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March 31, 2022

Mackenzie Valley Land and Water Board (*via email only*)
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Email: jo@mvlwb.com

Attention: Jacqueline Ho, Technical Regulatory Specialist

Re: 2021 Annual Water Licence Report – MV2017L2-0007

Pursuant to Part B (12) of Water Licence MV2017L2-0007, Teck Metals Ltd. (Teck) respectfully submits the Pine Point Tailings Impoundment Area Annual Water Licence Report for the 2021 reporting year and associated excel files of the data included in the report.

Please contact me if you have any questions or concerns regarding this report.

Yours truly,

Michelle Unger,
Manager, Environmental Performance
Teck

Attachment (1)

cc: Wendy Bidwell, Water Resource Officer Department of Environment & Natural Resources
Deninu K'ue First Nation Chief and IMA Coordinator
Fort Resolution Métis Government President and Environment Coordinator

Annual Water Licence Report for 2021

Property Name: Pine Point Tailings Impoundment Area

Company: Teck Metals Ltd.

Water Use Licence : MV2017L2-0007

Land Use Permit : MV2019X0006

Issued Date: March 31, 2022



Pine Point Tailings Impoundment Area Annual Water Licence Report for 2021

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EXECUTIVE SUMMARY

The Pine Point mine was operated by Cominco (a predecessor of Teck Metals Ltd.) as a large open-pit lead (Pb) and zinc (Zn) mine from 1964 to 1988. When the Pine Point Mine closed in 1988, the original Closure and Reclamation Plan (titled “Restoration and Abandonment Plan”, approved June 1987) was implemented. Updates to the plan were issued in 1990 and again in 1991 as reclamation work neared completion. In accordance with the plan, surface leases and mining claims were surrendered back to the Crown during the mid to late 1990s, with the exception of one surface land lease (#85B/16-9-11). The lease encompassed the Main Pond, polishing pond, a portion of the dykes and tailings, and an area east of the tailings impoundment area (TIA). A second surface lease (L-2000009T) was also obtained in 2020 for the south portion of the TIA. Restoration work at the TIA has focused on surface stability, effluent quality, and long-term stability of the dykes and decant structures. The TIA is considered to be in the Closure-Active Care phase of mine life and operates under a Type B Water Licence (licence MV2017L2-0007). The site also has a Land Use Permit (MX2019X0006) to allow for maintenance activities of the TIA.

In 2021, the Land Use Permit (MV2019X0006) was amended for use of additional equipment and fuel storage to operate mechanical evaporators on the Main Pond to reduce water levels.

In 2018, a Reclamation Research Plan was submitted which outlines research activities to be conducted in 2018, 2019 and 2020, which will inform the updated Closure and Reclamation Plan (CRP). The CRP was initially required to be submitted to the MVLWB by December 31, 2020 however an extension was requested and granted till June 1, 2021. The 2021 CRP included summaries of previous reclamation research and community engagement, and defined closure objectives. The uncertainty around the future trend in zinc concentrations in the Main Pond is the primary issue that delays the complete closure and return of the site leases to the Government of the Northwest Territories. As a result, the next phases of reclamation research were described, and Teck committed to providing reclamation research updates in annual reports.

Community engagement was focused on anticipated spring high-water levels, a land use permit amendment request and the CRP. Due to COVID-19 restrictions, in-person meetings could not be held in 2021. Instead, virtual methods such as a web-based story map and “Zoom” meetings were conducted. Fort Resolution residents were also employed during the reclamation research field activities in 2021. Community engagement will continue in 2022 with respect to ongoing reclamation research activities and future end land use planning.

Water accumulates in the pond every spring from snowmelt and rainfall. The water is elevated in zinc and cannot be released to the environment without treatment. Routine water treatment was then conducted from 6 May to 12 September 2021. The total volume discharged was 1,141,029.5 m³. The effluent discharge water quality was analyzed as per the water licence and met the effluent quality criteria.

Use of mechanical evaporators was proposed as a supplement to water treatment to increase rate of water level reduction. Initial planning began in early summer, when water levels were known to be high. Planning included feasibility assessments and amendment requests for the Land Use Permit. However, as the summer progressed, the success of the water treatment operations at treating and discharging water outweighed the risks and costs associated with mechanical evaporator operations. Therefore, the mechanical evaporators were not trialed in 2021. A field trial using coagulant and flocculant additives was also proposed in the 2021 Water Treatment Manual. In advance of a field trial, a bench-scale test was done with ten coagulant and flocculant products from Solenis, a supplier of water treatment products. Based on the bench testing results, the recommended next step is to conduct a field trial using a selected coagulant and flocculant in 2022.

Other activities in 2021 included the routine alert level-triggered dyke inspections, maintenance of erosion rills on the dykes and east diversion ditch, and phase three of the Reclamation Research plan.

Work in 2022 will include a continuation of the reclamation research activities, routine dam inspections and water treatment.

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1.0 Introduction

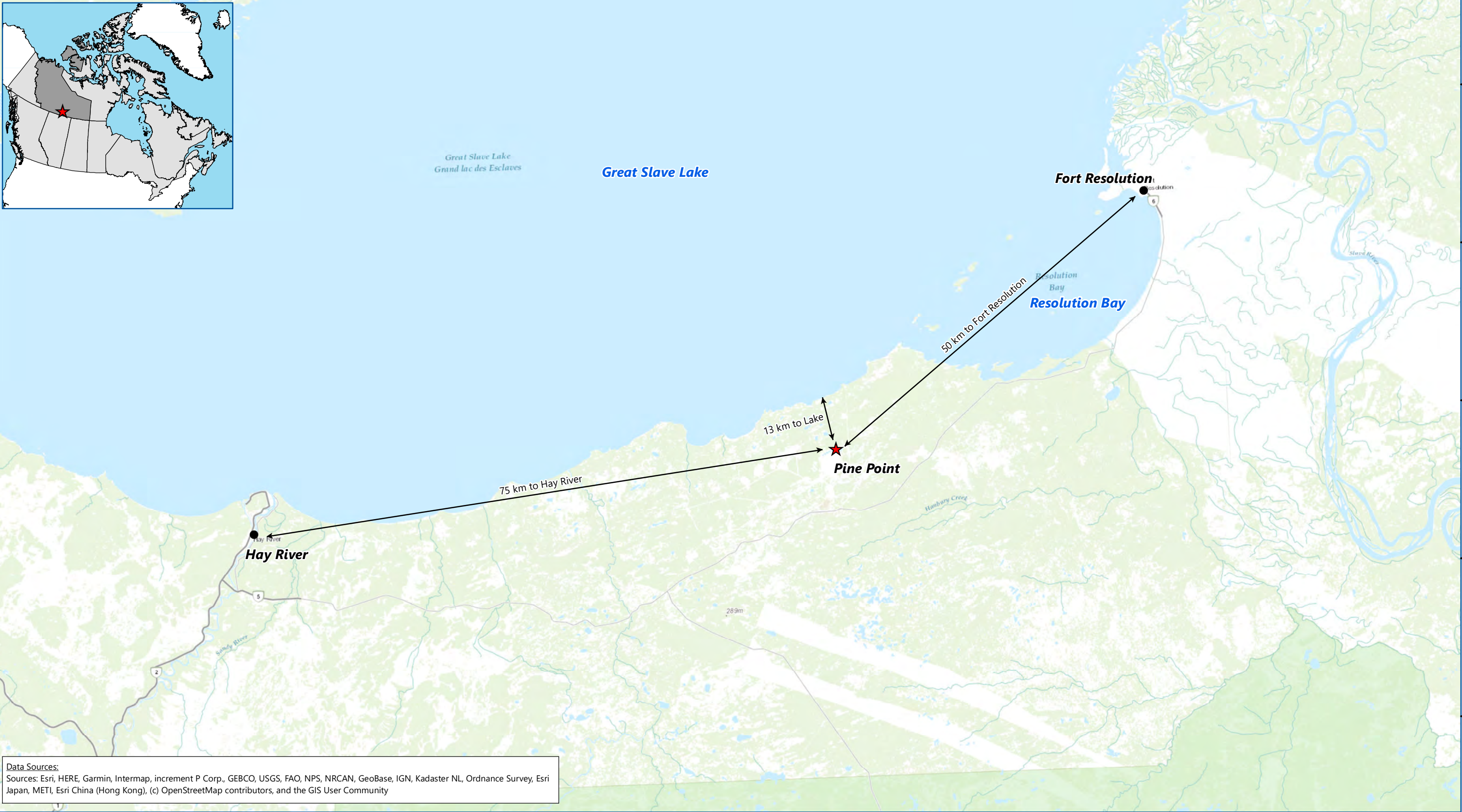
The Pine Point mine was operated by Cominco (a predecessor of Teck Metals Ltd.) as a large open-pit lead (Pb) and zinc (Zn) mine from 1964 to 1988. The Tailings Impoundment Area is located approximately 50 km west of Fort Resolution (Denínu Kúé) and 75 km east of Hay River (Xátł'odehchee), and 13 km south of the southern shoreline of Great Slave Lake. The site location is shown on Figure 1-1.

Following mine decommissioning, Teck maintained one lease, 85B/16-9-11, associated with the TIA which encompassed the Main Pond, polishing pond, a portion of the dykes and tailings, and an area east of the tailings. In 2017, Teck received a Type B water licence renewal MV2017L2-0007 (herein referred to as the Water Licence) from the Mackenzie Valley Land and Water Board (MVLWB), which authorized Teck to treat and discharge water from the TIA at the former Pine Point Mine location (60°53'41.3"N and 114°25'30.7"W). The water licence can be found on the MVLWB registry at the following link: [MV2017L2-0007.pdf](#). In 2020, Teck obtained a second lease (L-2000009T) to include the remainder of the dykes and tailings to conduct inspections, research and future reclamation activities as needed. Figure 1-2 presents the two land leases held by Teck. The mine is in a Closure-Active Care phase of mine life.

When the Pine Point Mine closed in 1988, the original Closure and Reclamation Plan (titled "Restoration and Abandonment Plan", approved June 1987) was implemented. Updates to the plan were issued in 1990 and again in 1991 as reclamation work neared completion. In accordance with the plan, surface leases and mining claims were surrendered back to the Crown during the mid to late 1990s, with the exception of one surface land lease (#85B/16-9-11), which encompasses the Tailings Impoundment Area (TIA). In 2006 the reclamation plan (titled "Update to Restoration and Abandonment Plan, Tailings Impoundment Area") was updated and focused on effluent quality, and long-term stability of the dykes and decant structures. When the water licence was renewed in 2017, conditions in the licence included development and implementation of a reclamation research plan, and an updated Closure and Reclamation Plan (CRP) was required in accordance with the MVLWB and Aboriginal Affairs and Northern Development Canada's (AANDC) November 2013 *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories* (herein referred to as the Guidelines) (MVLWB/AANDC 2013).

On June 1, 2021 a Closure and Reclamation Plan (2021 CRP) was submitted to the MVLWB. The 2021 CRP included summaries of previous reclamation research and community engagement, and defined closure objectives. The uncertainty around the future trend in zinc concentrations in the Main Pond is the primary issue that delays the complete closure and return of the site leases to the Government of the Northwest Territories (GNWT). As a result, the next phases of reclamation research were described, and Teck committed to providing reclamation research updates in annual reports.

Barr Footer: ArcGIS 10.8.1, 2022-03-16 08:49 File: I:\Projects\61\06\1001\Maps\Reports\MVLWB Annual Report 2021\Figure 1-1 Site Location.mxd User: MRQ



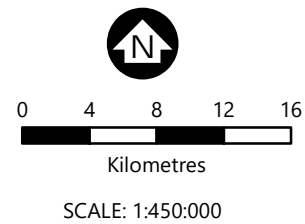
Data Sources:
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Coordinate System: NAD83 UTM
Zone 11N
Created on: 16/03/2022

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808 4th Avenue SW
Suite 700
Calgary, AB T2P 3E8

★ Pine Point Tailings Impoundment Area





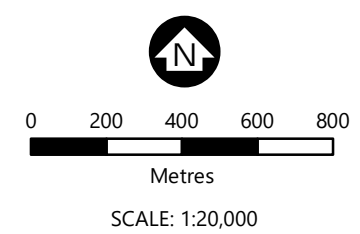
SITE LOCATION
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Teck Metals Ltd.

FIGURE 1-1

Data Sources:
Aerial imagery surface lease,other mining features provided by Teck Metals Ltd.
Imagery Date: July 2019



-  Surface Lease 85B/16-9-11
-  Surface Lease L-2000009T



Barr Footer: ArcGIS 10.8.1, 2022-03-16 08:41 File: I:\Projects\61\06\1001\Maps\Reports\MVLWB Annual Report 2021\Figure 1-2 Surface Leases.mxd User: MRQ

The Tailings Impoundment Area stores approximately 60 million tonnes of tailings that were produced from milling the ore mined from the pits. The tailings still contain some residual metals and are held in place by dykes constructed from local earthfill materials. By 1992, the surface of the tailings was covered with 15 cm of gravel to prevent the tailings from spreading dust to surrounding areas. Water from snow melt and rain that contacts the tailings (contact water) collects at the north end of the TIA in the Main Pond. Zinc concentrations in the Main Pond are greater than the effluent quality criterion (EQC) defined in the Water Licence; therefore, water treatment is necessary before water can be released to the surrounding environment. Water is treated by mixing the water with lime in the treatment pond. Treated water is released to a channel and a series of borrow areas that were used during mine operations before entering the surrounding muskeg. Water treatment has been ongoing since closure and continues today.

This 2021 Annual Report includes the requirements defined in Schedule 1, Part B, Item 12 of Water Licence MV2017L2-0007 issued October 25, 2017. A conformance table is provided in Appendix A. The remaining section of this report include the following:

- Section 2: Reclamation Research – summary of 2021 activities and planned activities for 2022
- Section 3: Engagement Summary – summary of 2021 community engagement activities and planned activities for 2022
- Section 4: Major Modification or Construction Activities – summary of 2021 activities
- Section 5: Water Management Plan activities – summaries of water treatment processes, and 2021 treatment volumes
- Section 6: Operations and Maintenance Plan – descriptions of processes and response actions
- Section 7: Spill Contingency Plan – description of training and communications exercises in 2021 and unauthorized discharges as applicable
- Section 8: Surveillance Network Program – summaries of water quality monitoring results, including Hach system monitoring and calibration and maintenance records
- Section 9: Regulator Inspections – summaries of inspections conducted by Lands and/or Water Resource inspectors.

2.0 2021 Reclamation Research Activities

The 2021 CRP concluded that the timing for decline in zinc concentrations to levels consistently less than the EQC in the Main Pond remains uncertain and that this is the primary issue that delays the complete closure of the site and return of land leases to the GNWT. In 2021, reclamation research focused on collecting data necessary for inputs into the water quality model and to inform water quality monitoring targets (i.e., criteria for post-closure monitoring) for the site. The goal of the research is to resolve uncertainties regarding zinc movement (and other metals as necessary) within environmental media in the TIA.

A summary of the field activities is presented in Table 2-1 and are described below. Field investigations did not occur in the spring because of travel restrictions associated with the COVID-19 pandemic for non-essential services. Winter field visits occurred on December 22, 2020, January 26, February 20, and March 23, 2021. The summer field program occurred from July 9 to 19, 2021 and the fall field program occurred from September 13 to 23, 2021. Community assistants from the Deninu K'ue First Nation (DKFN) supported summer and fall field programs. A summary of desktop studies follows the discussion of field activities.

Table 2-1 Summary of 2021 Field Activities

Assessment	Winter	Summer	Fall
Surface Water Quality			
Main Pond sampling	✓	✓	✓
Snow depth and ice thickness measurements	✓		
Downstream Drainage Network and reference sampling		✓	✓
In-Situ water quality profilers		✓	✓
Surveillance Network Program (SNP)			✓
Groundwater Quality			
Groundwater sampling		✓	✓
Geochemistry			
SoilVue probes		✓	✓
Main Pond sediment samples			✓
Other			
Meteorological station maintenance	✓	✓	✓
Archaeological Impact Assessment			✓

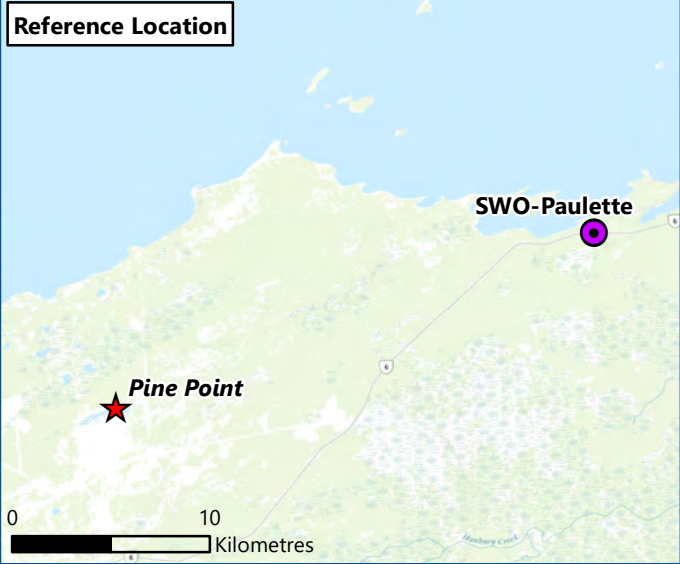
2.1 Surface Water Quality


Surface water samples for the purposes of reclamation research (see Section 8 for Surveillance Network Program sampling) were collected in the Main Pond, in the downstream drainage network north of the north dyke and a reference location (see Figure 1-1). The downstream drainage network is a series of channels and ponds that were created from previous borrow activities. The downstream drainage network receives treated water from the polishing pond via a spillway. Water is naturally released from the downstream drainage network to the surrounding muskeg. Surface water samples were collected in the summer during water treatment and in the early fall after the release of treated water. Water quality samples were also collected from the Main Pond under ice in December, January, February, and March to understand winter conditions in the Main Pond since seasonal variability in zinc concentrations and pH have been observed. This is the first year that under ice samples were collected.






Water samples were collected for submission to an analytical laboratory for analyses of total and dissolved metals, routine parameters and other parameters required for water quality assessment and geochemical model development. The purpose of the surface water samples was to understand seasonal variability in metals concentrations within the Main Pond and downstream of the treated water discharge point. In addition to the surface water samples, three water quality profilers (i.e., sondes) have been stationed in the Main Pond since 2020. Two are positioned in the shallow (approximately 1.5 m deep) water column at 35-1A and SW-1 during summer months and are removed before freeze-up. A third sonde is positioned at depth (just above the pond bottom at approximately 2.5 m deep) at SW-1 (the deepest point in the Main Pond) and records water quality measurements daily on six-hour increments throughout the year. In July, data from the deep sonde was retrieved, the sonde cleaned, batteries replaced calibrated, and inspected, and then redeployed. The shallow-positioned sondes were deployed in July and retrieved in September. The water quality profilers record pH, specific conductivity, oxidation-reduction potential (ORP), and temperature.

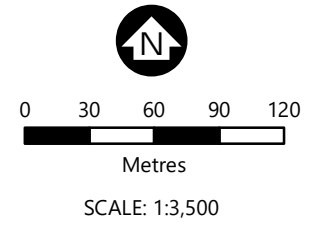
Barr Footer: ArcGIS 10.8.1, 2022-02-24 10:16 File: I:\Projects\61\06\1001\Maps\Reports\MVLWB Annual Report 2021\Figure 2-1 Surface Water Sample Locations.mxd User: MRQ

Data Sources:
Aerial imagery surface lease, other mining features provided by Teck Metals Ltd.
Imagery Date: July 2019




Coordinate System: NAD83 UTM
Zone 11N
Created on: 24/02/2022
Barr Engineering and Environmental Science Canada Ltd
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Suite 700
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-  Sample Collected to Determine Water Quality along the Flow Path
-  Sample Collected to Determine Potential for Porewater Seepage
-  Main Pond and Treatment Pond Sampling Location
-  Reference Sampling Location
-  Dominant Flow path



**SURFACE WATER
SAMPLE LOCATIONS**
Annual Report
Pine Point Tailings Impoundment Area
Teck Metals Ltd.
FIGURE 2-1

Zinc is the only metal that occurs in the Main Pond that is consistently greater than the EQC as defined in the Water Licence. Seasonal average total zinc concentrations measured in the Main Pond from 1996 to 2021 are presented in Figure 2-2. In 2021, zinc concentrations were highest over the winter months, and slightly higher in the fall samples than the summer samples.

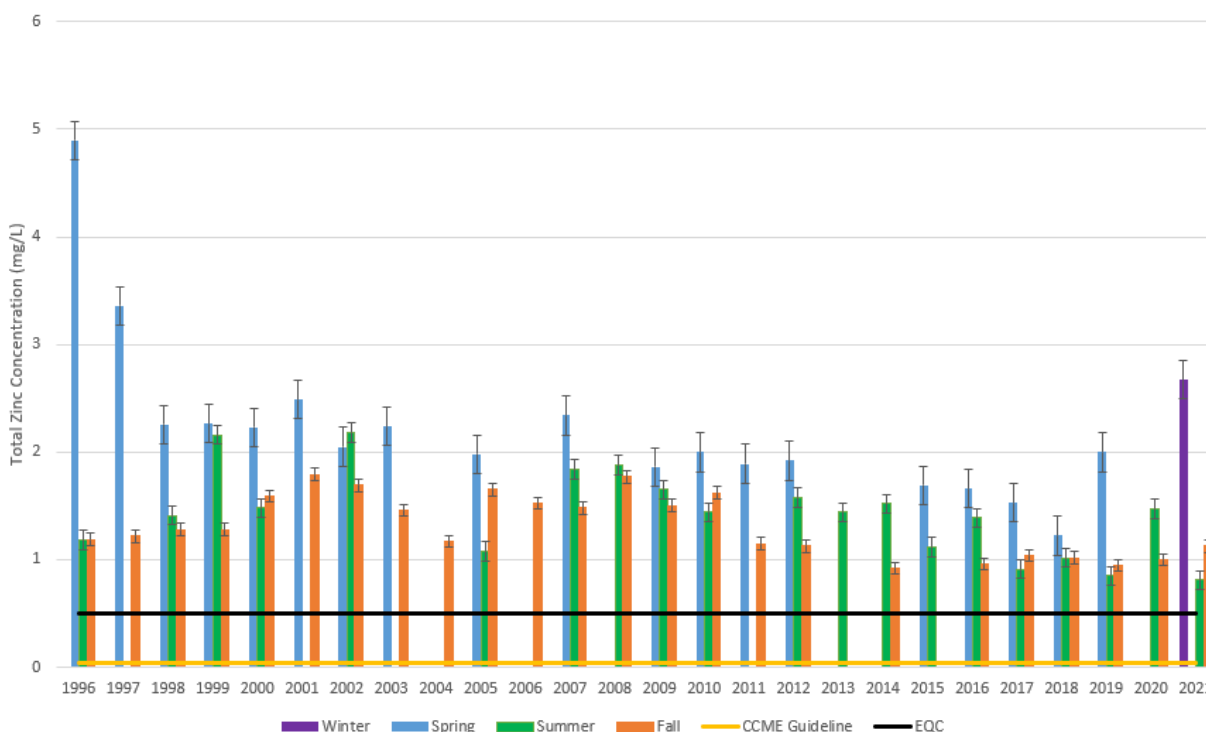


Figure 2-2 Total Zinc Concentrations in the Main Pond from 1996 to 2021

Total zinc concentrations measured during all reclamation research sample campaigns from 2018 to 2021 and including Teck's summer data collected during water treatment are presented in Figure 2-3 and are compared with the EQC. The pH (as measured by the laboratory) were also plotted with the zinc concentrations. Zinc concentrations were higher in samples collected during the winter months under ice than during open water seasons. Concentrations were also higher when pH was lower (winter months). During winter months, zinc appears to remain primarily in solution and is generally excluded from the ice at the surface. As the ice melts, the pH increases and zinc concentrations in solution decrease.

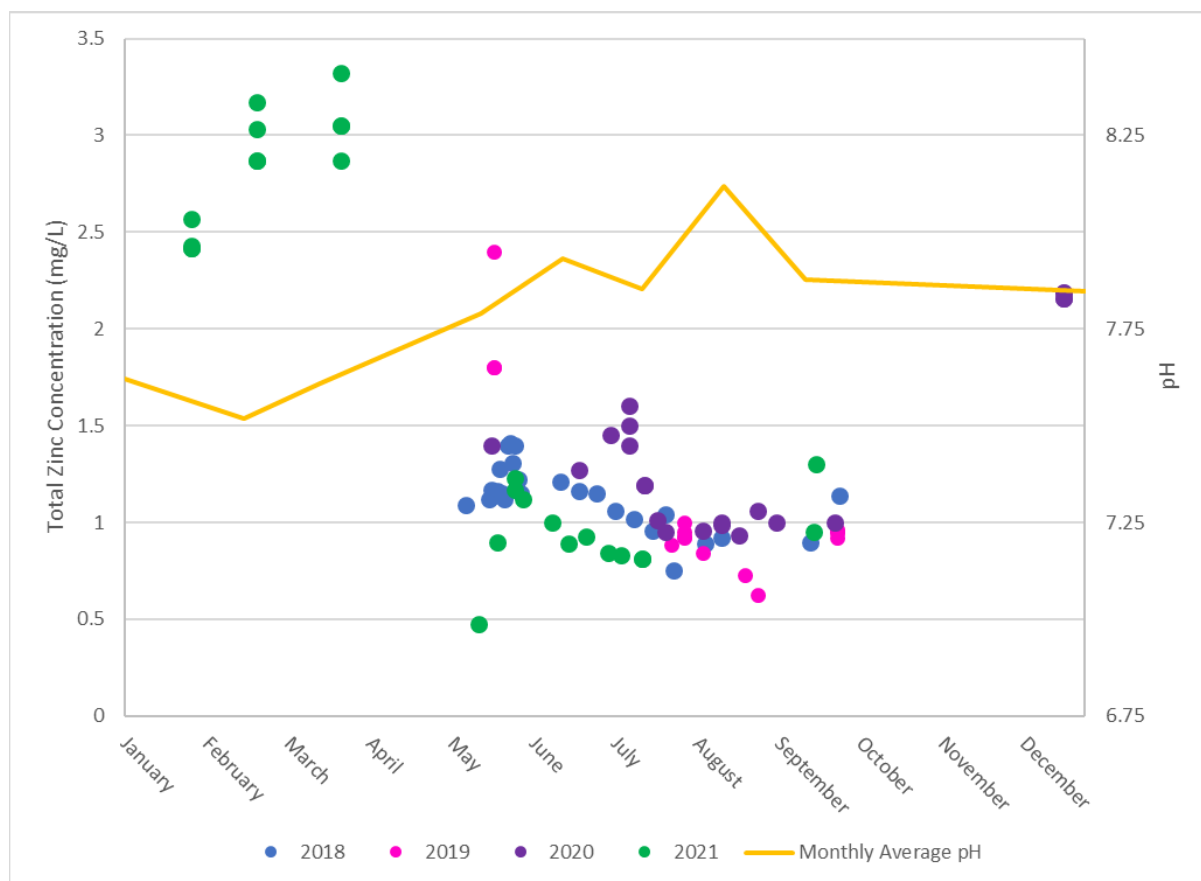


Figure 2-3 Main Pond Total Zinc Concentration and Average Monthly pH

Data collected by the in-situ water quality profilers from July 2020 when the sondes were first deployed, to fall 2021 are summarized on Figure 2-4. Key observations include:

- The water quality parameters are similar between the three probes indicating the pond is well-mixed and stratification is not occurring.
- Over the deployment period of the sondes, the typical pH of the Main Pond during the open water months (May through October) has been approximately pH 8.5. Periods when the pH has been at or above pH 9 are typically correlated with water treatment activities such as recirculation of water from the treatment pond or addition of surplus lime to the Main Pond.
- The rapid drop in pH observed in October 2020 from pH 8.5 to pH 8 was concurrent with the formation of the ice cover on the Main Pond and was likely caused by a build-up of carbon dioxide (CO₂) from respiration occurring in the pond sediments.
- The rise in pH observed in May 2021 from pH 7.7 to pH 8.6 was concurrent with the melting of the ice cover from the Main Pond and was likely caused by CO₂ off-gassing as the Main Pond water came to equilibrium with atmospheric CO₂.
- The specific conductance of the Main Pond rose through the open water months in both 2020 and 2021 due to net evaporative water loss. Through the winter of 2020/2021, the

specific conductance continued to rise likely due to fractional freezing (or brine rejection, the process wherein dissolved solids are excluded from the solid ice crystals and remain in the aqueous, dissolved phase).

- The oxidation-reduction potential remained positive for the duration that the sondes were deployed, indicating the Main Pond remained oxic. The oxidation-reduction potential varied between 60 mV and 380 mV. The lowest oxidation-reduction potential recorded at 35-1A (60 mV) corresponded with the addition of surplus lime in September 2020.
- The temperature ranged between 0°C (October 2020) and 25.4°C (July 2021).

