.5	6.6	11.5		4.5	15.6	15.0	3.2
Dissolved Organic Carbon	Dissolved	mg/L	31.1	13.3	15.5	7.8	15.4		10.0	24.6	24.8	11.2
Dissolved Oxygen	Total	mg/L	2.24	3.36	1.12	1.82		10.79	7.77	5.94	3.21	4.76
Hardness	Total	mg/L	20.2	28.2	27.6	10.3	27.8	27.5	36.6	29.7	29.4	38.5
Hardness	Dissolved	mg/L	22.2	27.1	27.2	8.5	27.3		35.0	31.0	29.9	37.8
Iron	Total	ug/L	2600					694	392	1680	2110	
Iron	Dissolved	ug/L	1780						169	774	1200	
Magnesium	Total	ug/L	1570					2430	3550	2760	2600	
Magnesium	Dissolved	ug/L	1760						3490	2820	2760	
Manganese	Total	ug/L	34.6					36.4	29.3	40.8	73.1	
Manganese	Dissolved	ug/L	34.1						26.0	30.9	65.9	
pH	Total	s.u.	6.28	5.78	5.74	5.71		6.63	6.54	6.21	6.44	6.5
Potassium	Total	ug/L	779					1690	1460	1010	650	
Potassium	Dissolved	ug/L	834						1390	995	613	
Redox Potential	Total	mV	152	176.1	107.5	174.1		63.8	63.7	130.3	132.7	147.7
Sodium	Total	ug/L	16000					35700	35500	23400	11500	
Sodium	Dissolved	ug/L	18000						36000	23600	12600	
Specific Conductance	Total	umhos/cm	120	154	304	343		267	264	159	104	237
Sulfate	Total	mg/L	< 2.2					4.1	2.4	1.1	< 2.2	
Sulfate	Dissolved	mg/L	< 2.2						2.5	1.1	< 2.2	
Sulfide	Total	mg/L	< 1.2					< 1.2	< 1.2	1.2	< 1.2	
Sulfide	Dissolved	mg/L	< 1.2						< 1.2	< 1.2	< 1.2	
Temperature	Total	deg c	14.56	21.21	19.18	4.09		3.17	7.68	13.91	12.02	28.02
Total Suspended Solids	Total	mg/L	3.5					1.9	< 0.49	2.6	4.6	
Zinc	Total	ug/L	22.4	33.6	24.3	19.2	27.1	23.4	18.2	30.5	24.7	< 10.3
Zinc	Dissolved	ug/L	23.4	27.0	25.9	16.4	20.7		19.0	24.3	24.8	< 10.3
Comment - Sample Color	Total	None	Stained light brown	Stained light brown	Stained light brown	Stained light brown		Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown
Comment - Sample Odor	Total	None	Slight organic	Slight organic	Slight organic	Slight organic		Slight Organic	Slight Organic	Slight organic	Slight organic	Slight organic
Comment - Sample Turbidity	Total	None	Slight	Slight	Slight	Slight		Slight	Slight	Slight	Slight	Slight

Table 1 (continued)

Location			SW-NB	SW-NB	SW-NB	SW-NBOUT	SW-NBOUT	SW-NBOUT	SW-NBOUT	SW-NBOUT	SW-NBOUT	SW-NBOUT
Chemical Name	**Total / Dissolved**	**Units**	**8/30/2024**	**11/21/2024**	**4/19/2023**	**4/19/2023**	**4/29/2023**	**5/8/2024**	**5/23/2024**	**7/24/2024**	**8/30/2024**	**11/21/2024**
Alkalinity as $CaCO_3$	Total	mg/L			6.8	18.6	20.7	40.2	45.2			
Alkalinity as $CaCO_3$	Dissolved	mg/L					21.0	35.6	43.7			
Calcium	Total	ug/L			6790	5540	9950	10600	12000			
Calcium	Dissolved	ug/L					8970	11100	12600			
Chloride	Total	mg/L			67.5	5.8	48.6	7.5	6.7			
Chloride	Dissolved	mg/L					53.9	6.3	6.9			
Copper	Total	ug/L	7.5	5.6	7.8	6.1	3.7	9.9	8.0	2.6	4.7	6.3
Copper	Dissolved	ug/L	4.3	4.6			3.2	8.1	7.2	< 1.9	3.4	5.1
Dissolved Organic Carbon	Dissolved	mg/L	13.3	5.6			9.2	15.4	16.5	9.9	12.7	7.2
Dissolved Oxygen	Total	mg/L	0.95	1.83		11.00	8.30	6.17	3.40	2.62	1.48	1.82
Hardness	Total	mg/L	46.7	64.8	26.9	22.9	42.8	45.5	51.5	54.4	61.6	60.4
Hardness	Dissolved	mg/L	47.5	60.2			38.8	48.3	54.1	54.5	60.9	58.4
Iron	Total	ug/L			760	652	370	755	988			
Iron	Dissolved	ug/L					116	179	456			
Magnesium	Total	ug/L			2420	2200	4360	4640	5220			
Magnesium	Dissolved	ug/L					3990	5010	5500			
Manganese	Total	ug/L			38.6	10.8	32.1	15.9	46.0			
Manganese	Dissolved	ug/L					13.1	8.6	42.6			
pH	Total	s.u.	6.27	6.93		6.77	6.42	6.75	6.86	6.58	6.81	6.96
Potassium	Total	ug/L			1720	1980	1370	1060	518			
Potassium	Dissolved	ug/L					1240	1050	505			
Redox Potential	Total	mV	82.5	159.9		46.1	68.5	224.9	172	156.3	109.1	162
Sodium	Total	ug/L			34200	3740	25300	5610	5030			
Sodium	Dissolved	ug/L					24400	5390	5460			
Specific Conductance	Total	umhos/cm	273	307		58	199	102	111	217	218	267
Sulfate	Total	mg/L			3.8	2.8	3.1	2.7	< 2.2			
Sulfate	Dissolved	mg/L					3.2	2.7	< 2.2			
Sulfide	Total	mg/L			< 1.2	< 1.2	< 1.2	1.8	< 1.2			
Sulfide	Dissolved	mg/L					< 1.2	< 1.2	< 1.2			
Temperature	Total	deg c	18.2	3.26		2.97	7.26	13.58	12.04	21.28	19.05	3.34
Total Suspended Solids	Total	mg/L			1.5	2.4	0.82	2.0	2.2			
Zinc	Total	ug/L	< 10.3	32.3	25.9	< 10.3	< 10.3	< 10.3	< 10.3	< 10.3	< 10.3	12.4
Zinc	Dissolved	ug/L	< 10.3	33.8			< 10.3	< 10.3	< 10.3	< 10.3	< 10.3	< 10.3
Comment - Sample Color	Total	None	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown
Comment - Sample Odor	Total	None	Slight organic	Slight organic	None	Slight Organic	Slight Organic	Slight organic	Slight organic	Slight organic	Slight organic	Slight organic
Comment - Sample Turbidity	Total	None	Slight	Slight	None	Slight	Slight	Slight	Slight	Slight	Slight	Slight

Table 1 (continued)

		Location	SW-STM	SW-STM	SW-STM	SW-STM	SW-STM	SW-STM	SW-STM
Chemical Name	**Total / Dissolved**	**Units**	**4/19/2023**	**4/29/2023**	**5/8/2024**	**5/23/2024**	**7/24/2024**	**8/30/2024**	**11/21/2024**
Alkalinity as $CaCO_3$	Total	mg/L	10	16.8	15.4	10.8	31.9	33.5	22.1
Alkalinity as $CaCO_3$	Dissolved	mg/L		18.9	13.1	10.3	30.1	34.4	22.2
Calcium	Total	ug/L	3410	7440	5430	4850	12800	12000	13800
Calcium	Dissolved	ug/L		7110	5670	5320	12900	11800	14500
Chloride	Total	mg/L	15.6	31.1	10.6	7.4	38.4	35.4	51.0
Chloride	Dissolved	mg/L		31.6	10.5	7.1	37.1	34.3	53.4
Copper	Total	ug/L	6.0	6.2	15.6	13.0	7.6	8.6	8.8
Copper	Dissolved	ug/L		4.9	12.8	12.6	5.5	5.9	8.3
Dissolved Organic Carbon	Dissolved	mg/L		8.7	16.0	16.0	10.5	9.9	8.0
Dissolved Oxygen	Total	mg/L	11.86	11.12	8.76	2.99	4.39	1.39	1.11
Hardness	Total	mg/L	13.8	31.5	22.1	19.8	53.3	50.4	59.2
Hardness	Dissolved	mg/L		30.3	22.5	21.6	53.6	49.4	62.6
Iron	Total	ug/L	718	371	1090	1010	1010	1130	904
Iron	Dissolved	ug/L		130	319	500	184	315	194
Magnesium	Total	ug/L	1280	3150	2070	1860	5220	4970	6020
Magnesium	Dissolved	ug/L		3050	2030	2020	5200	4820	6400
Manganese	Total	ug/L	20.6	16.5	35.3	24.0	99.7	52.9	15.0
Manganese	Dissolved	ug/L		10.3	11.5	16.3	13.2	28.7	5.7
pH	Total	s.u.	6.53	7.64	7.16	6.83	7.21	7.43	6.94
Potassium	Total	ug/L	1110	1180	1070	823	1210	1770	2170
Potassium	Dissolved	ug/L		1070	1030	853	1250	1690	2260
Redox Potential	Total	mV	66.6	49.3	191.1	157.6	161.5	125.5	142.1
Sodium	Total	ug/L	9520	17900	8660	4930	13700	16600	18800
Sodium	Dissolved	ug/L		17700	9300	5670	14000	16200	21200
Specific Conductance	Total	umhos/cm	72	147	74	52	185	174	221
Sulfate	Total	mg/L	2.5	3.6	1.7	< 2.2	7.9	3.0	8.7
Sulfate	Dissolved	mg/L		3.8	1.7	< 2.2	4.1	2.9	8.9
Sulfide	Total	mg/L	< 1.2	< 1.2	1.2	< 1.2	< 1.2	< 1.2	< 1.2
Sulfide	Dissolved	mg/L		< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Temperature	Total	deg c	3.71	6.30	17.60	12.80	18.23	18.09	3.71
Total Suspended Solids	Total	mg/L	9.0	2.1	8.1	4.6	7.1	4.1	0.72
Zinc	Total	ug/L	< 10.3	< 10.3	13.3	12.7	< 10.3	< 10.3	< 10.3
Zinc	Dissolved	ug/L		< 10.3	< 10.3	< 10.3	< 10.3	< 10.3	< 10.3
Comment - Sample Color	Total	None	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown	Stained light brown
Comment - Sample Odor	Total	None	None	None	None	None	None	None	None
Comment - Sample Turbidity	Total	None	None	None	Slight	Slight	Slight	Slight	None

< = less than
CaCO3 = calcium carbonate
deg c = Degree Celcius
mg/L = milligrams per liter
mV = millivolts

NA = Not Applicable
NS = Not Sampled
s.u. = Standard Unit
ug/L = micrograms per liter
umhos/cm = micromhos per centimeter

Table 2
ATC Summary - Copper and Zinc

Sampling Event	Hardness (mg/L)	Cu ln H	Zn ln H	Total Copper			Total Zinc		
				Cu (ATC) (µg/L)	Cu Sample results (µg/L)		Zn (ATC) (µg/L)	Zn Sample results (µg/L)	
Sampling Event 4/19/2023									
SW-HWY27E	8.5	2.56	2.48	2.26	4.1	J	18.9	10.3	<
SW-HWY27W	26.2	3.27	3.27	4.38	6.0	J	37.3	24.8	J
SW-NB	27.5	3.31	3.31	4.59	15.3		38.9	23.4	J
SW-NBOUT	22.9	3.13	3.13	3.86	6.1	J	33.2	10.3	<
SW-EB	25.8	3.25	3.25	4.32	6.9		36.8	10.3	<
CP-04	27.2	3.30	3.30	4.54	19.0		38.6	15.2	J
SW-C9	8.4	2.56	2.48	2.26	17.7		18.9	20.7	J
SW-C5	12.2	2.56	2.50	2.26	7.6		19.1	11.7	J
SW-C1	13.1	2.57	2.57	2.28	6.3	J	20.4	10.3	<
SW-STM	13.8	2.62	2.62	2.39	6.0	J	21.3	10.3	<
Sampling Event 4/29/2023									
SW-HWY27E	9.1	2.56	2.48	2.26	4.1	J	18.9	25.5	J
SW-HWY27W	40.5	3.70	3.70	6.61	4.2	J	54.6	30.3	J
SW-NB	36.6	3.60	3.60	6.01	5.6	J	50.0	18.2	J
SW-NBOUT	42.8	3.76	3.76	6.97	3.7	J	57.3	10.3	<
SW-EB	47.6	3.86	3.86	7.7	6.3	J	62.9	10.3	<
CP-04	60.5	4.10	4.10	9.66	12.7		77.6	10.4	J
SW-C9	10.3	2.56	2.48	2.26	5.0	J	18.9	11.6	J
SW-C5	19.7	2.98	2.98	3.35	6.7		29.1	10.3	<
SW-C1	27.4	3.31	3.31	4.57	7.3		38.8	10.3	<
SW-STM	31.5	3.45	3.45	5.22	6.2	J	43.8	10.3	<
Sampling Event 5/8/2024									
SW-HWY27E	11.6	2.56	2.48	2.26	8.9		18.9	12.0	J
SW-HWY27W	21.4	3.06	3.06	3.62	16.5		31.3	30.4	J
SW-NB	29.7	3.39	3.39	4.93	18.0		41.6	30.5	J
SW-NBOUT	45.5	3.82	3.82	7.38	9.9		60.5	10.3	<
SW-EB	36.5	3.60	3.60	5.99	14.1		49.9	14.6	J
CP-04	78.8	4.37	4.37	12.39	28.4		97.7	10.3	<
SW-C9	13.4	2.60	2.60	2.33	9.7		20.8	15.5	J
SW-C5	17.3	2.85	2.85	2.96	15.9		26.0	13.9	J
SW-C1	21.0	3.04	3.04	3.56	16.8		30.8	12.8	J
SW-STM	22.1	3.10	3.10	3.73	15.6		32.2	13.3	J
Sampling Event 5/23/2024									
SW-HWY27E	10.9	2.56	2.48	2.26	5.4	J	18.9	12.9	J
SW-HWY27W	20.2	3.01	3.01	3.43	9.8		29.7	22.4	J
SW-NB	29.4	3.38	3.38	4.89	16.8		41.3	24.7	J
SW-NBOUT	51.5	3.94	3.94	8.3	8.0		67.4	10.3	<
SW-EB	39.8	3.68	3.68	6.5	11.3		53.8	10.4	J
CP-04	59.5	4.09	4.09	9.51	28.0		76.5	10.3	<
SW-C9	12.0	2.56	2.48	2.26	6.5		18.9	15.5	J
SW-C5	15.7	2.75	2.75	2.7	13.2		23.8	13.9	J
SW-C1	19.5	2.97	2.97	3.32	13.6		28.8	14.7	J
SW-STM	19.8	2.99	2.99	3.37	13.0		29.2	12.7	J

Table 2 (continued)

Sampling Event	Hardness (mg/L)	Cu ln H	Zn ln H	Total Copper			Total Zinc		
				Cu (ATC) (µg/L)	Cu Sample results (µg/L)		Zn (ATC) (µg/L)	Zn Sample results (µg/L)	
Sampling Event 7/24/2024									
SW-HWY27E	8.9	2.56	2.48	2.26	8.2		18.9	12.4	J
SW-HWY27W	28.2	3.34	3.34	4.7	14.7		39.8	33.6	J
SW-NB	38.5	3.65	3.65	6.3	4.6	J	52.2	10.3	<
SW-NBOUT	54.4	4.00	4.00	8.74	2.6	J	70.7	10.3	<
SW-EB	54.5	4.00	4.00	8.75	3.7	J	70.8	10.3	<
CP-04	61.0	4.11	4.11	9.73	33.7		78.1	16.6	J
SW-C9	11.4	2.56	2.48	2.26	16.6		18.9	10.3	<
SW-C5	24.2	3.19	3.19	4.07	12.5		34.8	19.3	J
SW-C1	48.8	3.89	3.89	7.88	11.8		64.3	18.7	J
SW-STM	53.3	3.98	3.98	8.57	7.6		69.4	10.3	<
Sampling Event 8/30/2024									
SW-HWY27E	8.1	2.56	2.48	2.26	13.7		18.9	13.9	J
SW-HWY27W	27.6	3.32	3.32	4.6	20.4		39.1	24.3	J
SW-NB	46.7	3.84	3.84	7.56	7.5		61.9	10.3	<
SW-NBOUT	61.6	4.12	4.12	9.82	4.7	J	78.8	10.3	<
SW-EB	49.8	3.91	3.91	8.04	12.4		65.4	10.3	<
CP-04	87.8	4.48	4.48	13.72	6.1	J	107.4	10.3	<
SW-C9	10.8	2.56	2.48	2.26	14.0		18.9	13.6	J
SW-C5	31.5	3.45	3.45	5.22	12.2		43.8	11.9	J
SW-C1	37.8	3.63	3.63	6.2	12.9		51.4	10.3	<
SW-STM	50.4	3.92	3.92	8.13	8.6		66.1	10.3	<
Sampling Event 11/21/2024									
SW-HWY27E	44.9	3.80	3.80	7.29	13.3		59.8	99.3	
SW-HWY27W	10.3	2.56	2.48	2.26	9.5		18.9	19.2	J
SW-NB	64.8	4.17	4.17	10.3	5.6	J	82.4	32.3	J
SW-NBOUT	60.4	4.10	4.10	9.64	6.3	J	77.5	12.4	J
SW-EB	60.7	4.11	4.11	9.69	7.8		77.8	10.3	<
CP-04	64.2	4.16	4.16	10.21	30.5		81.7	10.3	<
SW-C9	9.9	2.56	2.48	2.26	18.1		18.9	23.8	J
SW-C5	30.7	3.42	3.42	5.09	15.8		42.9	23.4	J
SW-C1	50.4	3.92	3.92	8.13	14.7		66.1	19.9	J
SW-STM	59.2	4.08	4.08	9.46	8.8		76.1	10.3	<

Notes:

Prepared by: MCC2

Checked by: KMC2

ATC = Acute Toxicity Criteria (Wisconsin Administrative Code NR 105)

Cu = Copper; Zn=Zinc; mg/L = milligrams per liter; µg/L = micrograms/liter

J = estimated concentration at or above the limit of detection and below the limit of quantitation.

< = less than limit of detection.

Red formatting indicates ATC standard exceedance. 4

Gray formatting indicates hardness value for sample was below the water quality parameter range given in NR 105.06 Table 2A. The end point of the range nearest to that value was used to determine the criteria in accordance with NR 105.05(3)(L). Minimum H values: Cu=13; Zn=12. 2.26

Reference Formula:

Acute Toxicity Criteria (ATC) is calculated by the formula shown in WAC NR 105.05(3)(L):

NR 105.06 Table 2 Acute Toxicity Criteria for Substances With Toxicity Related to Water Quality (all in µg/L).

Total Recoverable Copper V=0.9436; ln ACI=-1.6036. Total Recoverable Zinc V=0.8745; ln ACI=0.7634

(ACI = Acute Criterion Intercept; V = constant defined in NR 105.06(8); table 2)

$$ATC = e^{(V \ln H + \ln ACI)}$$

Table 3
Biotic Ligand Model Results

Model Inputs[1]												Model Outputs[2]			
Copper Criteria														BLM-based Criterion	Current Criiterion
Location	Temperature	pH	Dissolved Cu	Dissolved Organic Carbon	Humic Acid	Dissolved Ca	Dissolved Mg	Dissolved Na	Dissolved K	Dissolved SO_4	S	FAV	CCC	CMC[3]	ATC[4]
units	°C	S.U.	µg/L	mg C/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L
Sampling Event 4/29/2023															
SW-HWY27E	6.56	5.73	3.6	8.3	10	1.93	0.76	3.08	0.635	1.4	1.2	1.92	0.59	0.96	2.26
SW-HWY27W	6.77	6.55	3.6	10.8	10	10.20	3.64	58.4	1.64	3.1	1.2	28.14	8.74	14.07	6.61
SW-C9	6.77	5.55	3.8	8.7	10	2.40	0.92	7.14	0.684	1.3	1.2	1.31	0.41	0.65	2.26
SW-C5	6.85	6.01	6.4	7.6	10	4.76	2.08	14.9	1.02	3.2	1.2	3.99	1.24	2.00	3.35
SW-C1	6.57	6.19	5.8	7.8	10	6.32	2.70	17	1.04	3.7	1.2	6.78	2.10	3.39	4.57
SW-STM	6.30	7.64	4.9	8.7	10	7.11	3.05	17.7	1.07	3.8	1.2	85.97	26.70	42.98	5.22
Sampling Event 5/08/2024															
SW-HWY27E	11.60	6.38	7.5	15.5	10	3.09	1.08	2.84	0.996	0.88	1.2	21.56	1.64	10.78	2.26
SW-HWY27W	12.56	6.29	14	28.1	10	5.70	1.71	35.9	1.25	0.92	1.2	45.01	2.77	22.51	3.62
SW-C9	11.94	6.31	8.2	15.8	10	3.46	1.19	4.18	0.854	0.72	1.2	18.53	1.85	9.26	2.33
SW-C5	15.26	6.54	13.9	15.8	10	4.70	1.72	6.47	0.715	1.3	1.2	30.69	2.31	15.34	2.96
SW-C1	15.88	6.57	14.5	15.6	10	5.35	1.96	7.32	0.741	1.4	1.2	31.92	2.72	15.96	3.56
SW-STM	17.60	7.16	12.8	16.0	10	5.67	2.03	9.30	1.03	1.7	1.2	89.53	2.84	44.77	3.73
Sampling Event 5/23/2024															
SW-HWY27E	15.08	6.12	5	17.7	10	2.99	0.97	0.998	0.679	2.2	1.2	12.77	1.55	6.39	2.26
SW-HWY27W	14.56	6.28	8	31.1	10	5.99	1.76	18	0.834	2.2	1.2	41.77	2.63	20.89	3.43
SW-C9	13.69	6.15	4.6	17.2	10	2.89	1.04	1.95	0.764	2.2	1.2	13.45	1.69	6.73	2.26
SW-C5	13.52	6.17	11.8	16.6	10	4.40	1.54	3.13	0.358	2.2	1.2	12.90	2.12	6.45	2.70
SW-C1	13.29	6.41	12.5	16.2	10	5.27	1.90	3.97	0.414	2.2	1.2	22.54	2.56	11.27	3.32
SW-STM	12.8	6.83	12.6	16	10	5.32	2.02	5.67	0.853	2.2	1.2	52.07	2.59	26.03	3.37
Sampling Event 7/24/2024															
SW-HWY27E	19.17	6.17	6.8	9.1	10	---	---	---	---	---	---	---	---	---	---
SW-HWY27W	21.21	5.78	7.1	13.3	10	---	---	---	---	---	---	---	---	---	---
SW-C9	18.97	6.29	11.7	12.3	10	2.86	0.953	7.7	0.629	1.6	1.2	14.03	1.81	7.02	2.26
SW-C5	17.6	6.31	5	11	10	6.04	2.35	7.24	0.378	2.2	1.2	11.80	3.07	5.90	4.07
SW-C1	17.33	6.64	6.7	10.3	10	12	4.79	11.2	0.534	3.5	1.2	22.86	5.60	11.43	7.88
SW-STM	18.23	7.21	5.5	10.5	10	12.9	5.2	14	1.25	4.1	1.2	58.83	6.04	29.42	8.57
Sampling Event 8/30/2024															
SW-HWY27E	17.86	6.03	9.5	10.1	10	---	---	---	---	---	---	---	---	---	---
SW-HWY27W	19.18	5.74	11.5	15.5	10	---	---	---	---	---	---	---	---	---	---
SW-C9	18.13	6.05	11.4	13.5	10	2.63	0.859	6.53	1.16	1.3	1.2	8.18	1.81	4.09	2.26
SW-C5	18.11	6.36	8.5	10.9	10	8.5	3.07	11.3	1.53	1.9	1.2	13.68	3.85	6.84	5.22
SW-C1	18.04	6.72	8.5	11.3	10	8.88	3.75	12.8	1.59	2.3	1.2	29.78	4.50	14.89	6.20
SW-STM	18.09	7.43	5.9	9.9	10	11.8	4.82	16.2	1.69	2.9	1.2	75.84	5.76	37.92	8.13
Sampling Event 11/21/2024															
SW-HWY27E	4.41	6.28	9.8	6.9	10	---	---	---	---	---	---	---	---	---	---
SW-HWY27W	4.09	5.71	6.6	7.8	10	---	---	---	---	---	---	---	---	---	---
SW-C9	4.54	6.14	15.2	9.9	10	2.55	0.858	8.1	1.96	4.6	1.2	7.38	1.81	3.69	2.26
SW-C5	4.09	6.27	12.9	8.5	10	7.37	3.42	13.5	2.19	8.2	1.2	8.64	3.77	4.32	5.09
SW-C1	4.15	6.74	11.8	8.2	10	12.6	5.39	17	2.26	8.8	1.2	22.48	5.76	11.24	8.13
SW-STM	3.71	6.94	8.3	8	10	14.5	6.4	21.2	2.26	8.9	1.2	31.09	6.61	15.55	9.46

Notes:

1 Model inputs correspond to concentrations measured within collected samples with the exception of humic acid. For non-detectable results, the method detection limit is used as the model inputs. Humic acid was not measured and the input percentage of 10% follows the Biotic Ligand Model User's Guide recommended input limit.

2 Criteria Maximum Concentration (CMC) is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The Criterion Continuous Concentration (CCC) is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable effect. The CMC and CCC are just two of the six parts of an aquatic life criterion; the other four parts are the acute averaging period, chronic averaging period, acute frequency of allowed exceedance, and chronic frequency of allowed exceedance. Because 304(a) aquatic life criteria are national guidance, they are intended to be protective of the vast majority of the aquatic communities in the United States. (EPA National Recommended Water Quality Criteria, Office of Science and Technology 4304T, 2006, https://nepis.epa.gov/Exe/ZyPDF.cgi/P1003R9X.PDF?Dockey=P1003R9X.PDF)

3 Criterion Maximum Concentration is the EPA national water quality criteria recommendation for the highest instream concentration of a toxicant or an effluent to which organisms can be exposed for a brief period of time without causing an acute effect. This is usually defined as the LD_{50} concentration. (http://www.cormix.info/glossary.php)

4 ATC was calculated according to WDNR NR 105 using measured hardness values and dissolved (filtered) copper concentrations.

ATC = Acute toxicity criterion means the maximum daily concentration of a substance which ensures adequate protection of sensitive species of aquatic life from the acute toxicity of that substance and will adequately protect the designated fish and aquatic life use of the surface water if not exceeded more than once every 3 years. (WDNR Chapter NR 105)

BLM = Biotic Ligand Model

CMC = Criterion Maximum Concentration or Acute Instantaneous Water Quality Criteria (IWQC), equal to FAV/2, can be used in place of ATC (WI NR 105)

CCC = Criterion Continuous Concentration, equal to FAV/Acute-to-chronic Ratio (ACR)

FAV = Final Acute Value, the level of a chemical or mixture of chemicals that does not allow the mortality or other specified response of aquatic organisms to exceed 50% when exposed for 96 hours, except where a shorter time period is appropriate for certain species.

% = percent

°C = degrees Celsius

$CaCO_3$ = calcium carbonate

mg/L = milligrams per liter

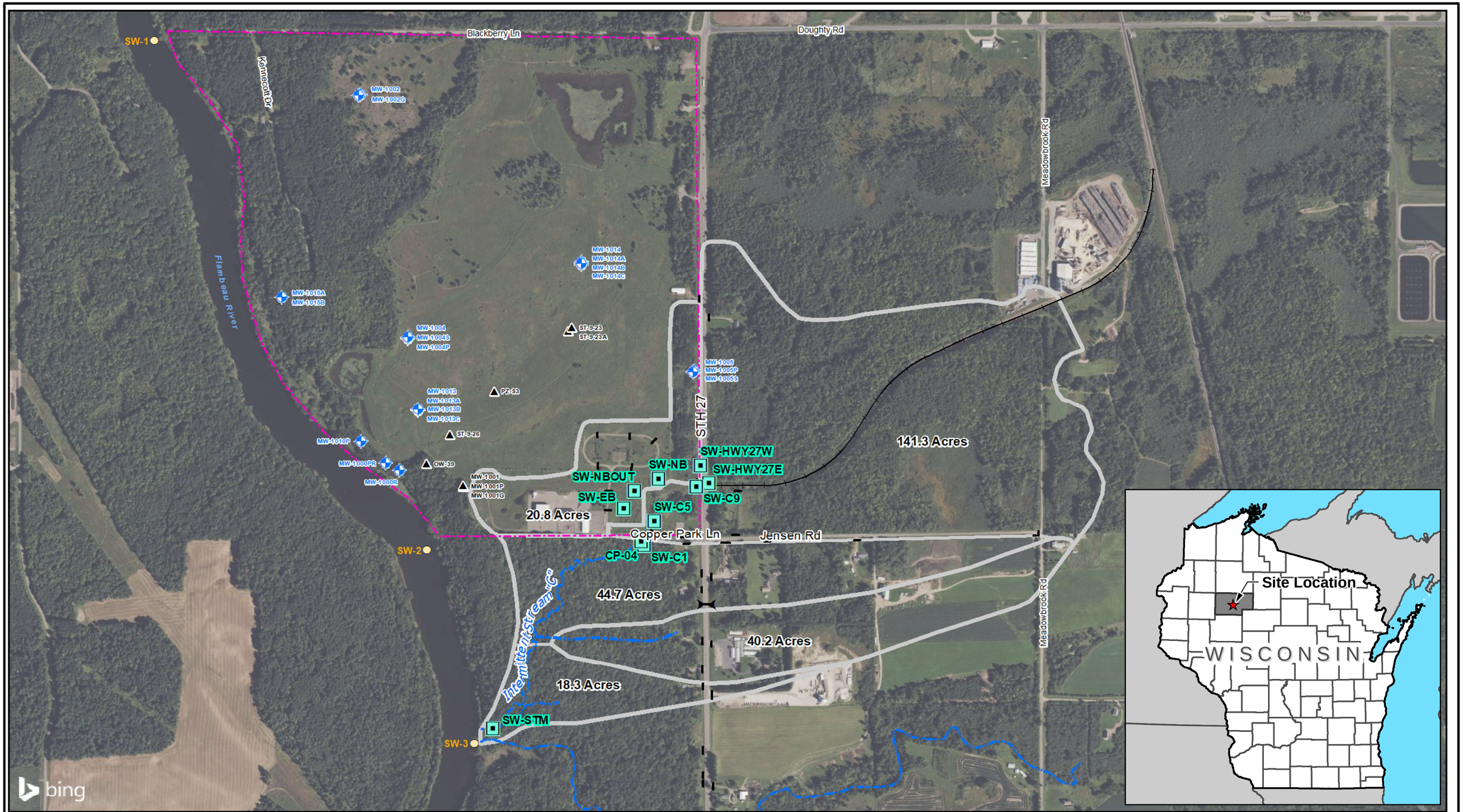
S.U. = standard unit

µg/L = micrograms per liter

= measured copper concentration exceeds the BLM CMC

= measured copper concentration exceeds the ATC

Figures



NOTES:

1. Base imagery from esri.com, courtesy of the Microsoft Corporation and its data suppliers.
2. Horizontal datum based on NAD 1983. Horizontal coordinates based on Wisconsin State Plane North (Feet).

LEGEND

- Surface Water Sampling Locations
- Groundwater Wells - MONITORED FOR WATER LEVELS ONLY
- Groundwater Wells
- Flambeau River Surface Water Monitoring Location
- Approximate Culvert Location
- Approximate Rail Spur
- Intermittent Stream
- Flambeau Project Area
- Intermittent Stream C Drainage Area

N

Foth

Foth Infrastructure & Environment, LLC

REVISED	DATE	BY	DESCRIPTION

PREPARED BY:	BJW1	DATE:	FEB.'25
CHECKED BY:	NMG1	DATE:	FEB.'25
APPROVED BY:	MCC2	DATE:	FEB.'25

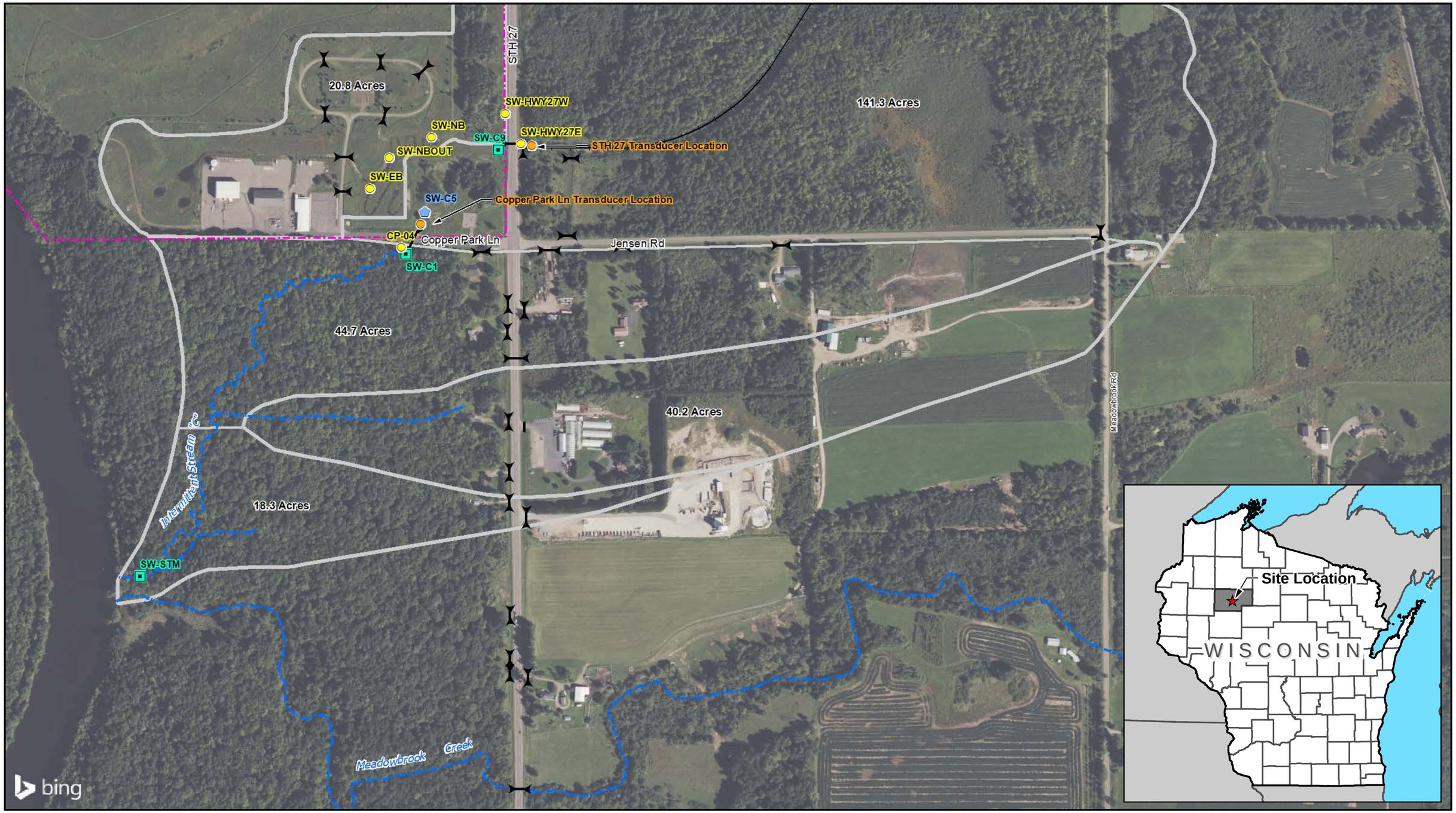
FLAMBEAU MINING COMPANY

FIGURE 1

SITE LAYOUT MAP
STREAM C DATA EVALUATION

Scale: 0 350 700 Feet		Date:	MARCH 2023
Drafted by:	DAT	Project No:	17F777.25

Path: Q:\Flambeau Mining Company\17F777\GIS\mxd\2024 Stream C Data Evaluation\Figure 1 - Site Location Map.mxd Date: 2/6/2025



NOTES:

1. Base imagery from esri.com, courtesy of the Microsoft Corporation and its data suppliers.
2. Horizontal datum based on NAD 1983. Horizontal coordinates based on Wisconsin State Plane North (Feet).

LEGEND

Surface Water Sampling Type

- Flow, Visual Observation, Water Quality, WET Test
- Visual Observation, Water Quality, WET Test
- Visual Observation, Water Quality
- Transducer Location
- Approximate Culvert Location
- Intermittent Stream
- Flambeau Project Area
- Intermittent Stream C Drainage Area

N

Foth Infrastructure & Environment, LLC

REVISED	DATE	BY	DESCRIPTION

PREPARED BY:	BJW1	DATE:	FEB.'25
CHECKED BY:	NMG1	DATE:	FEB.'25
APPROVED BY:	MCC2	DATE:	FEB.'25

FLAMBEAU MINING COMPANY

FIGURE 2

STREAM C EVALUATION LOCATIONS
STREAM C DATA EVALUATION

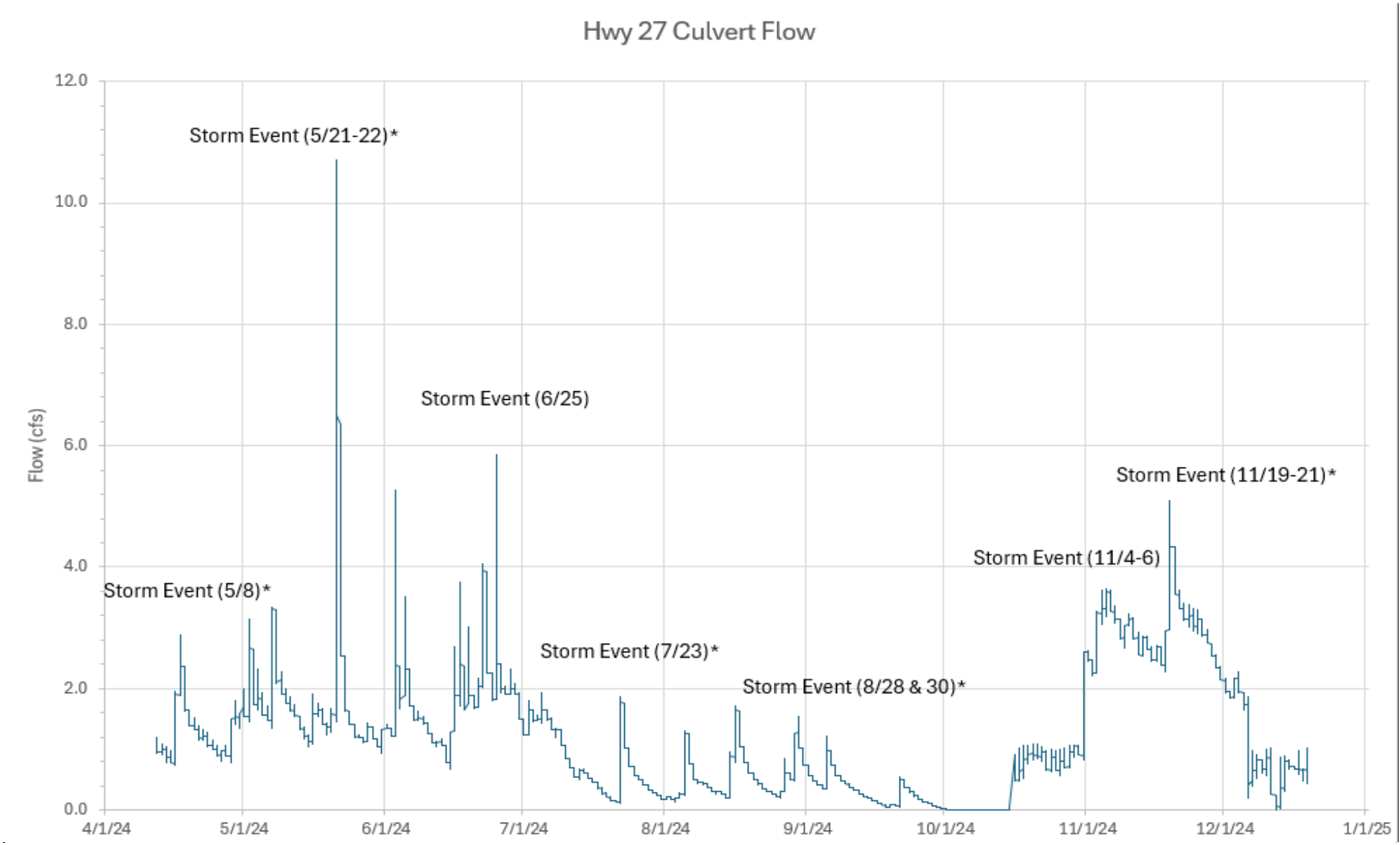
Scale: 0 200 400 Feet

Date: FEBRUARY 2025

Drafted by: DAT

Project No: 17F777.25

Path: Q:\Flambeau Mining Company\17F777\GIS\mxd\2024 Stream C Data Evaluation\Figure 2 - Stream C Evaluation Locations.mxd Date: 2/18/2025