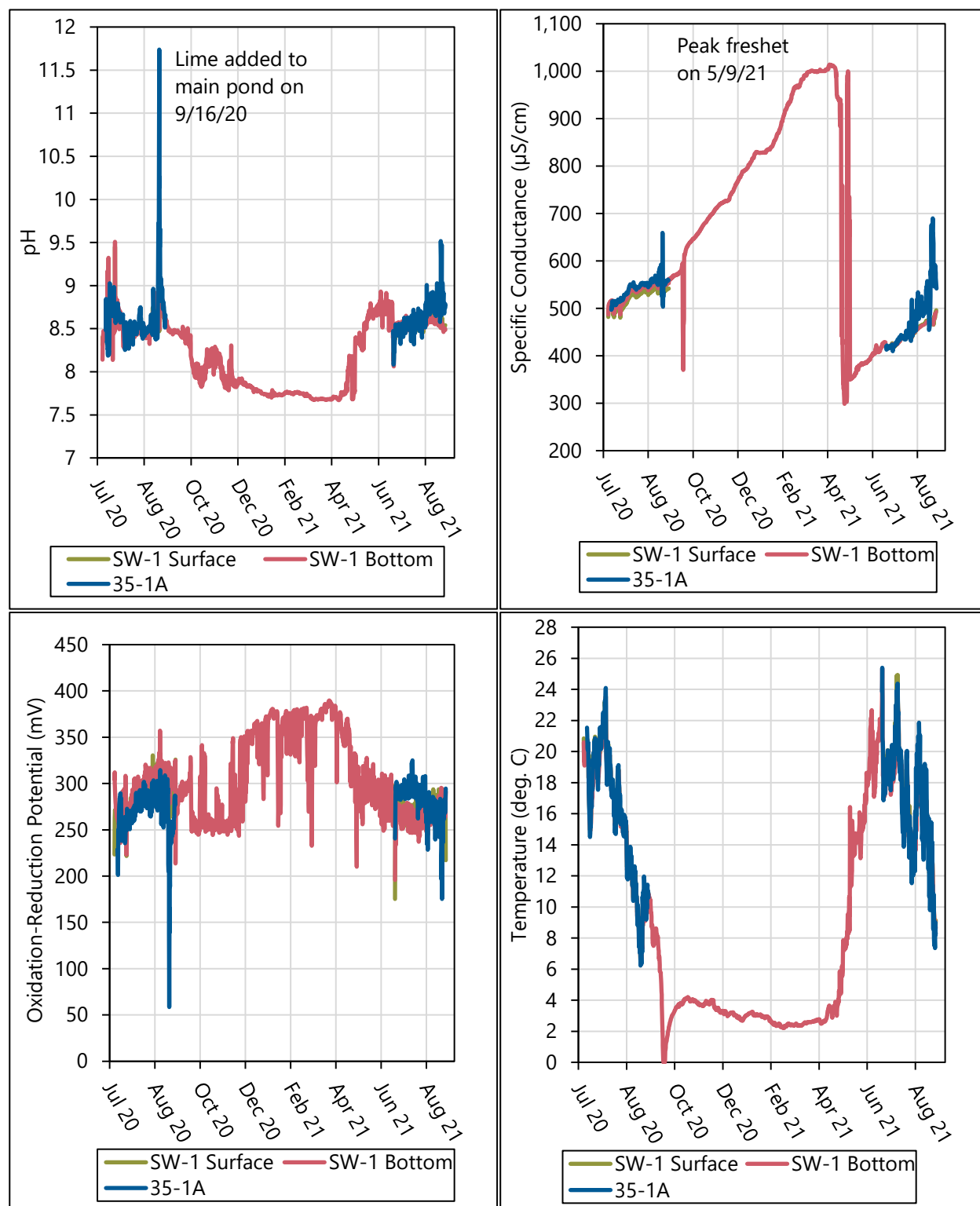


Figure 2-4 In-Situ Water Quality Profiler Data from 2020 and 2021

Dissolved zinc concentrations measured in the Downstream Drainage Network are presented in Figure 2-5. The concentrations are presented based on the time of year the samples were collected, spring, summer and fall, and based on distance along the flow path from the discharge point. Samples collected further than 400 m from the discharge point were less than the Canadian Council of Ministers of the Environment (CCME) aquatic life guideline. There was a clear spatial trend in concentrations in the Downstream Drainage Network samples with concentrations decreasing from the discharge point to less than the guideline at approximately 400 m, and then remaining relatively consistent from 500 m to 1,200 m along the flow path. Concentrations measured in 2021 were less than concentrations measured in previous years.

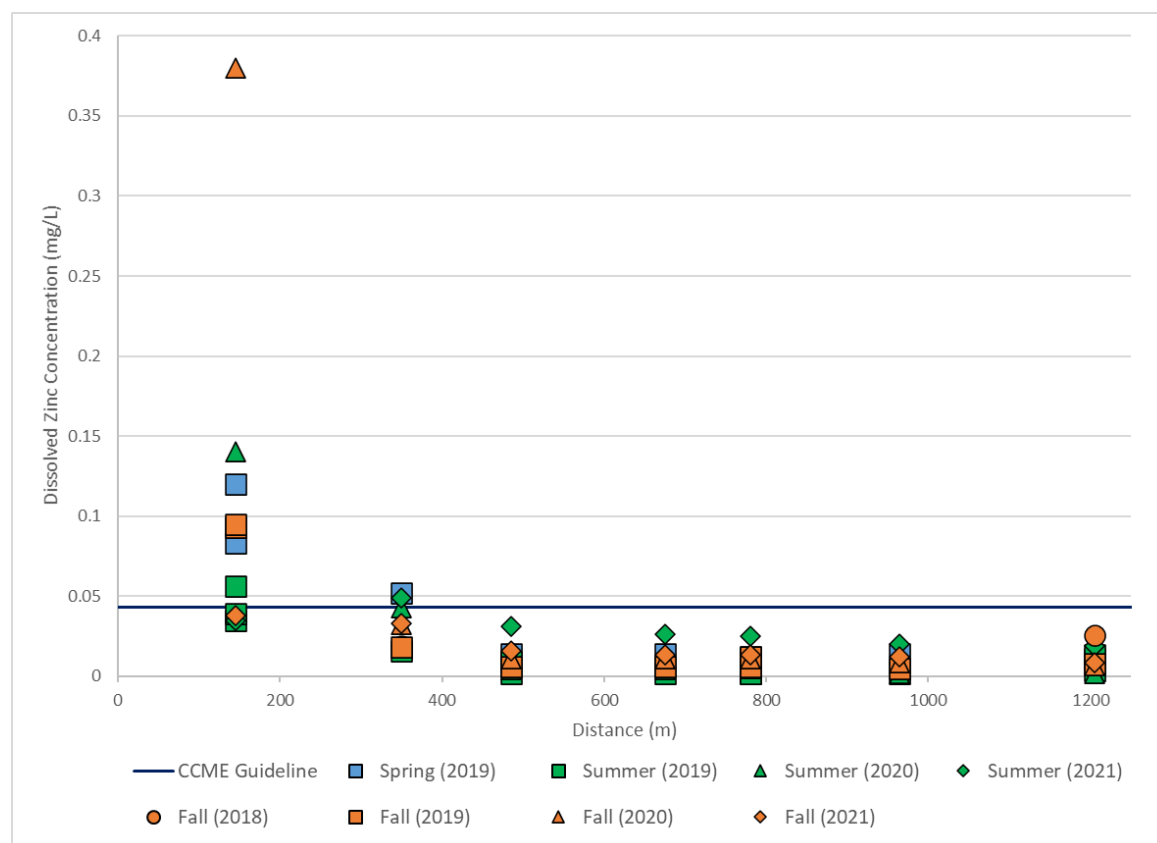


Figure 2-5 Dissolved Zinc Concentration with Downstream Drainage Distance

Prior to 2021 one sample was collected in the Downstream Drainage Network that was not within the flow path. This sample, SW-03, was located proximate to the north dyke to determine the likelihood for tailings porewater seepage impacts similar to the approach used for the former borrow pits on the west and northwest corner of the west dyke. In 2021, an additional two locations, SW-10 and SW-11, west of SW-3 were added to the sample program to determine the potential for evidence of seepage impacts to downstream water quality north of the north dyke (see Figure 2-1 above). Concentrations of zinc measured in samples from SW-3 in 2018 to 2021, and SW-10 and SW-11 in 2021 are presented in Table 2-2.

Table 2-2 Concentrations of Cadmium, Copper, Lead, and Zinc in SW-3, SW-10, and SW-11 in Proximity to the North Dyke

Parameter	Concentration (mg/L)												
	Sep 2018	May 2019	Aug 2019	Sep 2019	Jul 2020		Sep 2020	Jul 2021			Sep 2021		
	SW-3	SW-3	SW-3	SW-3	SW-3	SW-3 Dup	SW-3	SW-3	SW-10	SW-11	SW-3	SW-10	SW-11
Total Cadmium	0.000020	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.000052	0.000038	0.000031	0.000036	<0.00002	<0.00002	<0.00002
Total Copper	0.0020	0.0006	0.00089	0.00052	0.00059	0.00069	0.13	0.0013	0.0014	0.0012	0.00098	0.001	0.001
Total Lead	0.00031	0.00025	<0.0002	<0.0002	<0.0002	<0.0002	0.15	0.00034	0.00026	0.00030	<0.0002	<0.0002	<0.0002
Dissolved Zinc	0.029	0.012	<0.003	0.011	0.0032	<0.003	0.0087	0.025	0.019	0.020	0.011	0.011	0.011

CCME Aquatic life guidelines (adjusted based on site pH, hardness and/or dissolved organic carbon):

Total Cadmium = 0.00037

Total Copper = 0.0040

Total Lead = 0.0070

Dissolved Zinc = 0.043

Porewater seepage does not appear to degrade water quality in the Downstream Drainage Network, under current site conditions, because concentrations at SW-03, SW-10, and SW-11 are similar to concentrations measured in samples collected at distances further than 400 m along the drainage flow path. Seepage rates and contribution to the downstream drainage would be expected to be greatest during spring freshet when Main Pond levels are highest and so future sampling in the late stages of freshet are needed to confirm that seepage is not detectable in the water quality of the pond adjacent to the dyke. Total copper, and lead concentrations from September 2020 appear to be outliers, since data before and after this sample event were similar. It is likely that the sample had higher than average particulate matter since the total concentrations are elevated, but the dissolved concentrations are similar to other sample events.

2.2 Groundwater Quality Evaluation

In fall 2018, three nested monitoring wells were installed (BH18-B/G-10A/B/C, BH18-B/G-13A/B/C, and BH18-B/G-16A/B/C). For these nested wells, the most shallow wells (designated with an 'A' in the well name) were screened between 1 and 6 m and within the tailings with the goal of intersecting the water table, the intermediate wells (designated with a 'B' in the well name) were screened between 3 and 8 m within the tailings with the goal of collecting porewater at the base of saturated tailings, and the deepest wells (designated with a 'C' in the well name) were screened within unconsolidated deposits at 5 to 12.7 m with the goal of collecting local groundwater below the tailings pile. Three individual wells were also drilled in areas surrounding the tailings (BH18-B/G-11, BH18-B/G-14, and BH18-B/G-18) and six perimeter monitoring wells were added in September 2019. Perimeter wells were screened in unconsolidated deposits at shallow depths ranging from 0.8 to 5.8 m where saturated soils were encountered with the goal of monitoring local groundwater surrounding the tailings pile, including upgradient, side-gradient, and downgradient orientations. Figure 2-6 shows the locations of the monitoring wells.

The two groundwater assessments in 2021 included collection of static water levels and low flow sampling at all 18 monitoring wells in and around the TIA. Groundwater static water levels were collected site-wide on one day to provide a snapshot of the water table and groundwater flow direction. In addition, ten boreholes have vibrating wire piezometers (VWPs) that measure groundwater levels continuously throughout the year. Groundwater elevations have increased overall from 2018 to 2021 in eight VWPs and groundwater monitoring wells outside of the TIA including the Main Pond water level (i.e., PP-VWP-2018-10). Groundwater levels fluctuate seasonally, typically lowest during early summer and highest in early fall. Within the TIA, groundwater moves vertically downward at BH18-B/G-10 and BH18-B/G-16 (i.e., vertical gradients are negative). Nested monitoring wells screened at deeper intervals in the TIA have higher groundwater elevations than wells screened at shallower intervals with the exception at BH18-B/G-13. Groundwater moves upward vertically between BH18-B/G-13B and BH18-B/G-13A (i.e., positive gradient between the two wells) (Table 2-3).

Low-flow sampling was conducted using a peristaltic pump except at BH18-B/G-10C, which was sampled using a GeoSub submersible pump as it exceeds the maximum depth to create lift with a peristaltic pump. All groundwater wells were stabilized prior to sampling. Field parameters were measured with a handheld YSI Pro DSS multi-parameter probe with sensors for temperature, pH, specific conductivity, DO, and ORP. The YSI sensors were calibrated before each day of water sample collection using standard solutions for each parameter. Samples requiring field filtration were filtered using a syringe and a 0.45-micron filter prior to bottling in laboratory-supplied sampling containers. If the groundwater monitoring well was pumped dry during stabilization, the well was sampled 24 hours later following recharge and without stabilization. Groundwater sampling included two duplicate samples and one equipment blank sample collected during each field data collection event. Samples in 2021 were analyzed by Bureau Veritas for the following parameters: TSS, pH, metals (total and dissolved), anions and cations, nutrients, and cyanide.



Barr Footer: ArcGIS 10.8.1, 2022-02-21 11:37 File: I:\Projects\61\06\1001\Maps\Reports\MVLWB Annual Report 2021\Figure 2-6 Groundwater Monitoring Well Locations.mxd User: MRQ

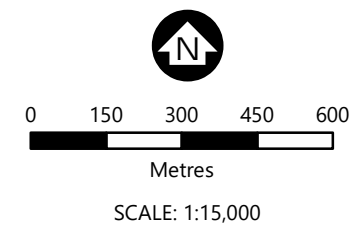
Data Sources:
Aerial imagery surface lease, other mining features provided by Teck Metals Ltd.
Imagery Date: July 2019



Coordinate System: NAD83 UTM
Zone 11N
Created on: 21/02/2022

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Calgary, AB T2P 3E8

 Monitoring Well Location
 Dikes



**GROUNDWATER MONITORING
WELL LOCATIONS**

Annual Report
Pine Point Tailings Impoundment Area
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FIGURE 2-6

Table 2-3 Groundwater Elevations and Vertical Hydraulic Gradients from Monitoring Wells Between 2018 and 2021

Well Name	Geologic Unit	Ground Surface (m)	Top of Screen (mbgs)	Bottom of Screen (mbgs)	Top of Screen (m)	Bottom of Screen (m)	Oct 2018		May 2019		Oct 2019		Jul 2020		Sep 2020		Jul 2021		Sep 2021	
							Groundwater Elevation (m)	Vertical Gradient (positive upward)	Groundwater Elevation (m)	Vertical Gradient (positive upward)	Groundwater Elevation (m)	Vertical Gradient (positive upward)	Groundwater Elevation (m)	Vertical Gradient (positive upward)	Groundwater Elevation (m)	Vertical Gradient (positive upward)	Groundwater Elevation (m)	Vertical Gradient (positive upward)	Groundwater Elevation (m)	Vertical Gradient (positive upward)
TIA																				
BH18-B/G-10A	Tailings	215.20	6.00	9.00	209.20	206.20	Dry	NA	Dry	NA	Dry	NA	Dry	NA	Dry	NA	Dry	NA	Dry	NA
BH18-B/G-10B	Tailings	215.21	9.22	12.22	205.99	202.99	206.74	0.05	206.25	0.004	206.04	-0.30	205.88	0.0018	205.85	-0.0041	206.33	-0.0009	206.35	0.000
BH18-B/G-10C	Silty sand / Silty clay	215.28	12.70	15.70	202.58	199.58	206.92	NA	206.26	NA	205.03	NA	205.89	NA	205.84	NA	206.33	NA	206.35	NA
BH18-B/G-13A	Tailings	202.39	1.00	2.50	201.39	199.89	201.77	0.27	200.88	-0.01	202.24	-0.03	201.26	0.038	201.94	0.088	201.41	0.071	202.00	0.070
BH18-B/G-13B	Tailings	202.42	2.80	4.30	199.62	198.12	202.24	0.02	200.87	-0.002	202.19	0.0005	201.33	0.0052	202.10	-0.004	201.53	-0.0062	202.12	-0.0062
BH18-B/G-13C	Silty clay / Clay	202.42	5.50	8.50	196.92	193.92	202.33	NA	200.87	NA	202.20	NA	201.35	NA	202.08	NA	201.51	NA	202.10	NA
BH18-B/G-16A	Tailings	201.82	0.90	2.40	200.92	199.42	200.84	-0.11	Dry	NA	Dry	NA	NA	NA	200.58	-0.12	200.67	-0.087	200.84	-0.081
BH18-B/G-16B	Tailings	201.76	5.00	6.50	196.76	195.26	200.37	-0.08	198.82	-0.2	199.17	-0.17	198.96	-0.161	200.11	-0.15	200.31	-0.087	200.50	-0.092
BH18-B/G-16C	Clay	201.83	7.80	10.80	194.03	191.03	200.04	NA	197.97	NA	198.44	NA	198.28	NA	199.48	NA	199.94	NA	200.11	NA
Surrounding TIA																				
BH18-B-11	Sand	210.16	0.8	2.8	209.36	207.36	209.93	NA	210.06	NA	209.82	NA	210.00	NA	210.14	NA	210.15	NA	210.19	NA
BH18-B/G-14	Silty clay / Gravel	197.57	5.8	8.8	191.77	188.77	NA ^(a)	NA	197.97	NA	197.91	NA	198.10	NA	198.06	NA	198.20	NA	198.03	NA
BH18-B/G-18	Sand / Clay	202.18	0.8	3.8	201.38	198.38	202.07	NA	201.77	NA	201.34	NA	201.74	NA	202.04	NA	201.98	NA	202.02	NA
BH19-B/G-12	Sand / Clay	197.84	1.3	2.8	196.54	195.04	NM ^(b)	NA	NM ^(b)	NA	197.15	NA	197.27	NA	197.39	NA	197.40	NA	197.38	NA
BH19-B/G-15	Sand / Clay	206.64	1.9	3.4	204.74	203.24	NM ^(b)	NA	NM ^(b)	NA	204.39	NA	204.33	NA	204.57	NA	204.52	NA	204.57	NA
BH19-B/G-17	Sand / Gravel / Clay	195.11	1.4	2.9	193.71	192.21	NM ^(b)	NA	NM ^(b)	NA	194.04	NA	193.96	NA	194.11	NA	194.06	NA	194.07	NA
BH19-B/G-36	Sand / Clayey Sand	198.53	1.9	3.4	196.63	195.13	NM ^(b)	NA	NM ^(b)	NA	197.18	NA	197.06	NA	197.21	NA	197.18	NA	197.17	NA
BH19-B/G-41	Sandy clay / Sand	207.75	1.4	2.9	206.35	204.85	NM ^(b)	NA	NM ^(b)	NA	206.91	NA	207.20	NA	207.46	NA	207.47	NA	207.41	NA
BH19-B/G-42	Clay	211.93	2	3.6	209.93	208.33	NM ^(b)	NA	NM ^(b)	NA	209.24	NA	211.64	NA	211.81	NA	212.17	NA	212.10	NA

- Notes:
- NM – Not Measured
 - NA – Not Applicable
 - Monitoring wells 13A, 16A, and 16B PVC well standpipes were cut down in September 2020 due to well heaving in order to close the locking steel casing.
 - o BH18-B/G-13A – 15.5 cm was removed from the PVC standpipe (Top of casing elevation change: 203.30m to 203.15m)
 - o BH18-B/G-16A – 15.2 cm was removed from the PVC standpipe (Top of casing elevation change: 202.72m to 202.57m)
 - o BH18-B/G-16B – 4.5 cm was removed from the PVC standpipe (Top of casing elevation change: 202.63m to 202.58m)

Dissolved zinc concentrations in the nested wells are presented in Table 2-4. Data measured in samples collected in 2021 are compared with data collected in 2018, 2019 and 2020. Zinc concentrations are higher in porewater in saturated tailings and decrease with depth into unconsolidated deposits as demonstrated by comparison of zinc concentrations in nested monitoring wells within the footprint of the tailings. In 2018 to 2021 samples, dissolved zinc concentrations in the upper tailings ranged from 1.1 mg/L to 17 mg/L. Dissolved zinc concentrations in the base of the tailings ranged from 0.069 mg/L to 9.7 mg/L. Dissolved zinc concentrations in the groundwater beneath the tailings ranged from 0.0084 mg/L to 0.18 mg/L. This indicates that tailings pore water concentrations are continuing to decrease with depth beneath the tailings, and the impacts associated with the tailings are limited to the tailings porewater and shallow (upper few metres) groundwater.

Groundwater wells BH18-B/G-11 and BH19-B/G-41 are located upgradient of the tailings and outside of the apparent contact water run-off extent and therefore can be considered representative of water quality flowing into the site or background. Background dissolved zinc concentration was approximately has ranged from <0.003 to 0.01 mg/L (Table 2-5). Concentrations from samples collected from groundwater wells located downgradient and adjacent to the tailings are also presented in Table 2-5. The highest concentrations were observed in the well located in the southwest corner of the TIA (BH19-B/G-15 range 0.079 to 0.3 mg/L). Dissolved zinc concentrations in the remaining wells ranged from <0.003 to 0.057 mg/L. The data collected to date suggest that the impact from tailings to groundwater is localized to the tailings area and that concentrations decline rapidly immediately laterally and vertically from the tailings source.

Table 2-4 Dissolved Zinc Concentrations within Nested Wells in the TIA

Borehole ID	Dissolved Zinc Concentration (mg/L)						
	Oct 2018	May 2019	Oct 2019	Jul 2020	Sep 2020	Jul 2021	Sep 2021
Upper Tailings							
BH18 - B/G - 10A	Dry	Dry	Dry	Dry	Dry	Dry	Dry
BH18 - B/G - 13A	1.64	1.10	13.0	1.50	14.0	1.80	5.80
BH18 - B/G - 16A	5.05	Dry	Dry	Dry	17.0	13.0	14.0
Tailings Base							
BH18 - B/G - 10B	6.55	9.10	9.30	9.70	9.30	9.20	8.60
BH18 - B/G - 13B	0.62	0.42	0.069	0.27	0.17	0.28	0.26
BH18 - B/G - 16B	2.26	3.60	0.73	1.70	1.40	1.40	0.42
Native Material							
BH18 - B/G - 10C	0.18	0.028	0.062	0.0091	0.0076	0.013	0.0085
BH18 - B/G - 13C	0.041	0.0096	0.15	0.0092	0.0054	< 0.0015	0.0033
BH18 - B/G - 16C	0.058	0.012	0.0084	0.014	0.0092	0.064	0.024

Table 2-5 Dissolved Zinc Concentrations Upgradient and Downgradient of Tailings

Borehole ID	Dissolved Zinc Concentration (mg/L)						
	Oct-18	May-19	Oct-19	Jul-20	Sep-20	Jul-21	Sep-21
Downgradient							
BH19-B/G-12	NA	NA	0.026	0.026	0.028	0.025	0.029
BH18-B/G-14	0.0037	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	<0.0030
BH19-B/G-15	NA	NA	0.079	0.3	0.18	0.18	0.11
BH19-B/G-17	NA	NA	0.041	0.049	0.052	0.049	0.057
BH18-B/G-18	0.022	0.0031	< 0.0030	< 0.0030	< 0.0030	0.0035	0.0034
BH19-B/G-36	NA	NA	0.011	0.017	0.011	0.0088	0.017
BH19-B/G-42	NA	NA	0.04	0.048	0.042	0.021	0.045
Upgradient							
BH18-B/G-11	0.0275	0.01	0.0094	0.0068	0.0095	0.0036	0.008
BH19-B/G-41	NA	NA	0.0092	0.0037	0.0094	<0.0030	<0.0030

2.3 Archaeological Impact Assessment

In 2020, an Archaeological Overview Assessment (AOA) was submitted to the Archaeology Program at the Prince of Wales Northern Heritage Centre (PWNHC) (Meyer 2020). Based on a desktop review of previous assessments done by others in the area and a review of available data (i.e., LiDAR, surficial geology and aerial imagery), two high potential landforms (beach remnants from the former Great Slave Lake shoreline) were identified within the TIA area and

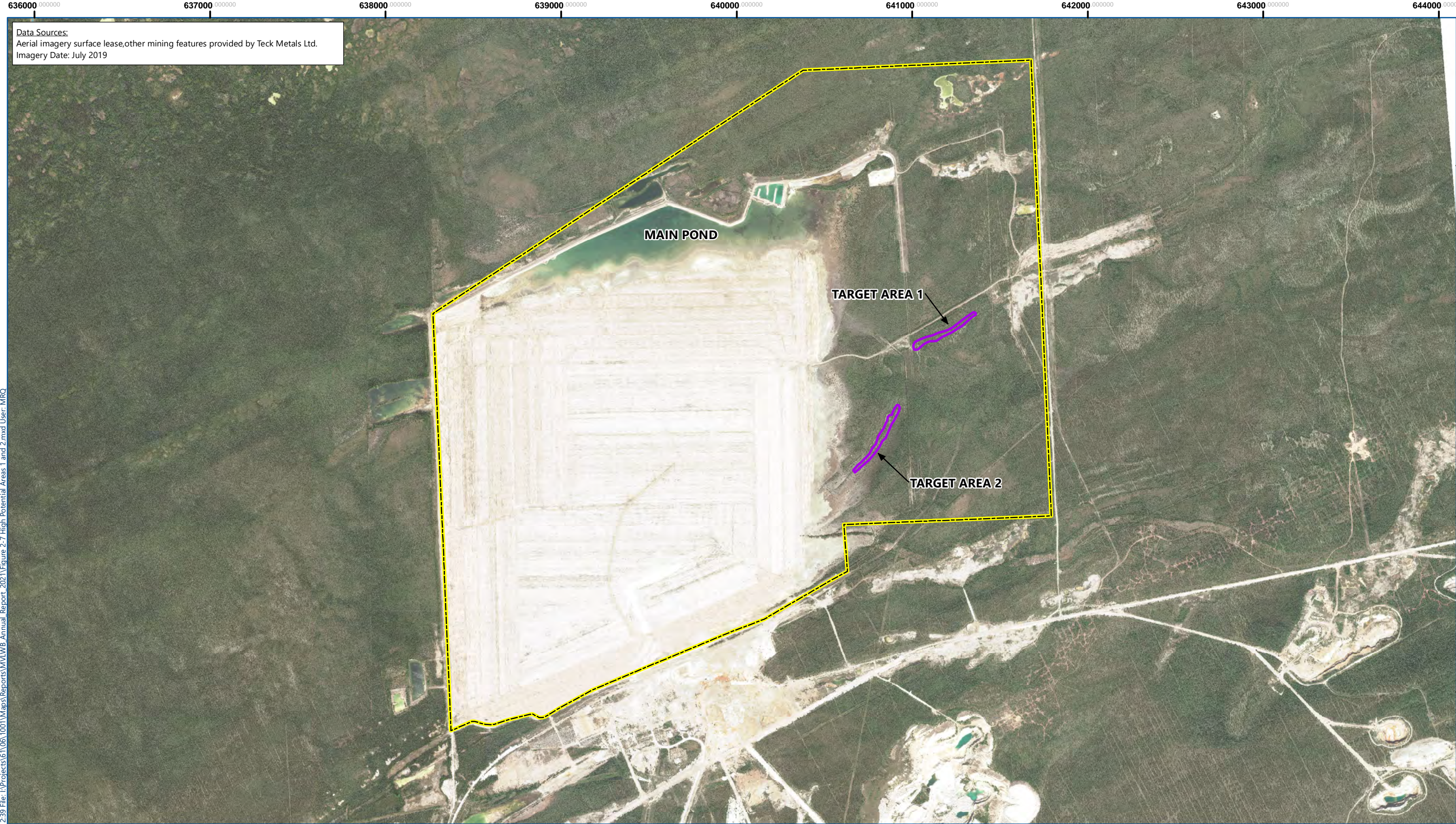
are referred to as Target Areas 1 and 2 (Figure 2-7). These two remnants are a component of a long line of beach remnants that run from southwest to northeast of the TIA. The age of this beachline is unknown, but likely at least 2,000 years based on other studies in the area (as referenced in the AOA), if not considerably older than that. During periods when the lake had receded from the shoreline represented by these beaches, their relative prominence and dryness may have made them a focus for human use of the land. The series of dry landforms marking the extensive southwest-northeast beachline could have formed part of a corridor for trails during warmer times of the year when low, wet, muskeg areas were not frozen. The AOA determined that the remaining land within Teck's surface lease holdings is of low archaeological potential given the existing topography, lack of natural watercourse or lakes/ponds, general lack of high potential landforms like terraces, eskers, and ridges, and the degree of disturbance associated with mining exploration and operation, and previous reclamation of the industrial workings of the mine itself.

An Archaeological Impact Assessment (AIA) was completed in 2021 under Northwest Territories Class 2 Archaeology Permit 2021-018 issued to Dr. Dan Meyer of Lifeways of Canada Limited (Lifeways) on the high potential areas. The purpose of the AIA was to determine if unrecorded archaeological resources are present that require protection (i.e., setbacks). All archaeological sites in NWT are protected under provisions of the *Archaeological Sites Act* and Archaeological Sites Regulations, and the Mackenzie Valley Land Use Regulations prohibit operations within 30 m of a known or suspected archaeological site without authorization.

The AIA included a surface survey and subsurface shovel test program of high potential zones, which was undertaken from September 15 to 18, 2021 by archaeologists from Lifeways and an assistant from DKFN. Transects, approximately 5 m apart, were surveyed by the project team. No discreet areas along the landforms were identified. The subsurface shovel tests were then conducted at 10-m intervals along the landforms. During field operations, Lifeways personnel used a system of sequential field numbers to label individual shovel tests and depths to record provenience. Each of the 125 shovel tests measured at least 35 by 35 cm in size, and excavated to sterile sediments, anywhere from 15 to 35 centimetres below surface (cmbs). In the absence of natural or cultural stratigraphic breaks, tests were excavated in approximate 5-cm levels. Substrate was screened through 6-mm mesh. All shovel tests were backfilled. Each test location was recorded using standard hand-held GPS, notes taken on observed soil horizons, and a sample of tests were photographed to provide additional record. Artifacts were collected and bagged by depth recovered and washed, sorted and classified at the Lifeways laboratory.

The intensive shovel testing program resulted in the recording of a single precontact archaeological site, JfPo-5, that produced two stone artifacts from 10 to 15 cmbs. The archaeological site (Figure 2-8) is on a narrow level part of the beach landform. The artifacts are stone fragments that demonstrate damage consistent with use (i.e., cutting tool). These pieces of debitage appear to be of a toolstone called either Beaver River Sandstone (BRSS) or Muskeg

Valley Microquartzite (MVMq), most commonly found at two bedrock quarry sources north of Fort McMurray, Alberta. In this case, based on other observations of possible natural pieces of this material in the gravel of at least one other shovel test on the landform, the JfPo-5 artifacts may have been flaked from a nodule found in the gravels present on the landform. According to staff of the Cultural Places Program at PWNHC (personal communication, December 9, 2021), there are no other identified examples of BRSS/MVMq artifacts from Northwest Territories. Although associated with a so-far not previously identified toolstone in this area, the site has low artifact density and diversity, including potentially dateable materials or diagnostics, and lacks identified features. Archaeological Site JfPo-5's site significance rating is low, or of only local archaeological significance.