NOTES:

* Sampling Events

Flambeau Mining Company

Figure 3

HWY 27 Culvert Flow Chart

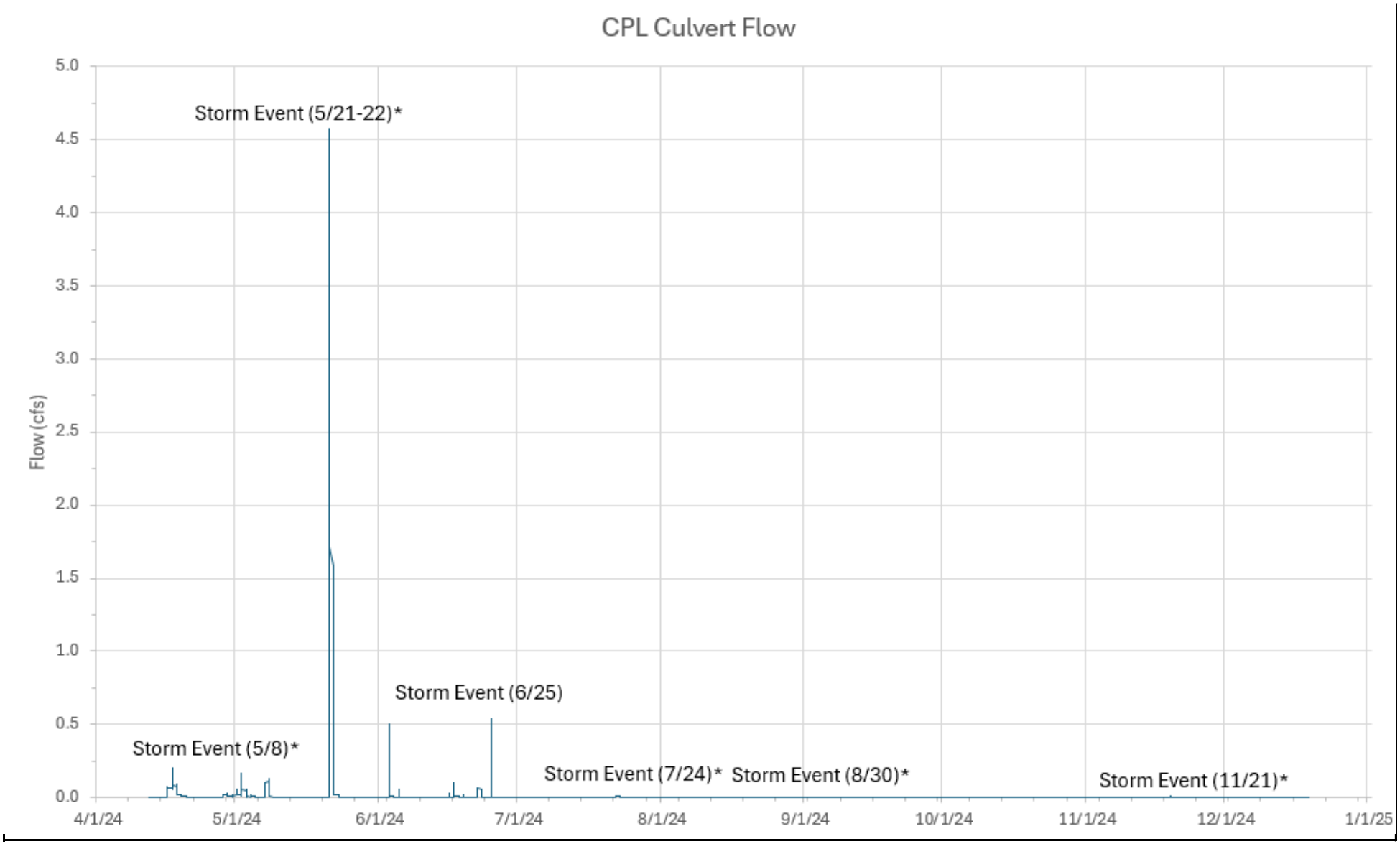
2024 Stream C Data Evaluation

Ladysmith, Wisconsin

Date: February 2025	Revision Date:	
Drawn By: NMG1	Checked By: MN	Project: 17F777.24

Path: Paste file path here

Date: 2/7/2025



NOTES:

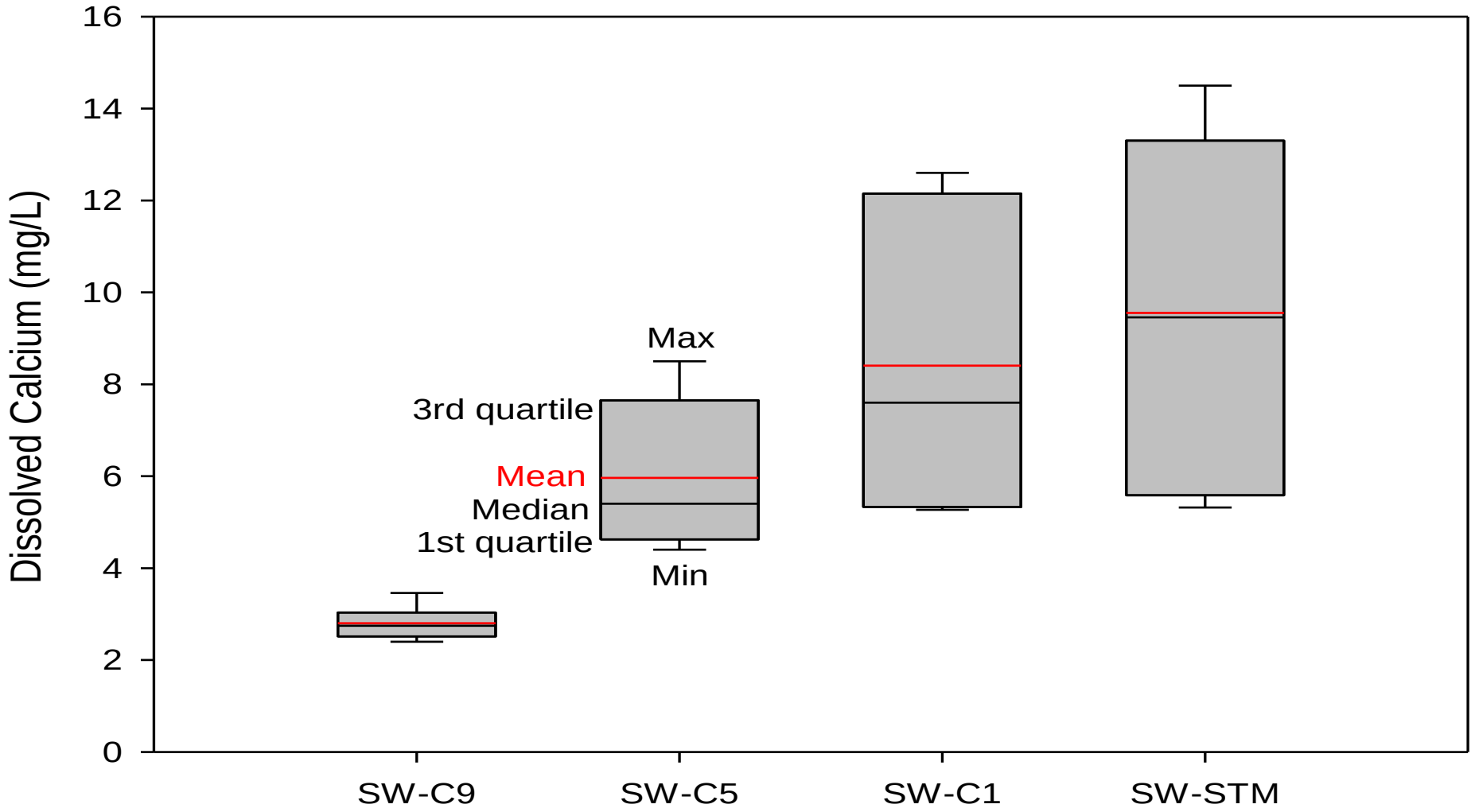
* Sampling Events

Flambeau Mining Company		
Figure 4 **Copper Park Lane Culvert Flow Chart** 2024 Stream C Data Evaluation Ladysmith, Wisconsin		
Date: February 2025	Revision Date:	
Drawn By: NMG1	Checked By: MN	Project: 17F777.24

Foth

Path: Paste file path here

Date: 2/7/2025



NOTES:

Flambeau Mining Company

Figure 5

Summary of Dissolved Calcium Data

2024 Stream C Data Evaluation

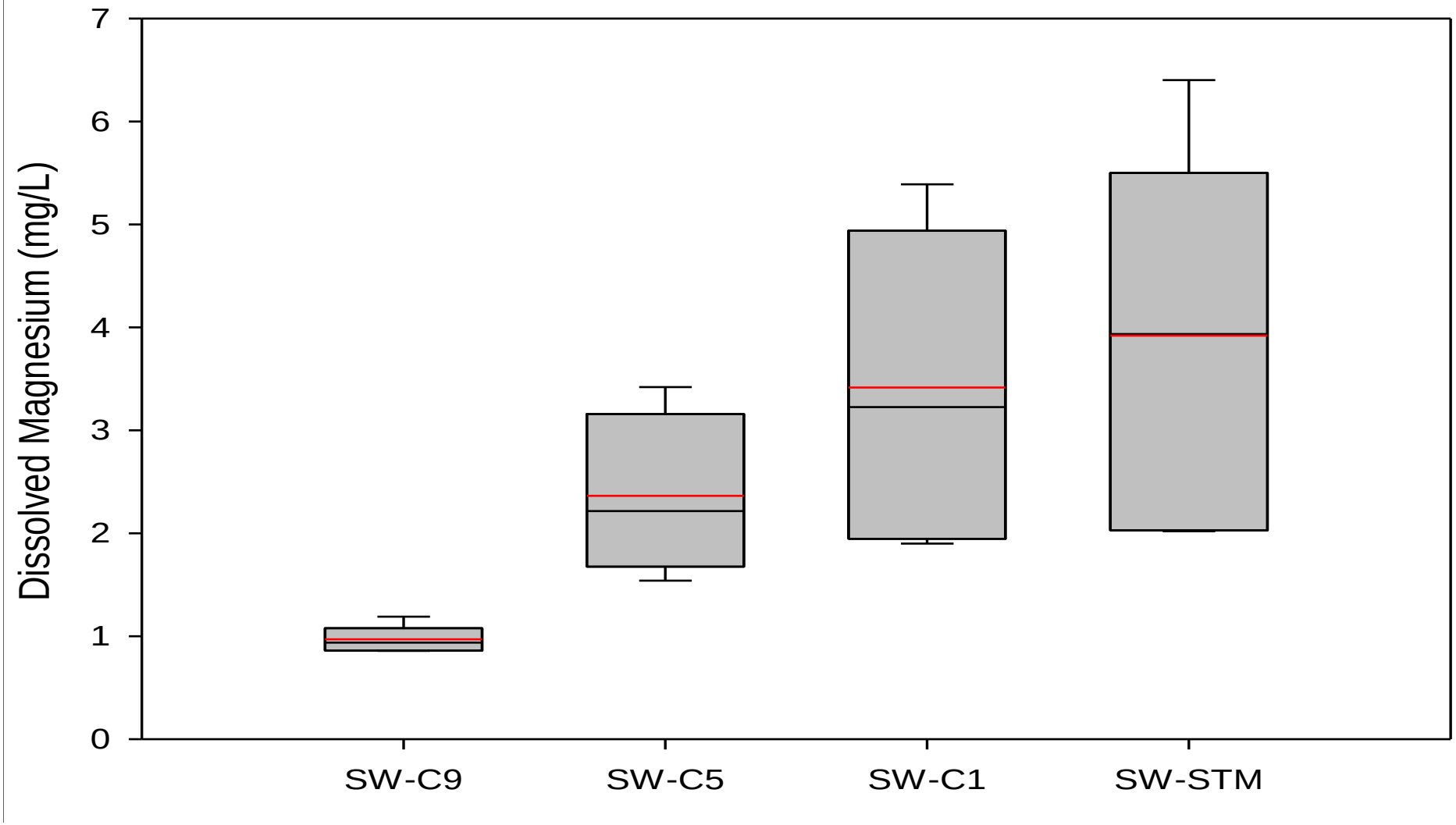
Ladysmith, Wisconsin

Date: February 2025	Revision Date:	
Drawn By: NMG1	Checked By: MN	Project: 17F777.24

Foth

Path: Paste file path here

Date: 2/7/2025



NOTES:

Flambeau Mining Company

Figure 6

Summary of Dissolved Magnesium Data

2024 Stream C Data Evaluation

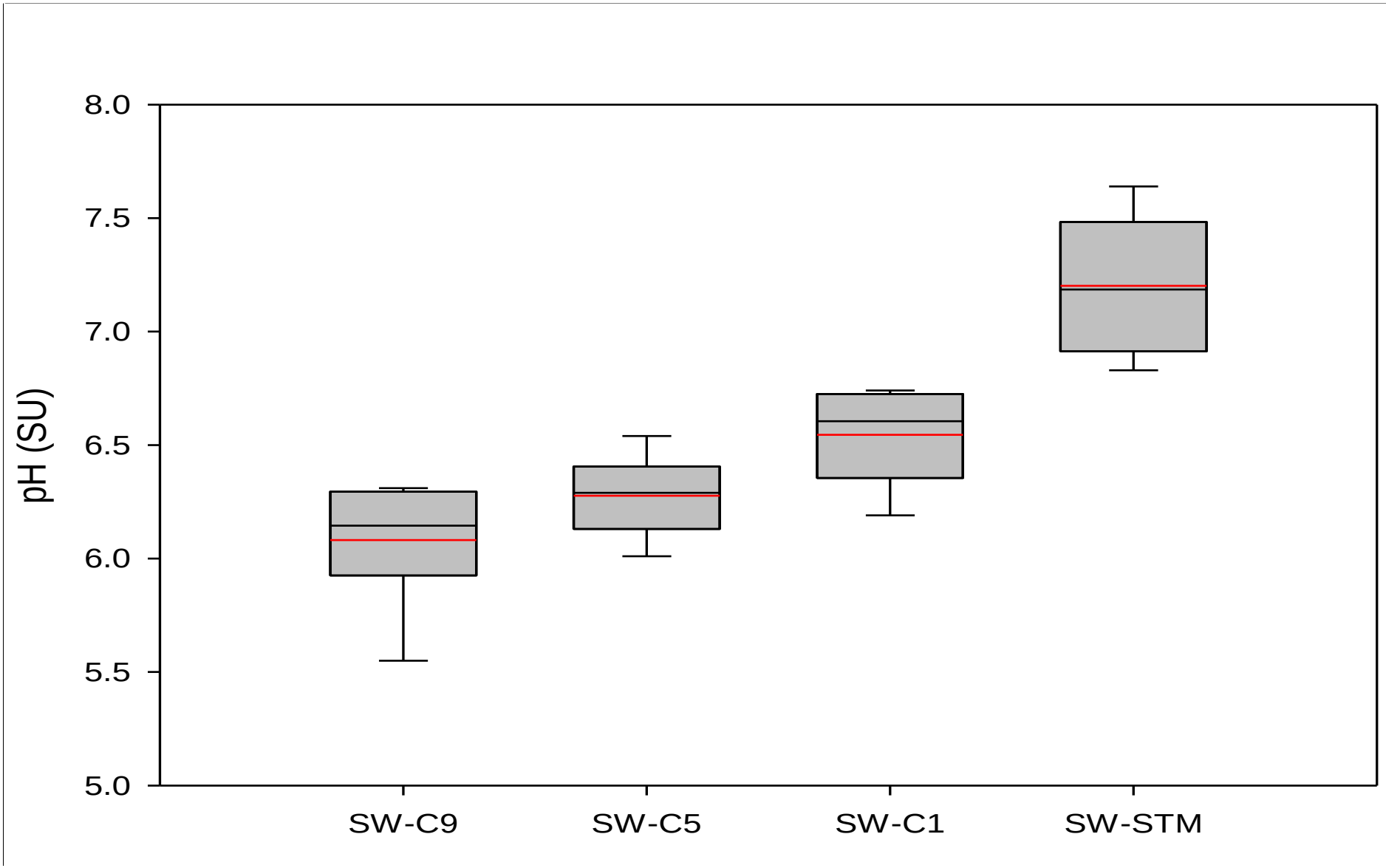
Ladysmith, Wisconsin

Date: February 2025	Revision Date:	
Drawn By: NMG1	Checked By: MN	Project: 17F777.24

Foth

Path: Paste file path here

Date: 2/7/2025



NOTES:

Flambeau Mining Company

Figure 7

Summary of pH Data

2024 Stream C Data Evaluation

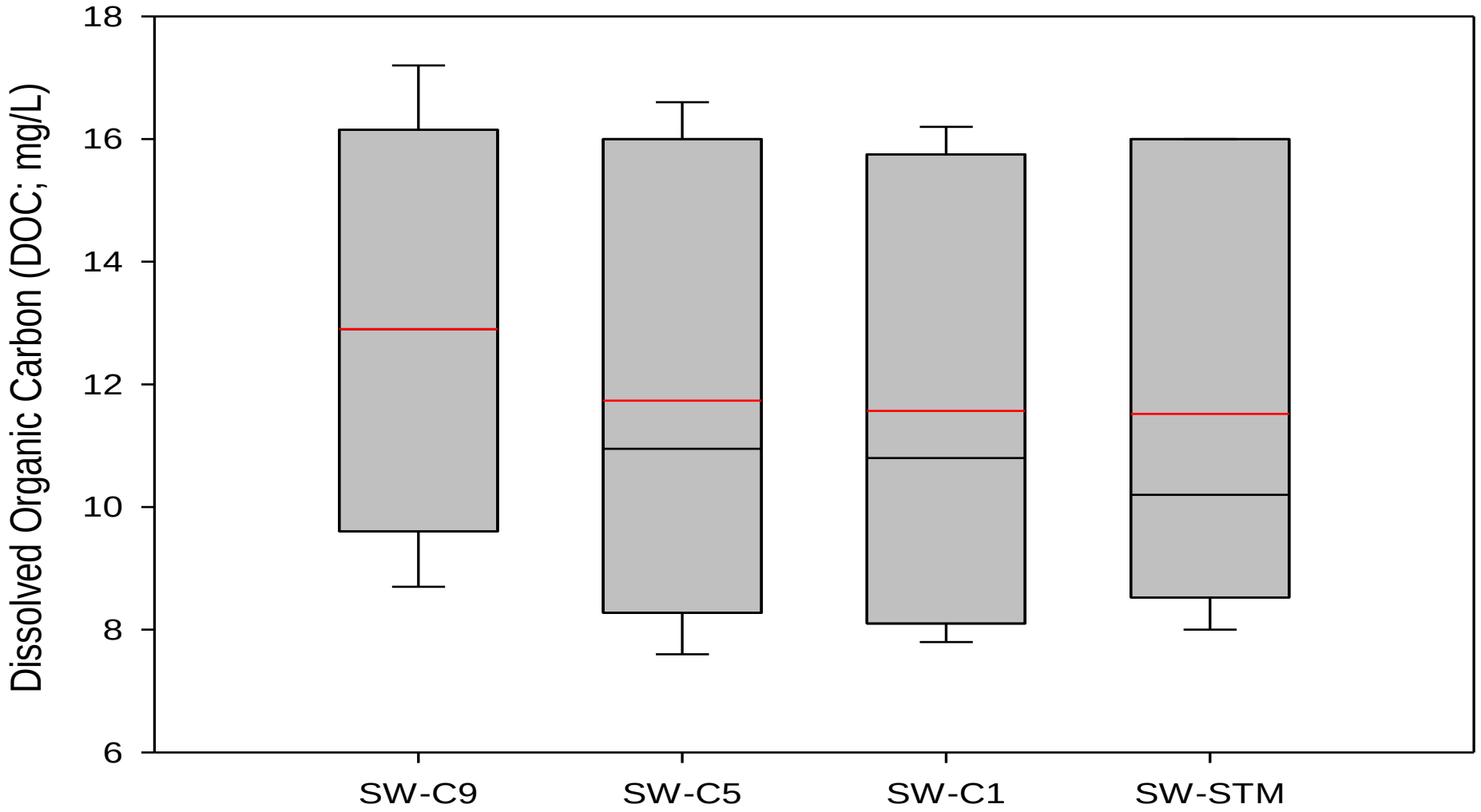
Ladysmith, Wisconsin

Date: February 2025	Revision Date:	
Drawn By: NMG1	Checked By: MN	Project: 17F777.24

Foth

Path: Paste file path here

Date: 2/7/2025



NOTES:

Flambeau Mining Company

Figure 8

Summary of Dissolved Organic Carbon Data

2024 Stream C Data Evaluation

Ladysmith, Wisconsin

Date: February 2025	Revision Date:	
Drawn By: NMG1	Checked By: MN	Project: 17F777.24

Foth

Path: Paste file path here

Date: 2/7/2025

Attachment 1

Flow Inspection Forms

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	9/5/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 76°, Mostly cloudy, 5-10mph northwest wind		

Inspection Notes

Stream C was inspected today with 0.82-inch of precipitation during the week. Small amount of flow at the Copper Park Lane culvert. No continuous flow to the Flambeau River was noted. Pools of ponded water were consistent throughout the waterway.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	9/13/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 80°, Fair, 5-10mph east wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with meter. No continuous flow to the Flambeau River was noted. Pools of ponded water were observed in the Stream C waterway.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	9/23/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 69°, partly cloudy, 5-10mph southeast wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter and there was no continuous flow to the Flambeau River.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	9/30/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 78°, Cloudy, 10-15mph south wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter and there was no continuous flow to the Flambeau River.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	10/7/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 67°, Fair, 9-14mph southwest wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter and there was no continuous flow to the Flambeau River.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	10/14/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 50°, Cloudy, 7-12mph north wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter and there was no continuous flow to the Flambeau River.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	10/21/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 80°, Cloudy, 8-13mph south / southwest wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter and there was no continuous flow to the Flambeau River. Dry conditions.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	10/28/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 72°, Fair, 12-17mph south / southeast wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter and there was no continuous flow to the Flambeau River.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	11/1/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 46°, Fair, 0-5mph south wind		

Inspection Notes

Stream C was inspected today after 0.8 inches of rain on October 31, 2024. Unable to measure flow with a meter. Stream C system is not a capacity with no continuous flow to the Flambeau River.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	11/6/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 44°, Cloudy, 5-10mph northwest wind		

Inspection Notes

Stream C was inspected today after 0.58 inches of rain on November 6, 2024. Unable to measure flow with a meter. Stream C system is not a capacity with no continuous flow to the Flambeau River.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	11/13/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 48°, Fair, 5-10mph east wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter with no continuous flow to the Flambeau River. Conditions still dry following recent precipitation events.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	11/19/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 57°, Cloudy, 10-15mph south wind		

Inspection Notes

Stream C was inspected today with 0.69-inch of precipitation beginning on November 19th. Unable to measure flow with a meter. Stream C system still not a capacity with no continuous flow to the Flambeau River.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	12/3/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 27°, Cloudy, 7-12mph west southwest wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter. No continuous flow to the Flambeau River. Once again, recent precipitation has not saturated the soils and snow cover is now present with overnight freezing conditions.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	12/10/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 27°, Cloudy, 5-10mph west wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter and no continuous flow to the Flambeau River. Stream C system is starting to ice over. Temperatures are starting to drop consistently below freezing – especially in the overnights.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	12/17/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 31°, Cloudy, 5-10mph west wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter and no continuous flow to the Flambeau River. Stream C system is starting to freeze over.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	12/24/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 31°, Cloudy, 5-10mph south wind		

Inspection Notes

Stream C was inspected today. Unable to measure flow with a meter and no continuous flow to the Flambeau River. Stream C system is frozen over.

END OF NOTES

Stream C - Flow Monitoring Inspection Report

Client:	Flambeau Mining Company	**Scope ID**	17F777.24
Project:	Stream C – Flow Monitoring	**Inspected by:**	Jim Engelhardt / Merjent
Date:	12/28/2024	**Prepared by:**	Nick Glander / Foth
Weather:	High of 41°, Cloudy to partly cloudy, 7-12mph west wind		

Inspection Notes

Stream C was inspected today. Precipitation event with 0.89-inches of rain on December 27th. Unable to measure flow with meter. No continuous flow to the Flambeau River. Short period of warm weather and precipitation melted snow, but did not melt ice in the ditches or Steam C system. Monitoring will discontinue due to time of year.

END OF NOTES

Attachment 2

Field Forms – November 2024

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

TECHNICIAN(S) NAME (INITIALS), COMPANY

Jin Engelhardt / Merjent

SUMMARY OF SAMPLING ACTIVITIES

Sample Date(s): 11/21/2024

Activities:

Collected field parameter measurements, and water quality samples for laboratory analysis by Pace Analytical.
Collected field quality control samples for laboratory analysis by Pace Analytical

Weather, Stream Conditions and Comments:
Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

Stream C Samples:	Total Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness
	Dissolved Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness
	Total Alkalinity (EPA310.2), Cl, Sulfate
	Dissolved Alkalinity (EPA310.2), Cl, Sulfate
	DOC
	TSS
	Total Sulfide
	Dissolved Sulfide

Velocity Measurements (collecteed at US end of culverts and at SW-STM near confluence of Flambeau River):

Location:	Velocity (ft/sec)	Depth (ft)
HWY 27 Culvert	None	1.11
Copper Park Lane Culvert	0.6	0.21
SW-STM Confluence	0.4	0.48

FIELD REPORT ATTACHMENTS

Summary of Field Parameters
Summary of Field Quality Control Samples
Field Forms

COMMENTS

The data collected during this event was conducted under the "Stream C Evaluation Work Plan" dated March 10, 2023.

Client: Flambeau Mining Co Project ID: 17F777.24
Project: Flambeau Stream C
Prepared by: Jim Engelhardt/Merjent Date: 11/21/2024
Checked by: NMG1 / Foth Date: 12/2/2024

SUMMARY OF FIELD PARAMETERS

Location	Sample Date	Sample Time	pH (SU)	Specific Conductance (mS/cm)	Temperature (^{0}C)	ORP (mV)	DO (mg/l)	Odor	Turbidity (visual)	Color (visual)
SW-C9	11/21/2024	11:30	6.14	0.064	4.54	133.9	1.44	None	Slight	Stained lt. Brown
SW-C1	11/21/2024	8:30	6.74	0.175	4.15	145.0	1.33	None	Slight	Stained lt. Brown
SW-STM	11/21/2024	8:00	6.94	0.221	3.71	142.1	1.11	None	None	Stained lt. Brown
SW-C5	11/21/2024	9:40	6.27	0.126	4.09	177.2	1.48	None	None	Stained lt. Brown
SW-EB	11/21/2024	10:15	6.91	0.240	3.29	170.2	1.81	Slt. Organic	Slight	Stained lt. Brown
SW-NB	11/21/2024	11:15	6.93	0.307	3.26	159.9	1.83	Slt. Organic	Slight	Stained lt. Brown
SW-NBOUT	11/21/2024	10:40	6.96	0.267	3.34	162.0	1.82	Slt. Organic	Slight	Stained lt. Brown
SW-HWY27W	11/21/2024	11:45	5.71	0.343	4.09	174.1	1.82	Slt. Organic	Slight	Stained lt. Brown
SW-HWY27E	11/21/2024	12:00	6.28	0.039	4.41	151.4	1.69	Slt. Organic	Moderate	Stained lt. Brown
CP-04	11/21/2024	8:45	7.00	0.294	3.11	137.7	1.33	None	Slight	Stained lt. Brown

Note:
ORP = Oxidation Reduction Potential
µmhos/cm = micromhos/centimeter
SU = Standard Unit
mV = Millivolts
°C = Degrees Celsius
NA = not applicable

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

SUMMARY OF FIELD QUALITY CONTROL SAMPLES

Sample ID	Sample Date	Description
SW-EB-DUP_20241121	11/21/2024	Duplicate Taken at SW-EB sampling location

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

FIELD NOTES

Site ID: SW-C9
Date: 11/21/2024
Technician(s) Initials: Jim Engelhardt / Merjent

Equipment: GPS, Multi-parameter probe, Camera, Peristaltic pump, Disposable Filters, Battery

Weather, Stream Conditions and Comments:

Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

#Collected	Filtered (Y/N)	Bottle	Preservative	Parameter
1	N	Plastic 250 mL	HNO_3	TOTAL (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	Y	Plastic 250 mL	HNO_3	Dissolved (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	N	Plastic 250 mL	None	Total Alkalinity, Chloride, Sulfate
1	Y	Plastic 250 mL	None	Dissolved Alkalinity, Chloride, Sulfate
1	N	Plastic 250 mL	None	TSS
1	Y	Amber 125 mL	H2SO4	DOC
1	N	Plastic 500 mL	Zinc Acetate & NaOH	Total Sulfide
1	Y	Plastic 500 mL	Zinc Acetate & NaOH	Dissolved Sulfide

FIELD PARAMETERS

Time	pH (SU)	Specifc Conductance (mS/cm)	Temperature (^{0}C)	Redox Potential (mV)	Dissolved Oxygen (mg/l)	Odor	Turbidity	Color
11:30	6.14	0.064	4.54	133.90	1.44	None	Slight	Stained lt. Brown

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

FIELD NOTES

Site ID: SW-C1
Date: 11/21/2024
Technician(s) Initials: Jim Engelhardt / Merjent

Equipment: GPS, Multi-parameter probe, Camera, Peristaltic pump, Disposable Filters, Battery

Weather, Stream Conditions and Comments:

Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

#Collected	Filtered (Y/N)	Bottle	Preservative	Parameter
1	N	Plastic 250 mL	HNO_3	TOTAL (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	Y	Plastic 250 mL	HNO_3	Dissolved (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	N	Plastic 250 mL	None	Total Alkalinity, Chloride, Sulfate
1	Y	Plastic 250 mL	None	Dissolved Alkalinity, Chloride, Sulfate
1	N	Plastic 250 mL	None	TSS
1	Y	Amber 125 mL	H2SO4	DOC
1	N	Plastic 500 mL	Zinc Acetate & NaOH	Total Sulfide
1	Y	Plastic 500 mL	Zinc Acetate & NaOH	Dissolved Sulfide

FIELD PARAMETERS

Time	pH (SU)	Specifc Conductance (mS/cm)	Temperature (^{0}C)	Redox Potential (mV)	Dissolved Oxygen (mg/l)	Odor	Turbidity	Color
8:30	6.74	0.175	4.15	145.00	1.33	None	Slight	Stained lt. Brown

Note:

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

FIELD NOTES

Site ID: SW-STM
Date: 11/21/2024
Technician(s) Initials: Jim Engelhardt / Merjent

Equipment: GPS, Multi-parameter probe, Camera, Peristaltic pump, Disposable Filters, Battery

Weather, Stream Conditions and Comments:

Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

#Collected	Filtered (Y/N)	Bottle	Preservative	Parameter
1	N	Plastic 250 mL	HNO_3	TOTAL (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	Y	Plastic 250 mL	HNO_3	Dissolved (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	N	Plastic 250 mL	None	Total Alkalinity, Chloride, Sulfate
1	Y	Plastic 250 mL	None	Dissolved Alkalinity, Chloride, Sulfate
1	N	Plastic 250 mL	None	TSS
1	Y	Amber 125 mL	H2SO4	DOC
1	N	Plastic 500 mL	Zinc Acetate & NaOH	Total Sulfide
1	Y	Plastic 500 mL	Zinc Acetate & NaOH	Dissolved Sulfide

FIELD PARAMETERS

Time	pH (SU)	Specifc Conductance (mS/cm)	Temperature (^{0}C)	Redox Potential (mV)	Dissolved Oxygen (mg/l)	Odor	Turbidity	Color
8:00	6.94	0.221	3.71	142.10	1.11	None	None	Stained lt. Brown

Note:

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

FIELD NOTES

Site ID: SW-C5
Date: 11/21/2024
Technician(s) Initials: Jim Engelhardt / Merjent

Equipment: GPS, Multi-parameter probe, Camera, Peristaltic pump, Disposable Filters, Battery

Weather, Stream Conditions and Comments:

Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

#Collected	Filtered (Y/N)	Bottle	Preservative	Parameter
1	N	Plastic 250 mL	HNO_3	TOTAL (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	Y	Plastic 250 mL	HNO_3	Dissolved (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	N	Plastic 250 mL	None	Total Alkalinity, Chloride, Sulfate
1	Y	Plastic 250 mL	None	Dissolved Alkalinity, Chloride, Sulfate
1	N	Plastic 250 mL	None	TSS
1	Y	Amber 125 mL	H2SO4	DOC
1	N	Plastic 500 mL	Zinc Acetate & NaOH	Total Sulfide
1	Y	Plastic 500 mL	Zinc Acetate & NaOH	Dissolved Sulfide

FIELD PARAMETERS

Time	pH (SU)	Specifc Conductance (mS/cm)	Temperature (^{0}C)	Redox Potential (mV)	Dissolved Oxygen (mg/l)	Odor	Turbidity	Color
9:40	6.27	0.126	4.09	177.20	1.48	None	None	Stained lt. Brown

Note:

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

FIELD NOTES

Site ID: SW-EB
Date: 11/21/2024
Technician(s) Initials: Jim Engelhardt / Merjent

Equipment: GPS, Multi-parameter probe, Camera, Peristaltic pump, Disposable Filters, Battery

Weather, Stream Conditions and Comments:

Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

#Collected	Filtered (Y/N)	Bottle	Preservative	Parameter
1	N	Plastic 250 mL	HNO_3	TOTAL (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	Y	Plastic 250 mL	HNO_3	Dissolved (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	N	Plastic 250 mL	None	Total Alkalinity, Chloride, Sulfate
1	Y	Plastic 250 mL	None	Dissolved Alkalinity, Chloride, Sulfate
1	N	Plastic 250 mL	None	TSS
1	Y	Amber 125 mL	H2SO4	DOC
1	N	Plastic 500 mL	Zinc Acetate & NaOH	Total Sulfide
1	Y	Plastic 500 mL	Zinc Acetate & NaOH	Dissolved Sulfide

FIELD PARAMETERS

Time	pH (SU)	Specifc Conductance (mS/cm)	Temperature (^{0}C)	Redox Potential (mV)	Dissolved Oxygen (mg/l)	Odor	Turbidity	Color
10:15	6.91	0.240	3.29	170.20	1.81	Slt. Organic	Slight	Stained lt. Brown

Note:

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

FIELD NOTES

Site ID: SW-NBOUT
Date: 11/21/2024
Technician(s) Initials: Jim Engelhardt / Merjent

Equipment: GPS, Multi-parameter probe, Camera, Peristaltic pump, Disposable Filters, Battery

Weather, Stream Conditions and Comments:

Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

#Collected	Filtered (Y/N)	Bottle	Preservative	Parameter
1	N	Plastic 250 mL	HNO_3	TOTAL (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	Y	Plastic 250 mL	HNO_3	Dissolved (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	N	Plastic 250 mL	None	Total Alkalinity, Chloride, Sulfate
1	Y	Plastic 250 mL	None	Dissolved Alkalinity, Chloride, Sulfate
1	N	Plastic 250 mL	None	TSS
1	Y	Amber 125 mL	H2SO4	DOC
1	N	Plastic 500 mL	Zinc Acetate & NaOH	Total Sulfide
1	Y	Plastic 500 mL	Zinc Acetate & NaOH	Dissolved Sulfide

FIELD PARAMETERS

Time	pH (SU)	Specifc Conductance (mS/cm)	Temperature (^{0}C)	Redox Potential (mV)	Dissolved Oxygen (mg/l)	Odor	Turbidity	Color
10:40	6.96	0.267	3.34	162.00	1.82	Slt. Organic	Slight	Stained lt. Brown

Note:

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

FIELD NOTES

Site ID: SW-NB
Date: 11/21/2024
Technician(s) Initials: Jim Engelhardt / Merjent

Equipment: GPS, Multi-parameter probe, Camera, Peristaltic pump, Disposable Filters, Battery

Weather, Stream Conditions and Comments:

Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

#Collected	Filtered (Y/N)	Bottle	Preservative	Parameter
1	N	Plastic 250 mL	HNO_3	TOTAL (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	Y	Plastic 250 mL	HNO_3	Dissolved (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	N	Plastic 250 mL	None	Total Alkalinity, Chloride, Sulfate
1	Y	Plastic 250 mL	None	Dissolved Alkalinity, Chloride, Sulfate
1	N	Plastic 250 mL	None	TSS
1	Y	Amber 125 mL	H2SO4	DOC
1	N	Plastic 500 mL	Zinc Acetate & NaOH	Total Sulfide
1	Y	Plastic 500 mL	Zinc Acetate & NaOH	Dissolved Sulfide

FIELD PARAMETERS

Time	pH (SU)	Specifc Conductance (mS/cm)	Temperature (^{0}C)	Redox Potential (mV)	Dissolved Oxygen (mg/l)	Odor	Turbidity	Color
11:15	6.93	0.307	3.26	159.90	1.83	Slt. Organic	Slight	Stained lt. Brown

Note:

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

FIELD NOTES

Site ID: SW-HWY27W
Date: 11/21/2024
Technician(s) Initials: Jim Engelhardt / Merjent

Equipment: GPS, Multi-parameter probe, Camera, Peristaltic pump, Disposable Filters, Battery

Weather, Stream Conditions and Comments:

Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

#Collected	Filtered (Y/N)	Bottle	Preservative	Parameter
1	N	Plastic 250 mL	HNO_3	TOTAL (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	Y	Plastic 250 mL	HNO_3	Dissolved (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	N	Plastic 250 mL	None	Total Alkalinity, Chloride, Sulfate
1	Y	Plastic 250 mL	None	Dissolved Alkalinity, Chloride, Sulfate
1	N	Plastic 250 mL	None	TSS
1	Y	Amber 125 mL	H2SO4	DOC
1	N	Plastic 500 mL	Zinc Acetate & NaOH	Total Sulfide
1	Y	Plastic 500 mL	Zinc Acetate & NaOH	Dissolved Sulfide

FIELD PARAMETERS

Time	pH (SU)	Specifc Conductance (mS/cm)	Temperature (^{0}C)	Redox Potential (mV)	Dissolved Oxygen (mg/l)	Odor	Turbidity	Color
11:45	5.71	0.343	4.09	174.10	1.82	Slt. Organic	Slight	Stained lt. Brown

Note:

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

FIELD NOTES

Site ID: SW-HWY27E
Date: 11/21/2024
Technician(s) Initials: Jim Engelhardt / Merjent

Equipment: GPS, Multi-parameter probe, Camera, Peristaltic pump, Disposable Filters, Battery

Weather, Stream Conditions and Comments:

Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

#Collected	Filtered (Y/N)	Bottle	Preservative	Parameter
1	N	Plastic 250 mL	HNO_3	TOTAL (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	Y	Plastic 250 mL	HNO_3	Dissolved (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	N	Plastic 250 mL	None	Total Alkalinity, Chloride, Sulfate
1	Y	Plastic 250 mL	None	Dissolved Alkalinity, Chloride, Sulfate
1	N	Plastic 250 mL	None	TSS
1	Y	Amber 125 mL	H2SO4	DOC
1	N	Plastic 500 mL	Zinc Acetate & NaOH	Total Sulfide
1	Y	Plastic 500 mL	Zinc Acetate & NaOH	Dissolved Sulfide

FIELD PARAMETERS

Time	pH (SU)	Specifc Conductance (mS/cm)	Temperature (^{0}C)	Redox Potential (mV)	Dissolved Oxygen (mg/l)	Odor	Turbidity	Color
12:00	6.28	0.039	4.41	151.40	1.69	Slt. Organic	Moderate	Stained lt. Brown

Note:

Client:	Flambeau Mining Co	Project ID:	17F777.24
Project:	Flambeau Stream C		
Prepared by:	Jim Engelhardt/Merjent	Date:	11/21/2024
Checked by:	NMG1 / Foth	Date:	12/2/2024

FIELD NOTES

Site ID: CP-04
Date: 11/21/2024
Technician(s) Initials: Jim Engelhardt / Merjent

Equipment: GPS, Multi-parameter probe, Camera, Peristaltic pump, Disposable Filters, Battery

Weather, Stream Conditions and Comments:

Temp: High of 45 degrees Fahrenheit, Cloudy, 10-15 mph Northwest Wind.