Data Sources:
Aerial imagery surface lease, other mining features provided by Teck Metals Ltd.
Imagery Date: July 2019

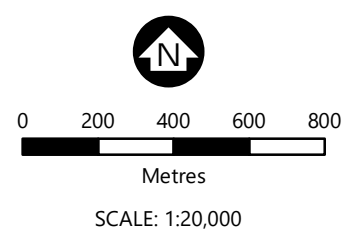
Barr Footer: ArcGIS 10.8.1, 2022-03-10 12:39 File: I:\Projects\61106\1001\Maps\Reports\MVLWB Annual Report 2021\Figure 2-7 High Potential Areas 1 and 2.mxd User: MRQ



Coordinate System: NAD83 UTM
Zone 11N
Created on: 10/03/2022

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Calgary, AB T2P 3E8

- Site Boundary
- Archaeological High Potential Area



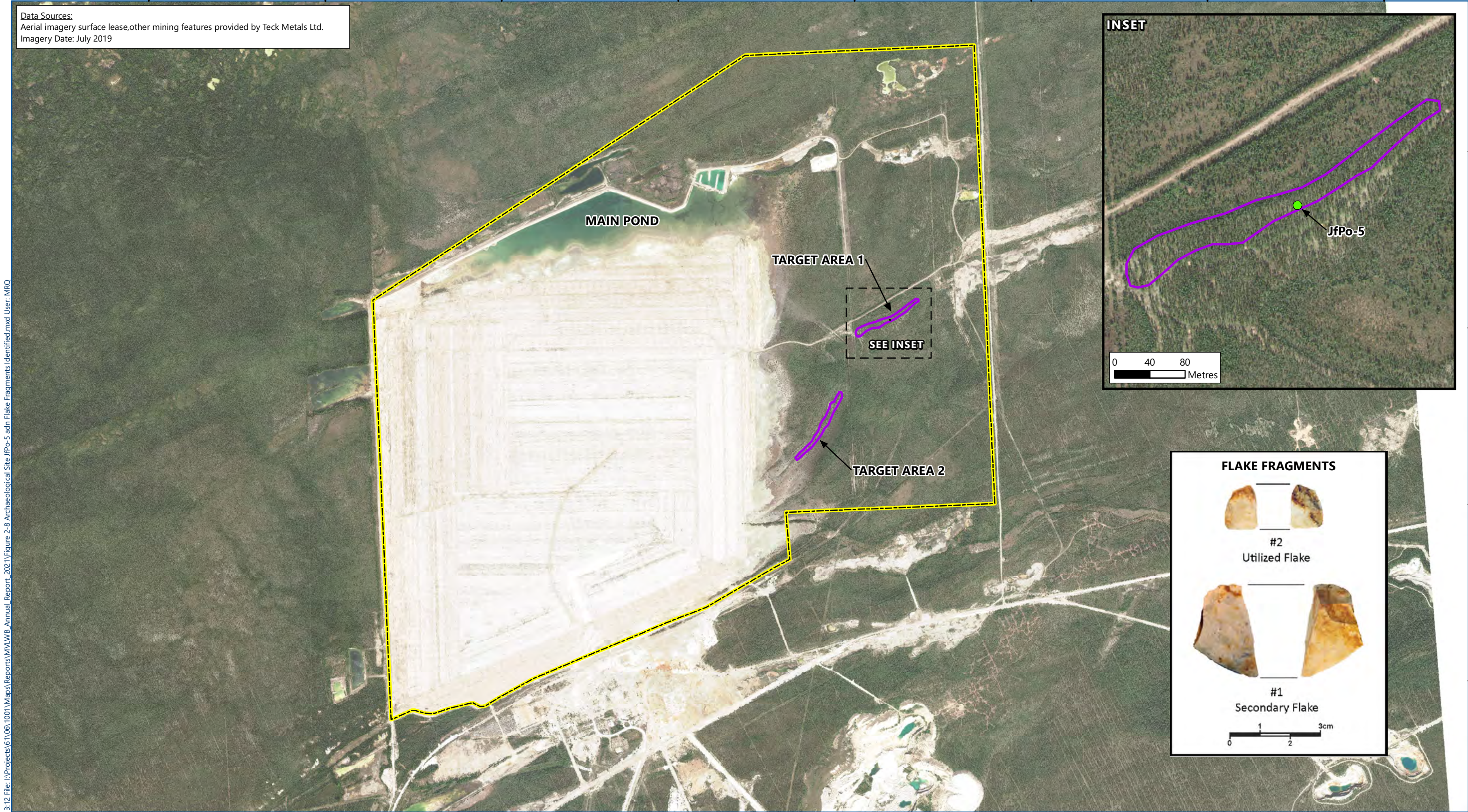
**HIGH POTENTIAL AREAS 1 AND 2
IDENTIFIED IN THE ARCHAEOLOGICAL
OVERVIEW ASSESSMENT**



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Pine Point Tailings Impoundment Area
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FIGURE 2-7

Barr Footer: ArcGIS 10.8.1, 2022-03-10 13:12 File: I:\Projects\61106\1001\Maps\Reports\MVLWB Annual Report 2021\Figure 2-8 Archaeological Site JfPo-5 adn Flake Fragments identified.mxd User: MRQ


Data Sources:
Aerial imagery surface lease, other mining features provided by Teck Metals Ltd.
Imagery Date: July 2019






Coordinate System: NAD83 UTM
Zone 11N
Created on: 10/03/2022


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Site Boundary




Archaeological High Potential Area



Archaeological Site

Note:
Flake fragments image from Archeological Impact Assessment Report,
Lifeways of Canada Limited, 2022.



0 200 400 600 800
Metres
SCALE: 1:20,000

**ARCHAEOLOGICAL SITE JfPo-5
AND FLAKE FRAGMENTS IDENTIFIED**

Annual Report
Pine Point Tailings Impoundment Area
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FIGURE 2-8

2.4 Water Balance Evaluation

A water balance evaluation using the software GoldSim continued in 2021, building off the previous work described in the 2020 annual report. No significant modifications were made to the water balance model; however, ice formation in the Main Pond was included in the model this year. Maskwa completed ice cores monthly between January 2021 and April 2021. These four ice core measurements provided an initial dataset for calibrating the ice formation component of the model as shown below in Figure 2-9, where the purple lines indicate the range of ice thickness measurements during each period. Ice coring activities are planned for the 2021/2022 winter period to further calibrate and validate that component of the model.

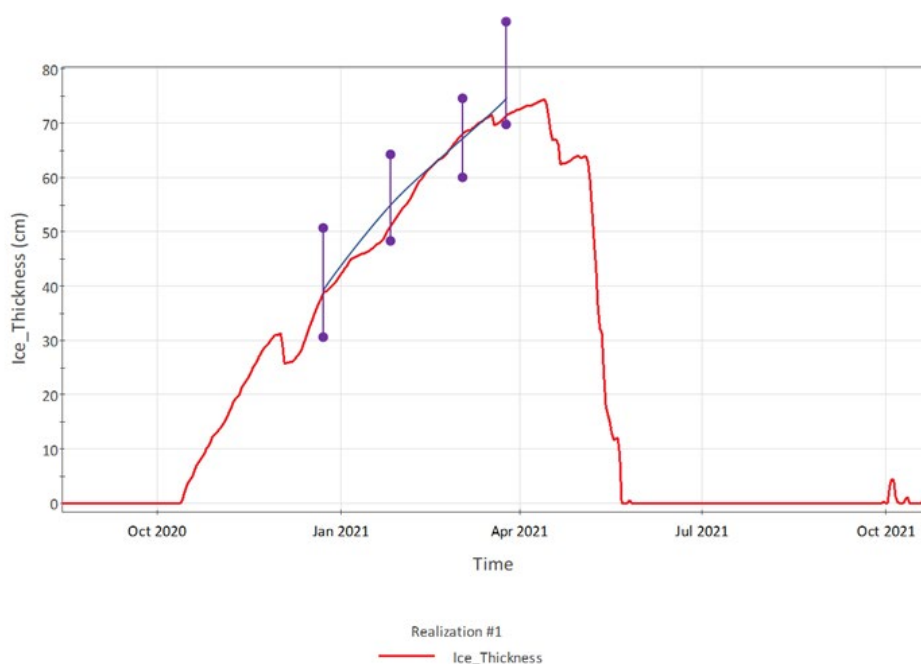


Figure 2-9 Ice Thickness Measurements and Model Results

The model was used to forecast Main Pond peak water levels during freshet based on observed snowpack development. The April modelling forecast, incorporating late March snowpack data and the 14-day weather forecast, predicted the water level to reach 202.2 m, which was the actual observed peak water level. This model forecast is shown below in Figure 2-10. Model forecasting was used to inform monitoring and inspection plans.

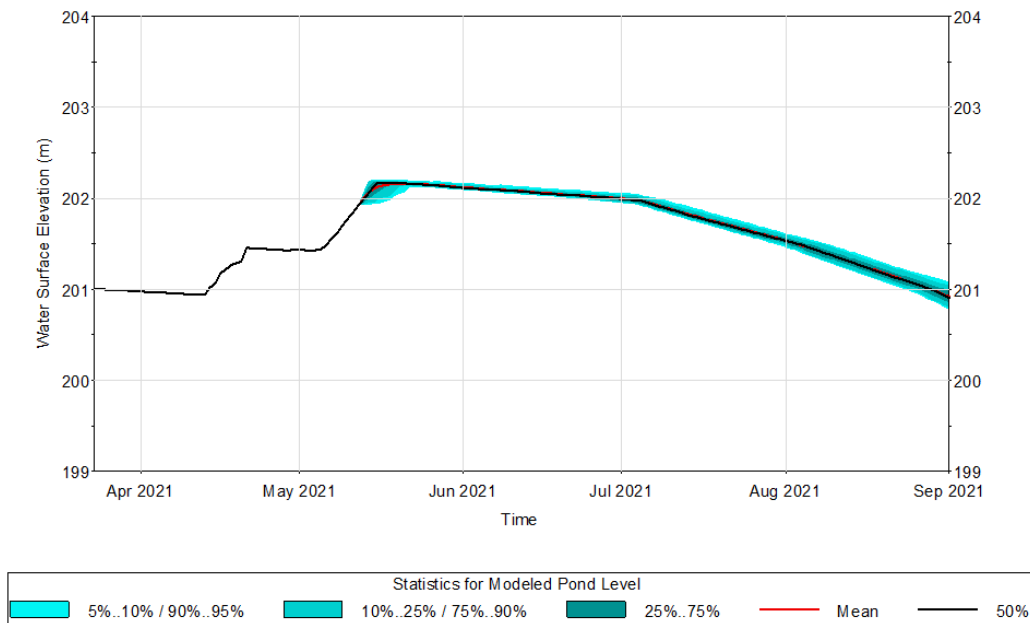


Figure 2-10 Forecasted Peak Water Levels in the Main Pond using the Water Balance Model

Model validation of Main Pond water levels continued during the open water season in 2021, inclusive of the water treatment period. The forecasted water levels, which incorporated actual daily treatment discharge rate information, were closely aligned with actual Main Pond water levels providing confidence that the model is reasonably representing actual conditions at the site. Figure 2-11 shows the model prediction of the Main Pond water level (blue line) starting in mid-June through late September. The actual daily treated discharge rate (black line) was imposed in the model through early August at the time of the model simulation. The blue stars show the actual water level in the Main Pond. The model was used to forecast the end of treatment season based on the target drawdown elevation of 200.1 m.

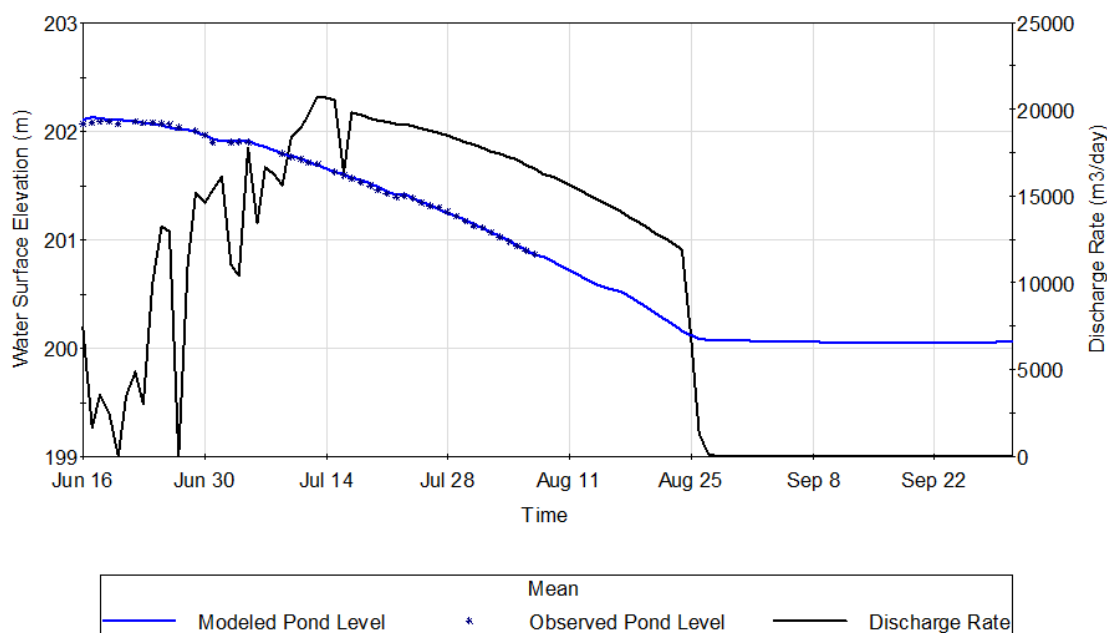
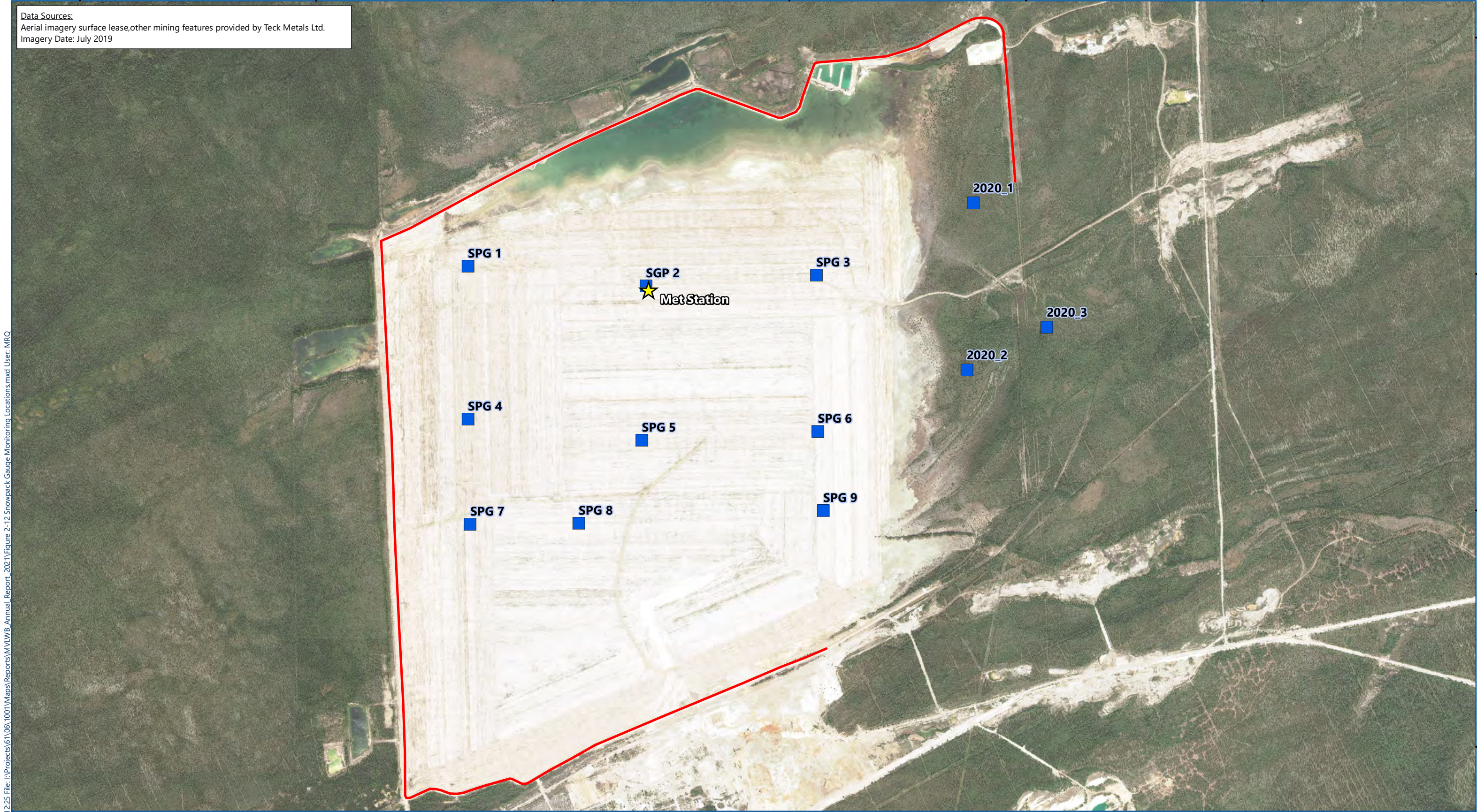



Figure 2-11 Forecasted and Actual Water Levels in the Main Pond during the Summer of 2021

A meteorological station on the north-central portion of the TIA (installed in 2018) is collecting precipitation, temperature, relative humidity, wind speed, wind direction, evaporation and short-wave radiation measurements. During the winter, a grid of snowpack monitoring stations was established (Figure 2-12). Each station has a staff gauge and camera. The cameras are set to periodically take pictures of the staff gauge, which is then used to track snow levels throughout the winter months. Snow coring was completed December, January, February and March to collect snow-water equivalent measurements (Table 2-6). The snow depth and snow-water equivalent measurements were used as input values in the water balance model to estimate Main Pond water levels during the spring melt. This was important for 2021, because Teck was aware that the Main Pond water level was higher than normal in the fall of 2020 due to higher precipitation throughout 2020. Therefore, the water balance model was used by Teck to prepare for water treatment.

Barr Footer: ArcGIS 10.8.1, 2022-03-16 12:25 File: I:\Projects\61106\1001\Maps\Reports\MVLWB Annual Report 2021\Figure 2-12 Snowpack Gauge Monitoring Locations.mxd User: MRQ

Data Sources:
Aerial imagery surface lease, other mining features provided by Teck Metals Ltd.
Imagery Date: July 2019





Coordinate System: NAD83 UTM
Zone 11N
Created on: 16/03/2022


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Snowpack Gauge Monitoring Locations

Met Station

Dikes



0 150 300 450 600
Metres
SCALE: 1:15,000

**SNOWPACK GAUGE
MONITORING LOCATIONS**

Annual Report
Pine Point Tailings Impoundment Area
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FIGURE 2-12

Table 2-6 2021 Snowpack Gauge Monitoring Results

Date	Snow-Water Equivalents (SWE) at Tailings Impoundment Area Gauge Locations (mm)								
	SPG 1	SPG 2	SPG 3	SPG 4	SPG 5	SPG 6	SPG 7	SPG 8	SPG 9
Mar. 23, 2021	183	140	183	143	147	147	123	170	194
Feb. 21, 2021	143	133	150	163	130	137	130	173	127
Jan. 26, 2021	204	130	161	146	123	118	153	126	133
Dec. 22, 2020	106	93	100	93	107	77	80	83	103

2.5 Water Quality Model Development

The water quality model developed in GoldSim using the contaminant transport module (CTM) was further advanced in 2021. The purpose of the water quality model is to forecast water quality changes in the Main Pond over time. Activities completed in 2021 to aid in further refining the model included observation of the Main Pond water quality, Main Pond sediment sampling and analysis, the inclusion of ice exclusion of zinc and solubility controls for zinc based on pH. Main Pond water quality monitoring included periodic sampling and continuous field monitoring with use of a sonde as describe in Section 2.1.1.

The conceptual model for the annual cycle of zinc within the Main Pond is evolving and based on recent monitoring, includes the following four general phases as described below and is illustrated in Figure 2-13:

1. Summer, Fall 2020:
 - pH responsive to treatment pond recirculation and surplus lime addition.
 - Dissolved zinc declines likely due to high pH treatment pond water.
2. Winter 2020:
 - Sharp pH decrease with onset of ice by 0.5 pH units
 - pH continues to drop by 1 pH unit through winter
 - Dissolved zinc concentration rises from 1 mg/L to 2.9 mg/L, likely due to ice exclusion
3. Freshet 2021:
 - Zinc concentration diluted by ice melt and early freshet.
 - After ice-out, both zinc and pH begin to rise.
 - Zinc rises likely due to contribution from late freshet and equilibrium condition. Net concentration change depends on SWE.
4. Summer 2021
 - pH reaches approximate steady-state (pH 8.5), which is in equilibrium with atmospheric carbon dioxide
 - Zinc concentrations decline.

Water quality monitoring is on-going to confirm this annual cycle for zinc in the Main Pond. Ice cores are planned for collection in winter 2021/2022 to confirm the assumption of ice exclusion is the primary mechanism contributing to elevated zinc concentrations in the remaining water phase over the winter period.

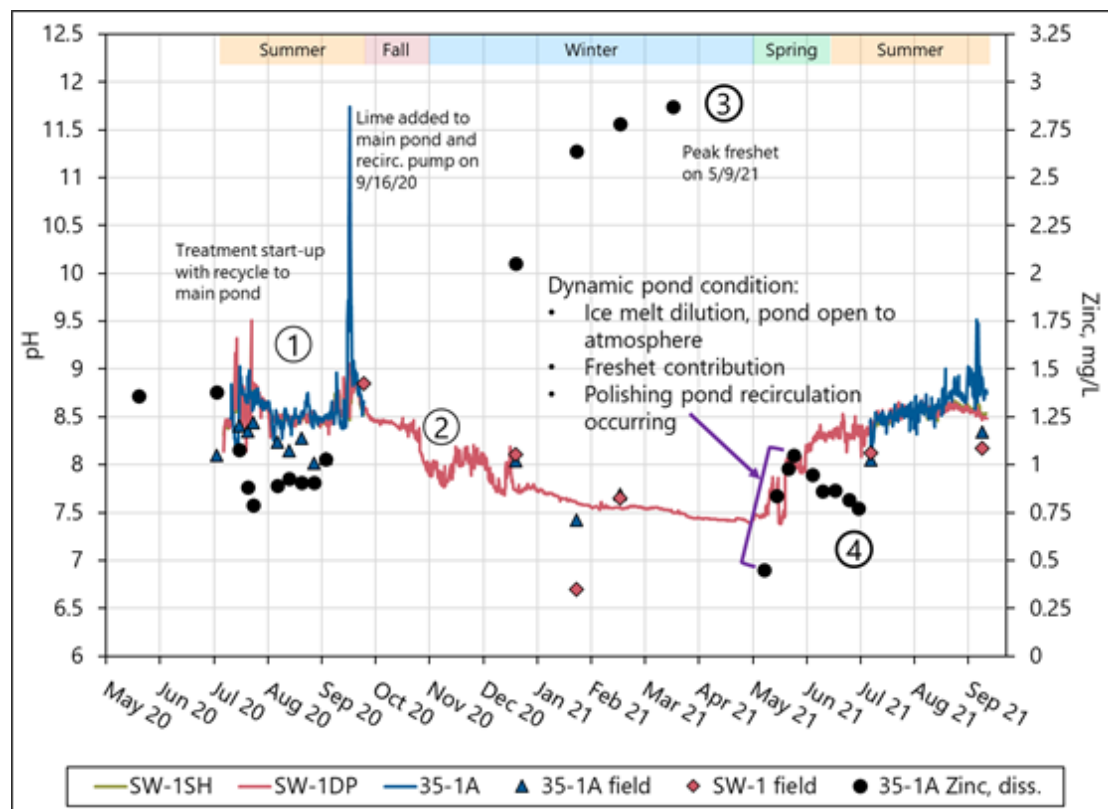


Figure 2-13 Main Pond Seasonal Water Quality

In 2021, six bottom sediment core samples were collected in the Main Pond (Figure 2-14). Samples were collected from between 15 cm to 30 cm in depth using an AMS (Art's Machine Shop, AMS Inc.) sampler. Two sediment samples were collected at SW-01, two samples were collected 100 m to the southeast of SW-01, and two samples were collected 100 m to the southwest of SW-01. The six sediment samples were extracted from the coring tubes and logged, and then submitted to ALS Environmental Laboratories in Tucson, Arizona for shake flask extraction tests and analyses of extractable metals and anions. Results from these analyses indicate that the sediments resemble highly weathered tailings and the sediments are likely not a significant source term and does not merit inclusion in the model at this time.

Barr Footer: ArcGIS 10.8.1, 2022-03-10 12:28 File: I:\Projects\61\06\1001\Maps\Reports\MVLWB Annual Report 2021\Figure 2-9 Main Pond Sediment Sample Locations.mxd User: MRQ

Data Sources:
Aerial imagery surface lease, other mining features provided by Teck Metals Ltd.
Imagery Date: July 2019

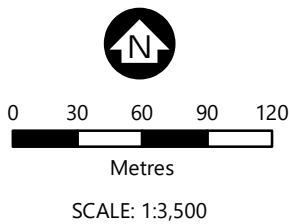


Barr Engineering and Environmental Science Canada Ltd
808 4th Avenue SW
Suite 700
Calgary, AB T2P 3E8

Coordinate System: NAD83 UTM
Zone 11N
Created on: 10/03/2022

● Sediment Sample Location
Two Samples Collected from Each Location (A, B)

Note:
Sediment samples were collected on September 20, 2021 to a
depth of approximately 30-cm using an AMS Sampler.



**MAIN POND SEDIMENT
SAMPLE LOCATIONS**

Annual Report
Pine Point Tailings Impoundment Area
Teck Metals Ltd.

FIGURE 2-14

2.6 Geotechnical Evaluation

In 2020, geotechnical site investigation was conducted to collect geotechnical data that will be used to characterize the site and to support closure design studies. Geotechnical borings, cone penetration tests (CPTs), test pits, additional instrumentation and geophysical surveys were completed.

A total of 16 sonic borings (2 of which were duplicates to allow for cone penetration testing) and 6 test pits were completed at the TIA. Three (3) nested vibrating wire piezometers were installed in one of the borings to monitor water pressure in a dyke and in the foundation, and one vibrating wire piezometer was installed in the main pond to monitor the pond water level. The vibrating wire piezometers were connected to an existing remote monitoring system, which continuously collects data. Twenty (20) CPTs were completed, 18 in the tailings and 2 in natural ground. Thirty (30) pore water pressure dissipation tests were performed as part of CPT testing to assess the in-situ hydraulic conductivity of tailings and native soils. Approximately 3 km of surface geophysics survey lines were completed along the north and west dykes to evaluate depth to bedrock. Sampling and testing location for the 2020 geotechnical site investigation are shown in Figure 2-15 to Figure 2-18.

The factual data report has been completed and will be included in the dam characterization report that is currently in progress. The findings are summarized below:

The general stratigraphy of the native soils was classified from top to bottom as:

- Organic soil – average thickness of 0.4 m (varying from 0.2 m to 0.9 m).
- Lacustrine deposits – average thickness of 7.4 m (varying from 1.5 m to 13.2 m). The Lacustrine deposit gradations included gravels, sands, silts and clays and were highly variable.
- Till – average thickness of 7.6 m (varying from 4.7 m to 12.5 m). The material was generally cohesive lean to fat clay to silty clay, typically containing sand and gravel and occasionally boulders.
- Bedrock – average depth of 23 m (based on drill results), and the bed rock depth varied between 13 m to 40 m (based on geophysical data).

Fill materials encountered during the investigation included:

- Dyke fill at locations along the crest of the dyke. The dyke fill generally consists of fine to coarse gravel and/or sand, silty sand, or sandy silty clay and sandy lean to fat clay. The dyke fill average thickness was 5.9 m (varying from 1.9 m to 9.6 m).

- General fill material, similar to dyke fill at select locations along the dyke toe and in the former mill area south of the TIA. General fill average thickness was 1.6 m (varying from 0.2 m to 2.7 m).
- Tailings – encountered by CPT investigations only. Tailings were interpreted as varying layers of sand, silty sand, sandy silty clay and clay.

Samples of foundation soils and dyke fills were collected and submitted for geotechnical testing including water content, grain size distribution, Atterberg limits, unit weight, specific gravity, organic content, shear strength, and hydraulic conductivity.