LABORATORY ANALYTICAL PARAMETERS

#Collected	Filtered (Y/N)	Bottle	Preservative	Parameter
1	N	Plastic 250 mL	HNO_3	TOTAL (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	Y	Plastic 250 mL	HNO_3	Dissolved (Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness)
1	N	Plastic 250 mL	None	Total Alkalinity, Chloride, Sulfate
1	Y	Plastic 250 mL	None	Dissolved Alkalinity, Chloride, Sulfate
1	N	Plastic 250 mL	None	TSS
1	Y	Amber 125 mL	H2SO4	DOC
1	N	Plastic 500 mL	Zinc Acetate & NaOH	Total Sulfide
1	Y	Plastic 500 mL	Zinc Acetate & NaOH	Dissolved Sulfide

FIELD PARAMETERS

Time	pH (SU)	Specifc Conductance (mS/cm)	Temperature (^{0}C)	Redox Potential (mV)	Dissolved Oxygen (mg/l)	Odor	Turbidity	Color
8:45	7.00	0.294	3.11	137.70	1.33	None	Slight	Stained lt. Brown

Note:

Attachment 3

Pace Laboratory Analytical Reports

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

December 10, 2024

Nick Glander
Foth Infrastructure & Environment, LLC
2121 Innovation Court
Suite 300
De Pere, WI 54115

RE: Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Dear Nick Glander:

Enclosed are the analytical results for sample(s) received by the laboratory on November 22, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod Noltemeyer

Tod Noltemeyer
tod.noltemeyer@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: MARK CIARDELLI, Foth Infrastructure & Environment, LLC
Krystal Clark, Foth Infrastructure & Environment
SHARON KOZICKI, Foth Infrastructure & Environment, LLC

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-21-8
Virginia VELAP Certification ID: 11873
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-21-00008
Federal Fish & Wildlife Permit #: 51774A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40287968001	**SW-C9_20241121**	Water	11/21/24 11:30	11/22/24 12:10
40287968002	**SW-C1_20241121**	Water	11/21/24 08:30	11/22/24 12:10
40287968003	**SW-STM_20241121**	Water	11/21/24 08:00	11/22/24 12:10
40287968004	**SW-C5_20241121**	Water	11/21/24 09:40	11/22/24 12:10
40287968005	**SW-EB_20241121**	Water	11/21/24 10:15	11/22/24 12:10
40287968006	**SW-NBOUT_20241121**	Water	11/21/24 10:40	11/22/24 12:10
40287968007	**SW-NB_20241121**	Water	11/21/24 11:15	11/22/24 12:10
40287968008	**SW-HWY27W_20241121**	Water	11/21/24 11:45	11/22/24 12:10
40287968009	**SW-HWY27E_20241121**	Water	11/21/24 12:00	11/22/24 12:10
40287968010	**CP-04_20241121**	Water	11/21/24 08:45	11/22/24 12:10
40287968011	**SW-EB-DUP_20241121**	Water	11/21/24 10:15	11/22/24 12:10

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40287968001	**SW-C9_20241121**	EPA 6020B	KXS	9
		EPA 6020B	KXS	9
		SM 2540D	LMB	1
		SM 4500-S F (2000)	LMB	1
		SM 4500-S F (2000)	LMB	1
		EPA 300.0	HMB	2
		EPA 300.0	HMB	2
		EPA 310.2	MT	1
		EPA 310.2	MT	1
		SM 5310C	TJJ	1
40287968002	**SW-C1_20241121**	EPA 6020B	KXS	9
		EPA 6020B	KXS	9
		SM 2540D	LMB	1
		SM 4500-S F (2000)	LMB	1
		SM 4500-S F (2000)	LMB	1
		EPA 300.0	HMB	2
		EPA 300.0	HMB	2
		EPA 310.2	MT	1
		EPA 310.2	MT	1
		SM 5310C	TJJ	1
40287968003	**SW-STM_20241121**	EPA 6020B	KXS	9
		EPA 6020B	KXS	9
		SM 2540D	LMB	1
		SM 4500-S F (2000)	LMB	1
		SM 4500-S F (2000)	LMB	1
		EPA 300.0	HMB	2
		EPA 300.0	HMB	2
		EPA 310.2	MT	1
		EPA 310.2	MT	1
		SM 5310C	TJJ	1
40287968004	**SW-C5_20241121**	EPA 6020B	KXS	9
		EPA 6020B	KXS	9
		SM 2540D	LMB	1
		SM 4500-S F (2000)	LMB	1
		SM 4500-S F (2000)	LMB	1
		EPA 300.0	HMB	2
		EPA 300.0	HMB	2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 310.2	MT	1
		EPA 310.2	MT	1
		SM 5310C	TJJ	1
40287968005	**SW-EB_20241121**	EPA 6020B	KXS	3
		EPA 6020B	KXS	3
		SM 5310C	TJJ	1
40287968006	**SW-NBOUT_20241121**	EPA 6020B	KXS	3
		EPA 6020B	KXS	3
		SM 5310C	TJJ	1
40287968007	**SW-NB_20241121**	EPA 6020B	KXS	3
		EPA 6020B	KXS	3
		SM 5310C	TJJ	1
40287968008	**SW-HWY27W_20241121**	EPA 6020B	KXS	3
		EPA 6020B	KXS	3
		SM 5310C	TJJ	1
40287968009	**SW-HWY27E_20241121**	EPA 6020B	KXS	3
		EPA 6020B	KXS	3
		SM 5310C	TJJ	1
40287968010	**CP-04_20241121**	EPA 6020B	KXS	3
		EPA 6020B	KXS	3
		SM 5310C	TJJ	1
40287968011	**SW-EB-DUP_20241121**	EPA 6020B	KXS	3
		EPA 6020B	KXS	3
		SM 5310C	TJJ	1

PASI-G = Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Method: **EPA 6020B**
Description: 6020B MET ICPMS
Client: Foth Infrastructure & Environment
Date: December 10, 2024

General Information:
11 samples were analyzed for EPA 6020B by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Method: **EPA 6020B**
Description: 6020B MET ICPMS, Dissolved
Client: Foth Infrastructure & Environment
Date: December 10, 2024

General Information:
11 samples were analyzed for EPA 6020B by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Method: **SM 2540D**
Description: 2540D Total Suspended Solids
Client: Foth Infrastructure & Environment
Date: December 10, 2024

General Information:
4 samples were analyzed for SM 2540D by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 491214

R1: RPD value was outside control limits.
- DUP (Lab ID: 2812481)
  - Total Suspended Solids

Additional Comments:

Analyte Comments:

QC Batch: 491214

PP: The mass of dried residue obtained did not meet the test method requirements based on volume used.
- SW-C1_20241121 (Lab ID: 40287968002)
  - Total Suspended Solids
- SW-STM_20241121 (Lab ID: 40287968003)
  - Total Suspended Solids

T3: Insufficient sample received from client to perform the analysis per EPA method requirements.
- SW-C1_20241121 (Lab ID: 40287968002)
  - Total Suspended Solids
- SW-STM_20241121 (Lab ID: 40287968003)
  - Total Suspended Solids

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Method: **SM 4500-S F (2000)**
Description: 4500S2F Sulfide, Iodometric
Client: Foth Infrastructure & Environment
Date: December 10, 2024

General Information:
4 samples were analyzed for SM 4500-S F (2000) by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 491283

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40287897001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2813035)
  - Sulfide
- MSD (Lab ID: 2813036)
  - Sulfide

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Method: **SM 4500-S F (2000)**
Description: 4500S2F Sulfide,Diss Iodometrc
Client: Foth Infrastructure & Environment
Date: December 10, 2024

General Information:
4 samples were analyzed for SM 4500-S F (2000) by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: Foth Infrastructure & Environment
Date: December 10, 2024

General Information:
4 samples were analyzed for EPA 300.0 by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 491771

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40288034010,40288077003

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2815187)
  - Sulfate

Additional Comments:

Analyte Comments:

QC Batch: 491771

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- SW-C1_20241121 (Lab ID: 40287968002)
  - Sulfate
- SW-C5_20241121 (Lab ID: 40287968004)
  - Sulfate
- SW-C9_20241121 (Lab ID: 40287968001)
  - Chloride
  - Sulfate
- SW-STM_20241121 (Lab ID: 40287968003)
  - Sulfate

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Method: **EPA 300.0**
Description: 300.0 IC Anions, Dissolved
Client: Foth Infrastructure & Environment
Date: December 10, 2024

General Information:
4 samples were analyzed for EPA 300.0 by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 491770

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- SW-C1_20241121 (Lab ID: 40287968002)
  - Sulfate, Dissolved
- SW-C5_20241121 (Lab ID: 40287968004)
  - Sulfate, Dissolved
- SW-C9_20241121 (Lab ID: 40287968001)
  - Sulfate, Dissolved
- SW-STM_20241121 (Lab ID: 40287968003)
  - Sulfate, Dissolved

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Method: **EPA 310.2**
Description: 310.2 Alkalinity
Client: Foth Infrastructure & Environment
Date: December 10, 2024

General Information:
4 samples were analyzed for EPA 310.2 by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Method: **EPA 310.2**
Description: 310.2 Alkalinity, Dissolved
Client: Foth Infrastructure & Environment
Date: December 10, 2024

General Information:
4 samples were analyzed for EPA 310.2 by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Method: **SM 5310C**
Description: 5310C Dissolved Organic Carbon
Client: Foth Infrastructure & Environment
Date: December 10, 2024

General Information:
11 samples were analyzed for SM 5310C by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-C9_20241121 **Lab ID: 40287968001** Collected: 11/21/24 11:30 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Calcium	**2340**	ug/L	254	76.2	1	11/26/24 07:24	11/27/24 21:50	7440-70-2	
Copper	**18.1**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 21:50	7440-50-8	
Iron	**2250**	ug/L	250	58.0	1	11/26/24 07:24	11/27/24 21:50	7439-89-6	
Magnesium	**976**	ug/L	250	31.2	1	11/26/24 07:24	11/27/24 21:50	7439-95-4	
Manganese	**59.2**	ug/L	4.0	1.2	1	11/26/24 07:24	11/27/24 21:50	7439-96-5	
Potassium	**2020**	ug/L	789	237	1	11/26/24 07:24	11/27/24 21:50	7440-09-7	
Sodium	**7290**	ug/L	250	42.0	1	11/26/24 07:24	11/27/24 21:50	7440-23-5	
Total Hardness by 2340B	**9.9**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 21:50		
Zinc	**23.8J**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 21:50	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Calcium, Dissolved	**2550**	ug/L	254	76.2	1	11/26/24 07:24	12/03/24 20:53	7440-70-2	D9
Copper, Dissolved	**15.2**	ug/L	6.4	1.9	1	11/26/24 07:24	12/03/24 20:53	7440-50-8	
Iron, Dissolved	**1200**	ug/L	250	58.0	1	11/26/24 07:24	12/03/24 20:53	7439-89-6	
Magnesium, Dissolved	**858**	ug/L	250	31.2	1	11/26/24 07:24	12/03/24 20:53	7439-95-4	
Manganese, Dissolved	**46.6**	ug/L	4.0	1.2	1	11/26/24 07:24	12/03/24 20:53	7439-96-5	
Potassium, Dissolved	**1960**	ug/L	789	237	1	11/26/24 07:24	12/03/24 20:53	7440-09-7	
Sodium, Dissolved	**8100**	ug/L	250	42.0	1	11/26/24 07:24	12/03/24 20:53	7440-23-5	D9
Total Hardness by 2340B, Dissolved	**9.9**	mg/L	1.7	0.32	1	11/26/24 07:24	12/03/24 20:53		
Zinc, Dissolved	**19.6J**	ug/L	34.4	10.3	1	11/26/24 07:24	12/03/24 20:53	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Green Bay								
Total Suspended Solids	**4.3**	mg/L	1.0	0.48	1		11/26/24 13:34		
4500S2F Sulfide, Iodometric	Analytical Method: SM 4500-S F (2000) Pace Analytical Services - Green Bay								
Sulfide	**<1.2**	mg/L	4.0	1.2	1		11/27/24 16:23		
4500S2F Sulfide,Diss Iodometrc	Analytical Method: SM 4500-S F (2000) Pace Analytical Services - Green Bay								
Sulfide, Dissolved	**<1.2**	mg/L	4.0	1.2	1		11/27/24 15:56		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**9.9J**	mg/L	10.0	3.0	5		12/06/24 17:07	16887-00-6	D3
Sulfate	**4.0J**	mg/L	10.0	2.2	5		12/06/24 17:07	14808-79-8	D3
300.0 IC Anions, Dissolved	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride, Dissolved	**10.1**	mg/L	10.0	3.0	5		12/06/24 18:14	16887-00-6	D9
Sulfate, Dissolved	**4.6J**	mg/L	10.0	2.2	5		12/06/24 18:14	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-C9_20241121 **Lab ID: 40287968001** Collected: 11/21/24 11:30 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
310.2 Alkalinity	Analytical Method: EPA 310.2 Pace Analytical Services - Green Bay								
Alkalinity, Total as CaCO3	**14.2J**	mg/L	25.0	7.4	1		12/02/24 14:00		
310.2 Alkalinity, Dissolved	Analytical Method: EPA 310.2 Pace Analytical Services - Green Bay								
Alkalinity, Total as CaCO3, Dissolved	**<7.4**	mg/L	25.0	7.4	1		12/02/24 12:17		
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**9.9**	mg/L	0.50	0.19	1		12/03/24 02:49		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-C1_20241121 **Lab ID: 40287968002** Collected: 11/21/24 08:30 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Calcium	**11800**	ug/L	254	76.2	1	11/26/24 07:24	11/27/24 20:26	7440-70-2	
Copper	**14.7**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 20:26	7440-50-8	
Iron	**1280**	ug/L	250	58.0	1	11/26/24 07:24	11/27/24 20:26	7439-89-6	
Magnesium	**5100**	ug/L	250	31.2	1	11/26/24 07:24	11/27/24 20:26	7439-95-4	
Manganese	**64.4**	ug/L	4.0	1.2	1	11/26/24 07:24	11/27/24 20:26	7439-96-5	
Potassium	**2150**	ug/L	789	237	1	11/26/24 07:24	11/27/24 20:26	7440-09-7	
Sodium	**14900**	ug/L	250	42.0	1	11/26/24 07:24	11/27/24 20:26	7440-23-5	
Total Hardness by 2340B	**50.4**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 20:26		
Zinc	**19.9J**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 20:26	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Calcium, Dissolved	**12600**	ug/L	254	76.2	1	11/26/24 07:24	12/03/24 20:24	7440-70-2	D9
Copper, Dissolved	**11.8**	ug/L	6.4	1.9	1	11/26/24 07:24	12/03/24 20:24	7440-50-8	
Iron, Dissolved	**307**	ug/L	250	58.0	1	11/26/24 07:24	12/03/24 20:24	7439-89-6	
Magnesium, Dissolved	**5390**	ug/L	250	31.2	1	11/26/24 07:24	12/03/24 20:24	7439-95-4	D9
Manganese, Dissolved	**52.2**	ug/L	4.0	1.2	1	11/26/24 07:24	12/03/24 20:24	7439-96-5	
Potassium, Dissolved	**2260**	ug/L	789	237	1	11/26/24 07:24	12/03/24 20:24	7440-09-7	D9
Sodium, Dissolved	**17000**	ug/L	250	42.0	1	11/26/24 07:24	12/03/24 20:24	7440-23-5	D9
Total Hardness by 2340B, Dissolved	**53.7**	mg/L	1.7	0.32	1	11/26/24 07:24	12/03/24 20:24		
Zinc, Dissolved	**19.2J**	ug/L	34.4	10.3	1	11/26/24 07:24	12/03/24 20:24	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Green Bay								
Total Suspended Solids	**1.8**	mg/L	1.0	0.48	1		11/26/24 13:34		PP,T3
4500S2F Sulfide, Iodometric	Analytical Method: SM 4500-S F (2000) Pace Analytical Services - Green Bay								
Sulfide	**<1.2**	mg/L	4.0	1.2	1		11/27/24 16:24		
4500S2F Sulfide,Diss Iodometrc	Analytical Method: SM 4500-S F (2000) Pace Analytical Services - Green Bay								
Sulfide, Dissolved	**<1.2**	mg/L	4.0	1.2	1		11/27/24 16:03		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**35.5**	mg/L	10.0	3.0	5		12/06/24 17:18	16887-00-6	
Sulfate	**8.5J**	mg/L	10.0	2.2	5		12/06/24 17:18	14808-79-8	D3
300.0 IC Anions, Dissolved	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride, Dissolved	**37.4**	mg/L	10.0	3.0	5		12/06/24 18:25	16887-00-6	D9
Sulfate, Dissolved	**8.8J**	mg/L	10.0	2.2	5		12/06/24 18:25	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-C1_20241121 **Lab ID: 40287968002** Collected: 11/21/24 08:30 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
310.2 Alkalinity	Analytical Method: EPA 310.2 Pace Analytical Services - Green Bay								
Alkalinity, Total as CaCO3	**24.2J**	mg/L	25.0	7.4	1		12/02/24 14:01		
310.2 Alkalinity, Dissolved	Analytical Method: EPA 310.2 Pace Analytical Services - Green Bay								
Alkalinity, Total as CaCO3, Dissolved	**25.3**	mg/L	25.0	7.4	1		12/02/24 12:20		
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**8.2**	mg/L	0.50	0.19	1		12/03/24 03:06		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-STM_20241121 **Lab ID: 40287968003** Collected: 11/21/24 08:00 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Calcium	**13800**	ug/L	254	76.2	1	11/26/24 07:24	11/27/24 21:00	7440-70-2	
Copper	**8.8**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 21:00	7440-50-8	
Iron	**904**	ug/L	250	58.0	1	11/26/24 07:24	11/27/24 21:00	7439-89-6	
Magnesium	**6020**	ug/L	250	31.2	1	11/26/24 07:24	11/27/24 21:00	7439-95-4	
Manganese	**15.0**	ug/L	4.0	1.2	1	11/26/24 07:24	11/27/24 21:00	7439-96-5	
Potassium	**2170**	ug/L	789	237	1	11/26/24 07:24	11/27/24 21:00	7440-09-7	
Sodium	**18800**	ug/L	250	42.0	1	11/26/24 07:24	11/27/24 21:00	7440-23-5	
Total Hardness by 2340B	**59.2**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 21:00		
Zinc	**<10.3**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 21:00	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Calcium, Dissolved	**14500**	ug/L	254	76.2	1	11/26/24 07:24	12/03/24 20:40	7440-70-2	D9
Copper, Dissolved	**8.3**	ug/L	6.4	1.9	1	11/26/24 07:24	12/03/24 20:40	7440-50-8	
Iron, Dissolved	**194J**	ug/L	250	58.0	1	11/26/24 07:24	12/03/24 20:40	7439-89-6	
Magnesium, Dissolved	**6400**	ug/L	250	31.2	1	11/26/24 07:24	12/03/24 20:40	7439-95-4	D9
Manganese, Dissolved	**5.7**	ug/L	4.0	1.2	1	11/26/24 07:24	12/03/24 20:40	7439-96-5	
Potassium, Dissolved	**2260**	ug/L	789	237	1	11/26/24 07:24	12/03/24 20:40	7440-09-7	D9
Sodium, Dissolved	**21200**	ug/L	250	42.0	1	11/26/24 07:24	12/03/24 20:40	7440-23-5	D9
Total Hardness by 2340B, Dissolved	**62.6**	mg/L	1.7	0.32	1	11/26/24 07:24	12/03/24 20:40		
Zinc, Dissolved	**<10.3**	ug/L	34.4	10.3	1	11/26/24 07:24	12/03/24 20:40	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Green Bay								
Total Suspended Solids	**0.72J**	mg/L	1.0	0.49	1		11/26/24 13:34		PP,T3
4500S2F Sulfide, Iodometric	Analytical Method: SM 4500-S F (2000) Pace Analytical Services - Green Bay								
Sulfide	**<1.2**	mg/L	4.0	1.2	1		11/27/24 16:25		
4500S2F Sulfide,Diss Iodometrc	Analytical Method: SM 4500-S F (2000) Pace Analytical Services - Green Bay								
Sulfide, Dissolved	**<1.2**	mg/L	4.0	1.2	1		11/27/24 16:04		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**51.0**	mg/L	10.0	3.0	5		12/06/24 18:02	16887-00-6	
Sulfate	**8.7J**	mg/L	10.0	2.2	5		12/06/24 18:02	14808-79-8	D3
300.0 IC Anions, Dissolved	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride, Dissolved	**53.4**	mg/L	10.0	3.0	5		12/06/24 18:36	16887-00-6	D9
Sulfate, Dissolved	**8.9J**	mg/L	10.0	2.2	5		12/06/24 18:36	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-STM_20241121 **Lab ID: 40287968003** Collected: 11/21/24 08:00 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
310.2 Alkalinity	Analytical Method: EPA 310.2 Pace Analytical Services - Green Bay								
Alkalinity, Total as CaCO3	**22.1J**	mg/L	25.0	7.4	1		12/02/24 14:02		
310.2 Alkalinity, Dissolved	Analytical Method: EPA 310.2 Pace Analytical Services - Green Bay								
Alkalinity, Total as CaCO3, Dissolved	**22.2J**	mg/L	25.0	7.4	1		12/02/24 12:21		
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**8.0**	mg/L	0.50	0.19	1		12/03/24 03:23		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-C5_20241121 **Lab ID: 40287968004** Collected: 11/21/24 09:40 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Calcium	**6930**	ug/L	254	76.2	1	11/26/24 07:24	11/27/24 21:08	7440-70-2	
Copper	**15.8**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 21:08	7440-50-8	
Iron	**1300**	ug/L	250	58.0	1	11/26/24 07:24	11/27/24 21:08	7439-89-6	
Magnesium	**3260**	ug/L	250	31.2	1	11/26/24 07:24	11/27/24 21:08	7439-95-4	
Manganese	**30.3**	ug/L	4.0	1.2	1	11/26/24 07:24	11/27/24 21:08	7439-96-5	
Potassium	**2120**	ug/L	789	237	1	11/26/24 07:24	11/27/24 21:08	7440-09-7	
Sodium	**12000**	ug/L	250	42.0	1	11/26/24 07:24	11/27/24 21:08	7440-23-5	
Total Hardness by 2340B	**30.7**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 21:08		
Zinc	**23.4J**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 21:08	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Calcium, Dissolved	**7370**	ug/L	254	76.2	1	11/26/24 07:24	12/03/24 20:49	7440-70-2	D9
Copper, Dissolved	**12.9**	ug/L	6.4	1.9	1	11/26/24 07:24	12/03/24 20:49	7440-50-8	
Iron, Dissolved	**329**	ug/L	250	58.0	1	11/26/24 07:24	12/03/24 20:49	7439-89-6	
Magnesium, Dissolved	**3420**	ug/L	250	31.2	1	11/26/24 07:24	12/03/24 20:49	7439-95-4	D9
Manganese, Dissolved	**16.0**	ug/L	4.0	1.2	1	11/26/24 07:24	12/03/24 20:49	7439-96-5	
Potassium, Dissolved	**2190**	ug/L	789	237	1	11/26/24 07:24	12/03/24 20:49	7440-09-7	D9
Sodium, Dissolved	**13500**	ug/L	250	42.0	1	11/26/24 07:24	12/03/24 20:49	7440-23-5	D9
Total Hardness by 2340B, Dissolved	**32.5**	mg/L	1.7	0.32	1	11/26/24 07:24	12/03/24 20:49		
Zinc, Dissolved	**22.8J**	ug/L	34.4	10.3	1	11/26/24 07:24	12/03/24 20:49	7440-66-6	
2540D Total Suspended Solids	Analytical Method: SM 2540D Pace Analytical Services - Green Bay								
Total Suspended Solids	**1.2**	mg/L	1.0	0.48	1		11/26/24 13:34		
4500S2F Sulfide, Iodometric	Analytical Method: SM 4500-S F (2000) Pace Analytical Services - Green Bay								
Sulfide	**<1.2**	mg/L	4.0	1.2	1		11/27/24 16:26		
4500S2F Sulfide,Diss Iodometrc	Analytical Method: SM 4500-S F (2000) Pace Analytical Services - Green Bay								
Sulfide, Dissolved	**<1.2**	mg/L	4.0	1.2	1		11/27/24 16:09		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**24.4**	mg/L	10.0	3.0	5		12/06/24 18:12	16887-00-6	
Sulfate	**7.8J**	mg/L	10.0	2.2	5		12/06/24 18:12	14808-79-8	D3
300.0 IC Anions, Dissolved	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride, Dissolved	**25.3**	mg/L	10.0	3.0	5		12/06/24 18:46	16887-00-6	D9
Sulfate, Dissolved	**8.2J**	mg/L	10.0	2.2	5		12/06/24 18:46	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-C5_20241121 **Lab ID: 40287968004** Collected: 11/21/24 09:40 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
310.2 Alkalinity	Analytical Method: EPA 310.2 Pace Analytical Services - Green Bay								
Alkalinity, Total as CaCO3	**14.4J**	mg/L	25.0	7.4	1		12/02/24 14:03		
310.2 Alkalinity, Dissolved	Analytical Method: EPA 310.2 Pace Analytical Services - Green Bay								
Alkalinity, Total as CaCO3, Dissolved	**14.9J**	mg/L	25.0	7.4	1		12/02/24 12:22		
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**8.5**	mg/L	0.50	0.19	1		12/03/24 03:39		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-EB_20241121 **Lab ID: 40287968005** Collected: 11/21/24 10:15 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper	**7.8**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 20:51	7440-50-8	
Total Hardness by 2340B	**60.7**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 20:51		
Zinc	**<10.3**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 20:51	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper, Dissolved	**6.3J**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 17:40	7440-50-8	
Total Hardness by 2340B, Dissolved	**58.2**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 17:40		
Zinc, Dissolved	**<10.3**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 17:40	7440-66-6	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**7.4**	mg/L	0.50	0.19	1		12/03/24 03:55		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-NBOUT_20241121 **Lab ID: 40287968006** Collected: 11/21/24 10:40 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper	**6.3J**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 21:12	7440-50-8	
Total Hardness by 2340B	**60.4**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 21:12		
Zinc	**12.4J**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 21:12	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper, Dissolved	**5.1J**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 17:57	7440-50-8	
Total Hardness by 2340B, Dissolved	**58.4**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 17:57		
Zinc, Dissolved	**<10.3**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 17:57	7440-66-6	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**7.2**	mg/L	0.50	0.19	1		12/03/24 04:13		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-NB_20241121 **Lab ID: 40287968007** Collected: 11/21/24 11:15 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper	**5.6J**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 21:16	7440-50-8	
Total Hardness by 2340B	**64.8**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 21:16		
Zinc	**32.3J**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 21:16	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper, Dissolved	**4.6J**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 18:01	7440-50-8	
Total Hardness by 2340B, Dissolved	**60.2**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 18:01		
Zinc, Dissolved	**33.8J**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 18:01	7440-66-6	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**5.6**	mg/L	0.50	0.19	1		12/03/24 04:29		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-HWY27W_20241121 **Lab ID: 40287968008** Collected: 11/21/24 11:45 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper	**9.5**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 21:20	7440-50-8	
Total Hardness by 2340B	**10.3**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 21:20		
Zinc	**19.2J**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 21:20	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper, Dissolved	**6.6**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 18:05	7440-50-8	
Total Hardness by 2340B, Dissolved	**8.5**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 18:05		
Zinc, Dissolved	**16.4J**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 18:05	7440-66-6	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**7.8**	mg/L	0.50	0.19	1		12/03/24 05:06		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-HWY27E_20241121 **Lab ID: 40287968009** Collected: 11/21/24 12:00 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper	**13.3**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 21:25	7440-50-8	
Total Hardness by 2340B	**44.9**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 21:25		
Zinc	**99.3**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 21:25	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper, Dissolved	**9.8**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 18:10	7440-50-8	
Total Hardness by 2340B, Dissolved	**41.4**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 18:10		
Zinc, Dissolved	**92.8**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 18:10	7440-66-6	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**6.9**	mg/L	0.50	0.19	1		12/03/24 05:24		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: CP-04_20241121 **Lab ID: 40287968010** Collected: 11/21/24 08:45 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper	**30.5**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 21:29	7440-50-8	
Total Hardness by 2340B	**64.2**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 21:29		
Zinc	**<10.3**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 21:29	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper, Dissolved	**21.8**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 18:14	7440-50-8	
Total Hardness by 2340B, Dissolved	**59.6**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 18:14		
Zinc, Dissolved	**<10.3**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 18:14	7440-66-6	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**12.4**	mg/L	0.50	0.19	1		12/03/24 05:40		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Sample: SW-EB-DUP_20241121 **Lab ID: 40287968011** Collected: 11/21/24 10:15 Received: 11/22/24 12:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper	**8.0**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 20:55	7440-50-8	
Total Hardness by 2340B	**61.6**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 20:55		
Zinc	**<10.3**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 20:55	7440-66-6	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Copper, Dissolved	**5.3J**	ug/L	6.4	1.9	1	11/26/24 07:24	11/27/24 18:26	7440-50-8	
Total Hardness by 2340B, Dissolved	**56.7**	mg/L	1.7	0.32	1	11/26/24 07:24	11/27/24 18:26		
Zinc, Dissolved	**<10.3**	ug/L	34.4	10.3	1	11/26/24 07:24	11/27/24 18:26	7440-66-6	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C Pace Analytical Services - Green Bay								
Dissolved Organic Carbon	**7.5**	mg/L	0.50	0.19	1		12/03/24 05:56		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

QC Batch: 491154
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004, 40287968005, 40287968006, 40287968007, 40287968008, 40287968009, 40287968010, 40287968011

METHOD BLANK: 2812230 Matrix: Water
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004, 40287968005, 40287968006, 40287968007, 40287968008, 40287968009, 40287968010, 40287968011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	ug/L	<76.2	254	11/27/24 20:01	
Copper	ug/L	<1.9	6.4	11/27/24 20:01	
Iron	ug/L	<58.0	250	11/27/24 20:01	
Magnesium	ug/L	<31.2	250	11/27/24 20:01	
Manganese	ug/L	<1.2	4.0	11/27/24 20:01	
Potassium	ug/L	<237	789	11/27/24 20:01	
Sodium	ug/L	<42.0	250	11/27/24 20:01	
Total Hardness by 2340B	mg/L	<0.32	1.7	11/27/24 20:01	
Zinc	ug/L	<10.3	34.4	11/27/24 20:01	

LABORATORY CONTROL SAMPLE: 2812231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	9550	95	80-120	
Copper	ug/L	250	245	98	80-120	
Iron	ug/L	10000	9920	99	80-120	
Magnesium	ug/L	10000	10200	102	80-120	
Manganese	ug/L	250	246	98	80-120	
Potassium	ug/L	10000	9890	99	80-120	
Sodium	ug/L	10000	9750	97	80-120	
Total Hardness by 2340B	mg/L		66.0			
Zinc	ug/L	250	255	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2812232 2812233

Parameter	Units	40287968002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	11800	10000	10000	21300	21100	95	93	75-125	1	20	
Copper	ug/L	14.7	250	250	257	259	97	98	75-125	1	20	
Iron	ug/L	1280	10000	10000	11300	11400	100	101	75-125	1	20	
Magnesium	ug/L	5100	10000	10000	15100	15400	100	103	75-125	2	20	
Manganese	ug/L	64.4	250	250	308	313	97	99	75-125	1	20	
Potassium	ug/L	2150	10000	10000	12100	12200	99	101	75-125	1	20	
Sodium	ug/L	14900	10000	10000	24700	24900	98	100	75-125	1	20	
Total Hardness by 2340B	mg/L	50.4			115	116				1	20	
Zinc	ug/L	19.9J	250	250	271	274	100	102	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

QC Batch: 491153
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET Dissolved
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004, 40287968005, 40287968006, 40287968007, 40287968008, 40287968009, 40287968010, 40287968011

METHOD BLANK: 2812225 Matrix: Water
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004, 40287968005, 40287968006, 40287968007, 40287968008, 40287968009, 40287968010, 40287968011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium, Dissolved	ug/L	<76.2	254	12/03/24 20:15	
Copper, Dissolved	ug/L	<1.9	6.4	12/03/24 20:15	
Iron, Dissolved	ug/L	<58.0	250	12/03/24 20:15	
Magnesium, Dissolved	ug/L	<31.2	250	12/03/24 20:15	
Manganese, Dissolved	ug/L	<1.2	4.0	12/03/24 20:15	
Potassium, Dissolved	ug/L	<237	789	12/03/24 20:15	
Sodium, Dissolved	ug/L	<42.0	250	12/03/24 20:15	
Total Hardness by 2340B, Dissolved	mg/L	<0.32	1.7	12/03/24 20:15	
Zinc, Dissolved	ug/L	<10.3	34.4	12/03/24 20:15	

LABORATORY CONTROL SAMPLE: 2812226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	ug/L	10000	10400	104	80-120	
Copper, Dissolved	ug/L	250	262	105	80-120	
Iron, Dissolved	ug/L	10000	10600	106	80-120	
Magnesium, Dissolved	ug/L	10000	10800	108	80-120	
Manganese, Dissolved	ug/L	250	272	109	80-120	
Potassium, Dissolved	ug/L	10000	10800	108	80-120	
Sodium, Dissolved	ug/L	10000	10800	108	80-120	
Total Hardness by 2340B, Dissolved	mg/L		70.4			
Zinc, Dissolved	ug/L	250	266	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2812227 2812228

Parameter	Units	40287968002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	ug/L	12600	10000	10000	22900	23100	103	105	75-125	1	20	
Copper, Dissolved	ug/L	11.8	250	250	270	269	103	103	75-125	0	20	
Iron, Dissolved	ug/L	307	10000	10000	10800	10800	105	105	75-125	0	20	
Magnesium, Dissolved	ug/L	5390	10000	10000	16200	16200	108	108	75-125	0	20	
Manganese, Dissolved	ug/L	52.2	250	250	322	321	108	107	75-125	0	20	
Potassium, Dissolved	ug/L	2260	10000	10000	13000	12800	108	106	75-125	2	20	
Sodium, Dissolved	ug/L	17000	10000	10000	28100	28100	110	111	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2812227 2812228

Parameter	Units	40287968002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Hardness by 2340B, Dissolved	mg/L	53.7			124	125				0	20	
Zinc, Dissolved	ug/L	19.2J	250	250	284	283	106	106	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

QC Batch: 491214
QC Batch Method: SM 2540D
Analysis Method: SM 2540D
Analysis Description: 2540D Total Suspended Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

METHOD BLANK: 2812479 Matrix: Water
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	<0.48	1.0	11/26/24 13:33	

LABORATORY CONTROL SAMPLE: 2812480

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	107	90.0	84	80-120	

SAMPLE DUPLICATE: 2812481

Parameter	Units	40287922001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	17.6	14.8	17	10	R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

QC Batch: 491284
QC Batch Method: SM 4500-S F (2000)
Analysis Method: SM 4500-S F (2000)
Analysis Description: 4500S2F Sulfide, Dissolved Iodometric
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

METHOD BLANK: 2813037 Matrix: Water
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	<1.2	4.0	11/27/24 15:51	

LABORATORY CONTROL SAMPLE: 2813038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	42.8	38.8	91	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2813039 2813040

Parameter	Units	40287968001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	<1.2	42.8	42.8	40.8	38.0	95	89	80-120	7	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

QC Batch: 491283
QC Batch Method: SM 4500-S F (2000)
Analysis Method: SM 4500-S F (2000)
Analysis Description: 4500S2F Sulfide, Iodometric
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

METHOD BLANK: 2813033 Matrix: Water
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	<1.2	4.0	11/27/24 16:13	

LABORATORY CONTROL SAMPLE: 2813034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	42	40.0	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2813035 2813036

Parameter	Units	40287897001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	mg/L	<1.2	42	42	24.8	27.2	59	64	80-120	9	10	M0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

QC Batch: 491770
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions,Dissolved
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

METHOD BLANK: 2815179 Matrix: Water
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.59	2.0	12/06/24 14:44	
Sulfate	mg/L	<0.44	2.0	12/06/24 14:44	

LABORATORY CONTROL SAMPLE: 2815180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.8	104	90-110	
Sulfate	mg/L	20	21.1	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2815181 2815182

Parameter	Units	40287876001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	0.88J	20	20	21.8	21.9	104	105	90-110	0	15	
Sulfate	mg/L	3.5	20	20	25.0	25.0	108	108	90-110	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2815183 2815184

Parameter	Units	40287971007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	7.2J	100	100	112	114	105	107	90-110	2	15	
Sulfate	mg/L	40.7	100	100	147	150	107	109	90-110	2	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

QC Batch: 491771
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

METHOD BLANK: 2815185 Matrix: Water
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.59	2.0	12/06/24 14:32	
Sulfate	mg/L	<0.44	2.0	12/06/24 14:32	

LABORATORY CONTROL SAMPLE: 2815186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.0	100	90-110	
Sulfate	mg/L	20	20.9	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2815187 2815188

Parameter	Units	40288077003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	<0.59	20	20	21.3	20.6	104	101	90-110	3	15	
Sulfate	mg/L	<0.44	20	20	22.8	21.9	114	109	90-110	4	15	M0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2815189 2815190

Parameter	Units	40288034010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	446	400	400	839	866	98	105	90-110	3	15	
Sulfate	mg/L	19.1	100	100	126	125	106	106	90-110	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

QC Batch: 491435 Analysis Method: EPA 310.2
QC Batch Method: EPA 310.2 Analysis Description: 310.2 Alkalinity
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