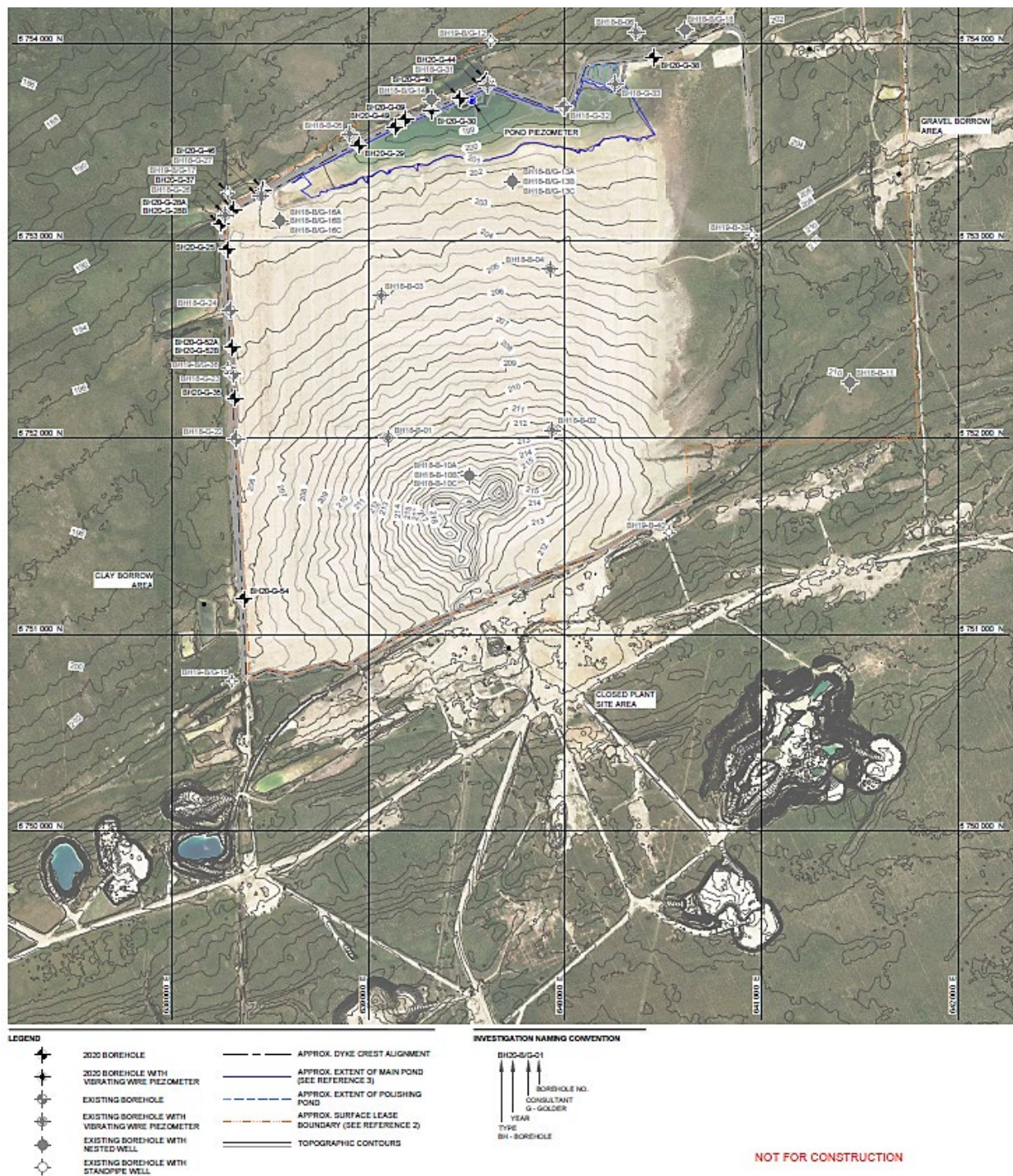


Figure 2-15 2020 Geotechnical Site Investigation – Borehole Location Plan

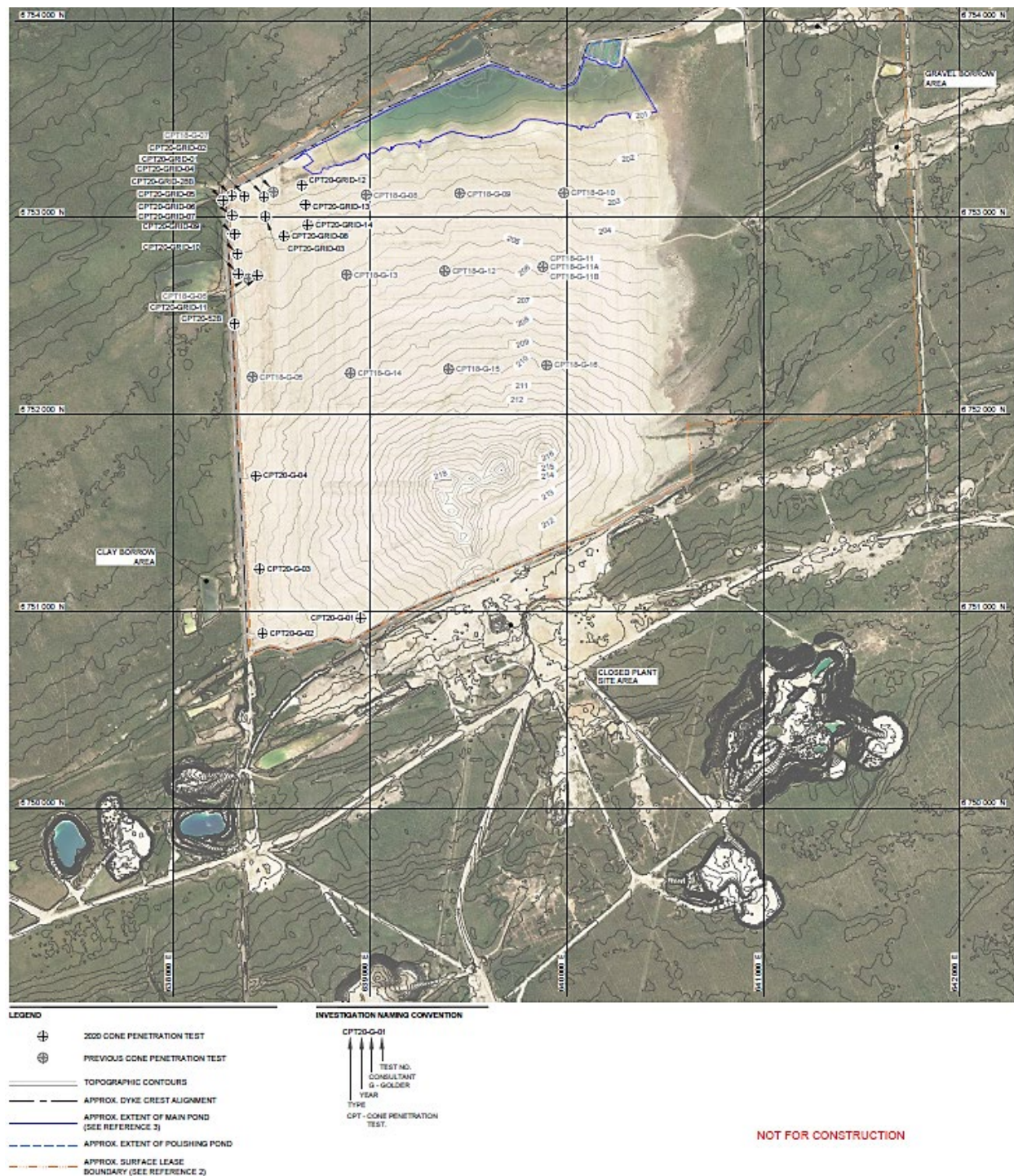


Figure 2-16 2020 Geotechnical Site Investigation – CPT Location Plan

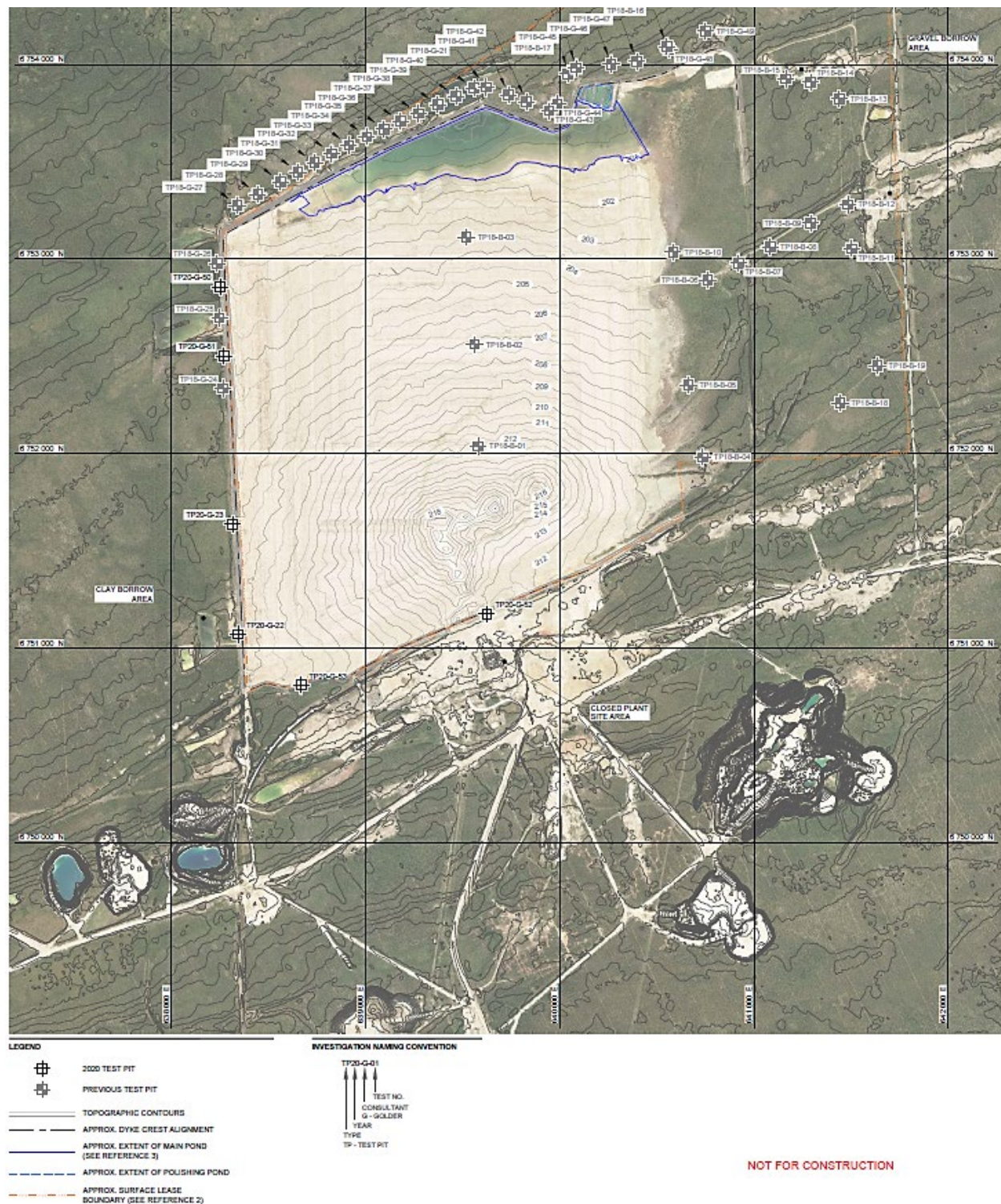


Figure 2-17 2020 Geotechnical Site Investigation – Test Pit Location Plan

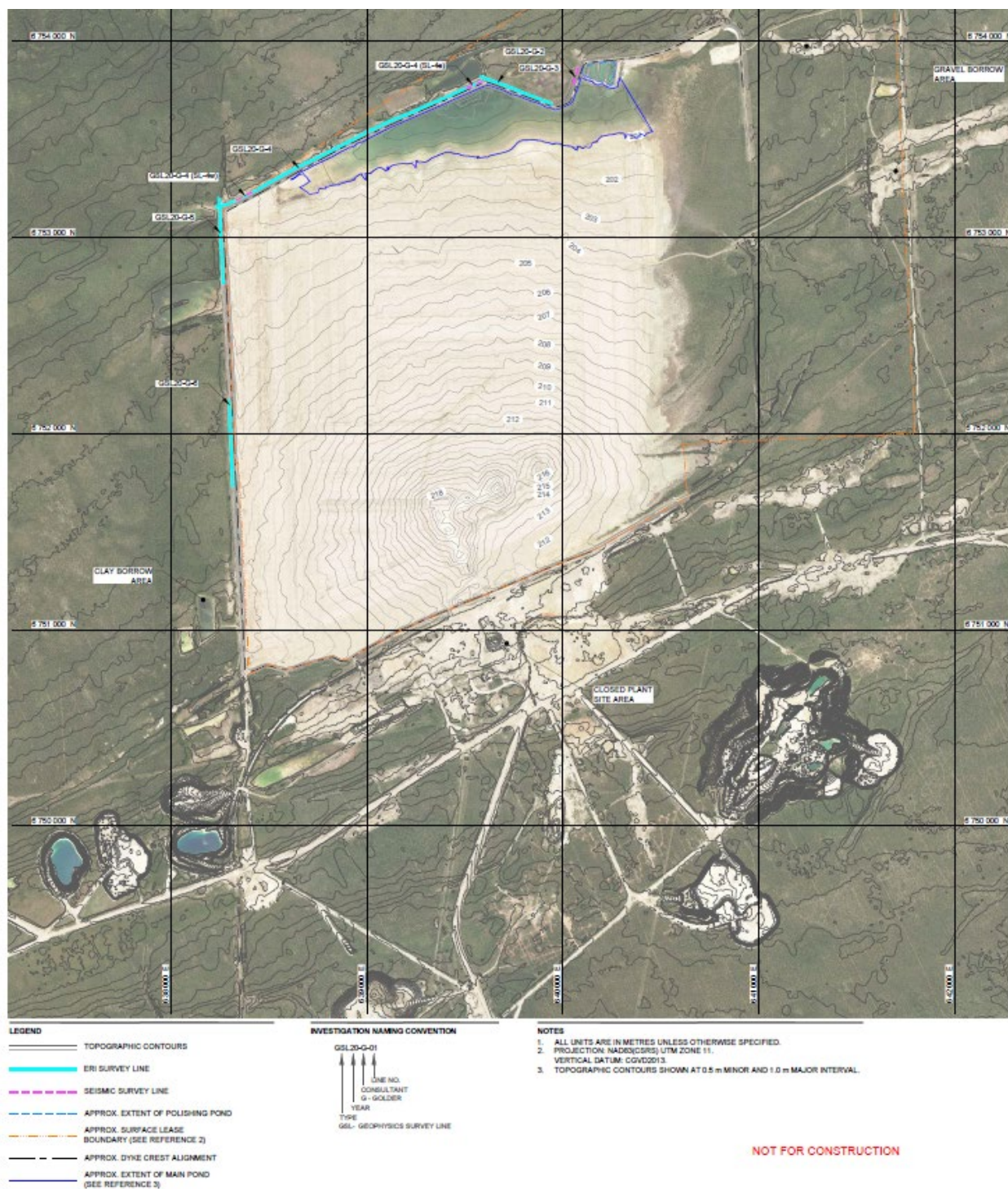


Figure 2-18

2020 Geotechnical Site Investigation – Geophysical Survey Location Plan

2.7 2022 Research Activities

The 2021 Closure and Reclamation Plan included a summary of the results of the 2018 to 2020 research activities. The research completed to date established the current conditions and served as input data for water balance and water quality models. The research data also addressed uncertainties and questions about current conditions as identified in the reclamation research plan. However, residual water quality and the timeframe for water quality to achieve EQC without active water treatment remains uncertain. Additional data gathering and ongoing research will be necessary to complete remaining data gaps as identified in the 2021 CRP. Research activities expected for 2022 are presented in Table 1 below.

Table 2-7 2022 Research Activities

Category	Activity
Ongoing Monitoring	<ul style="list-style-type: none"> • Porewater/groundwater water levels and quality • Surface water quality of main pond and downstream drainage network will be evaluated in the spring • Field study of infiltration during spring melt for water balance and geochemical evaluation
Desktop Assessments	<ul style="list-style-type: none"> • Calibration and validation of GoldSim model for use in current pond operations and to forecast future conditions • Sensitivity analysis on water quality predictions within the Main Pond, including the potential for the shallow tailings leaching rate to decay over time • Review of active water treatment processes and potential for system optimization
Geochemical Evaluation	<ul style="list-style-type: none"> • Column testing that will replicate the column study completed by Cominco in 1989-1992 on raw tailings, but on the weathered tailings • An oxidation/drying test is planned to quantify the rate of accumulation of soluble metal mass following different drying times to provide an estimate of the maximum soluble mass of zinc and other metals • Further investigation of the 'interflow' depth in which flow moves through the tailings toward the main pond
Future Land Use Planning	<ul style="list-style-type: none"> • Pre-mine ecosystem map for the TIA to allow for estimates of residual effects in the next version of the CRP and to inform future land use planning • Next phase of community engagement to collaborate on future land use envisioned for the site

3.0 Engagement Summary

As per the Public Engagement Plan, affected parties were included in distribution lists for reports and plans submitted to the MVLWB. Documents submitted for review in 2021 Closure and Reclamation Plan, the annual Dam Safety Inspection report, the annual Water Licence report (2020) and management plans (i.e., OMS, water treatment, contingency, and waste management plans). Communication also included notifications regarding the Land Use Permit application amendment. The Public Engagement Plan was reviewed in 2021, but no changes were required.

Focused engagement was directed around anticipated spring high-water levels, a land use permit amendment request and the CRP. Due to COVID-19 restrictions, in-person meetings could not be held in 2021. Instead, virtual methods such as a web-based story map and “Zoom” meetings were conducted.

A web-based story map was developed and shared with all Affected Parties on February 25th. The story map was shared via email to community liaisons and via Facebook. The story map introduced the reclamation research and closure and reclamation plan prior to submission. Viewers of the story map had the opportunity to complete a survey to provide comments on the content and inform Teck how they wanted to be engaged in the future. Twelve responses were received. A summary of the survey responses is as follows:

- Interested in learning more about human and ecological risk assessment and water quality
- E-newsletters and social media were the preferred modes of communication
- The area is primarily accessed for hunting trails and for recreational purposes (recreational vehicles)
- People wanted to be involved by helping with environmental monitoring and general services

On April 19 and 20, a virtual workshop was hosted by Teck to provide an overview of the reclamation research and to introduce the CRP planning approach and introduce draft closure objectives for discussion. Seventeen people were in attendance including two people representing DKFN and four people representing the Hamlet of Fort Resolution. FRMG did not have any representatives present. Other attendees included staff from MVLWB, Government of Northwest Territories (GNWT) Environment and Natural Resources, GNWT Lands and Environment and Climate Change Canada. Teck hosted follow-up Zoom meetings with DKFN on May 3 and 17. The Chief, councilors, DKFN staff and land users (total of 12 DKFN representatives) participated. On June 29, Teck met with the FRMG Environment Liaison and their consultant to review the CRP.

The key takeaways from the discussions from workshop were as follows:

- Water quality and dust were raised as on-going concerns
- Factors that can change water quality (e.g., different weather patterns)
- Seepage through the north dyke
- Wildlife exposure to run-off water
- Consider a holistic approach to site closure and understand that all things are connected (i.e., incorporate Indigenous Knowledge)
- Objectives were on the right track and suggestions for improvements were provided

The points above were addressed in the CRP as acknowledgements of future reclamation research needs and for discussions with Fort Resolution residents. For example, additional tailings column tests were proposed to understand weathering, wetting and drying cycles and how these factors will affect zinc mobilization over time. In addition, an end land use plan or future land use plan was also proposed to collaborate with Indigenous Knowledge keepers on the future for the site.

In March and April 2021, Teck communicated with DKFN and FRMG regarding anticipated high-water levels in the spring. In 2018, an emergency decant was required due to high water levels in the spring. Since high-water levels were anticipated for 2021 based on fall 2020 levels, Teck began preparations for high water levels throughout the winter to avoid an emergency decant of untreated water. Preparations included evaluating water level alerts and associated actions, and earlier water treatment. These preparations and plans were communicated with DKFN and FRMG liaisons. DKFN and FRMG representatives appreciated efforts to avoid an emergency decant and asked to be informed during the spring operations. Since communications regarding the CRP also occurred through the spring and early summer, operations updates were also provided during those meetings. A follow-up email summarizing the annual operations was sent in the late fall. No comments were received.

Notifications for a land use permit amendment request were sent to all affected parties identified in the Engagement Plan on June 4 and June 14, 2021. DKFN and FRMG requested more information regarding the request, which was provided by email and phone conversations. The land use permit amendment request was for use of additional equipment and fuel storage to operate mechanical evaporators on the Main Pond to reduce water levels. Information requests were focused on programming of evaporators to prevent spray outside of the TIA, expected operational efficiency and operating oversight (who and how often). Operational configurations were still in planning phases at the time of the meetings. The mechanical evaporators were not installed in 2021, and therefore, there was no further follow-up.

Fort Resolution residents were employed during the reclamation research activities in July, September and October. Residents carried out roles such as wildlife monitoring (including den sweeps) and assistance in the collection of environmental samples (water). A total of 30

working days were completed by members from the Deninu K'ue First Nation in support of field days during which the reclamation research activities occurred.

More than 50 email exchanges and phone calls occurred between Teck representatives and affected parties. Most of these communication exchanges were in relation to the CRP, field program support and providing updates on site operations.

4.0 Major Modification or Construction Activities

There were no modifications or construction activities in accordance with Part E of the Licence. Maintenance works were conducted and are further discussed in Section 6.2.

5.0 Water Management Plan Activities

Water accumulates in the Main Pond every spring from snowmelt and rainfall. Concentrations of zinc in the Main Pond are greater than the Water Licence EQC and cannot be released to the environment without treatment. Arsenic, copper, lead, cyanide, ammonia and TSS concentrations in the Main Pond were all less than the EQC. Each year accumulated water is treated by gravity drainage (i.e., not pumped) through a culvert, where it is mixed with lime, to form insoluble precipitates that settle to form a sludge in the treatment pond. Treated water is released when lab data are available that concentrations are less than the EQC. Water is treated until the water level in the Main Pond is dropped to a minimum level (i.e., water can no longer flow through the culvert).

The water treatment plant is a simple lime treatment system that consists of a lime silo, trailer mounted pump/blower unit, lime slurry tank, jet mixer, water pump and a trailer mounted laboratory. Most of the equipment is stored in Hay River through the winter and is assembled on site for the operating period.

The 2020 annual tailings facility inspection (Golder, 2020) recommended an interim plan to manage the 2021 freshet, including defining interim freeboard limits. Based on updated survey data, climate data, and a hydrologic assessment, an interim Normal Operating Water Level (NOWL) of 201.9 m was recommended for the 2021 freshet (Golder Associates Ltd., 2021). This interim level was based on the scenario where the site is remotely monitored and personnel are not on site. In the case where personnel are on site and are actively monitoring dyke stability with the ability to effectively respond to emergency, including ability to discharge water if needed, a NOWL of 202.4 m will be used as recommended by the Golder (2021) for the 2021 freshet. In accordance, a trigger-action-response-plan (TARP) was developed and incorporated into the revised water treatment manual.

On 26 February 2021, the following manual was revised and submitted to MVLWB for approval to incorporate interim operational water levels, pre-season preparations and descriptions of water treatment and water reduction trials to be conducted in 2021.

- Pine Point Mine Tailings Impoundment Water Treatment Manual (PP-EP-001 V005)

On 7 May 2021, the following manual was revised and submitted to MVLWB for approval to address details of the mechanical evaporator trial plan and effectiveness review, and to clarify timing and scheduling of additional treatment technology trials to describe overlap and independently conducted trials

- Pine Point Mine Tailings Impoundment Water Treatment Manual (PP-EP-001 V006)

On 22 June 2021, the following manuals were revised and submitted to MVLWB as part of the Land Use Permit amendment application to address the request for additional fuel use and storage to support the proposed mechanical evaporator trial plan, as well as the use of additional treatment technologies include coagulants and flocculants

- Pine Point Mine Tailings Impoundment Waste Management Manual (PP-EP-003 V005)
- Pine Point Mine Tailings Impoundment Contingency Manual (PP-EP-005 V004).

On 17 September 2021, the following manual was revised and submitted to MVLWB for approval to address review comments specific to the controlled use of mechanical evaporators

- Pine Point Mine Tailings Impoundment Contingency Manual (PP-EP-005 V005).

5.1 Annual Water Treatment Summary

5.1.1 Annual Water Treatment Kick-Off

The annual water treatment kickoff meeting was conducted at Cobb Enterprises residence in Fernie, BC on May 11, 2021 and was attended by the three key employees of Cobb Enterprises and the Teck water treatment supervisor. All relevant safety documents including the Mine Emergency Response plan were reviewed with treatment operators. Updated versions of the Pine Point Mine Tailings Impoundment Water Treatment Manual and the Pine Point Mine Tailings Impoundment Contingency Manual were reviewed at the time, focusing on recent version updates. Major topics of the kickoff meeting included response to high water levels, requirements for on-site personnel including spill response, and inspection duties related to water levels.

5.1.2 Water Treatment Operations

Water treatment operations in 2021 started earlier than previous years to due to forecasted high water levels. At the end of the 2020 water treatment season, the water level of the Main Pond was not drawn down as low as typical. On average, the water level is drawn down to 200.30 m by the end of the water treatment season; however, in Fall 2020 the water level was 200.92 m

due to above average precipitation during the 2020 water treatment season. The resulting Spring 2021 water level was 201.64 m. By the time water treatment started (9 June 2021), the water level of the Main Pond reached 202.11 m due to additional run-in and precipitation.

Water treatment was initiated on 9 June 2021 and completed on 12 September 2021, equating to 96 days of active water treatment. No water was discharged on six days for reasons unrelated to water treatment issues. No discharge occurred on June 13, 14, 20 and 27, 2021, due to the operators reaching the maximum allowable work hours (alternate operators were not available at the time). Additionally, no discharge occurred on August 26 and 27, 2021 due to a brief shutdown to install a temporary coffer dam at the inlet of the treatment pond.

A total of 1,141,029.5 m³ of treated water was released during the 2021 water treatment period as recorded by the flow meters on the discharge siphons. This is the greatest volume of treated and released water since the commencement of active water treatment at Pine Point. The high treated water volume was due to the high pre-treatment Main Pond water levels and the installation of a temporary coffer dam near the end of the active water treatment period.

The temporary coffer dam was installed on August 26 and 27, 2021 to treat additional water to further reduce the water level of the Main Pond. The water level prior to the coffer dam installation was 200.38 m (August 25, 2021), which equates to a Main Pond water volume of 0.259 Mm³ (1.051 Mm³ had been treated by that date). Following the coffer dam installation, an additional 89,754.64 m³ of water was treated and released. The final Main Pond water level was 200.06 m.

Daily discharge volumes and cumulative volumes as shown in Table 5-1.

Table 5-1 Discharge Volume at Station 35-1B

Sampling Date (YYYY-MM-DD)	Volume Discharged (m ³)	Cumulative Volume Discharged (m ³)
2021-06-09	7,462.272	7,462.272
2021-06-10	8,988.369	16,450.641
2021-06-11	8,987.116	25,437.757
2021-06-12	6,816.181	32,253.938
2021-06-13	no discharge	32,253.938
2021-06-14	no discharge	32,253.938
2021-06-15	6,714.721	38,968.659
2021-06-16	7,436.106	46,404.765
2021-06-17	1,676.246	48,081.011
2021-06-18	3,563.233	51,644.244
2021-06-19	2,517.925	54,162.169

Sampling Date (YYYY-MM-DD)	Volume Discharged (m ³)	Cumulative Volume Discharged (m ³)
2021-06-20	no discharge	54,162.169
2021-06-21	3,514.538	57,676.707
2021-06-22	5,012.339	62,689.046
2021-06-23	3,021.248	65,710.294
2021-06-24	10,195.620	75,905.914
2021-06-25	13,266.979	89,172.893
2021-06-26	12,981.116	102,154.009
2021-06-27	no discharge	102,154.009
2021-06-28	11,356.983	113,510.991
2021-06-29	15,508.829	129,019.820
2021-06-30	15,514.970	144,534.791
2021-07-01	15,588.865	160,123.655
2021-07-02	16,869.870	176,993.525
2021-07-03	12,022.196	189,015.721
2021-07-04	10,628.752	199,644.473
2021-07-05	18,088.098	217,732.571
2021-07-06	13,406.045	231,138.616
2021-07-07	16,635.755	247,774.371
2021-07-08	16,238.824	264,013.195
2021-07-09	15,625.009	279,638.204
2021-07-10	18,415.349	298,053.553
2021-07-11	18,906.236	316,959.789
2021-07-12	19,696.257	336,656.046
2021-07-13	20,706.340	357,362.386
2021-07-14	20,651.000	378,013.386
2021-07-15	20,505.000	398,518.386
2021-07-16	16,296.495	414,814.881
2021-07-17	19,816.170	434,631.051
2021-07-18	19,646.181	454,277.232
2021-07-19	19,454.604	473,731.836
2021-07-20	19,335.742	493,067.578
2021-07-21	19,281.180	512,348.758
2021-07-22	19,141.000	531,489.758
2021-07-23	19,135.106	550,624.864
2021-07-24	19,013.207	569,638.071
2021-07-25	18,904.980	588,543.051

Sampling Date (YYYY-MM-DD)	Volume Discharged (m ³)	Cumulative Volume Discharged (m ³)
2021-07-26	18,731.411	607,274.462
2021-07-27	18,630.998	625,905.460
2021-07-28	18,463.758	644,369.218
2021-07-29	18,290.130	662,659.348
2021-07-30	18,067.839	680,727.187
2021-07-31	17,944.972	698,672.159
2021-08-01	17,738.730	716,410.889
2021-08-02	17,537.526	733,948.415
2021-08-03	17,436.417	751,384.832
2021-08-04	17,241.677	768,626.509
2021-08-05	17,106.360	785,732.869
2021-08-06	16,776.871	802,509.740
2021-08-07	16,594.079	819,103.819
2021-08-08	16,278.270	835,382.089
2021-08-09	15,876.127	851,258.216
2021-08-10	15,900.798	867,159.014
2021-08-11	15,643.700	882,802.714
2021-08-12	15,172.801	897,975.515
2021-08-13	14,808.286	912,783.801
2021-08-14	14,027.436	926,811.237
2021-08-15	11,755.052	938,566.289
2021-08-16	13,792.394	952,358.683
2021-08-17	14,504.276	966,862.959
2021-08-18	14,096.717	980,959.676
2021-08-19	13,778.854	994,738.530
2021-08-20	13,337.749	1,008,076.279
2021-08-21	12,589.079	1,020,665.358
2021-08-22	10,813.887	1,031,479.245
2021-08-23	8,827.723	1,040,306.968
2021-08-24	8,091.374	1,048,398.342
2021-08-25	2,876.473	1,051,274.815
2021-08-26	no discharge	1,051,274.815
2021-08-27	no discharge	1,051,274.815
2021-08-28	4,446.758	1,055,721.573
2021-08-29	5,018.384	1,060,739.957
2021-08-30	5,763.391	1,066,503.348

Sampling Date (YYYY-MM-DD)	Volume Discharged (m ³)	Cumulative Volume Discharged (m ³)
2021-08-31	5,177.291	1,071,680.639
2021-09-01	5,387.253	1,077,067.893
2021-09-02	5,282.912	1,082,350.805
2021-09-03	5,341.786	1,087,692.591
2021-09-04	5,607.880	1,093,300.471
2021-09-05	5,627.717	1,098,928.188
2021-09-06	3,921.042	1,102,849.230
2021-09-07	5,487.910	1,108,337.140
2021-09-08	6,621.646	1,114,958.786
2021-09-09	6,649.853	1,121,608.639
2021-09-10	6,644.043	1,128,252.682
2021-09-11	6,616.668	1,134,869.350
2021-09-12	6,160.105	1,141,029.455
Total Volume		1,141,029.455

5.2 Water Treatment Process Updates

No flocculant blocks were deployed in 2021, nor were any flocculant additives used during water treatment. Flocculant blocks or additives were not necessary because total suspended solids (TSS) concentrations were low throughout 2021, which was attributed to favourable wind patterns, use of turbidity curtains and due to removal of sludge in the fall of 2020. Removal of sludge allowed for heightened system performance by creating more volume for settling particulates and reducing the potential for resuspension of particulates previously experienced on high-wind days.

5.2.1 Water Treatment Trials

Two trials were planned for 2021 to improve water treatment operations as outlined in the Water Treatment Manual. Use of mechanical evaporators was proposed as a supplement to water treatment to increase the rate of water level draw down during the open water season. Initial planning began in early summer, when water levels were known to be high. Planning included feasibility assessments and amendment requests for the Land Use Permit to allow for an increase in the amount of fuel storage and equipment that would be necessary for operation of the mechanical evaporators. However, as the summer progressed, the success of the water treatment operations at treating and discharging water outweighed the risks and costs associated with mechanical evaporator operations. Therefore, the mechanical evaporators were not trialed in 2021.

A field trial using coagulant and flocculant additives was also proposed in the Water Treatment Manual. In advance of a field trial, a bench-scale test was done with ten coagulant and flocculant products from Solenis, a supplier of water treatment products. Coagulants and flocculants were provided by Solenis. Table 5-2 summarizes information about the coagulants and flocculants tested, including the primary active ingredients and make-down concentrations used for testing.

Table 5-2 Coagulants and Flocculants Tested in the Bench-Scale Trial

Product Name	Active Ingredient(s) in Product (% w/w)	Liquid, Emulsion, or Dry	Product Density (g/mL)	Typical Product Dose Range (ppm w/v)	Make-down Concentration of Product (% w/v)
Organic Coagulants					
Amerfloc 485	50% Polyamine (moderate molecular weight)	Liquid	0.805	1-5	1.0%
Amerfloc 487	40% PolyDADMAC (moderate molecular weight)	Liquid	1.09	1-5	1.0%
Inorganic + Organic Coagulants					
Chargepac 47	50% Aluminum chlorohydrate 10% PolyDADMAC	Liquid	1.22	5-20	1.0%
Chargepac 7	50% Aluminum chlorohydrate 5% PolyDADMAC	Liquid	1.32	5-20	1.0%
Anionic Flocculants					
Drewfloc 2205	35-45% Anionic flocculant (CD=-5)	Emulsion	1.05	0.25-1	0.10%
Drewfloc 2220	35-45% Anionic flocculant (CD=-20)	Emulsion	1.05	0.25-1	0.10%
Drewfloc 2270	35-45% Anionic flocculant (CD=-35)	Emulsion	1.05	0.25-1	0.10%
Drewfloc 212	95% Anionic flocculant (CD=-10)	Dry	0.72	0.25-1	0.10%
Drewfloc 270	95% Anionic flocculant (CD=-25)	Dry	0.72	0.25-1	0.10%
Drewfloc 277	95% Anionic flocculant (CD=-35)	Dry	0.72	0.25-1	0.10%

PolyDADMAC = Polydiallyldimethylammonium chloride

CD = charge density

% w/w = unit of concentration, percent ratio by weight

% w/v = unit of concentration, percent ratio as weight per volume (g/mL or kg/L)

Water from the Main Pond was submitted to a laboratory (Barr Engineering's water lab in Minneapolis, MN) where the tests were conducted. The water was initially treated using lime at a rate similar to that used at the Pine Point water treatment pond. Following this, initial screening tests were conducted by adding the additives in small sequential doses to observe visual particle aggregation and settling in comparison to lime-only treatment. Based on the results of the screening, confirmation tests were done with the two best performing coagulants and the two best performing flocculants to assess the repeatability of the screening test. A series of treatability tests were then conducted using the best coagulant (Chargepac 7) and flocculant (Drewfloc 270) – singularly and in combination at varying doses – and the supernatant water (after overnight settling of particulates) was then submitted to an external analytical laboratory for analyses of total and dissolved metals, and total suspended solids.