METHOD BLANK: 2813917 Matrix: Water
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<7.4	25.0	12/02/24 11:15	

LABORATORY CONTROL SAMPLE: 2813918

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	107	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2813919 2813920

Parameter	Units	40287801021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	382	100	100	491	485	109	103	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2813921 2813922

Parameter	Units	40287801024 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	334	100	100	433	429	99	95	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

QC Batch: 491438 | Analysis Method: EPA 310.2
QC Batch Method: EPA 310.2 | Analysis Description: 310.2 Alkalinity, Dissolved
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

METHOD BLANK: 2813932 Matrix: Water
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3, Dissolved	mg/L	<7.4	25.0	12/02/24 12:15	

LABORATORY CONTROL SAMPLE: 2813933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3, Dissolved	mg/L	100	105	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2813934 2813935

Parameter	Units	40287968001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3, Dissolved	mg/L	<7.4	100	100	110	113	105	107	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2813936 2813937

Parameter	Units	40287971016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3, Dissolved	mg/L	409	200	200	612	606	101	99	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

QC Batch: 491518
QC Batch Method: SM 5310C
Analysis Method: SM 5310C
Analysis Description: 5310C Dissolved Organic Carbon
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004, 40287968005, 40287968006, 40287968007, 40287968008, 40287968009, 40287968010, 40287968011

METHOD BLANK: 2814148 Matrix: Water
Associated Lab Samples: 40287968001, 40287968002, 40287968003, 40287968004, 40287968005, 40287968006, 40287968007, 40287968008, 40287968009, 40287968010, 40287968011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	<0.19	0.50	12/02/24 23:16	

LABORATORY CONTROL SAMPLE: 2814149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	12.5	12.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2814150 2814151

Parameter	Units	10716404001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	1.1	6	6	6.9	6.9	95	96	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2814152 2814153

Parameter	Units	10716232001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dissolved Organic Carbon	mg/L	1.3	6	6	6.9	7.0	94	95	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - The reported result is an estimated value.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

DL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Analyte was not detected and is reported as less than the LOD or as defined by the customer.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D9	Dissolved result is greater than the total. Data is within laboratory control limits.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
PP	The mass of dried residue obtained did not meet the test method requirements based on volume used.
R1	RPD value was outside control limits.
T3	Insufficient sample received from client to perform the analysis per EPA method requirements.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40287968001	**SW-C9_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968002	**SW-C1_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968003	**SW-STM_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968004	**SW-C5_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968005	**SW-EB_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968006	**SW-NBOUT_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968007	**SW-NB_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968008	**SW-HWY27W_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968009	**SW-HWY27E_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968010	**CP-04_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968011	**SW-EB-DUP_20241121**	EPA 3010A	491154	EPA 6020B	491260
40287968001	**SW-C9_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968002	**SW-C1_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968003	**SW-STM_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968004	**SW-C5_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968005	**SW-EB_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968006	**SW-NBOUT_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968007	**SW-NB_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968008	**SW-HWY27W_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968009	**SW-HWY27E_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968010	**CP-04_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968011	**SW-EB-DUP_20241121**	EPA 3010A	491153	EPA 6020B	491259
40287968001	**SW-C9_20241121**	SM 2540D	491214		
40287968002	**SW-C1_20241121**	SM 2540D	491214		
40287968003	**SW-STM_20241121**	SM 2540D	491214		
40287968004	**SW-C5_20241121**	SM 2540D	491214		
40287968001	**SW-C9_20241121**	SM 4500-S F (2000)	491283		
40287968002	**SW-C1_20241121**	SM 4500-S F (2000)	491283		
40287968003	**SW-STM_20241121**	SM 4500-S F (2000)	491283		
40287968004	**SW-C5_20241121**	SM 4500-S F (2000)	491283		
40287968001	**SW-C9_20241121**	SM 4500-S F (2000)	491284		
40287968002	**SW-C1_20241121**	SM 4500-S F (2000)	491284		
40287968003	**SW-STM_20241121**	SM 4500-S F (2000)	491284		
40287968004	**SW-C5_20241121**	SM 4500-S F (2000)	491284		
40287968001	**SW-C9_20241121**	EPA 300.0	491771		
40287968002	**SW-C1_20241121**	EPA 300.0	491771		
40287968003	**SW-STM_20241121**	EPA 300.0	491771		
40287968004	**SW-C5_20241121**	EPA 300.0	491771		
40287968001	**SW-C9_20241121**	EPA 300.0	491770		
40287968002	**SW-C1_20241121**	EPA 300.0	491770		
40287968003	**SW-STM_20241121**	EPA 300.0	491770		
40287968004	**SW-C5_20241121**	EPA 300.0	491770		
40287968001	**SW-C9_20241121**	EPA 310.2	491435		
40287968002	**SW-C1_20241121**	EPA 310.2	491435		
40287968003	**SW-STM_20241121**	EPA 310.2	491435		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FMC-2024_04 FLAMBEAU MINE CO.
Pace Project No.: 40287968

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40287968004	**SW-C5_20241121**	EPA 310.2	491435		
40287968001	**SW-C9_20241121**	EPA 310.2	491438		
40287968002	**SW-C1_20241121**	EPA 310.2	491438		
40287968003	**SW-STM_20241121**	EPA 310.2	491438		
40287968004	**SW-C5_20241121**	EPA 310.2	491438		
40287968001	**SW-C9_20241121**	SM 5310C	491518		
40287968002	**SW-C1_20241121**	SM 5310C	491518		
40287968003	**SW-STM_20241121**	SM 5310C	491518		
40287968004	**SW-C5_20241121**	SM 5310C	491518		
40287968005	**SW-EB_20241121**	SM 5310C	491518		
40287968006	**SW-NBOUT_20241121**	SM 5310C	491518		
40287968007	**SW-NB_20241121**	SM 5310C	491518		
40287968008	**SW-HWY27W_20241121**	SM 5310C	491518		
40287968009	**SW-HWY27E_20241121**	SM 5310C	491518		
40287968010	**CP-04_20241121**	SM 5310C	491518		
40287968011	**SW-EB-DUP_20241121**	SM 5310C	491518		

4028968

Foth

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Page: of 1 of 1
Cooler # 1 of 2

COC # FMC-2024_04

Required Ship to Lab:
Lab Name: Pace Analytical Services
Address:
1241 Bellevue Street - Suite 9, Green Bay, WI
Lab PM: Tod Noltemeyer
Phone/Fax: (608) 232-3300
Lab PM email: Tod.No...@pacelabs.com
Applicable Lab Quote #:

Required Project Information:
Facility ID#: Flambeau Mine Co.
Task Code#: FMC-2024_04
Site Address: --
City: LADYSMITH State: WI
Project Contact: Mark Ciardelli
Phone/Fax: 920-496-6656
Email: Mark.Ciardelli@foth.com

Required Invoice Information:
Send Invoice to: Accounting
Address: 2121 Innovation Court P.O. Box 5126, De Pere, WI.
City/State: De Pere, WI. 54115 Ph #: 920-497-2500
17F777.23-07-73
Send EDD to: Nick Glander
CC Hardcopy report to: Sharon Kozicki, Nick Glander
CC electronic copy report to: Sharon.Kozicki@foth.com; nick.glander@foth.com

TAT: Standard 10 day [X] Rush [ ] Mark One
If Rush, Date due
QC level Required: Standard [ ] [ ] [X] Special [ ] Mark one
Lab Project ID (lab use)

Valid Matrix Codes

MATRIX		MATRIX	
DRINKING WATER	WP	SURFACE WATER	WS
GROUND WATER	WG	WATER QC	WQ
WASTE WATER	WW	SLUDGE	SL
FREE PRODUCT	LP	RINSEATE	WH
SOIL	SO	LAB LEACHATE -	
OIL	OL	SPLP	LLB
WIPE	SW	LAB LEACHATE -	
AMBIENT AIR	AA	TCLP	LLT
SVE AIR	AE		
SOIL GAS	GS		

ITEM #	SAMPLE ID (Samples IDs MUST BE UNIQUE)	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	SAMPLE DATE	SAMPLE TIME (Military)	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Zinc Acetate & NaOH	Total Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness	Dissolved Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness	Total Alkalinity, Cl, Sulfate	Dissolved Alkalinity, Cl, Sulfate	DOC	TSS	Total Sulfide	Total Cu, Zn and Hardness	Dissolved Cu, Zn and Hardness	Dissolved Sulfide	Comments/ Lab Sample I.D.
	Filtered (Y/N)														N	Y	N	Y	Y	N	N	N	Y	Y	
1	SW-C9_20241121	WS	G	11/21/2024	1130	8	3	1	2					2	X	X	X	X	X	X	X			X	001
2	SW-C1_20241121	WS	G	11/21/2024	0830	8	3	1	2					2	X	X	X	X	X	X	X			X	002
3	SW-STM_20241121	WS	G	11/21/2024	0800	8	3	1	2					2	X	X	X	X	X	X	X			X	003
4	SW-C5_20241121	WS	G	11/21/2024	0940	8	3	1	2					2	X	X	X	X	X	X	X			X	004
5	SW-EB-20241121	WS	G	11/21/2024	1015	3		1	2										X			X	X		005
6	SW-NBOUT_20241121	WS	G	11/21/2024	1040	3		1	2										X			X	X		006
7	SW-NB_20241121	WS	G	11/21/2024	1115	3		1	2										X			X	X		007
8	SW-HWY27W_20241121	WS	G	11/21/2024	1145	3		1	2										X			X	X		008
9	SW-HWY27E_20241121	WS	G	11/21/2024	1200	3		1	2										X			X	X		009
10	CP-04_20241121	WS	G	11/21/2024	0845	3		1	2										X			X	X		010
11	SW-EB-DUP_20241121	WS	G	11/21/2024	1015	3		1	2										X			X	X		011

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Jim Engelhardt/Merjent	21-Nov	1300		11/21/24	1300
[illegible] (Foth)	11/22/24	800	E. Fol Pace	11/22/24	0945
E. Fol Pace	11/22/24	1210		11/22/24	1210

Sample Receipt Conditions

Temp in °C	Samples on Ice?	Sample Intact?	Trip Blank?
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
1.0	(Y)N	(Y)N	(Y)N
	Y/N	Y/N	Y/N

SHIPPING METHOD (mark as appropriate): UPS COURIER FEDEX US MAIL Other
SAMPLER NAME AND SIGNATURE: Jim Engelhardt
SIGNATURE of SAMPLER: DATE Signed: 11/21/2024 Time: 1300

Include Equis EDD's
***Required Information for electronic data deliverable.**

https://merjent1-my.sharepoint.com/personal/jim_engelhardt_merjent_com/Documents/Desktop/Flambeau Mine Monitoring/COC/2024_FMC_StreamC_COC_202411212024_FMC_StreamC_COC_20241121COC
PACE SW-Stream C

Foth

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

402879968

Page: of 1 of 1
Cooler # 2 of 2

COC # FMC-2024_04

Required Ship to Lab:

Lab Name: Pace Analytical Services
Address:
1241 Bellevue Street - Suite 9, Green Bay, WI
Lab PM: Tod Noltemeyer
Phone/Fax: (608) 232-3300
Lab PM email: Tod.Noltemeyer@pacelabs.com
Applicable Lab Quote #:

Required Project Information:

*Facility ID #: Flambeau Mine Co.
*Task Code #: FMC-2024_04
Site Address: --
City: LADYSMITH State: WI
Project Contact: Mark Ciardelli
Phone/Fax: 920-496-6656
Email: Mark.Ciardelli@foth.com

Required Invoice Information:

Send Invoice to: Accounting
Address: 2121 Innovation Court P.O. Box 5126, De Pere, WI.
City/State: De Pere, WI. 54115 Ph #: 920-497-2500
17F777.23-07-73
Send EDD to: Nick Glander
CC Hardcopy report to: Sharon Kozicki, Nick Glander
CC electronic copy report to: Sharon.Kozicki@foth.com; nick.glander@foth.com

TAT: Standard 10 day [X] Rush [ ] Mark One
If Rush, Date due
QC level Required: Standard [ ] [ ] [X] Special [ ] Mark one
Lab Project ID (lab use)

Valid Matrix Codes: DRINKING WATER WP; GROUND WATER WG; WASTE WATER WW; FREE PRODUCT LF; SOIL SO; OIL OL; WIPE SW; AMBIENT AIR AA; SVE AIR AE; SOIL GAS SG; SURFACE WATER WS; WATER DC WD; SLUDGE SL; RINSEATE WH; LAB LEACHATE - SPLP LLS; LAB LEACHATE - TCLP LLT

Requested Analyses

ITEM #	*SAMPLE ID Samples IDs MUST BE UNIQUE	*MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	SAMPLE DATE	SAMPLE TIME (Military)	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Zinc Acetate & NaOH	Filtered (Y/N): N	Y	N	Y	Y	N	N	N	Y	Y	Comments/ Lab Sample I.D.
															Total Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness	Dissolved Ca, Cu, Fe, Mg, Mn, K, Na, Zn, Hardness	Total Alkalinity, Cl, Sulfate	Dissolved Alkalinity, Cl, Sulfate	DOC	TSS	Total Sulfide	Total Cu, Zn and Hardness	Dissolved Cu, Zn and Hardness	Dissolved Sulfide	
1	SW-C9_20241121	WS	G	11/21/2024	1130	8	3	1	2					2	X	X	X	X	X	X	X			X	
2	SW-C1_20241121	WS	G	11/21/2024	1030	8	3	1	2					2	X	X	X	X	X	X	X			X	
3	SW-STM_20241121	WS	G	11/21/2024	0900	8	3	1	2					2	X	X	X	X	X	X	X			X	
4	SW-C5_20241121	WS	G	11/21/2024	0940	8	3	1	2					2	X	X	X	X	X	X	X			X	
5	SW-EB-20241121	WS	G	11/21/2024	1015	3		1	2										X			X	X		
6	SW-NBOUT_20241121	WS	G	11/21/2024	1040	3		1	2										X			X	X		
7	SW-NB_20241121	WS	G	11/21/2024	1115	3		1	2										X			X	X		
8	SW-HWY27W_20241121	WS	G	11/21/2024	1145	3		1	2										X			X	X		
9	SW-HWY27E_20241121	WS	G	11/21/2024	1200	3		1	2										X			X	X		
10	CP-04_20241121	WS	G	11/21/2024	0845	3		1	2										X			X	X		
11	SW-EB-DUP_20241121	WS	G	11/21/2024	1015	3		1	2										X			X	X		

Additional Comments/Special Instructions:

Include Equis EDD's

*Required information for electronic data deliverable.

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Jim Engelhardt/Merjent	21-Nov	1300	(FOTH)	11/22/24	1300
(FOTH)	11/22/24	800	Pace	11/22/24	0945
Pace	11/22/24	1210		11/22/24	1210

Sample Receipt Conditions

Temp in °C	Samples on Ice?	Sample Intact?	Trip Blank?
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
1.0	(Y)N	(Y)N	Y/(N)
	Y/N	Y/N	Y/N

SHIPPING METHOD (mark as appropriate): UPS COURIER FEDEX US MAIL Other

SAMPLER NAME AND SIGNATURE: Jim Engelhardt
SIGNATURE of SAMPLER:
DATE Signed: 11/21/2024 Time:

https://merjent1-my.sharepoint.com/personal/jim_engelhardt_merjent_com/Documents/Desktop/Flambeau Mine Monitoring/COC/2024_FMC_StreamC_COC_202411212024_FMC_StreamC_COC_20241121COC
PACE SW-Stream C

Sample Preservation Receipt Form

Client Name: Foth Project # 40287968

All containers needing preservation have been checked and noted below: ☑Yes ☐No ☐N/A Initial when completed: MH Date/ Time:

Lab Lot# of pH paper: 10D0144 Lab Std #ID of preservation (if pH adjusted):

	Glass							Plastic						Vials						Jars				General				VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
Pace Lab #	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN 1	GN 2							
001				1				1	2		2		2																	X		X		2.5 / 5
002				1				1	2		2		2																	X		X		2.5 / 5
003				1				1	2		2		2																	X		X		2.5 / 5
004				1				1	2		2		2																	X		X		2.5 / 5
005				1							2																					X		2.5 / 5
006				1							2																					X		2.5 / 5
007				1							2																					X		2.5 / 5
008				1							2																					X		2.5 / 5
009				1							2																					X		2.5 / 5
010				1							2																					X		2.5 / 5
011				1							2																					X		2.5 / 5
012																																		2.5 / 5
013																																		2.5 / 5
014																																		2.5 / 5
015																																		2.5 / 5
016																																		2.5 / 5
017																																		2.5 / 5
018																																		2.5 / 5
019																																		2.5 / 5
020																																		2.5 / 5

MH 4/22/24

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: DOC Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☑N/A *If yes look in headspace column

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4
BP2Z	500 mL plastic NaOH + Zn

VG9C	40 mL clear ascorbic w/ HCl
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN 1	
GN 2	

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40287968

40287968

Client Name: Foth

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☑ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used SR - 120 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 1.0 /Corr: 1.0

Temp Blank Present: (☑) yes ☑ no mnt 11/22/24 **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Person examining contents:
Date: 11/22/24 /Initials: mnt

Labeled By Initials: GF

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☑Yes ☐No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume:		8.
For Analysis: ☑Yes ☐No MS/MSD:	☐Yes ☑No ☐N/A	
Correct Containers Used:	☑Yes ☐No	9.
Correct Type: Pace Green Bay, Pace IR, Non-Pace		
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☑Yes ☐No ☐N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:	W	
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi

Attachment 4

Cove Environmental WET Test Report Forms

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT FORM

GENERAL INFORMATION

FACILITY:	**Foth Infrastructure & Env.**	WPDES PERMIT NO.:	N/A
OUTFALL NO.:	Various	LABORATORY NAME:	Cove Environmental
RECEIVING WATER:	N/A		

SAMPLE INFORMATION

SAMPLE NO.	SAMPLE COLLECTION: SAMPLE TYPE	SAMPLE COLLECTION: BEGINNING DATE	SAMPLE COLLECTION: END DATE	SAMPLE TEMP °C: COLLECTION	SAMPLE TEMP °C: AT LAB	pH at LAB	HAND DELIVER? (If Yes, ≤ 4 hr?)	HOLD TIME ≤ 36 HR?	SAMPLE ACCEPTABLE?
1	SW-STM		11/21/2024		3.1	6.61	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No
2	SW-C1		11/21/2024		3.2	6.37	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No
3	SW-C5		11/21/2024		3.1	6.15	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No
4	SW-C9		11/21/2024		3.0	5.75	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No
							☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
							☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

Describe any unusual conditions during sampling that may influence test results. (see Part 6.1.2 of the Methods Manual for examples.)