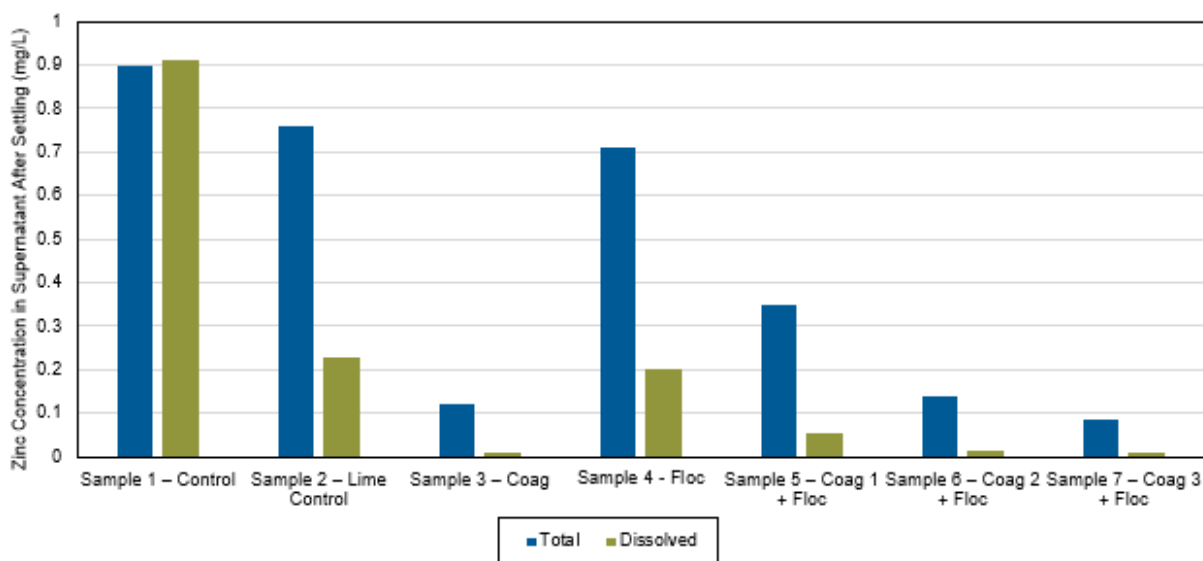


Figure 5-1 Comparison of Analytical Zinc Concentrations from Treatability Testing

Key takeaways from the treatability tests are as follows:

- Lime treatment (Sample 2) only reduced total zinc to about 0.75 mg/L which is above the EQC. This limited improvement is attributed to the reduced settling time of the treatability jar test compared to the field condition which has extended settling time and thus, should not be extrapolated to field performance of lime treatment.
- Addition of only coagulant results in similar zinc treatment as moderate dosing of coagulant and flocculant in tandem (compare Sample 3 and Sample 6 in Figure 5-1).
- Flocculant treatment on its own did not improve zinc removal beyond the level that is achieved with lime treatment (Compare Sample 2 with Sample 4 in Figure 5-1).
- Higher doses of coagulant resulted in lower zinc concentrations, both total and dissolved (Compare Samples 5 (lower dosing) to Sample 7 (higher dosing) in Figure 5-1).
- All chemically treated samples had concentrations of total suspended solids significantly below the EQC of 25 mg/L.

While the results of the treatability tests suggest that coagulant alone (Sample 3) provides a similar level of treatment to the coagulant + flocculant (Sample 6), there was a clear visual difference between the two samples after overnight settling. Sample 6 had larger agglomerated particles (floc structures) that were denser, while the particles in Sample 3 were smaller and looser. The particles in Sample 6 showed faster settling as opposed to the particles of Sample 3. Therefore, it is recommended to use a moderate dosing of both the coagulant and flocculant in tandem. Use of coagulant alone would also likely improve zinc removal, but the particles may be more vulnerable to resuspension in the channel than the particles formed with the combination of coagulant and flocculant.

Based on the bench testing results, the recommended next step is to conduct a field trial using the coagulant Chargepac 7 and the flocculant Drewfloc 270. A 5- to 7-day trial is planned to perform field-scale tests under normal operating conditions in 2022.

6.0 Operations and Maintenance Plan Update and Activities

The Operations and Maintenance Plan entitled *Operations, Maintenance and Surveillance Plan for Pine Point Tailings Impoundment Area – Version 5* was submitted in May 2020 (Teck, 2020). Updates included the addition of a requirement to update emergency response documentation. The OMS also incorporates the Water Treatment Plant and Contingency Manuals which were previously referenced in Section 5.0.

6.1 Surveillance Activities

Surveillance activities at the Pine Point TIA in 2021 included geotechnical site inspections by both the Engineer of Record and by the Tailings Surveillance Officer:

- Engineer of Record – Klohn Crippen Berger (KCB)
 - 21 July 2021 – annual Dam Safety Inspection (DSI) routine inspection (with Tailings Surveillance Officer and Teck).
- Tailings Surveillance Officer – Maskwa Engineering Limited (Maskwa)
 - 9 May 2021 to 19 May 2021 – 7 event-driven inspections after freshet
 - 23 June 2021 – 4 event-driven inspections in summer
 - 27 August 2021 – 1 event-driven inspection in fall

The results of the surveillance are documented in the 2021 Annual Facility Performance Review (AFPR) (Klohn Crippen Berger, 2021), submitted to MVWLB on December 8, 2021. The report can be found on the registry at the following link: [2021 Annual Facility Performance Review](#).

In 2021, the water level in the pond reached approximately 202.1 m (on 10 May 2021) which was above the alert level of 201.9 m as evidenced by a site visit conducted by the Tailings Surveillance Officer under direction from Engineer of Record. The following actions were taken:

- Water treatment began on 9 June 2021 and the water level dropped below the alert level on 21 June 2021.
- By 12 September 2021 (at the end of the 2021 water treatment campaign), the water level was at 200.1 m which was lower than historical levels after treatment. The water level during the monitoring period was more or equal to 1.4 m below the crest level, which met the water licence freeboard requirement of 1.0 m.

Installation of a remote view camera to monitor the main pond staff gauge in 2020 will continue to support monitoring the water levels remotely for the site in 2022. In addition, the 2021 water

level was lower than the historical level, and a 2022 freshet management plan will be also developed to manage the water level for the TIA.

6.2 Maintenance Activities

During the Annual Performance Facility Review conducted by the Engineer of Record, a few areas of the north dyke were observed to require maintenance. Maintenance included grading dyke crests to remove surficial surface cracks on the south and north dykes, repair a 1,200 m scarp on the upstream slope of the north dyke, and armour approximately 1,500 m of the upstream face of the north dyke.

Photographs 1 and 2 shows an example of the slumping and erosion observed on the North Dyke and Photographs 3 and 4 show the North Dyke repairs



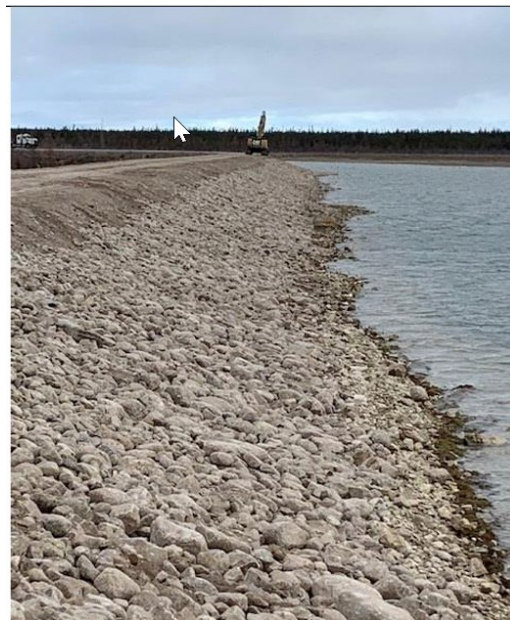
Photograph 1 – North Dyke – looking east, slumping and erosion on upstream slope



Photograph 2 – North Dyke – looking east, slumping and erosion on upstream slope



Photograph 3 – Placing riprap on North Dyke

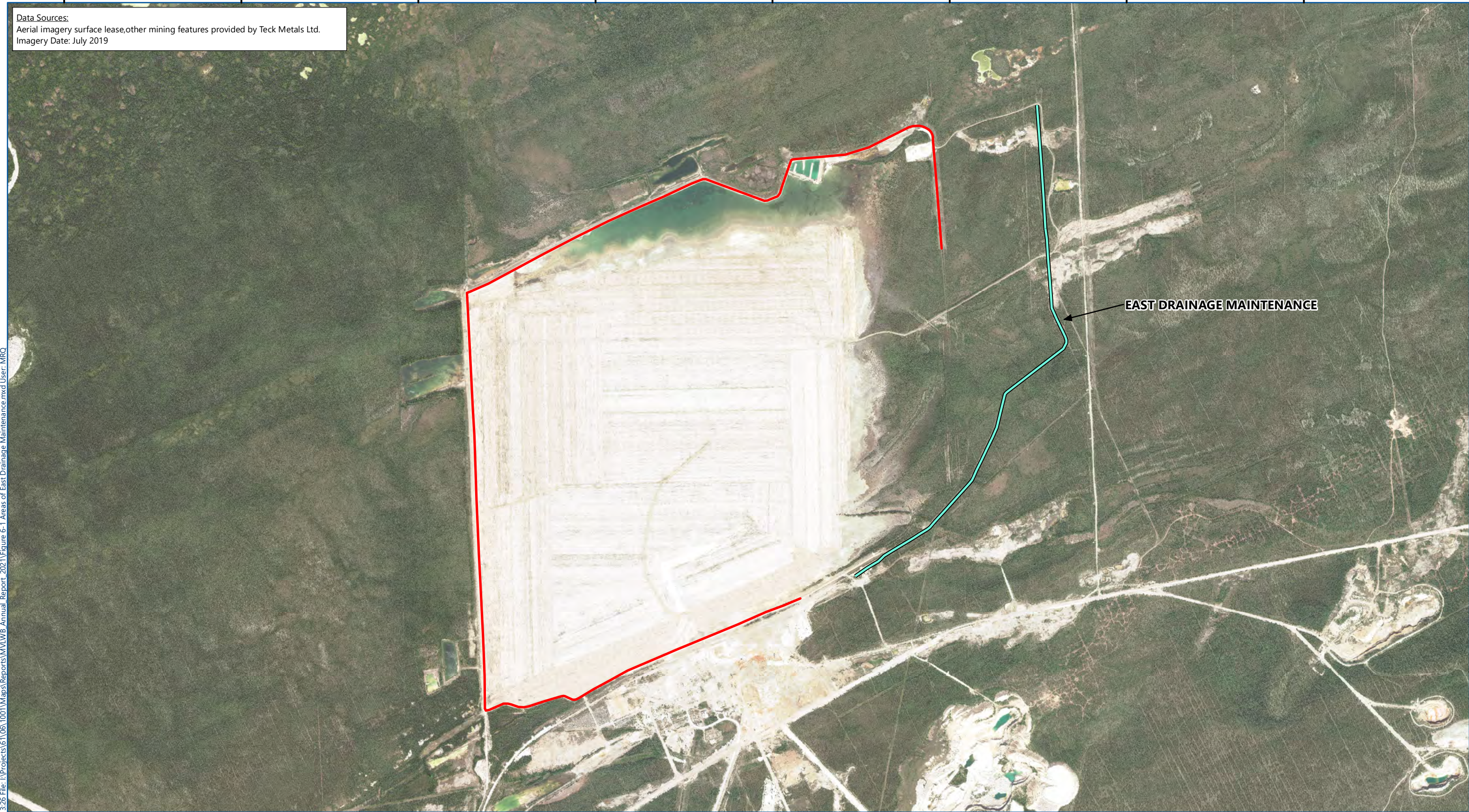


Photograph 4 – North Dyke banks shaped and riprap placed

In October 2021, maintenance was completed on the east diversion ditch as indicated by the teal line in Figure 6-1. The purpose of the maintenance was to repair areas where the ditch was no longer functioning properly. Repairs included improvements to ditch walls to prevent overtopping, ditch grading to enhance water diversion (Photo 5), removal of fallen trees and vegetation and removal of two beaver structures.



Photograph 5 – East Diversion Ditch grading



Data Sources:
Aerial imagery surface lease, other mining features provided by Teck Metals Ltd.
Imagery Date: July 2019

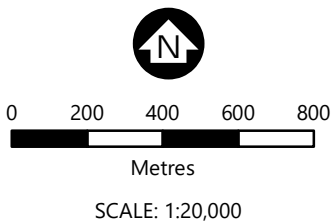
Barr Footer: ArcGIS 10.8.1, 2022-03-10 13:26 File: I:\Projects\61\06\1001\Maps\Reports\MVLWB Annual Report 2021\Figure 6-1 Areas of East Drainage Maintenance.mxd User: MRQ



Barr Engineering and Environmental Science Canada Ltd
808 4th Avenue SW
Suite 700
Calgary, AB T2P 3E8

Coordinate System: NAD83 UTM
Zone 11N
Created on: 10/03/2022

East Drainage Maintenance Area
Dikes



**AREAS OF EAST DRAINAGE
MAINTENANCE**
Annual Report
Pine Point Tailings Impoundment Area
Teck Metals Ltd.

FIGURE 6-1

6.2.1 Wildlife Management

Prior to maintenance activities in the ditches located in the east drainage area, Teck obtained a permit GW501053 on August 19, 2021 that expires on August 19, 2022 to remove beaver dams and lodges that were obstructing water movement in the ditch. The locations of the structures are shown in Figure 6-2. Two inactive beaver structures were removed in October 2021.

Since the east drainage maintenance began after October 1st, Teck undertook a wildlife den sweep to confirm that hibernating wildlife would not be disturbed during the maintenance work. Teck contacted a Renewable Resources Officer and was notified that a 100-m zone around the maintenance area was adequate for the den sweep. Land Users from DKFN were employed to assess the zone and determine presence of wildlife dens. The den sweep was completed within the week prior to the maintenance activities. No dens were observed.

Data Sources:
Aerial imagery surface lease,other mining features provided by Teck Metals Ltd.
Imagery Date: July 2019

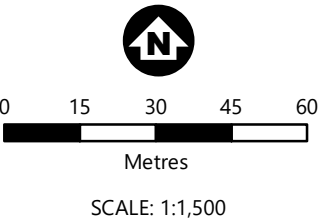
Barr Footer: ArcGIS 10.8.1, 2021-06-25 14:11 File: I:\Projects\61\06\1001\Maps\Beaver Dam Lodge Locations June2021\Figure 1 Beaver Dam Lodge Locations.mxd User: MRQ



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808 4th Avenue SW
Suite 700
Calgary, AB T2P 3E8

Coordinate System: NAD83 UTM
Zone 11N
Created on: 25/06/2021

- Beaver Dam Locations (May 2020)
- ◆ Beaver Lodge Locations (May 2020)



BEAVER DAM AND
LODGE LOCATIONS
Teck Metals Ltd.

FIGURE 6-2

7.0 Spill Contingency Plan

Spill response training was included in the water treatment kick-off meeting on May 11. Training included a review of the contingency plan and confirmation that the necessary response materials, as outlined in the contingency plan, were available on site. In addition, spill response is included in the orientation package that all contractors are required to review annually. All site contractors and visitors to the site are made aware of the requirements for spill response, including communications to the site manager and expected clean up response. There were no spills at the Pine Point TIA in 2021.

The Spill Contingency Plan was updated in June 2021 and September 2021. The revisions included the following:

- Update of the site area to include the surface lease obtained in 2020.
- Storage, prevention and response updates commensurate with storage of larger volumes of fuel, which was the subject of a Land Use Permit amendment request (there have not been any changes in fuel storage to date though).
- Updates related to changes in maximum and alert water levels as interim water level quantitative performance objectives were developed for freshet 2021.
- Inclusion of a wider variety of coagulants and flocculants for trial purposes.

The September version was to address comments received from the MWLVB with respect the operations of the mechanical evaporators.

8.0 Surveillance Network Program

Surveillance Network Program (SNP) sampling was conducted according to Annex A Part A and Part B of the [Water Licence MV2017L2-0007](#) and summarized in Table 8-1. More frequent sample collection than specified in Table 8-1 may be required at the request of an Inspector. In 2021, no additional data requests were made by an Inspector.

All sampling methods and analyses were conducted according to the Pine Point Tailings Impoundment Area Quality Assurance and Quality Control Plan for the Surveillance Network Program (Teck, 2019). The Quality Assurance and Quality Control Plan was reviewed in 2021, but no changes were made. Samples were analyzed by ALS Laboratories in Edmonton, which is a Canadian Association for Laboratory Accreditation (CALA) certified laboratory.

Table 8-1 Summary of SNP Station Monitoring Requirements



Station	Location	Parameter	Minimum Frequency
35-1A	Main Pond Culvert Intake	Water Level	3 Times per Year (Spring, Summer, and Fall during)
		Water Quality	Weekly
35-1B	End of Water Treatment Pond	Treated Water Discharge Volume	Daily
		Water Quality	Pre-Discharge
		Water Quality	Weekly
35-4,5,6,9,10,12,13	Downstream of the TIA discharge to Great Slave Lake	Water Quality	Annually

There are two purposes for the SNP. The first purpose is to measure water quality prior to discharge to confirm that treated water quality achieves the EQC as identified in the Water Licence. The second purpose is monitor water quality in the receiving environment to confirm that there are no mine-related impacts on the receiving environment. The operational SNP stations are referred to as 35-1A and 35-1B. Station 35-1A is located at the culvert intake and represents water quality prior to water treatment. Station 35-1B is located at the end of the water treatment pond and represents water quality of treated water and is tested to confirm that water quality achieves the EQC prior to discharge. Receiving environment monitoring is conducted at seven water quality stations located between the TIA and Great Slave Lake. Locations of the operational and receiving environment stations are presented in Figure 8-1 and the methods, results and QA/QC for operational and receiving environment stations are presented in Sections 8.2 and 8.3 respectively.

Barr Footer: ArcGIS 10.8.1, 2022-02-21 11:42 File: I:\Projects\61\06\1001\Maps\Reports\MVLWB Annual Report 2021\Figure 8-1 Surveillance Network Program Sample Locations.mxd User: MRQ


Data Sources:
Aerial imagery provided by Esri, Vivid.
Imagery Date: 2019-2020






Coordinate System: NAD83 UTM
Zone 11N
Created on: 21/02/2022

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808 4th Avenue SW
Suite 700
Calgary, AB T2P 3E8



Surveillance Network Program
Location



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**SURVEILLANCE NETWORK PROGRAM
SAMPLE LOCATIONS**

Annual Report
Pine Point Tailings Impoundment Area
Teck Metals Ltd.

FIGURE 8-1

8.1 Station 35-1A

8.1.1 Water Level

The Water Licence requires that water levels are recorded three times per year from a staff gauge located at the culvert intake: once in Spring, Summer, and Fall (during periods of open water). The water level is monitored regularly to confirm that the freeboard limit of 1.0 m specified in the Water Licence is not exceeded. A freeboard limit of 1.0 m corresponds to a water level of 202.5 m. Table 8-2 summarizes the 2021 Spring, Summer, and Fall water levels, which are compared to water levels measured in 2020. The water levels did not exceed the Water Licence freeboard limit.

Table 8-2 Water Levels in the Tailings Pond at 35-1A

2021 Measurement Date	2021 Water Level (m as metres above mean sea level)	2020 Measurement Date	2020 Water Level (m as metres above mean sea level)
Spring (May 15)	201.64	Spring (May 14)	201.68
Summer (July 15)	201.61	Summer (July 1)	201.48
Fall (September 12)	200.06	Fall (September 22)	200.92

At the end of the 2020 water treatment season, the water level of the Main Pond was not drawn down as low as typical. On average, the water level is drawn down to 200.3 m by the end of the water treatment season. During the 2020 water treatment season (July 1, 2020 to September 16, 2020), a total of 383,451 m³ of water was treated and discharged. This volume is approximately 46% more than the historical average of 262,250 m³ (Golder, 2020). However, several challenges occurred during the 2020 water treatment season including high water levels following the spring freshet due to greater precipitation over the 2019/2020 winter, higher than average precipitation during the 2020 water treatment season, and water treatment efficacy issues following start-up.

As a result of the high 2020 fall water level, additional actions were undertaken to monitor and forecast the anticipated water level following the 2021 freshet. In September 2020, a remote view camera was installed to remotely monitor the Main Pond water level. Additionally, the GoldSim water balance model constructed for the site was used to provide probabilistic outcomes of the Main Pond water level by incorporating monthly snowpack monitoring data.

Following the 2021 freshet, the water level was similar to the 2020 water level (201.64 m vs. 201.68 m). To maximize the water level drawdown during the 2021 water treatment season, Teck prepared for an earlier start to water treatment operations. At the time water treatment started (9 June 2021), the water level of the Main Pond reached 202.11 m due to additional run-in and precipitation. Additionally, a cofferdam was installed on August 27 and 28, 2021 to further reduce the Main Pond water level below 200.3 m. Between 9 June 2021 and 12 September 2021 a total of 1,141,029.5 m³ of water was treated and released; the greatest volume of treated and released water since the commencement of active water treatment at Pine Point. The resulting water level at the end of the treatment season (September 12, 2021) was 200.06 m.

8.1.2 Water Quality

The Water Licence requires water samples from 35-1A to be collected on a weekly basis during the active water treatment period and that samples are analyzed for total copper, lead, zinc, pH and Total Suspended Solids (TSS) (Annex A, Part B, Item 2). In addition, ammonia, total arsenic, and cyanide are also measured to confirm that these substances are not present at concentrations that are greater than the EQC prior to treatment.

Table 8-3 summarizes the weekly 2021 laboratory and field results for the water samples collected at 35-1A between May 14 and September 12, 2021. Cyanide was analyzed less frequently but was consistently less than the detection limit in 2021 and has been less than the detection limit in previous years. Only concentrations of total zinc were greater than the EQC, which validates the continuation of water treatment to reduce zinc concentrations and confirms that other constituents remain less than the EQC.

Table 8-3 Weekly Water Quality from Station 35-1A (Main Pond Prior to Treatment)

Sample Date	Lab pH s.u.	Field pH s.u.	Total Zinc mg/L	Field Zinc mg/L	Total Arsenic mg/L	Total Lead mg/L	Total Copper mg/L	TSS mg/L	Cyanide mg/L	Ammonia mg/L
5/14/2021	7.59	N/A	0.473	N/A	< 0.00010	0.0452	0.00265	5	N/A	< 0.050
5/21/2021	7.62	6.6	0.9	0.9	0.00011	0.0315	0.00372	< 3.0	< 0.0020	< 0.050
5/28/2021	7.97	6.67	1.17	1.16	0.00016	0.0385	0.00585	< 3.0	N/A	0.057
5/31/2021	8.04	7.72	1.12	1.12	0.00022	0.0468	0.00622	7.7	< 0.0020	< 0.050
6/11/2021	7.6	7.86	0.997	N/A	0.00016	0.0248	0.00538	< 3.0	N/A	< 0.050
6/17/2021	8	N/A	0.892	N/A	0.00015	0.0211	0.00468	< 3.0	N/A	< 0.050
6/24/2021	8.14	N/A	0.929	N/A	0.00018	0.0211	0.00475	< 3.0	N/A	< 0.050
7/2/2021	8.12	N/A	0.84	N/A	0.0005	0.021	0.00548	< 3.0	< 0.0020	< 0.050
7/7/2021	8.37	N/A	0.83	N/A	0.0002	0.0257	0.00607	3	N/A	< 0.050
7/14/2021	8.01	8.02	0.77	0.81	0.0002	0.025	0.00576	< 3.0	N/A	< 0.050
7/21/2021	8.16	8.13	0.771	0.81	0.00017	0.0269	0.00607	< 3.0	N/A	< 0.050
7/28/2021	8.43	8.20	0.765	0.79	0.0002	0.0302	0.00641	4	N/A	< 0.050
8/4/2021	8.31	8.05	0.763	0.8	0.00023	0.0305	0.00709	3	N/A	< 0.050
8/11/2021	8.25	8.15	0.71	0.64	0.00028	0.0335	0.00736	< 3.0	N/A	< 0.050
8/18/2021	8.24	8.23	0.71	0.66	0.00019	0.036	0.0068	4	N/A	< 0.050
8/25/2021	8.33	8.12	0.765	0.81	0.00023	0.0345	0.00883	< 3.0	< 0.0020	< 0.050
9/1/2021	8.26	8.33	0.734	0.77	0.00023	0.0344	0.0086	< 3.0	N/A	< 0.050
9/8/2021	8.29	8.30	0.66	0.73	0.00024	0.0268	0.0104	4.5	N/A	< 0.050
9/12/2021	8.31	8.21	0.659	N/A	0.00028	0.0295	0.0176	< 3.0	N/A	< 0.050
EQC (maximum average)	6.5-9.5		0.5		0.5	0.2	0.15	25.00	0.10	2.00

Notes:

Bolded and shaded cells indicate concentrations that were greater than the maximum average EQC as stated in the Water Licence.

Field pH and field zinc analyses were not conducted in late June and early July.

8.2 Station 35-1B

At Station 35-1B, water quality prior to discharge and the volumes of water discharged are measured. Daily water treatment volumes are presented in Section 5.1. Water quality is presented in this section.

Part F Section 3 of the 2017 Water Licence required that the Operations and Maintenance Plan include Action Levels. The Water Licence defines an Action Level as a predetermined qualitative or quantitative trigger which, if exceeded, requires the Licensee to take appropriate actions including, but not limited to further investigations, changes to operations, or enhanced mitigation measures and reporting. As such, a Water Treatment Manual was incorporated into the Operations and Maintenance Plan in 2018. Section 6.1 of the Water Treatment Manual defined Action Levels for grab samples collected prior to discharge and are presented in Table 8-4. The Action Levels for arsenic, copper, cyanide, lead, zinc, ammonia and TSS were set to the maximum **average** concentration defined in the Water Licence EQC. The maximum average concentration is defined in the Water Licence as the discrete average of four consecutive analytical results. Teck used this value to compare analyses from each grab sample as an Action Level. The intention of this Action Level was to confirm that discharged water quality would be less than the maximum grab concentration and less than the maximum average concentration as identified in the Water Licence. For pH, the Water Licence specifies an acceptable range of pH values. Since the water treatment process includes the addition of lime, water pH tends to reach the higher end of the range rather than the low end of the range. Therefore, the action level for pH was set to 9.3 standard units (s.u.).

At the beginning of water treatment, samples from 35-1B were collected and submitted to the laboratory daily until the EQC specified in the Water Licence were achieved. Both laboratory and field measurements were collected to confirm that field measurements for pH, TSS and zinc were consistent with laboratory measurements. The results were provided to the GNWT Environment and Natural Resources Water Resources Officer to authorize discharge. As per the Water Licence, once discharge is authorized, water samples from 35-1B were collected on a (at least) weekly basis for submission to an analytical laboratory. The water samples were analyzed for ammonia, total arsenic, total copper, cyanide, total lead, total zinc, TSS, and pH.

During water discharge, the water treatment operator measured pH, TSS, and zinc using in-field techniques (pH and turbidity meter, and Hach system for zinc) at least three times each day. If the average values of samples collected that day exceeds the action level, then the response action will be initiated (e.g., adjustments in treatment conditions). If a grab sample is greater than the maximum grab concentration identified in the Water Licence; however, water discharge would be suspended. Notifications as identified in Teck's Contingency Plan would be initiated. In 2021, water discharge was not suspended due field or lab measurements that were greater than maximum grab concentration.

Table 8-4 Action Levels for Station 35-1B

Parameter	Water Licence Effluent Quality Criteria		Water Treatment Manual Action Level
	Maximum Average Concentration (mg/L)	Maximum Grab Concentration (mg/L)	Action Level for Station 35-1B
pH (in s.u.)	6.5 to 9.5 s.u.	6.5 to 9.5 s.u.	9.3 s.u. maximum
Arsenic, total	0.50	1.00	0.50
Copper, total	0.15	0.30	0.15
Cyanide, total	0.10	0.20	0.10
Lead, total	0.20	0.40	0.20
Zinc, total	0.50	1.00	0.50
Ammonia as N	2.00	4.00	2.00
Total Suspended Solids	25.00	50.00	25.00

8.2.1 Water Quality

Annex A, Part B, Item 2 states that weekly concentrations of total copper, total lead, total zinc, pH and TSS are to be measured in samples submitted to an analytical laboratory. This section of the Water Licence also states that water quality at this station must meet the compliance EQC limits set in Part F of the Water Licence. Since EQC are also provided for arsenic, cyanide and ammonia, these analytes were also measured regularly at Station 35-1B. Teck submitted samples to an analytical laboratory more frequently than required by the Water Licence. Samples were submitted daily during water discharge and analyzed for copper, lead, zinc, pH and TSS. Cyanide analyses were completed weekly. Results from all sample submissions collected at 35-1B between 9 June 2021 and 12 September 2021 (active water discharge period) are presented in Table 8-5.

The analytical results show that all daily concentrations were less than the EQC for both the maximum grab concentration and the maximum average concentration for all of the constituents of concern. Cyanide was less than the analytical detection limit in all weekly samples.

Table 8-5 Tailings Area Discharge at Decant Structure at SNP 35-1B Post Treatment Effluent Discharge

Sample Date	Lab pH	Field pH	Total Zinc mg/L	Field Zinc mg/L	Total Arsenic mg/L	Total Lead mg/L	Total Copper mg/L	TSS mg/L	Field TSS mg/L	Cyanide mg/L	Ammonia mg/L
6/9/2021	8.54	8.77	0.1	0.13	0.00015	0.00652	0.00568	< 3.0	3	NA	< 0.050
6/10/2021	8.54	NA	0.1	NA	0.00015	0.00652	0.00568	< 3.0	NA	NA	< 0.050
6/11/2021	8.76	9.04	0.19	0.25	0.00015	0.00726	0.00639	< 3.0	5.93	< 0.0020	< 0.050
6/12/2021	9.32	9.37	0.393	0.43	< 0.00010	0.0897	0.00725	< 3.0	7.1	NA	< 0.050
6/16/2021	9.25	9.32	0.337	0.38	0.00016	0.00874	0.00622	3	NA	NA	< 0.050
6/17/2021	9.05	9.22	0.347	0.49	0.00015	0.0091	0.00655	3	NA	< 0.0020	< 0.050
6/18/2021	8.77	9.31	0.339	0.46	0.00017	0.00814	0.00636	< 3.0	6	NA	< 0.050
6/19/2021	9.05	9.26	0.406	0.42	0.00017	0.0105	0.00644	3.2	5	NA	< 0.050
6/21/2021	9.1	9.39	0.424	0.43	0.00016	0.0103	0.00613	< 3.0	4.03	NA	< 0.050
6/22/2021	9.12	9.19	0.44	0.45	0.00017	0.00988	0.00587	3	5.56	NA	< 0.050
6/23/2021	9.02	9.12	0.442	0.48	0.00016	0.01	0.00627	3.2	NA	NA	< 0.050
6/24/2021	9.11	9.10	0.427	0.45	0.00018	0.00908	0.00599	< 3.0	NA	< 0.0020	< 0.050
6/25/2021	8.85	9.28	0.358	0.4	0.00017	0.00784	0.00538	< 3.0	NA	NA	< 0.050
6/28/2021	9.17	9.13	0.219	0.19	0.00019	0.00695	0.0049	5.6	NA	NA	< 0.050
6/29/2021	8.92	9.4	0.215	0.23	0.00017	0.00606	0.00552	5.6	NA	NA	< 0.050
6/30/2021	9.11	9.38	0.314	0.33	0.00017	0.00898	0.00624	8.6	NA	NA	< 0.050
7/1/2021	9.08	9.34	0.268	0.31	0.00018	0.00871	0.00588	5.1	NA	NA	< 0.050
7/2/2021	8.94	9.33	0.22	0.26	0.00019	0.00775	0.00668	6.1	NA	< 0.0020	< 0.050
7/3/2021	9.1	9.25	0.247	0.3	0.00019	0.00807	0.00746	5.4	NA	NA	< 0.050
7/4/2021	9.14	8.98	0.254	0.26	0.00018	0.00795	0.00646	< 3.0	NA	NA	< 0.050
7/5/2021	9.21	9.31	0.329	0.36	0.00018	0.00918	0.00664	5.2	NA	NA	< 0.050
7/6/2021	9.2	9.31	0.385	0.43	0.00018	0.0102	0.00682	8.3	NA	NA	< 0.050
7/7/2021	8.76	9.47	0.348	0.35	0.0002	0.00992	0.00622	11.2	NA	< 0.0020	< 0.050

Sample Date	Lab pH	Field pH	Total Zinc mg/L	Field Zinc mg/L	Total Arsenic mg/L	Total Lead mg/L	Total Copper mg/L	TSS mg/L	Field TSS mg/L	Cyanide mg/L	Ammonia mg/L
7/8/2021	8.93	9.36	0.313	0.36	0.0002	0.0102	0.00591	8	NA	NA	< 0.050
7/9/2021	8.74	8.55	0.183	0.25	0.00021	0.00774	0.00634	14.4	NA	NA	< 0.050
7/10/2021	9.06	8.55	0.176	0.22	0.00016	0.00626	0.00501	5.4	NA	NA	< 0.050
7/11/2021	9.26	9.3	0.225	0.26	0.00019	0.00686	0.00536	3.4	NA	NA	< 0.050
7/12/2021	9.26	9.25	0.266	0.290	0.00019	0.00806	0.00639	4	NA	NA	< 0.050
7/13/2021	9.08	9.27	0.185	0.320	0.00012	0.00911	0.00398	5.8	NA	NA	< 0.050
7/14/2021	9.07	9.22	0.229	0.270	0.00019	0.00948	0.00566	6	NA	< 0.0020	< 0.050
7/15/2021	9.29	9.22	0.185	0.230	0.00018	0.00886	0.00607	9	NA	NA	< 0.050
7/16/2021	9.35	9.30	0.187	0.220	0.0002	0.00864	0.00585	4.8	NA	NA	< 0.050
7/17/2021	8.92	9.32	0.256	0.290	0.00019	0.00986	0.00578	< 9.0	NA	NA	< 0.050
7/18/2021	8.67	9.30	0.282	0.320	0.0002	0.0109	0.00575	< 9.0	NA	NA	< 0.050
7/19/2021	8.76	9.15	0.274	0.310	0.00019	0.0112	0.00595	< 9.0	NA	NA	< 0.050
7/20/2021	8.47	9.22	0.236	0.290	0.00019	0.0109	0.00579	6.7	NA	NA	< 0.050
7/21/2021	8.66	9.17	0.216	0.270	0.00018	0.0104	0.00571	5.5	9.5	< 0.0020	< 0.050
7/22/2021	9.08	9.20	0.195	0.220	0.00018	0.0102	0.00594	8.6	11.8	NA	< 0.050
7/23/2021	9.16	9.23	0.195	0.210	0.00023	0.0113	0.00625	8.6	11.6	NA	< 0.050
7/24/2021	8.43	9.15	0.207	0.250	0.00018	0.0106	0.00646	11.8	12.1	NA	< 0.050
7/25/2021	8.59	9.18	0.217	0.250	0.0002	0.0119	0.00606	9.4	11.6	NA	< 0.050
7/26/2021	8.64	9.22	0.244	0.280	0.0002	0.0127	0.00619	4.6	8.6	NA	< 0.050
7/27/2021	8.9	9.05	0.195	0.250	0.00021	0.0118	0.00777	12.4	19	NA	< 0.050
7/28/2021	8.94	9.08	0.249	0.200	0.00065	0.0128	0.0065	6.4	18.5	< 0.0020	< 0.050
7/29/2021	9.02	9.22	0.205	0.210	0.0002	0.0127	0.00619	< 3.0	7.7	NA	< 0.050
7/30/2021	9.02	9.21	0.237	0.260	0.00021	0.0137	0.00654	< 3.0	6.3	NA	< 0.050
7/31/2021	8.88	9.12	0.222	0.220	0.00022	0.0134	0.00675	2.6	7.1	NA	< 0.050
8/1/2021	8.97	9.01	0.22	0.250	0.0002	0.0136	0.00668	5.2	5.0	NA	< 0.050
8/2/2021	8.97	9.08	< 0.0030	0.250	0.00269	0.000189	0.00544	2.8	5.6	NA	< 0.050
8/3/2021	8.96	9.13	< 0.0030	0.240	< 0.00010	0.000065	0.00172	3.8	6.1	NA	0.051

Sample Date	Lab pH	Field pH	Total Zinc mg/L	Field Zinc mg/L	Total Arsenic mg/L	Total Lead mg/L	Total Copper mg/L	TSS mg/L	Field TSS mg/L	Cyanide mg/L	Ammonia mg/L
8/4/2021	9.16	9.15	0.224	0.240	0.00022	0.0129	0.00699	4.2	5.7	< 0.0020	< 0.050
8/5/2021	9.03	9.23	0.268	0.310	0.00019	0.0129	0.00702	7.8	4.9	NA	< 0.050
8/6/2021	9.06	9.16	0.304	0.360	0.0002	0.0134	0.0068	6.4	5.5	NA	< 0.050
8/7/2021	9.1	9.10	0.319	0.360	0.00018	0.0143	0.00687	< 3.0	5.9	NA	< 0.050
8/8/2021	9.22	9.25	0.343	0.420	0.00022	0.0158	0.00745	< 3.0	4.9	NA	< 0.050
8/9/2021	9.18	9.30	0.327	0.300	0.0002	0.0147	0.00736	< 3.0	4.6	NA	0.069
8/10/2021	9.18	9.18	0.363	0.370	0.0002	0.016	0.00774	< 3.0	5.3	NA	< 0.050
8/11/2021	9.22	9.30	0.343	0.370	0.00019	0.0158	0.00745	< 3.0	5.5	< 0.0020	< 0.050
8/12/2021	9.27	9.30	0.331	0.360	0.00023	0.0164	0.00725	< 3.0	4.7	NA	< 0.050
8/13/2021	9.29	9.30	0.314	0.310	0.00021	0.0153	0.00728	3	5.1	NA	< 0.050
8/14/2021	9.2	9.19	0.23	0.260	0.00019	0.0128	0.00709	4.2	5.1	NA	< 0.050
8/15/2021	9.18	9.17	0.169	0.210	0.00022	0.0125	0.00731	4.2	4.9	NA	< 0.050
8/16/2021	9.14	9.18	0.169	0.210	0.00021	0.0127	0.00756	4.2	6.4	NA	< 0.050
8/17/2021	8.96	9.33	0.27	0.280	0.00021	0.0154	0.00705	7.8	6.4	NA	< 0.050
8/18/2021	8.57	9.07	0.194	0.220	0.00022	0.018	0.00712	13.6	17.8	< 0.0020	< 0.050
8/19/2021	8.76	9.28	0.273	0.280	0.00039	0.0182	0.00734	4.9	9.2	NA	< 0.050
8/20/2021	8.61	8.91	0.229	0.350	0.00023	0.016	0.00781	10.3	17.5	NA	< 0.050
8/21/2021	8.97	9.47	0.424	0.420	0.00021	0.0205	0.00828	9.6	9.8	NA	< 0.050
8/22/2021	8.81	9.03	0.358	0.410	0.00021	0.0179	0.00788	11.8	16.7	NA	< 0.050
8/23/2021	8.86	8.96	0.228	0.240	0.00021	0.0136	0.00762	12	18.0	NA	0.055
8/24/2021	8.51	9.04	0.181	0.210	0.00024	0.0124	0.00825	7.3	14.7	NA	< 0.050
8/25/2021	8.62	8.91	0.127	0.150	0.00023	0.0104	0.00891	11.1	13.1	< 0.0020	< 0.050
8/28/2021	8.7	8.68	0.0662	0.080	0.00026	0.00657	0.00956	< 3.0	5.2	NA	< 0.050
8/29/2021	8.99	8.91	0.123	0.140	0.00029	0.00909	0.00962	4.4	6.7	NA	< 0.050
8/30/2021	8.95	8.96	0.116	0.150	0.00026	0.00885	0.00939	3.8	8.7	NA	< 0.050
8/31/2021	8.53	8.85	0.0901	0.120	0.00025	0.00744	0.0087	6.2	9.5	NA	< 0.050
9/1/2021	8.5	8.78	0.0878	0.130	0.00025	0.00744	0.00883	6.2	10.2	< 0.0020	< 0.050

Sample Date	Lab pH	Field pH	Total Zinc mg/L	Field Zinc mg/L	Total Arsenic mg/L	Total Lead mg/L	Total Copper mg/L	TSS mg/L	Field TSS mg/L	Cyanide mg/L	Ammonia mg/L
9/2/2021	8.8	8.87	0.0866	0.110	0.00024	0.00733	0.00854	3.6	8.7	NA	< 0.050
9/3/2021	8.82	8.87	0.085	0.090	0.00026	0.00692	0.00812	4.4	8.5	NA	< 0.050
9/4/2021	8.73	8.87	0.107	0.120	0.0003	0.00815	0.00977	9.9	11.6	NA	< 0.050
9/5/2021	8.79	8.75	0.0842	0.100	0.00023	0.00718	0.00883	6.9	8.5	NA	< 0.050
9/6/2021	8.84	8.76	0.0846	0.100	0.00025	0.00699	0.00956	7.3	8.7	NA	< 0.050
9/7/2021	8.8	8.77	0.0743	0.090	0.00025	0.00644	0.00905	7.1	7.9	NA	< 0.050
9/8/2021	8.49	8.79	0.0699	0.080	0.00025	0.00634	0.00872	9.9	11.4	< 0.0020	< 0.050
9/9/2021	8.57	8.80	0.0701	0.100	0.00025	0.00665	0.00881	26.7	8.3	NA	< 0.050
9/10/2021	8.66	8.77	0.0688	0.090	0.00023	0.00626	0.00836	24.5	7.7	NA	< 0.050
9/11/2021	8.53	8.87	0.0811	0.110	0.00024	0.00719	0.00792	8.2	9.3	NA	< 0.050
9/12/2021	8.58	8.90	0.0888	0.120	0.00023	0.00829	0.00744	11	11.1	< 0.0020	0.076
Max Measured Concentration	9.35	9.47	0.44	0.49	0.00269	0.090	0.010	26.7	19.0	< 0.0020	0.076
Action Level Concentration	9.30		0.50		0.50	0.20	0.15	25.0		0.1	2.00
EQC Max. Average	6.50 - 9.50		0.50		0.50	0.20	0.15	25		0.10	2.00
EQC Max Grab	6.50 - 9.50		1.00		1.00	0.40	0.30	50.0		0.20	4.00

Notes:

Analytical data were evaluated upon receipt to confirm that concentrations affirmed field-based measurements and that concentrations were less than the EQC for the constituents of concern. Regular field determinations for TSS were not conducted until late July due to lack of adequate laboratory supplies for these analyses.

During the 2021 active water treatment period, water quality was consistently below the EQC. On July 16, 2021, a lab pH sample marginally exceeded the action level of 9.3 (pH of 9.35). Field pH was greater than the action level 14 times. When pH reached the action level, adjustments were made to the lime dosage at the inlet to prevent an increase in pH, and to confirm progression through the treatment pond was trending down. Neither lab nor field pH exceeded the EQC upper limit of 9.5 s.u. Grab samples obtained on September 9 and 10, 2021, indicated TSS levels of 26.7 mg/L and 24.5 mg/L, respectively. These elevated results were directly related to sediment disturbance events associated with the removal of the temporary coffer dam at the inlet to the treatment pond. The average observed TSS over the entire treatment season was 6.47 mg/L and the maximum grab was 26.7 mg/L, which did not exceed the maximum grab concentration of 50 mg/L.

Plots for lab pH, total zinc, total lead, total copper, and TSS are provided in Figure 8-2 through Figure 8-6, respectively. The plots include the grab samples results, average results, water licence limits (maximum average and grab concentrations), and action levels, as applicable. Plots for total arsenic, cyanide and ammonia were not created as the concentrations were near or below the detection limits and significantly less than licence limits as well as action limits.

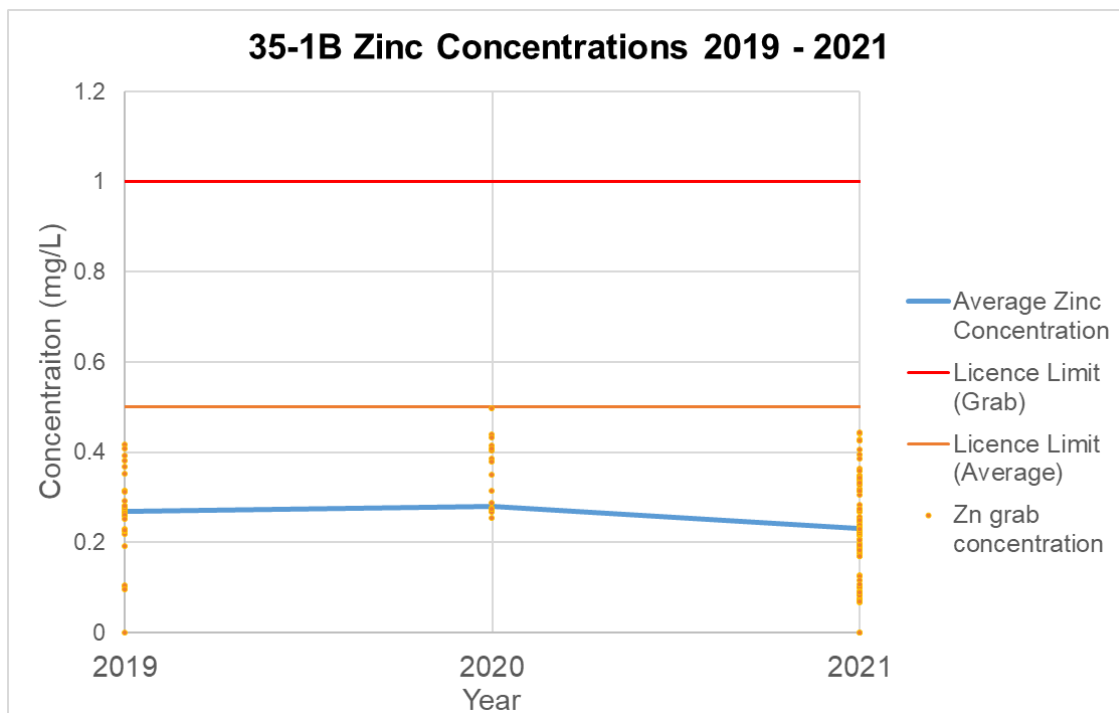


Figure 8-2 35-1B Zinc Concentrations 2019 – 2021

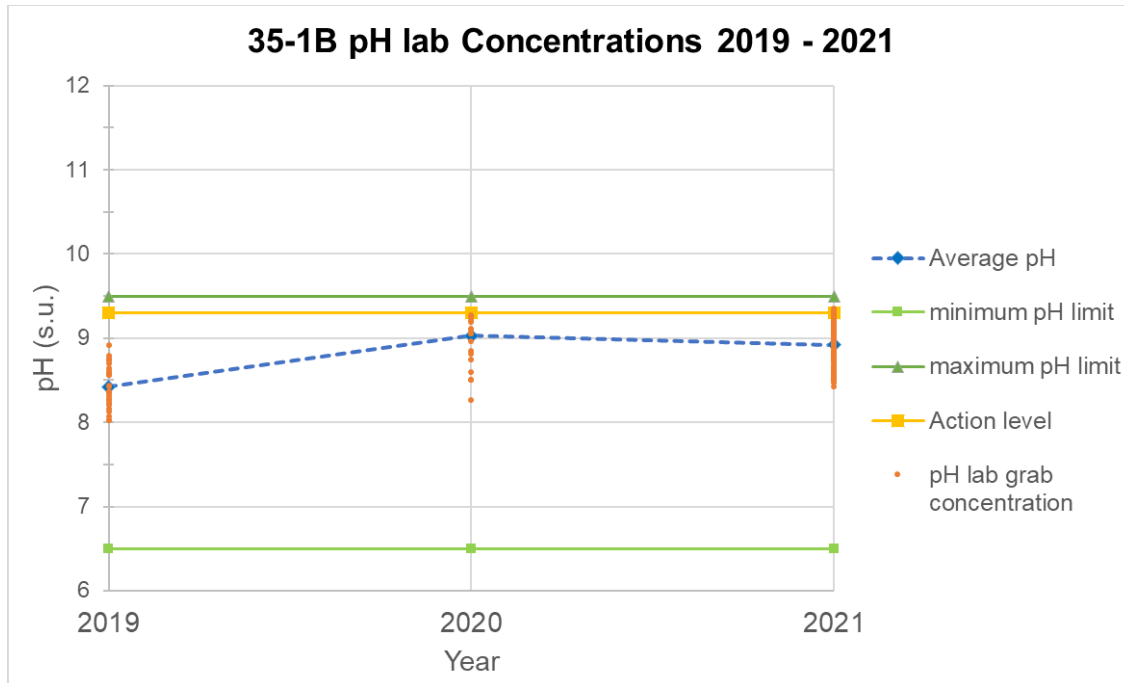


Figure 8-3 35-1B pH Concentrations 2019 - 2021

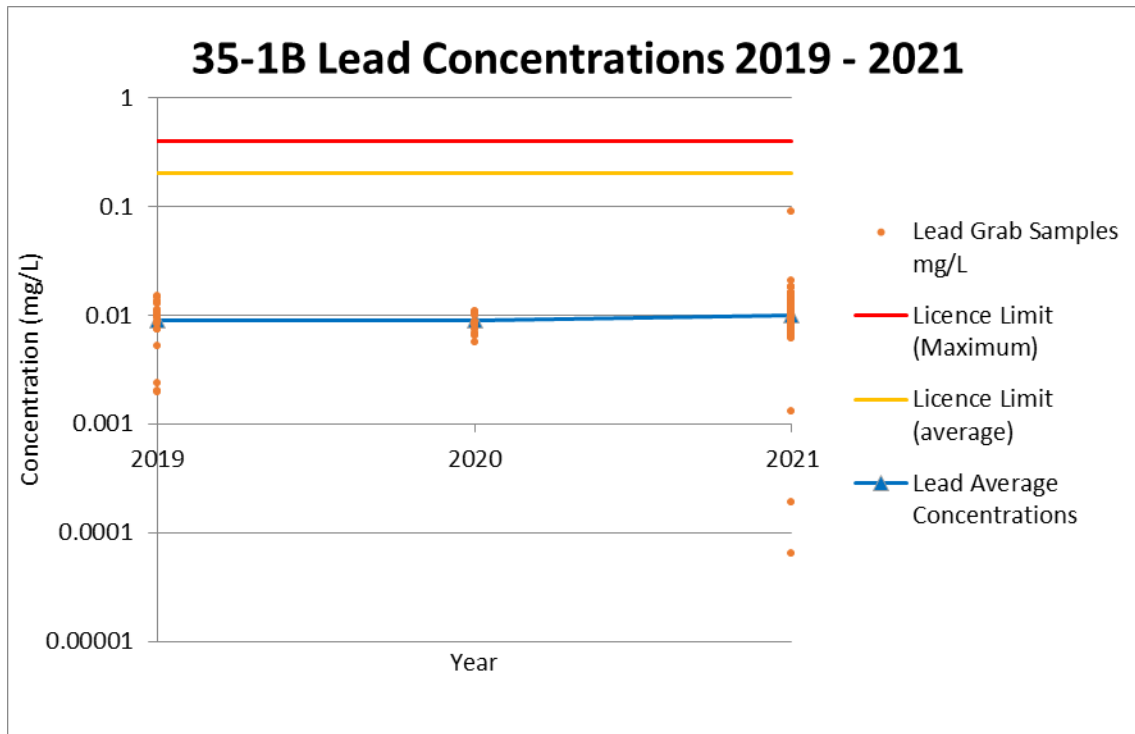


Figure 8-4 35-1B Lead Concentrations 2019 - 2021

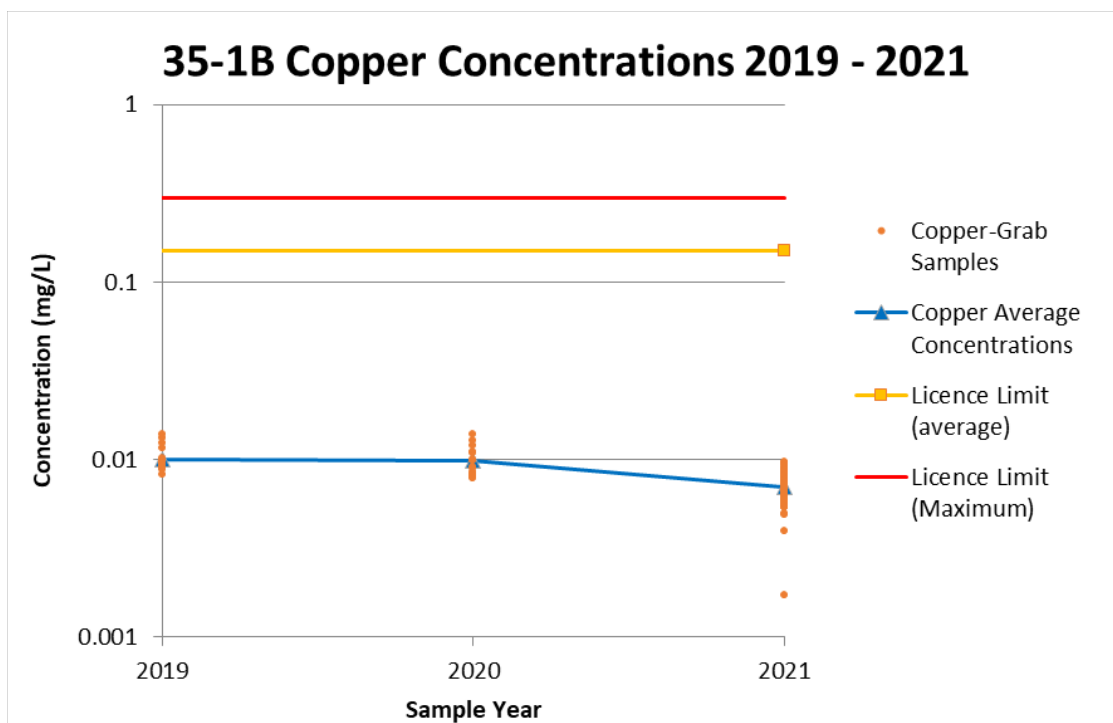


Figure 8-5 35-1B Copper Concentrations 2019 - 2021

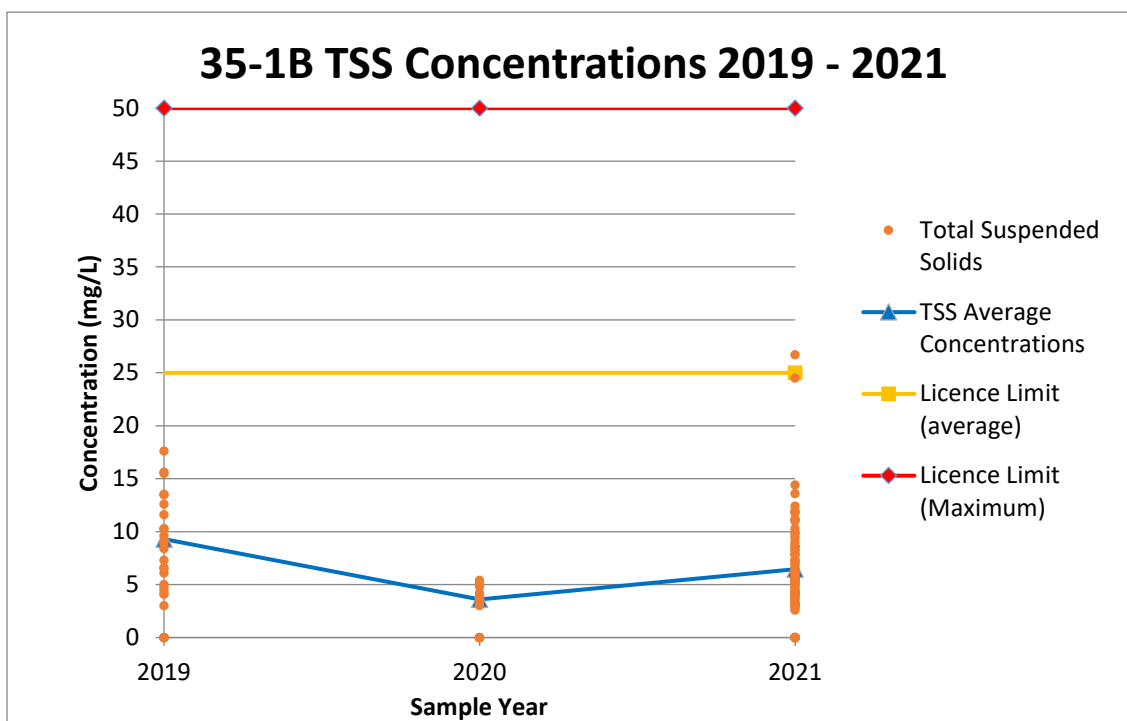


Figure 8-6 35-1B TSS Concentrations 2019 - 2021

8.2.2 Quality Assurance and Quality Control (QA/QC)

Quality Assurance and Quality Control (QA/QC) for the SNP included calibration of field instruments used to measure pH, TSS and zinc, and duplicate and field blank sample analyses for samples submitted to the analytical laboratory as described below.

8.2.2.1 Calibration

Calibration of the field instruments used to measure daily water quality in the Main Pond and treatment pond is necessary for data reliability. The SNP locations 35-1A and 1B are tested regularly using field instruments to determine pH, TSS, and total zinc concentration. All instruments are calibrated as per the manual instructions with each sample collected. The Hach Company is the manufacturer of the Hach 3900 Spectrophotometer and the Zincon Method with a range of 0-1.5, 0-3.0 mg/L is used to measure zinc concentrations. This instrument is calibrated as per the manual instructions with each sample collected. At the end of each water treatment campaign, the instrument is shipped away for manufacturer calibration manufacturer. The certificate of calibration is included in Appendix C.

The zinc field results are compared to the lab results for SNP location 35-1B. In 2021, there appeared to be a positive correlation of 0.961. On average the difference between the field results and the lab results was 0.04 mg/L.

Field determination of TSS was introduced in 2020. Prior to 2020, turbidity was measured in the field and a correlation between turbidity and TSS from laboratory data was used to provide context for field turbidity values. The TSS meter has proven to be more reliable and a significant improvement over the previous method. The comparison of lab TSS and field TSS produced a positive correlation of 0.514 for the relationship with an average difference of 2.19 mg/L between the field and lab results at SNP location 35-1B.

8.2.3 Duplicate and Field Blank Samples

Duplicate samples were collected by collecting a second sample from the same location and depth as the original field sample. Duplicate samples were prepared (i.e., filtered and preserved as required), the same way as field samples, and then submitted to the appropriate analytical laboratory along with the field sample. These samples were used to check for variability in laboratory analyses. Copies of the 2021 lab Certificates of Analysis including the lab's QA/QC data are available upon request.

In 2021, nine duplicate samples were taken at location 35-1A and six duplicate samples were taken at location 35-1B. The location for the duplicate sample is determined randomly for each weekly sample event. In all cases, duplicates were submitted to the laboratory for the same analyses as the parent samples. Results for all analyzed parameters were compared by calculating the Relative Percent Difference (RPD), where RPD was calculated as the absolute difference of two sampling results, divided by the absolute value of their arithmetic mean, as follows:

$$RPD = \left(\frac{2 \cdot (\text{sample} - \text{duplicate})}{(\text{sample} + \text{duplicate})} \right) \times 100$$

Four types of acceptance or pass criteria were used for the duplicate sample data precision analysis as follows:

- Pass was applied to duplicate results that had an RPD value less than 30%.
- Pass-1 was applied to duplicate results that had an RPD value greater than 30%, but when the measured concentration was less than 10 times the analytical detection limit (concentrations near the analytical detection limit may exaggerate the RPD).
- Pass-2 was applied to duplicate results that had an RPD value greater than 30% but less than 50%, and when the concentration was greater than 10 times, but less than 10 times the analytical detection limit.
- Exceeds RPD Control Limits was applied to duplicate results that had an RPD value greater than 30% and were greater than 20 times the detection limit, and when duplicate results had an RPD value greater than 50%.

The results for duplicate samples and calculated RPD values are presented in Appendix D. More than 90% of the duplicate analyses had an RPD value less than 30% (Pass). Fewer than 10% had an RPD value greater than 30% and were designated as Pass-1. No duplicate analyses were qualified as Pass-2 or Exceeds RPD Control Limits.

Field blanks are used to determine whether there is a source of contamination in the field procedures and are indicative of sample integrity. New, lab-provided sample bottles were filled with distilled/deionized water in the field and preserved using the same approach as the other samples. Sixteen field blank samples were collected. A field blank was collected weekly during water treatment and an additional sample was collected prior to treated water discharge. Field blank data was reviewed and flagged if metals concentrations were greater than 10 times the analytical detection limit (i.e., indication of false positives). None of the field blank samples had concentrations that were greater than 10 times the analytical detection limit and the data was considered valid for the purposes of reporting.