COMMENTS:

TEST INFORMATION

	ACUTE			CHRONIC		
Date Test Initiated:						
Tests Are For:						
Date of Initial Test:						
ZID/IWC Info.:	ZID Compliance Concentration =	**100.00**		Instream Waste Concentration =		
Dilution Water:	*C.dubia*	FHM	Other	*C.dubia*	FHM	Other
	☐ RW	☐ RW	☐ RW	☐ RW	☐ RW	☐ RW
	☑ LW	☑ LW	☐ LW	☐ LW	☐ LW	☐ LW

QA/QC CONDITIONS

	ACUTE	CHRONIC
Temperatures maintained during test? (20 ± 1°C or 25 ± 1°C)	☑ Yes ☐ No	☐ Yes ☐ No
Dissolved oxygen ≥ 4.0 mg/l throughout test?	☑ Yes ☐ No	☐ Yes ☐ No
Effluent pH maintained within 6.0 - 9.0 s.u. throughout test?	☑ Yes ☐ No	☐ Yes ☐ No
Concurrent or monthly reference tests within acceptable limits?	☑ Yes ☐ No	☐ Yes ☐ No
Tests conducted in a carbon dioxide atmosphere throughout test?	☑ Yes ☐ No	☐ Yes ☐ No
Were effluent samples modified prior to testing? (ex. filtration, aeration, chem addition)	☐ Yes ☑ No	☐ Yes ☐ No

COMMENTS:

WATER CHEMISTRY (All values reported in mg/L, except pH)

SAMPLE TYPE	NO.	HARDNESS	ALKALINITY	TOTAL AMMONIA	pH (s.u.) After Warming	TOTAL RESIDUAL CHLORINE
Effluent	SW-STM	64	30	<1	6.7	Not detected
	SW-C1	56	30	<1	6.4	Not detected
	SW-C5	40	24	<1	6.4	Not detected
	SW-C9	12	10	<1	5.8	Not detected
Lab Water	MH18524	108	62	N/A	7.4	Not detected

COMMENTS: **TRC measured via DPD powder packets, per WI protocol.**

ACUTE TEST CONTROL PERFORMANCE

RECEIVING WATER CONTROLS		LAB WATER CONTROLS	
Fathead Minnow	*Ceriodaphnia dubia*	Fathead Minnow	*Ceriodaphnia dubia*
Survival ≥ 90% ☑ Yes ☐ No	Survival ≥ 90% ☑ Yes ☐ No	Survival ≥ 90% ☑ Yes ☐ No	Survival ≥ 90% ☑ Yes ☐ No

COMMENTS:

ACUTE TEST DATA

SPECIES	EFFLUENT TREATMENT	Percent Survival By Replicate				Mean Percent Survival
		1	2			
Fathead Minnow	MH Control	100	100			100.0
	SW-STM	90	100			95.0
Age of Organism:	SW-C5	90	100			95.0
	SW-C9	100	100			100.0
5 Days	SW-C1	90	90			90.0

FATHEAD MINNOW ACUTE RESULTS: **LC_{50} =** **>100** **C.I.% =** **NC** **TU_a =** **<1**

Please describe any unusual behavior and/or appearance of organisms.(see Part 6.1.2 of the Methods Manual for ex.)

COMMENTS:

SPECIES	EFFLUENT TREATMENT	Percent Survival By Replicate				Mean Percent Survival
		1	2	3	4	
Ceriodaphnia dubia	MH Control	100	100	100	100	100.0
	SW-STM	100	100	100	100	100.0
Age of Organism:	SW-C5	100	100	100	100	100.0
	SW-C9	100	100	100	100	100.0
< 24 Hours Old	SW-C1	100	100	100	100	100.0

***Ceriodaphnia dubia* ACUTE RESULTS:** **LC_{50} =** **>100** **C.I.% =** **NC** **TU_a =** **<1**

Please describe any unusual behavior and/or appearance of organisms.(see Part 6.1.2 of the Methods Manual for ex.)

COMMENTS:

Facility : Foth Infrastructure & Environment, LLC
Permit # : N/A
Acute Test Date : 11/27/2024

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

LAB REPRESENTATIVE:	Sarah Brown		SIGNATURE:		
PHONE:	(405) 372-2122	LAB CERT #:	399154580	DATE:	12/6/2024
PERMITTEE REPRESENTATIVE:			SIGNATURE:		
PHONE:			DATE:		

Send this form (and any relevant attachments) to Kari.Fleming@wisconsin.gov or mail to: Biomonitoring Coordinator, Bureau of Water Quality (WY/3), Department of Natural Resources, 101 South Webster St., P.O. Box 7921, Madison, WI 53707-7921; according to the timelines specified in your WPDES permit.

Copies of the State of Wisconsin Aquatic Life Toxicity Testing Methods Manual (Methods Manual) and the WET Guidance Document can be obtained from the Biomonitoring Coordinator at the address given above or at: http://dnr.wi.gov/org/water/wm/ww/biomon/biomon.htm

TO BE COMPLETED BY THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES					
		DID TESTS PASS?			
ACUTE	Fathead Minnow	☐ Yes	☐ No	☐ Inconclusive	☐ Unacceptable
	Ceriodaphnia dubia	☐ Yes	☐ No	☐ Inconclusive	☐ Unacceptable
CHRONIC	Fathead Minnow	☐ Yes	☐ No	☐ Inconclusive	☐ Unacceptable
	Ceriodaphnia dubia	☐ Yes	☐ No	☐ Inconclusive	☐ Unacceptable
Retests Required?	☐ Yes ☐ No _____	**Acute / Chronic:**	Both Species	*C.dubia* only	FHM only
Due To:	☐ Failure ☐ QA Problem				
WET Limit Violation?	☐ Yes ☐ No limit in permit	Results Entered Into Database?	☐ Yes ☐ No		
COMMENTS:					
REVIEWED BY:		**DATE:**			
CC:		BASIN ENGINEER			
		PERMIT COORDINATOR			
		PERMIT FILE			

Facility : Foth Infrastructure & Environment, LLC
Permit # : N/A
Test Date : 11/27/2024

Cove

CLIENT:	**191**	**TEST DATE:**	**11/27/24**
TEST ID:	**191-2-24**		

100% EFFLUENT

Sample ID	Alkalinity mg/L	Hardness mg/L CaCO3	Ammonia mg/L NH3N
112724-01	30	64	<1
112724-02	30	56	<1
112724-03	24	40	<1
112724-04	10	12	<1

CONTROL / DILUTION WATER

Sample ID	Alkalinity mg/L	Hardness mg/L CaCO3	Ammonia mg/L NH3N
MH18524	62	108	N/A

Comments:

CLIENT: 191 **TEST DATE:** 11/27/2024

TEST ID: 191-2-24

Comments:

Concentration	Sample ID	Control Water	Client ID	Dilution	Initial pH (s.u.)	DO (mg/L)	Conductivity (µS/cm)	Temp (°C)	Sample ID	Control Water	Client ID	Dilution	Final pH (s.u.)	DO (mg/L)	Conductivity (µS/cm)	Temp (°C)
0% (SYN)	N/A	MH18524	191	S	7.39	6.69	347	24.2	N/A	MH18524	191	S	7.22	8.17	352	24.0
SW-STM 100%	112724-01	MH18524	191	SW-STM	6.72	8.27	244	24.0	112724-01	MH18524	191	SW-STM	7.2	8.28	249	24.0
SW-C1 100%	112724-02	MH18524	191	SW-C1	6.38	8.38	193	24.1	112724-02	MH18524	191	SW-C1	7.21	8.30	197	24.0
SW-C5 100%	112724-03	MH18524	191	SW-C5	6.35	8.18	140	24.0	112724-03	MH18524	191	SW-C5	7.17	8.28	142	24.0
SW-C9 100%	112724-04	MH18524	191	SW-C9	5.81	8.08	62	24.0	112724-04	MH18524	191	SW-C9	7.06	8.26	63	24.0

Concentration	Sample ID	Control Water	Client ID	Dilution	Initial pH (s.u.)	DO (mg/L)	Conductivity (µS/cm)	Temp (°C)	Sample ID	Control Water	Client ID	Dilution	Final pH (s.u.)	DO (mg/L)	Conductivity (µS/cm)	Temp (°C)
0% (SYN)	N/A	MH18524	191	S	7.61	8.19	352	24.0	N/A	MH18524	191	S	8.13	8.12	365	24.5
SW-STM 100%	112724-01	MH18524	191	SW-STM	7.08	8.55	252	24.0	112724-01	MH18524	191	SW-STM	7.9	8.34	261	24.4
SW-C1 100%	112724-02	MH18524	191	SW-C1	6.34	8.36	196	24.0	112724-02	MH18524	191	SW-C1	7.81	8.40	202	24.3
SW-C5 100%	112724-03	MH18524	191	SW-C5	6.61	8.50	142	24.0	112724-03	MH18524	191	SW-C5	7.8	8.44	148	24.4
SW-C9 100%	112724-04	MH18524	191	SW-C9	6.42	8.39	71	24.0	112724-04	MH18524	191	SW-C9	7.69	8.42	74	24.0

CLIENT:	191	**STUDY ID:**	191-2-24	**START DATE:**	11/27/2024
TEST TYPE:	Screen	**PHOTOPERIOD:**	16 hrs light/8 hrs dark	**SYN WATER TYPE:**	MH
ORGANISM SOURCE:	Cove				

TEST ORGANISM:	*C. dubia*	**ORGANISM BATCH #:**	Cd2024-331	**TEST ORGANISM:**	*P. promelas*	**ORGANISM BATCH #:**	Pp2024-328
TEST METHOD:	EPA-821-R-02-012 (20	**ALGAE BATCH #:**	ABSALG24-51	**TEST VESSEL CAP**	500 mL	**BRINE BATCH #:**	2024-04
TEST VESSEL CAPACITY:	30 mL	**YCT BATCH #:**	YCT-0224	**TEST SOLUTION V**	200 mL	**FED 2HRS BEFORE START:**	EM
TEST SOLUTION VOLUME:	15 mL	**FED 2HRS BEFORE START:**	EM	**NO. ORGANISMS/VE**	10	**RANDOMIZED:**	EM
NO. ORGANISMS/VESSEL:	8	**RANDOMIZED:**	EM	**NO. REPLICATES:**	2		
NO. REPLICATES:	5			**LIGHT STATION:**	EX3		
LIGHT STATION:	EX5						

Conc (%)	Vessel ID	Survival (#) 0	24	48	DEAD
Syn - 0 %	S1	8	8	8	0
	S2	8	8	8	0
	S3	8	8	8	0
	S4	8	8	8	0
	S5	8	8	8	0
SW-STM - 100%	A1	8	8	8	0
	A2	8	8	8	0
	A3	8	8	8	0
	A4	8	8	8	0
	A5	8	8	8	0
SW-C5 - 100%	B1	8	8	8	0
	B2	8	8	8	0
	B3	8	8	8	0
	B4	8	8	8	0
	B5	8	8	8	0
SW-C9 - 100%	C1	8	8	8	0
	C2	8	8	8	0
	C3	8	8	8	0
	C4	8	8	8	0
	C5	8	8	8	0
SW-C1 - 100%	D1	8	8	8	0
	D2	8	8	8	0
	D3	8	8	8	0
	D4	8	8	8	0
	D5	8	8	8	0

Initials:	**EM**	**SS**	**SS**
Time:	**1500**	**1110**	**1450**
Date:	**11/27**	**11/28**	**11/29**
Checked:	**SS**	**SS**	

Dilutions	**Initials**	**EM**	**EM**
	Time:	**1425**	**1005**

Conc (%)	Vessel ID	Survival (#) 0	24	48	72	96	DEAD
Syn - 0 %	S1	10	10	10	10	10	0
	S2	10	10	10	10	10	0
SW-STM - 100%	A1	10	10	10	9	9	1
	A2	10	10	10	10	10	0
SW-C5 - 100%	B1	10	10	10	9	9	1
	B2	10	10	10	10	10	0
SW-C9 - 100%	C1	10	10	10	10	10	0
	C2	10	10	10	10	10	0
SW-C1 - 100%	D1	10	10	10	10	9	1
	D2	10	10	10	10	9	1

Initials	**EM**	**SS**	**CO**	**SS**	**SS**
Time:	**1437**	**1130**	**1150**	**1400**	**1445**
Date:	**11/27**	**11/28**	**11/29**	**11/30**	**12/1**
Check	**SS**	**SS**	**CO**	**SS**	

Dilutions	**Initials**	**EM**		**SG**
	Time:	**1425**		**1500**

Comments:

Reviewed by:	SS
QA Review:	SB

Cove Aquatic Toxicity Laboratory
WI Sample Receipt Checklist:

Study ID: 191-2-24 Checked in by: SA

Date: 11/27/24 Time: 1030

1. Upon arrival by:
   - Client -was cooler closed and intact and w/ COC? (YES) NO
   - Shipping Courier- was cooler sealed with tape and/or custody seal and was COC attached?
2. Is the COC filled out correctly?
   - Client Name (YES) NO
   - Analysis Requested (YES) NO
   - Sample location (YES) NO
   - Sampler's Signature (YES) NO
   - Date/Time On/Off (YES) NO
   - Preservation Type (if Any) (YES) NO
3. Were the sample(s) received below 6°C? (YES) NO
4. Was ice or ice packs present? (YES) NO
5. Were the sample(s) received within 36 hours of collection? YES (NO)
6. Were the sample(s) shipped in appropriate containers and sealed? (YES) NO
7. Were the sample(s) easy to identify? (Labeled correctly if different?) (YES) NO
8. Was total volume of sample adequate to perform the required analysis? (YES) NO

Sample ID	Description	pH	DO	TRC	Pull off Date/Time	NH3/pH dups pulled?
112724-01	SW-STM	6.61	7.58	—	11/24 0800	N/A
-02	SW-C1	6.37	8.81	—	0830	
-03	SW-C5	6.15	8.92	—	0940	
-04	SW-C9	5.75	8.50	—	1130	

WI Secondary Checklist

NH3 STD	NH3 Blank	NH3 Dup	NH3	Chlorine
SA	SA	SA	SA	N/A

ULR Vials for NH3 // Run chlorine only if sample is positive

Comments:
Concurrent WI Reftox necessary
Do Not Dechlorinate

COVE ENVIRONMENTAL

AQUATIC TOXICITY LABORATORY
3400 W. Lakeview Rd. Stillwater, OK 74075
Phone 405.372.2122
www.covesciences.com

Client/Facility Name: FLAMBEAU MINE COMPANY

Submit report to: NICK GLANDER, FOTH

Email: NICK.GLANDER@FOTH.COM

Phone: 920-362-8744 PO No.

FOR LAB USE ONLY
Client# - Project# - Work Order#
191-2-24

TYPES: C-Compliance S-Screen O-Other

Test Sample No.	Sample Location	Type of Sample: Composite Date/Time On	Composite Date/Time Off	Grab Date/Time	No. of Cont.	Cont. Type (P/G)	Type of Preserv.	Analysis Required	TEST TYPE	SAMPLE ID:	TEMP
1	SW-STM			11-21-24/0800	1	P	NONE	WI WET TESTING		112724-01	3.1°C
2	SW-C1			11-21-24/0830	1	P	NONE	WI WET TESTING		-02	3.2°C
3	SW-C5			11-21-24/0940	1	P	NONE	WI WET TESTING		-03	3.1°C
4	SW-C9			11-21-24/1130	1	P	NONE	WI WET TESTING		-04	3.0°C

Sampler's Signature:

Comments:

- ☑ On ice upon arrival
- ☐ Delivery with attempt to cool
- ☐ No ice present

Sample Relinquished by:	Date/Time	Sample Received by:	Date/Time
	11-21-24/1300		11/27/24 1030

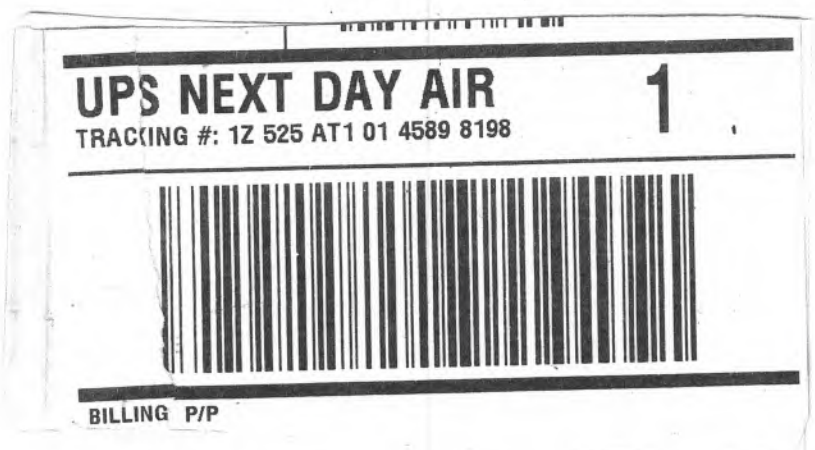
CHAIN OF CUSTODY RECORD

(Please complete form as thoroughly as possible, using black or blue ink.)

* UNLESS OTHERWISE NOTED, ALL SAMPLES ARE STORED BELOW 6°C *

Cove Aquatic Toxicity Laboratory
Shipping Label Receipt:

Study ID: 191-224 Sample ID: 12224-01
-02
-03
-04



COVE ENVIRONMENTAL

3400 W. Lakeview
Stillwater, OK 74074
Phone +1 405 372 2122
www.covesciences.com

License Preliminary Reference Toxicant Test: *sodium chloride*

Report Date: 11/14/2024 | **Lab Contact:** Shannon Scott
Report Ident: RT1124 | **EPA Lab ID:** OK01095

Test Methods/Description:

(a) Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA-821-R-02-013) / 7-day Chronic Toxicity, Static-renewal, w/ *Ceriodaphnia dubia* (Method 1002.0) and w/ *Pimephales promelas* (Method 1000.0).

(b) Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA-821-R-02-012), 48-hr Acute Toxicity, Static-renewal, w/ *Daphnia pulex* (Method 2021.0) and *Pimephales promelas* (Method 2000.0).

Central Tendency Calculation: Average of Last 20 Data Points

Upper Control Limit Calculation: Average +2 Standard Deviations or Average +1 Tested Conc.

Lower Control Limit Calculation: Average -2 Standard Deviations or Average -1 Tested Conc.

Deviations from Test Methods: None.

Statistical Software Utilized: CETIS™ v2.1.4.3

Source of Organism Cultures: Cove

Target Dilution Series (mg/L):

Ceriodaphnia dubia..... 0.0, 375, 750, 1500, 3000, 6000
Daphnia magna..... 0.0, 750, 1500, 3000, 6000, 12000
Pimephales promelas 0.0, 750, 1500, 3000, 6000, 12000
Daphnia pulex..... 0.0, 375, 750, 1500, 3000, 6000

Reviewed and Approved By:

Shannon Scott, Laboratory Director

Acute Test Results	*Daphnia pulex*	*Pimephales promelas*	*Ceriodaphnia dubia*	*Daphnia magna*
Test Initation Date	11/6/2024	11/6/2024	11/6/2024	11/6/2024
48-hour LC50 (mg/L)	2721	7647	2523	6212
Control Survival (%)	90	100	100	100
Central Tendency (Mean) (mg/L)	2591	7933	2445	5609
Upper Control Limit (mg/L)	3761	10104	3064	7954
Lower Control Limit (mg/L)	1420	5761	1825	3264

Chronic Test Results	*Ceriodaphnia dubia*	*Pimephales promelas*
Test Initation Date	11/6/2024	11/6/2024
Control Survival (%)	100	100
%CV Survival (Control)	0	0
%CV Growth (Control)	NA	8.02
%CV Reproduction (Control)	6.2	NA
Growth PMSD	NA	15.1
Reproduction PMSD	11.3	NA
Growth IC25	NA	3373
Reproduction IC25	942.9	NA
Mean Dry Weight (Control) (mg/L)	NA	0.4387
Mean # Neonates (Control)	37.4	NA
NOEC Survival (mg/L)	1500	3000
NOEC Growth (mg/L)	NA	1500
NOEC Reproduction (mg/L)	750	NA
Central Tendency (Surv) (mg/L)	1725	2325
Central Tendency (Growth) (mg/L)	NA	3464
Central Tendency (Repro) (mg/L)	892	NA
Upper Control Limits (Growth PMSD) (mg/L)	NA	30
Lower Control Limits (Growth PMSD) (mg/L)	NA	8.1
Upper Control Limits (Repro PMSD) (mg/L)	32	NA
Lower Control Limits (Repro PMSD) (mg/L)	2.8	NA
Upper Control Limits (Growth IC25) (mg/L)	NA	4590
Lower Control Limits (Growth IC25) (mg/L)	NA	2337
Upper Control Limits (Repro IC25) (mg/L)	1210	NA
Lower Control Limits (Repro IC25) (mg/L)	574	NA
Upper Control Limits (Surv NOEC) (mg/L)	3000	6000
Lower Control Limits (Surv NOEC) (mg/L)	375	1500
Upper Control Limits (Growth NOEC) (mg/L)	NA	3000
Lower Control Limits (Growth NOEC) (mg/L)	NA	750
Upper Control Limits (Repro NOEC) (mg/L)	1500	NA
Lower Control Limits (Repro NOEC) (mg/L)	375	NA

Acute Monthly Reference Toxicant Control Charts (cont'd)