8.3 Receiving Environment SNP Monitoring

The Water Licence requires annual sampling in the fall after the water treatment discharge is completed from seven stations located downstream between the TIA and Great Slave Lake. Monitoring SNP locations has been a requirement of the Water Licence since 1997. In 2017, the Water Licence condition was modified to annual sampling rather than twice annual (i.e., spring and fall) samples. The monitoring rationale is to confirm that there are no mine-related water quality impacts to the Receiving Environment and the constituents of concern identified in the Water Licence were pH, and total copper, lead, and zinc.

After water treatment was completed in September, the seven SNP locations were accessed and sampled via argo from October 25 to 27 by Maskwa and two members from DKFN. Samples from the SNP were analyzed by ALS Laboratories for the constituents of concern, and also hardness, ammonia, cyanide, pH, total suspended solids, and dissolved and total metals.

Concentrations of total copper, total lead, total and dissolved zinc, and pH measured from the seven samples in 2021 are presented in Table 8-3. All samples collected from the downstream SNP locations in 2021 had concentrations of copper, lead, zinc and pH that were less than the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Aquatic Life (CCME 2020).

Table 8-6 2021 Concentrations of Copper, Lead, Zinc and pH in the SNP Receiving Environment Monitoring Stations

Parameter	CCME Aquatic Life Guidelines ^(a)	Concentration (mg/L – unless otherwise indicated)						
		35-4	35-5	35-6	35-9	35-10	35-12	35-13
		25 Oct	25 Oct	26 Oct	27 Oct	26 Oct	26 Oct	27 Oct
Total Copper	0.004	< 0.00050	0.00070	< 0.00050	< 0.00050	0.00147	< 0.00050	< 0.00050
Total Lead	0.007	<0.000050	0.000239	0.000096	0.000061	0.000221	< 0.000050	0.000054
Total Zinc	NA	< 0.0030	0.022	< 0.0030	0.0033	< 0.0030	< 0.0030	< 0.0030
Dissolved Zinc	0.043	< 0.0010	0.0195	0.002	0.0023	< 0.0010	< 0.0010	< 0.0010
pH (s.u.)	6.5 to 9.0	8.06	7.92	8.09	7.80	8.36	8.09	8.00

(a) CCME Water Quality Guidelines for Protection of Aquatic Life (CCME 2020) adjusted for site-specific pH, hardness and/or dissolved organic carbon.

Concentrations of copper, lead, zinc and pH measured in samples from the SNP monitoring stations from 1997 to 2021 are presented in Figures 8-7 to 8-10, respectively. A summary of concentration of the remaining analytes are provided in Appendix B. Concentrations have been less than the aquatic life guidelines for these four constituents for the last decade except for one 2015 total zinc sample from 35-5 (0.045 mg/L), which was marginally greater than the guideline for dissolved zinc of 0.043 mg/L (adjusted for site-specific pH, hardness and dissolved organic carbon). Based on SNP monitoring results, there is no evidence that concentrations of copper, lead, and zinc are elevated in ponds located between the TIA and Great Slave Lake and therefore, it is unlikely that the TIA is impacting water quality in Great Slave Lake.

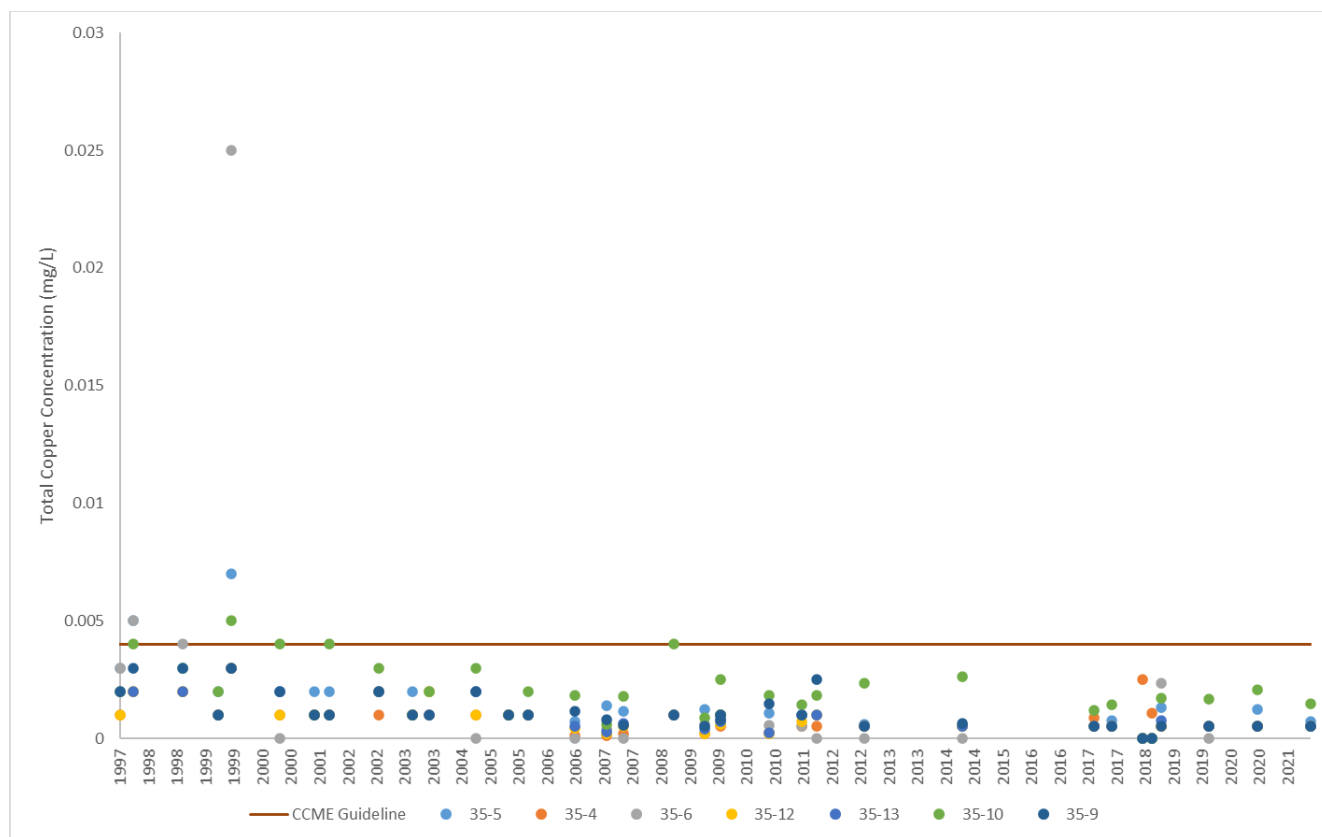


Figure 8-7 Total Copper Concentrations from 1997 to 2021 in the Downstream Surveillance Network Program Monitoring Stations Compared to CCME Guidelines for the Protection of Aquatic Life

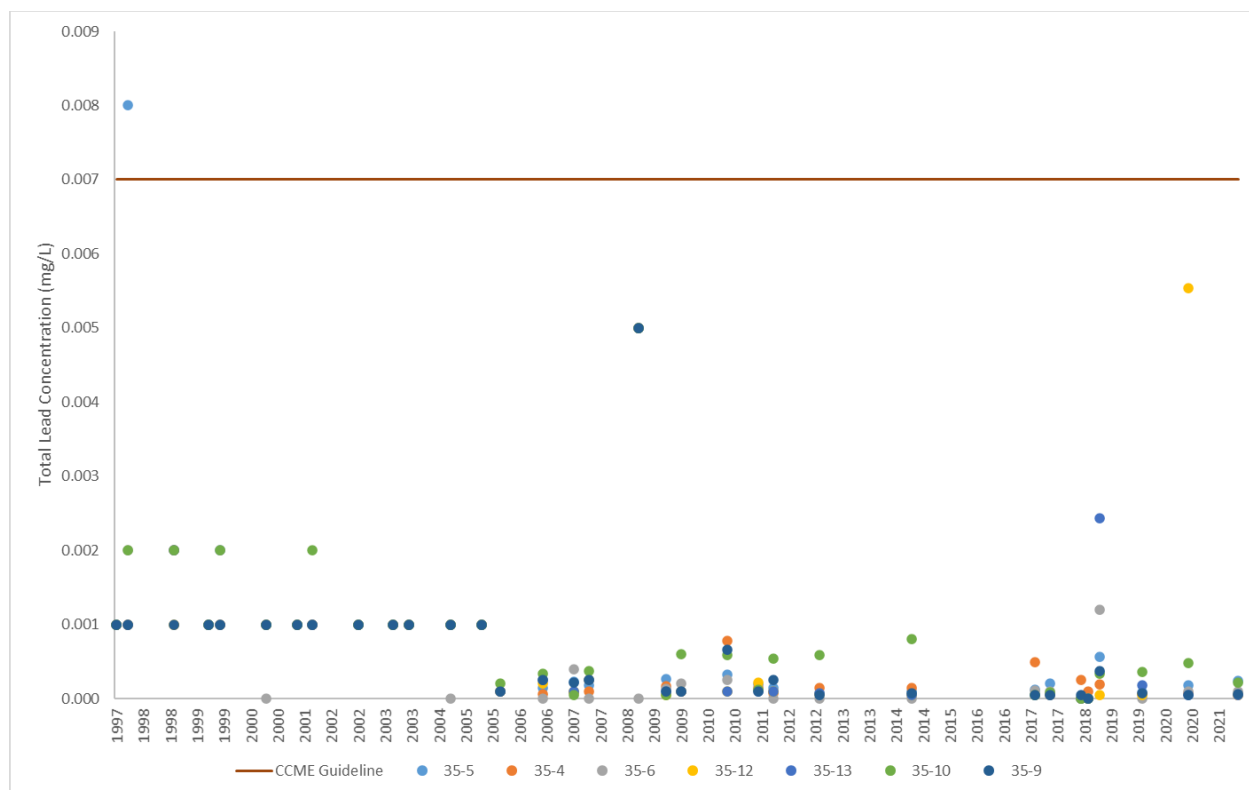


Figure 8-8 Total Lead Concentrations from 1997 to 2021 in the Downstream Surveillance Network Program Monitoring Stations Compared to CCME Guidelines for the Protection of Aquatic Life

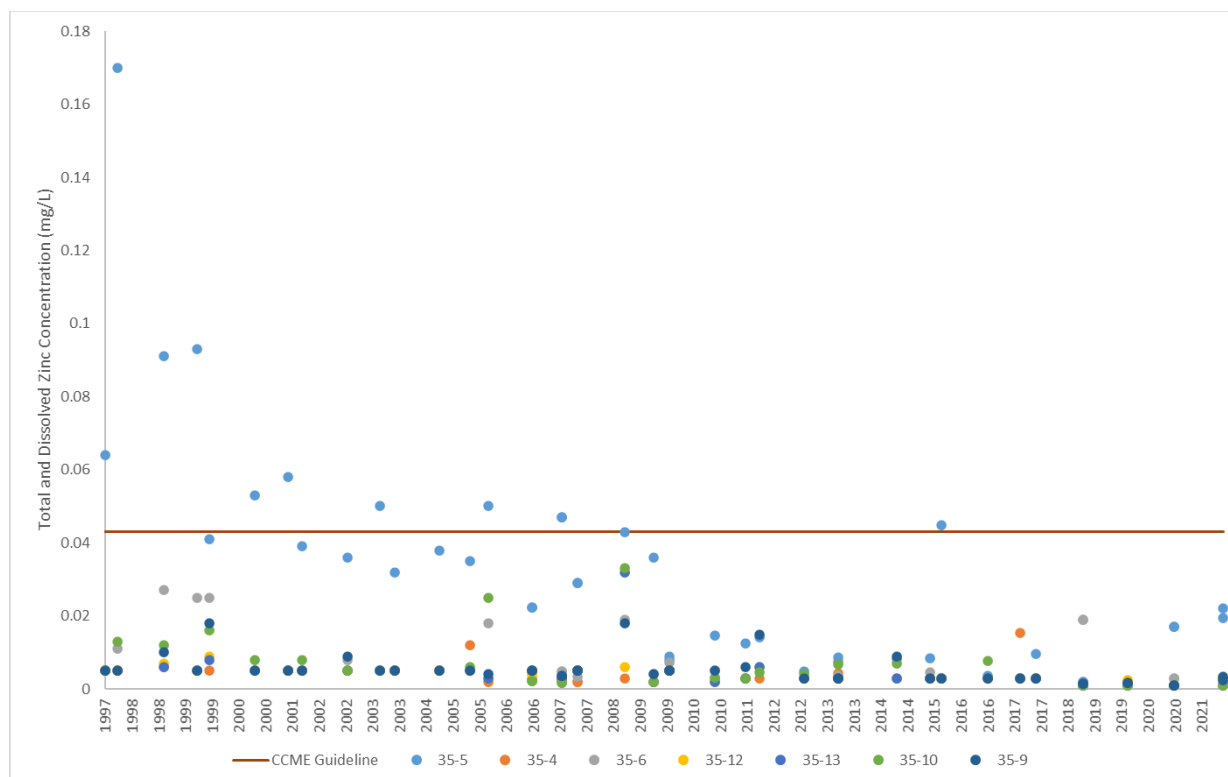


Figure 8-9 Total and Dissolved Zinc Concentrations from 1997 to 2021 in the Downstream Surveillance Network Program Monitoring Stations Compared to CCME Guidelines for the Protection of Aquatic Life

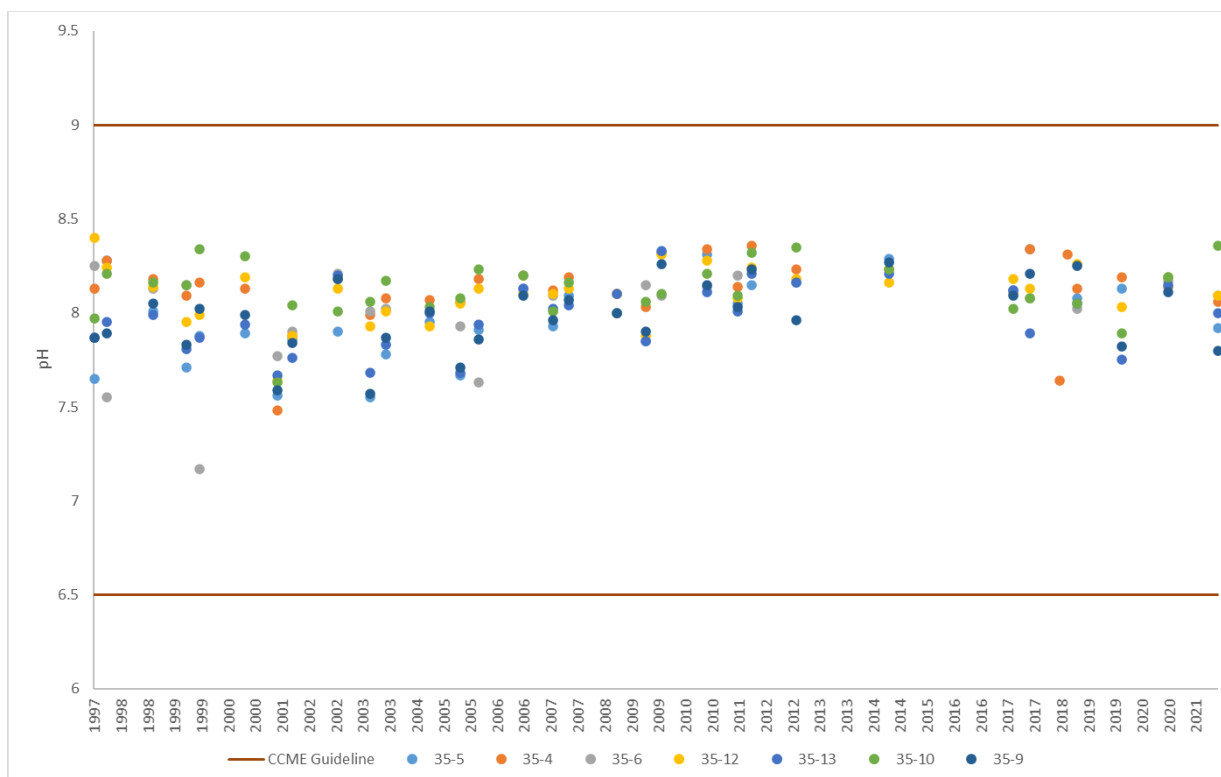


Figure 8-10 pH from 1997 to 2021 in the Downstream Surveillance Network Program Monitoring Stations Compared to the CCME Guidelines for the Protection of Aquatic Life

8.3.1 Receiving Environment SNP QA/QC

One duplicate sample was collected during the fall, receiving environment SNP monitoring program. One monitoring station, 35-9, was randomly selected by the water samplers during the field program for the duplicate sample. The sample was collected in the same location and using the same methods as the parent sample. The results from the duplicate samples were reviewed by using the RPD calculation described in Section 8.2.3. RPD values were qualified with a Pass-1 for aluminum, cadmium, copper, lead, ammonia and zinc, and the remaining analytes had RPD values less than 30% (Pass).

9.0 Regulator Inspections

An annual water licence site inspection was conducted by the Water Resource Officer Wendy Bidwell from Department of Lands, South Slave Region on July 6, 2021. The inspector met with Neil MacDonald, Supervisor, Water Treatment and Monitoring. The inspection covered treatment equipment operation and discharge water quality. Discharge water quality was deemed compliant and field measurements conducted by Teck were consistent with these results. A formal inspection report was not received.

10.0 References

Golder Associates Ltd. (2020). *2020 Annual Inspection, Pine Point Tailings Impoundment, Pine Point, NT, dated 16 December 2020.*

Golder Associates Ltd. (2021). *Interim Freeboard Criteria for Pine Point Tailings Impoundment Area for 2021 Freshet, Pine Point, NT. 2021.*

Klohn Crippen Berger. (2021). *2021 Annual Facility Performance Review Report, Pine Point Mine Tailings Impoundment Area, dated 2 November 2021.*

Teck. (2019). *Pine Point Tailings Impoundment Area Quality Assurance and Quality Control Plan for the Surveillance Network Program.*

Teck. (2020). *Operations, Maintenance and Surveillance Plan for Pine Point Tailings Impoundment Area.*

APPENDIX A
CONCORDANCE TABLE

Requirement	Conformity
a) A summary of the calibration and status of the meters and devices referred to in Part B of this Licence;	Provided in section 8.2.2
b) A summary of engagement activities conducted in accordance with the approved Engagement Plan , in Part B of this Licence, undertaken during the previous calendar year and shall include a brief description of activities planned for the forthcoming year;	Provided in section 3.0
c) A summary of Construction activities and major maintenance work conducted in accordance with Part E of this Licence, undertaken during the previous calendar year;	Provided in section 4.0, no construction occurred.
d) A summary of activities conducted in accordance with the approved Water Management Plan, required in Part F of this Licence, undertaken during the previous calendar year, including: <ul style="list-style-type: none"> i. A summary of updates or changes to the process or facilities required for the management of Water and Wastewater; ii. Daily, monthly and annual quantities in cubic metres of all Water and Wastewater collected, treated and pumped from the Post-Treatment Effluent Discharge point, identified by Discharge location; 	Discharge volume provided in Table 5-1 in Section 5.1
e) A summary of activities conducted in accordance with the approved Operations and Maintenance Plan, required in Part F of this Licence, undertaken during the previous calendar year, including: <ul style="list-style-type: none"> i. A summary of updates or changes to the process or facilities required for the management of the Tailings Impoundment Area; ii. A description of response actions that were carried out if any Action Levels were exceeded. 	<p>Provided in section 6.0.</p> <p>Response to Action Levels in Section 8.2</p>
f) A summary of activities conducted in accordance with the approved Spill Contingency Plan, required in Part G of this Licence, undertaken during the previous calendar year, including: <ul style="list-style-type: none"> i. A list and description for all Unauthorized Discharges that occurred during the previous calendar year, including the date, NWT spill number, volume, location, summary of the circumstances and follow-up actions taken, and status (i.e. open or closed), in accordance with the reporting requirements in Part G of this Licence; and ii. An outline of any spill training and communications exercises carried out during the previous calendar year. 	<p>Provided in section 7.</p> <p>Spill training is provided Section 7.0</p>
g) A summary of activities conducted in accordance with the Closure and Reclamation Plan , required in Part H of this Licence, completed during the year, a summary of updates or changes made, and an outline of any work anticipated for the next year;	2021 activities are summarized in Section 2.0 and the 2022 activities are included in 2.1.7 and Table 27
h) Any other details on Water Use or Waste disposal requested by the Board by November 1 of the year being reported;	NA

Requirement	Conformity
<p>i) Electronic and tabular summaries of all data and information generated under the Surveillance Network Program for the previous year, in excel, or an electronic and printed format acceptable to the Board. This shall also include, but not be limited to the following:</p> <ul style="list-style-type: none"> a. Rationale for SNP stations where samples were not collected and results and interpretation of quality assurance/quality control procedures; b. Graphical summaries and interpretation of the analytical results from the SNP samples collected at the points of compliance (SNP station 35-1) compared to the Effluent Quality Criteria under Part F of this Licence, for the previous two consecutive years; c. An explanation of any actions taken in response to any exceedances of the Effluent Quality Criteria; d. Results from the Hach system monitoring, including all calibration and maintenance records for the Hach system; 	<p>Tabular summary of data is presented in Section 8.2 for 35-1 and Appendix B for the downstream SNP stations.</p> <p>Provided in Section 8.2.1</p> <p>Provided in Section 8.2</p> <p>No exceedances of the EQC</p> <p>Provided in Table 8-3 and Table 8-5, Appendix C</p>
<p>j) A summary of actions taken to address concerns, non-conformances, or deficiencies in any reports filed by an Inspector.</p>	<p>NA</p>

APPENDIX B
SNP DATA TABLES

Table A Concentrations of Dissolved Metals from Surveillance Network Program Monitoring Stations

Parameter	CCME Long-Term Aquatic Life Guidelines	Concentration (mg/L)						
		35-4	35-5	35-6	35-9	35-10	35-12	35-13
		25 Oct 2021	25 Oct 2021	26 Oct 2021	27 Oct 2021	26 Oct 2021	26 Oct 2021	27 Oct 2021
Aluminum	0.1	0.0021	0.0023	0.0015	0.00125	0.0187	0.0017	0.0014
Antimony	NG ^(a)	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Arsenic	0.005	0.00037	0.00018	0.00032	0.000495	0.00038	0.00035	0.00035
Barium	NG	0.0100	0.0136	0.00879	0.01495	0.0407	0.0152	0.0122
Beryllium	NG	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Boron	1.5 29 (short-term)	0.035	0.025	0.058	0.079	0.028	0.048	0.067
Cadmium	0.00037	< 0.0000050	0.0000093	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050
Calcium	NG	61.7	95.3	123	138	42.2	126	137
Chromium	0.0089	< 0.00010	< 0.00010	< 0.00010	< 0.00010	0.00012	< 0.00010	< 0.00010
Cobalt	0.00283	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Copper	0.004	< 0.00020	0.00064	< 0.00020	0.000285	0.00124	< 0.00020	< 0.00020
Iron	0.3	0.013	0.015	0.016	0.276	0.100	< 0.010	< 0.010
Lead	0.007	< 0.000050	0.000125	0.000098	< 0.000050	< 0.000050	< 0.000050	< 0.000050
Lithium	NG	0.0072	0.0052	0.0105	0.0179	0.0058	0.0125	0.0152
Magnesium	NG	26.0	35.8	47.2	70.25	13.9	52.0	63.7
Manganese	0.46 14.9 (short-term)	0.00798	0.00950	0.0101	0.0352	0.00892	0.00195	0.00254
Mercury	0.000026	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050
Molybdenum	0.073	< 0.000050	0.00147	0.000655	0.0001495	0.000626	0.000158	0.000169
Nickel	0.15	< 0.00050	< 0.00050	< 0.00050	< 0.00050	0.00120	< 0.00050	< 0.00050
Potassium	NG	1.29	1.57	2.21	2.405	1.19	1.77	1.99
Selenium	0.001	< 0.000050	< 0.000050	< 0.000050	< 0.000050	0.000182	< 0.000050	< 0.000050
Silver	0.00025	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Sodium	NG	3.67	5.31	11.4	16.05	8.71	6.97	14.6
Thallium	0.0008	< 0.000010	0.000012	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin	NG	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Titanium	NG	< 0.00030	< 0.00030	< 0.00030	< 0.00030	0.00137	< 0.00030	< 0.00030
Uranium	0.015 0.033 (short-term)	< 0.000010	0.000108	0.000032	0.000239	0.000364	0.000400	0.000511
Vanadium	NG	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050
Zinc	0.043 0.248 (short-term)	< 0.0010	0.0195	0.0020	0.00165	< 0.0010	< 0.0010	< 0.0010

(a) NG = No guideline

(b) The CCME Aquatic Life Guidelines (CCME 2020) apply to total metals, with the exception of zinc and manganese which apply to dissolved metals only. The dissolved data results have been compared to the total metals guidelines, which is a conservative application.

Aluminum: Based on site-wide pH greater than 6.5.

Cadmium long-term guideline: based on site-wide hardness median of 300 mg/L, short-term guideline is based on site-wide hardness median is 300 mg/L and median pH is 8.

Chromium: Guideline is for Chromium III.

Copper, lead and nickel: based on site-wide hardness greater than 180 mg/L.

Manganese (dissolved): based on site-wide hardness median of 300 mg/L and median pH of 8.

Zinc long-term guideline (dissolved): based on site-wide hardness median of 300 mg/L, pH 8, DOC median of 6.3 mg/L. Short-term guideline: 0.248 mg/L based on range graphs DOC median of 6.3 and hardness greater than 250 mg/L. Note that hardness is higher than range deemed applicable in guideline, but hardness decreases toxicity.

Table B Concentrations of Total Metals from Surveillance Network Program Monitoring Stations

Parameter	CCME Long-Term Aquatic Life Guidelines	Concentration (mg/L – unless otherwise indicated)						
		35-4	35-5	35-6	35-9	35-10	35-12	35-13
		25 Oct 2021	25 Oct 2021	26 Oct 2021	27 Oct 2021	26 Oct 2021	26 Oct 2021	27 Oct 2021
Aluminum	0.1	0.0046	0.0040	0.0053	0.0049	0.0920	0.0038	0.0047
Antimony	NG ^(a)	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Arsenic	0.005	0.00037	0.00019	0.00033	0.0005	0.00055	0.00035	0.00041
Barium	NG	0.0101	0.0143	0.0118	0.01515	0.0436	0.0152	0.0124
Beryllium	NG	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Boron	1.5 29 (short-term)	0.036	0.026	0.053	0.0825	0.028	0.051	0.070
Cadmium	0.00037	< 0.0000050	0.0000112	< 0.0000050	0.0000047	0.0000118	< 0.0000050	< 0.0000050
Calcium	NG	61.4	100	108	138.5	43.1	125	132
Chromium	0.0089	< 0.00010	< 0.00010	< 0.00010	0.00012	0.00027	< 0.00010	< 0.00010
Cobalt	0.00283	< 0.00010	< 0.00010	< 0.00010	< 0.00010	0.00012	< 0.00010	< 0.00010
Copper	0.004	< 0.00050	0.00070	< 0.00050	< 0.00050	0.00147	< 0.00050	< 0.00050
Iron	0.3	< 0.010	0.018	0.018	0.365	0.360	< 0.010	< 0.010
Lead	0.007	< 0.000050	0.000239	0.000096	0.000043	0.000221	< 0.000050	0.000054
Lithium	NG	0.0072	0.0054	0.0091	0.0181	0.0058	0.0126	0.0152
Magnesium	NG	25.7	36.4	47.9	71.8	13.9	53.9	64.3
Manganese	NG	0.00854	0.00930	0.0110	0.03495	0.0155	0.00225	0.00275
Mercury	0.000026	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050	< 0.0000050
Molybdenum	0.073	< 0.000050	0.00149	0.000589	0.000149	0.000616	0.000175	0.000191
Nickel	0.15	< 0.00050	< 0.00050	< 0.00050	< 0.00050	0.00148	< 0.00050	< 0.00050
Potassium	NG	1.28	1.63	2.24	2.375	1.20	1.83	1.98
Selenium	0.001	< 0.000050	< 0.000050	< 0.000050	< 0.000050	0.000198	0.000055	< 0.000050
Silver	0.00025	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Sodium	NG	3.38	5.48	11.8	16.85	8.89	7.21	14.9
Thallium	0.0008	< 0.000010	0.000014	< 0.000010	< 0.000010	< 0.000010	< 0.000010	< 0.000010
Tin	NG	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Titanium	NG	< 0.00030	< 0.00030	< 0.00030	< 0.00030	0.00264	< 0.00030	< 0.00030
Uranium	0.015 0.033 (short-term)	< 0.000010	0.000121	0.000024	0.0002455	0.000355	0.000386	0.000499
Vanadium	NG	< 0.00050	< 0.00050	< 0.00050	< 0.00050	0.00053	< 0.00050	< 0.00050
Zinc	NG	< 0.0030	0.0220	< 0.0030	0.0033	< 0.0030	< 0.0030	< 0.0030

(a) NG = No guideline

(b) The CCME Aquatic Life Guidelines (CCME 2020) apply to total metals, with the exception of zinc and manganese which apply to dissolved metals only. The dissolved data results have been compared to the total metals guidelines, which is a conservative application. However, the comparison of guidelines derived for dissolved concentrations were not compared to total concentrations.

Aluminum: Based on site-wide pH greater than 6.5.

Cadmium long-term guideline: based on site-wide hardness median of 300 mg/L, short-term guideline is based on site-wide hardness median is 300 mg/L and median pH is 8.

Chromium: Guideline is for Chromium III

Copper, lead and nickel: based on site-wide hardness greater than 180 mg/L.

Sample Date	35-1A							
	Lab pH	Total Zinc	Total Arsenic	Total Lead	Total Copper	TSS	Cyanide	Ammonia
	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2021-05-14	7.59	0.473	< 0.00010	0.0452	0.00265	5	NA	< 0.050
2021-05-21	7.62	0.9	0.00011	0.0315	0.00372	< 3.0	< 0.0020	< 0.050
2021-05-28	7.97	1.17	0.00016	0.0385	0.00585	< 3.0	NA	0.057
2021-05-31	8.04	1.12	0.00022	0.0468	0.00622	7.7	< 0.0020	< 0.050
2021-06-11	7.6	0.997	0.00016	0.0248	0.00538	< 3.0	NA	< 0.050
2021-06-17	8	0.892	0.00015	0.0211	0.00468	< 3.0	NA	< 0.050
2021-06-24	8.14	0.929	0.00018	0.0211	0.00475	< 3.0	NA	< 0.050
2021-07-02	8.12	0.84	0.0005	0.021	0.00548	< 3.0	< 0.0020	< 0.050
2021-07-07	5.6	0.83	0.0002	0.0257	0.00607	3	NA	< 0.050
2021-07-14	8.01	0.77	0.0002	0.025	0.00576	< 3.0	NA	< 0.050
2021-07-21	8.16	0.771	0.00017	0.0269	0.00607	< 3.0	NA	< 0.050
2021-07-28	8.43	0.765	0.0002	0.0302	0.00641	4	NA	< 0.050
2021-08-04	8.31	0.763	0.00023	0.0305	0.00709	3	NA	< 0.050
2021-08-11	8.25	0.71	0.00028	0.0335	0.00736	< 3.0	NA	< 0.050
2021-08-18	8.24	0.71	0.00019	0.036	0.0068	4	NA	< 0.050
2021-08-25	8.33	0.765	0.00023	0.0345	0.00883	< 3.0	< 0.0020	< 0.050
2021-09-01	8.26	0.734	0.00023	0.0344	0.0086	< 3.0	NA	< 0.050
2021-09-08	8.29	0.66	0.00024	0.0268	0.0104	4.5	NA	< 0.050
2021-09-12	8.31	0.659	0.00028	0.0295	0.0176	< 3.0	NA	< 0.050

Sample Date	35-1B										
	Field Zinc	Lab Total Zinc	Lab pH	Field pH	Total Arsenic	Total Lead	Total Copper	TSS	TSS field	Cyanide	Ammonia
	mg/L	mg/L	pH units	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2021-06-09	0.13	0.1	8.54	8.77	0.00015	0.00652	0.00568	3	3	NA	0.05
2021-06-10	NA	0.1	8.54	NA	0.00015	0.00652	0.00568	3	NA	NA	0.05
2021-06-11	0.25	0.19	8.76	9.04	0.00015	0.00726	0.00639	3	5.93	< 0.0020	0.05
2021-06-12	0.43	0.393	9.32	9.37	0.0001	0.0897	0.00588	3	7.1	NA	0.05
2021-06-15	NA	0.0897	NA	NA	0.0001	0.0013	0.00393	NA	NA	< 0.0020	0.05
2021-06-16	0.38	0.337	9.25	9.32	0.00016	0.00874	0.00622	3	NA	NA	0.05
2021-06-17	0.49	0.347	9.05	9.22	0.00015	0.0091	0.00655	3	NA	< 0.0020	0.05
2021-06-18	0.46	0.339	8.77	9.31	0.00017	0.00814	0.00636	3	6	NA	0.05
2021-06-19	0.42	0.406	9.05	9.26	0.00017	0.0105	0.00644	3.2	5	NA	0.05
2021-06-21	0.43	0.424	9.1	9.39	0.00016	0.0103	0.00613	3	4.03	NA	0.05
2021-06-22	0.45	0.44	9.12	9.19	0.00017	0.00988	0.00587	3	5.56	NA	0.05
2021-06-23	0.48	0.442	9.02	9.12	0.00016	0.01	0.00627	3.2	NA	NA	0.05
2021-06-24	0.45	0.427	9.11	9.10	0.00018	0.00908	0.00599	3	NA	< 0.0020	0.05
2021-06-25	0.4	0.358	8.85	9.28	0.00017	0.00784	0.00538	3	NA	NA	0.05
2021-06-28	0.19	0.219	9.17	9.13	0.00019	0.00695	0.0049	5.6	NA	NA	0.05
2021-06-29	0.23	0.215	8.92	9.4	0.00017	0.00606	0.00552	5.6	NA	NA	0.05
2021-06-30	0.33	0.314	9.11	9.38	0.00017	0.00898	0.00624	8.6	NA	NA	0.05
2021-07-01	0.31	0.268	9.08	9.34	0.00018	0.00871	0.00588	5.1	NA	NA	0.05
2021-07-02	0.26	0.22	8.94	9.33	0.00019	0.00775	0.00668	6.1	NA	< 0.0020	0.05
2021-07-03	0.3	0.247	9.1	9.25	0.00019	0.00807	0.00746	5.4	NA	NA	0.05
2021-07-04	0.26	0.254	9.14	8.98	0.00018	0.00795	0.00646	3	NA	NA	0.05
2021-07-05	0.36	0.329	9.21	9.31	0.00018	0.00918	0.00664	5.2	NA	NA	0.05
2021-07-06	0.43	0.385	9.2	9.31	0.00018	0.0102	0.00682	8.3	NA	NA	0.05
2021-07-07	0.35	0.348	8.76	9.47	0.0002	0.00992	0.00622	11.2	NA	< 0.0020	0.05
2021-07-08	0.36	0.313	8.93	9.36	0.0002	0.0102	0.00591	8	NA	NA	0.05
2021-07-09	0.25	0.183	8.74	8.55	0.00021	0.00774	0.00634	14.4	NA	NA	0.05
2021-07-10	0.22	0.176	9.06	8.55	0.00016	0.00626	0.00501	5.4	NA	NA	0.05
2021-07-11	0.26	0.225	9.26	9.3	0.00019	0.00686	0.00536	3.4	NA	NA	0.05
2021-07-12	0.290	0.266	9.26	9.25	0.00019	0.00806	0.00639	4	NA	NA	0.05
2021-07-13	0.320	0.185	9.08	9.27	0.00012	0.00911	0.00398	5.8	NA	NA	< 0.05
2021-07-14	0.270	0.229	9.07	9.22	0.00019	0.00948	0.00566	6	NA	< 0.0020	< 0.05
2021-07-15	0.230	0.185	9.29	9.22	0.00018	0.00886	0.00607	9	NA	NA	< 0.05
2021-07-16	0.220	0.187	9.35	9.30	0.0002	0.00864	0.00585	4.8	NA	NA	< 0.05
2021-07-17	0.290	0.256	8.92	9.32	0.00019	0.00986	0.00578	< 9	NA	NA	< 0.05
2021-07-18	0.320	0.282	8.67	9.30	0.0002	0.0109	0.00575	< 9	NA	NA	< 0.05
2021-07-19	0.310	0.274	8.76	9.15	0.00019	0.0112	0.00595	< 9	NA	NA	< 0.05
2021-07-20	0.290	0.236	8.47	9.22	0.00019	0.0109	0.00579	6.7	NA	NA	< 0.05

Sample Date	35-1B										
	Field Zinc	Lab Total Zinc	Lab pH	Field pH	Total Arsenic	Total Lead	Total Copper	TSS	TSS field	Cyanide	Ammonia
	mg/L	mg/L	pH units	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2021-07-21	0.270	0.216	8.66	9.17	0.00018	0.0104	0.00571	5.5	9.5	< 0.0020	< 0.05
2021-07-22	0.220	0.195	9.08	9.20	0.00018	0.0102	0.00594	8.6	11.8	NA	< 0.05
2021-07-23	0.210	0.195	9.16	9.23	0.00023	0.0113	0.00625	8.6	11.6	NA	< 0.05
2021-07-24	0.250	0.207	8.43	9.15	0.00018	0.0106	0.00646	11.8	12.1	NA	< 0.05
2021-07-25	0.250	0.217	8.59	9.18	0.0002	0.0119	0.00606	9.4	11.6	NA	< 0.05
2021-07-26	0.280	0.244	8.64	9.22	0.0002	0.0127	0.00619	4.6	8.6	NA	< 0.05
2021-07-27	0.250	0.195	8.9	9.05	0.00021	0.0118	0.00777	12.4	19	NA	< 0.05
2021-07-28	0.200	0.249	8.94	9.08	0.00065	0.0128	0.0065	6.4	18.5	< 0.0020	< 0.05
2021-07-29	0.210	0.205	9.02	9.22	0.0002	0.0127	0.00619	< 3	7.7	NA	< 0.05
2021-07-30	0.260	0.237	9.02	9.21	0.00021	0.0137	0.00654	< 3	6.3	NA	< 0.05
2021-07-31	0.220	0.222	8.88	9.12	0.00022	0.0134	0.00675	2.6	7.1	NA	< 0.05
2021-08-01	0.250	0.22	8.97	9.01	0.0002	0.0136	0.00668	5.2	5.0	NA	< 0.05
2021-08-02	0.250	< 0.0030	8.97	9.08	0.00269	0.000189	0.00544	2.8	5.6	NA	< 0.05
2021-08-03	0.240	< 0.0030	8.96	9.13	< 0.0001	0.000065	0.00172	3.8	6.1	NA	0.051
2021-08-04	0.240	0.224	9.16	9.15	0.00022	0.0129	0.00699	4.2	5.7	< 0.0020	< 0.05
2021-08-05	0.310	0.268	9.03	9.23	0.00019	0.0129	0.00702	7.8	4.9	NA	< 0.05
2021-08-06	0.360	0.304	9.06	9.16	0.0002	0.0134	0.0068	6.4	5.5	NA	< 0.05
2021-08-07	0.360	0.319	9.1	9.10	0.00018	0.0143	0.00687	< 3	5.9	NA	< 0.05
2021-08-08	0.420	0.343	9.22	9.25	0.00022	0.0158	0.00745	< 3	4.9	NA	< 0.05
2021-08-09	0.300	0.327	9.18	9.30	0.0002	0.0147	0.00736	< 3	4.6	NA	0.069
2021-08-10	0.370	0.363	9.18	9.18	0.0002	0.016	0.00774	< 3	5.3	NA	< 0.05
2021-08-11	0.370	0.343	9.22	9.30	0.00019	0.0158	0.00745	< 3	5.5	NA	< 0.05
2021-08-12	0.360	0.331	9.27	9.30	0.00023	0.0164	0.00725	< 3	4.7	NA	< 0.05
2021-08-13	0.310	0.314	9.29	9.30	0.00021	0.0153	0.00728	3	5.1	NA	< 0.05
2021-08-14	0.260	0.23	9.2	9.19	0.00019	0.0128	0.00709	4.2	5.1	NA	< 0.05
2021-08-15	0.210	0.169	9.18	9.17	0.00022	0.0125	0.00731	4.2	4.9	NA	< 0.05
2021-08-16	0.210	0.169	9.14	9.18	0.00021	0.0127	0.00756	4.2	6.4	NA	< 0.05
2021-08-17	0.280	0.27	8.96	9.33	0.00021	0.0154	0.00705	7.8	6.4	NA	< 0.05
2021-08-18	0.220	0.194	8.57	9.07	0.00022	0.018	0.00712	13.6	17.8	< 0.0020	< 0.05
2021-08-19	0.280	0.273	8.76	9.28	0.00039	0.0182	0.00734	4.9	9.2	NA	< 0.05
2021-08-20	0.350	0.229	8.61	8.91	0.00023	0.016	0.00781	10.3	17.5	NA	< 0.05
2021-08-21	0.420	0.424	8.97	9.47	0.00021	0.0205	0.00828	9.6	9.8	NA	< 0.05
2021-08-22	0.410	0.358	8.81	9.03	0.00021	0.0179	0.00788	11.8	16.7	NA	< 0.05
2021-08-23	0.240	0.228	8.86	8.96	0.00021	0.0136	0.00762	12	18.0	NA	0.055
2021-08-24	0.210	0.181	8.51	9.04	0.00024	0.0124	0.00825	7.3	14.7	NA	< 0.05
2021-08-25	0.150	0.127	8.62	8.91	0.00023	0.0104	0.00891	11.1	13.1	< 0.0020	< 0.05
2021-08-28	0.080	0.0662	8.7	8.68	0.00026	0.00657	0.00956	< 3	5.2	NA	< 0.05

Sample Date	35-1B										
	Field Zinc	Lab Total Zinc	Lab pH	Field pH	Total Arsenic	Total Lead	Total Copper	TSS	TSS field	Cyanide	Ammonia
	mg/L	mg/L	pH units	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2021-08-29	0.140	0.123	8.99	8.91	0.00029	0.00909	0.00962	4.4	6.7	NA	< 0.05
2021-08-30	0.150	0.116	8.95	8.96	0.00026	0.00885	0.00939	3.8	8.7	NA	< 0.05
2021-08-31	0.120	0.0901	8.53	8.85	0.00025	0.00744	0.0087	6.2	9.5	NA	< 0.05
2021-09-01	0.130	0.0878	8.5	8.78	0.00025	0.00744	0.00883	6.2	10.2	< 0.0020	< 0.05
2021-09-02	0.110	0.0866	8.8	8.87	0.00024	0.00733	0.00854	3.6	8.7	NA	< 0.05
2021-09-03	0.090	0.085	8.82	8.87	0.00026	0.00692	0.00812	4.4	8.5	NA	< 0.05
2021-09-04	0.120	0.107	8.73	8.87	0.0003	0.00815	0.00977	9.9	11.6	NA	< 0.05
2021-09-05	0.100	0.0842	8.79	8.75	0.00023	0.00718	0.00883	6.9	8.5	NA	< 0.05
2021-09-06	0.100	0.0846	8.84	8.76	0.00025	0.00699	0.00956	7.3	8.7	NA	< 0.05
2021-09-07	0.090	0.0743	8.8	8.77	0.00025	0.00644	0.00905	7.1	7.9	NA	< 0.05
2021-09-08	0.080	0.0699	8.49	8.79	0.00025	0.00634	0.00872	9.9	11.4	< 0.0020	< 0.05
2021-09-09	0.100	0.0701	8.57	8.80	0.00025	0.00665	0.00881	26.7	8.3	NA	< 0.05
2021-09-10	0.090	0.0688	8.66	8.77	0.00023	0.00626	0.00836	24.5	7.7	NA	< 0.05
2021-09-11	0.110	0.0811	8.53	8.87	0.00024	0.00719	0.00792	8.2	9.3	NA	< 0.05
2021-09-12	0.120	0.0888	8.58	8.90	0.00023	0.00829	0.00744	11	11.1	< 0.0020	0.076

APPENDIX C
CALIBRATION CERTIFICATE



Certificate of Instrument Performance
Certificat de Conformité

Company Name / Nom de la Compagnie: TECK METALS LTD (KIMBERLEY)

Account Number / No. de compte: 40277765

Certification Number / Numéro du Certificat: 1079379

Part Number / No. de pièce: LPV440.99.00012
Serial Number / No. de série: 1719627
External Reference / Référence externe:

Hach Sales & Service Canada Ltd. certifies that your instrument has been serviced, calibrated, and verified with standards and now meets new product specifications.

Hach Sales & Service Canada Ltd. atteste que votre instrument a été entretenu, calibré et vérifié selon les normes en vigueur. Ses spécifications actuelles sont équivalentes à celles d'un produit neuf.

Certified by / Certifié par:

Certification Date / Date de certification:

Jordan Showers, C.Tech.

January 19, 2021

A handwritten signature in black ink, appearing to read "Jordan Showers", is written over a faint, light blue circular stamp.

APPENDIX D

QAQC RELATIVE PERCENT DIFFERENCE RESULTS

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0042	0.001	123.08%	Pass-1
ALUMINUM, T	0.003	0.003	mg/l	0.0672	0.0746	10.44%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.00755	0.00807	6.66%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.00734	0.00774	5.31%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.014	<0.005	94.74%	Pass-1
BORON, T	0.01	0.01	mg/l	<0.0050	<0.005	0.00%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000887	0.000962	8.11%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000856	0.000969	12.38%	Pass
CALCIUM, D	0.05	0.05	mg/l	21.0	21.7	3.28%	Pass
CALCIUM, T	0.05	0.05	mg/l	22.4	22.8	1.77%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00015	0.00012	22.22%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00016	0.00018	11.76%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00016	0.00019	17.14%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00154	0.00153	0.65%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00265	0.0027	1.87%	Pass
Hardness, Total or Dissolved CaCO ₃ , D	0.13	0.13	mg/l	65.9	69.4	5.17%	Pass
Hardness, Total or Dissolved CaCO ₃ , T	0.13	0.13	mg/l	70.9	71.8	1.26%	Pass
IRON, D	0.01	0.01	mg/l	0.021	<0.005	123.08%	Pass-1
IRON, T	0.01	0.01	mg/l	0.125	0.123	1.61%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.00828	0.00929	11.50%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0452	0.0425	6.16%	Pass
LITHIUM, D	0.001	0.001	mg/l	<0.00050	<0.0005	0.00%	Pass
LITHIUM, T	0.001	0.001	mg/l	<0.00050	<0.0005	0.00%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	3.25	3.67	12.14%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	3.63	3.64	0.28%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.0244	0.0275	11.95%	Pass
MANGANESE, T	0.0001	0.0001	mg/l	0.0253	0.0262	3.50%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000128	0.000118	8.13%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000128	0.000121	5.62%	Pass
NICKEL, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00054	0.00056	3.64%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	7.59	7.57	0.26%	Pass
POTASSIUM, D	0.05	0.05	mg/l	0.308	0.352	13.33%	Pass
POTASSIUM, T	0.05	0.05	mg/l	0.309	0.323	4.43%	Pass
SELENIUM, D	0.05	0.05	ug/l	0.069	<0.025	93.62%	Pass-1
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	0.378	0.394	4.15%	Pass
SODIUM, T	0.05	0.05	mg/l	0.324	0.334	3.04%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000061	7.3e-005	17.91%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000080	7.8e-005	2.53%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00229	0.00208	9.61%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	5.0	4.4	12.77%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000035	3.2e-005	8.96%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000046	4.2e-005	9.09%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.449	0.519	14.46%	Pass
ZINC, T	0.003	0.003	mg/l	0.473	0.509	7.33%	Pass

Sample Date 14 May 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0035	0.0043	20.51%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.126	0.138	9.09%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00011	0.00011	0.00%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00016	0.00016	0.00%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0152	0.0153	0.66%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0169	0.017	0.59%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	<0.0050	<0.005	0.00%	Pass
BORON, T	0.01	0.01	mg/l	<0.0050	<0.005	0.00%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000732	0.000753	2.83%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000999	0.00099	0.90%	Pass
CALCIUM, D	0.05	0.05	mg/l	48.7	49	0.61%	Pass
CALCIUM, T	0.05	0.05	mg/l	50.0	49.5	1.01%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00022	0.0003	30.77%	Pass-1
COBALT, D	0.0001	0.0001	mg/l	0.00038	0.0004	5.13%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00044	0.00043	2.30%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00362	0.00356	1.67%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00585	0.00571	2.42%	Pass
Hardness, Total or Dissolved CaCO ₃ , D	0.13	0.13	mg/l	169	170	0.59%	Pass
Hardness, Total or Dissolved CaCO ₃ , T	0.13	0.13	mg/l	175	173	1.15%	Pass
IRON, D	0.01	0.01	mg/l	0.017	0.019	11.11%	Pass
IRON, T	0.01	0.01	mg/l	0.206	0.213	3.34%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.0105	0.0107	1.89%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0385	0.0403	4.57%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0012	0.0012	0.00%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0014	0.0015	6.90%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	11.5	11.6	0.87%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	12.1	12	0.83%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.0472	0.0475	0.63%	Pass
MANGANESE, T	0.0001	0.0001	mg/l	0.0517	0.0521	0.77%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000330	0.000464	33.75%	Pass-1
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000319	0.000388	19.52%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00137	0.00136	0.73%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00160	0.00163	1.86%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	0.057	0.091	45.95%	Pass-1
pH, LAB	0.1	0.1	ph units	7.97	8.04	0.87%	Pass
POTASSIUM, D	0.05	0.05	mg/l	0.757	0.754	0.40%	Pass
POTASSIUM, T	0.05	0.05	mg/l	0.845	0.841	0.47%	Pass
SELENIUM, D	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.16	1.18	1.71%	Pass
SODIUM, T	0.05	0.05	mg/l	1.22	1.21	0.82%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000116	0.000113	2.62%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000123	0.000115	6.72%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00579	0.00474	19.94%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	<1.5	<1.5	0.00%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000122	0.000127	4.02%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000118	0.000131	10.44%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.982	0.994	1.21%	Pass
ZINC, T	0.003	0.003	mg/l	1.17	1.17	0.00%	Pass

Sample Date 28 May 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0045	0.0014	105.08%	Pass-1
ALUMINUM, T	0.003	0.003	mg/l	0.0160	0.0161	0.62%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00014	0.00014	0.00%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00015	0.00015	0.00%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0189	0.0191	1.05%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0191	0.019	0.52%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.011	0.01	9.52%	Pass
BORON, T	0.01	0.01	mg/l	0.011	0.011	0.00%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000447	0.000458	2.43%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000703	0.000725	3.08%	Pass
CALCIUM, D	0.05	0.05	mg/l	53.9	54.1	0.37%	Pass
CALCIUM, T	0.05	0.05	mg/l	54.7	54.3	0.73%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	0.00017	<5e-005	109.09%	Pass-1
CHROMIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00032	0.0003	6.45%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00030	0.00031	3.28%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00337	0.00333	1.19%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00468	0.00488	4.18%	Pass
Hardness, Total or Dissolved CaCO ₃ , D	0.13	0.13	mg/l	192	190	1.05%	Pass
Hardness, Total or Dissolved CaCO ₃ , T	0.13	0.13	mg/l	192	193	0.52%	Pass
IRON, D	0.01	0.01	mg/l	0.013	0.012	8.00%	Pass
IRON, T	0.01	0.01	mg/l	0.045	0.044	2.25%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.0110	0.0105	4.65%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0211	0.0203	3.86%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0012	<0.0005	82.35%	Pass-1
LITHIUM, T	0.001	0.001	mg/l	0.0011	0.0012	8.70%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	13.9	13.4	3.66%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	13.5	13.9	2.92%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.0275	0.0275	0.00%	Pass
MANGANESE, T	0.0001	0.0001	mg/l	0.0287	0.0297	3.42%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000397	0.000421	5.87%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000410	0.000393	4.23%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00142	0.00146	2.78%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00144	0.00151	4.75%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.00	8.02	0.25%	Pass
POTASSIUM, D	0.05	0.05	mg/l	0.918	0.885	3.66%	Pass
POTASSIUM, T	0.05	0.05	mg/l	0.909	0.914	0.55%	Pass
SELENIUM, D	0.05	0.05	ug/l	0.062	<0.025	85.06%	Pass-1
SELENIUM, T	0.05	0.05	ug/l	<0.025	0.055	75.00%	Pass-1
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.37	1.36	0.73%	Pass
SODIUM, T	0.05	0.05	mg/l	1.34	1.37	2.21%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000130	0.000132	1.53%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000140	0.000138	1.44%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00067	0.00059	12.70%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	<1.5	<1.5	0.00%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000120	0.000119	0.84%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000126	0.00012	4.88%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.863	0.867	0.46%	Pass
ZINC, T	0.003	0.003	mg/l	0.892	0.914	2.44%	Pass

Sample Date 17 June 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0015	<0.0005	100.00%	Pass-1
ALUMINUM, T	0.003	0.003	mg/l	0.0143	0.013	9.52%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00018	0.00015	18.18%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00050	0.00023	73.97%	Pass-1
BARIUM, D	0.0001	0.0001	mg/l	0.0210	0.0213	1.42%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0213	0.0211	0.94%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.014	0.013	7.41%	Pass
BORON, T	0.01	0.01	mg/l	0.015	0.015	0.00%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000452	0.000436	3.60%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000615	0.000633	2.88%	Pass
CALCIUM, D	0.05	0.05	mg/l	58.6	57.4	2.07%	Pass
CALCIUM, T	0.05	0.05	mg/l	56.9	55.6	2.31%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00057	0.00044	25.74%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00027	0.00026	3.77%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00028	0.00027	3.64%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00415	0.00397	4.43%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00548	0.00547	0.18%	Pass
CYANIDE, T	0.002	0.002	mg/l	<0.0010	<0.001	0.00%	Pass
Hardness, Total or Dissolved CaCO ₃ , D	0.13	0.13	mg/l	205	201	1.97%	Pass
Hardness, Total or Dissolved CaCO ₃ , T	0.13	0.13	mg/l	201	197	2.01%	Pass
IRON, D	0.01	0.01	mg/l	0.013	0.013	0.00%	Pass
IRON, T	0.01	0.01	mg/l	0.046	0.049	6.32%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.0136	0.0131	3.75%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0210	0.0216	2.82%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0016	0.0014	13.33%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0016	0.0015	6.45%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	14.1	14.1	0.00%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	14.3	14.2	0.70%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.0246	0.0248	0.81%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
MANGANESE, T	0.0001	0.0001	mg/l	0.0265	0.0267	0.75%	Pass
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000438	0.000431	1.61%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000491	0.000462	6.09%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00140	0.0014	0.00%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00153	0.00159	3.85%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.12	8.19	0.86%	Pass
POTASSIUM, D	0.05	0.05	mg/l	1.01	1.02	0.99%	Pass
POTASSIUM, T	0.05	0.05	mg/l	0.995	0.996	0.10%	Pass
SELENIUM, D	0.05	0.05	ug/l	0.061	0.058	5.04%	Pass
SELENIUM, T	0.05	0.05	ug/l	<0.025	0.053	71.79%	Pass-1
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.44	1.43	0.70%	Pass
SODIUM, T	0.05	0.05	mg/l	1.45	1.48	2.05%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000181	0.000162	11.08%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000176	0.000171	2.88%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00031	0.00034	9.23%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	<1.5	<1.5	0.00%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000125	0.000123	1.61%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000137	0.000139	1.45%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.816	0.798	2.23%	Pass
ZINC, T	0.003	0.003	mg/l	0.840	0.816	2.90%	Pass

Sample Date 2 July 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0011	0.001	9.52%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0172	0.0206	17.99%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00016	0.00024	40.00%	Pass-1
ARSENIC, T	0.0001	0.0001	mg/l	0.00020	0.00021	4.88%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0222	0.0224	0.90%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0228	0.0235	3.02%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BISMUTH, D	0.00005	0.00005	mg/l	<0.000025	<2.5e-005	0.00%	Pass
BISMUTH, T	0.00005	0.00005	mg/l	<0.000025	<2.5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.012	0.012	0.00%	Pass
BORON, T	0.01	0.01	mg/l	0.014	0.014	0.00%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000489	0.000467	4.60%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000583	0.000602	3.21%	Pass
CALCIUM, D	0.05	0.05	mg/l	59.3	59.3	0.00%	Pass
CALCIUM, T	0.05	0.05	mg/l	61.1	61.1	0.00%	Pass
CESIUM, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
CESIUM, T	0.00001	0.00001	mg/l	0.000011	1.1e-005	0.00%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	<0.000050	0.0001	66.67%	Pass-1
COBALT, D	0.0001	0.0001	mg/l	0.00026	0.00028	7.41%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00027	0.00028	3.64%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00431	0.00462	6.94%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00576	0.00619	7.20%	Pass
IRON, D	0.01	0.01	mg/l	0.014	0.017	19.35%	Pass
IRON, T	0.01	0.01	mg/l	0.055	0.059	7.02%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.0160	0.0163	1.86%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0250	0.0268	6.95%	Pass
LITHIUM, D	0.001	0.001	mg/l	<0.00050	<0.0005	0.00%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0011	<0.0005	75.00%	Pass-1
MAGNESIUM, D	0.005	0.005	mg/l	14.6	14.8	1.36%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	13.9	14.7	5.59%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.0194	0.0197	1.53%	Pass
MANGANESE, T	0.0001	0.0001	mg/l	0.0229	0.0236	3.01%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000480	0.000494	2.87%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000529	0.000525	0.76%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00080	0.00092	13.95%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00161	0.00161	0.00%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.01	8.3	3.56%	Pass
PHOSPHORUS, D	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
PHOSPHORUS, T	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
POTASSIUM, D	0.05	0.05	mg/l	0.996	1.05	5.28%	Pass
POTASSIUM, T	0.05	0.05	mg/l	1.01	1.09	7.62%	Pass
RUBIDIUM, D	0.0002	0.0002	mg/l	0.00088	0.00096	8.70%	Pass
RUBIDIUM, T	0.0002	0.0002	mg/l	0.00099	0.00097	2.04%	Pass
SELENIUM, D	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILICON, D	0.05	0.05	mg/l	0.956	0.954	0.21%	Pass
SILICON, T	0.1	0.1	mg/l	1.04	1.03	0.97%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.38	1.39	0.72%	Pass
SODIUM, T	0.05	0.05	mg/l	1.44	1.53	6.06%	Pass
STRONTIUM, D	0.0002	0.0002	mg/l	0.157	0.157	0.00%	Pass
STRONTIUM, T	0.0002	0.0002	mg/l	0.154	0.159	3.19%	Pass
SULFUR, D	0.5	0.5	mg/l	44.4	45	1.34%	Pass
SULFUR, T	0.5	0.5	mg/l	42.3	43.3	2.34%	Pass
TELLURIUM, D	0.0002	0.0002	mg/l	<0.00010	<0.0001	0.00%	Pass
TELLURIUM, T	0.0002	0.0002	mg/l	<0.00010	<0.0001	0.00%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000177	0.000179	1.12%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000196	0.000186	5.24%	Pass
THORIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
THORIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
TITANIUM, T	0.0003	0.0003	mg/l	0.00042	0.00042	0.00%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	<1.5	<1.5	0.00%	Pass
TUNGSTEN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TUNGSTEN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000136	0.000141	3.61%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000146	0.000152	4.03%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.744	0.761	2.26%	Pass
ZINC, T	0.003	0.003	mg/l	0.770	0.813	5.43%	Pass
ZIRCONIUM, D	0.0002	0.0002	mg/l	<0.00010	<0.0001	0.00%	Pass
ZIRCONIUM, T	0.0002	0.0002	mg/l	<0.00010	<0.0001	0.00%	Pass

Sample Date 14 July 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0025	0.0029	14.81%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0230	0.0228	0.87%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	0.00014	0.00013	7.41%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	0.00085	177.78%	Pass-1
ARSENIC, D	0.0001	0.0001	mg/l	0.00017	0.00016	6.06%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00020	0.00022	9.52%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0233	0.0227	2.61%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0234	0.0234	0.00%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.014	0.014	0.00%	Pass
BORON, T	0.01	0.01	mg/l	0.019	0.017	11.11%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000400	0.000397	0.75%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000552	0.000564	2.15%	Pass
CALCIUM, D	0.05	0.05	mg/l	65.7	63.9	2.78%	Pass
CALCIUM, T	0.05	0.05	mg/l	62.6	63.1	0.80%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	<0.000050	0.00015	100.00%	Pass-1
COBALT, D	0.0001	0.0001	mg/l	0.00025	0.00025	0.00%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00027	0.00026	3.77%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00455	0.00455	0.00%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00641	0.0064	0.16%	Pass
Hardness, Total or Dissolved CaCO3, D	0.13	0.13	mg/l	227	225	0.88%	Pass
Hardness, Total or Dissolved CaCO3, T	0.13	0.13	mg/l	220	224	1.80%	Pass
IRON, D	0.01	0.01	mg/l	0.019	0.018	5.41%	Pass
IRON, T	0.01	0.01	mg/l	0.075	0.073	2.70%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.0177	0.0169	4.62%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0302	0.0295	2.35%	Pass
LITHIUM, D	0.001	0.001	mg/l	<0.00050	<0.0005	0.00%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0018	0.0018	0.00%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	15.3	15.8	3.22%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	15.5	16.1	3.80%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.0158	0.0157	0.63%	Pass
MANGANESE, T	0.0001	0.0001	mg/l	0.0192	0.0192	0.00%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000549	0.000523	4.85%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000549	0.000562	2.34%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00142	0.00142	0.00%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00149	0.00145	2.72%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.43	8.38	0.59%	Pass
POTASSIUM, D	0.05	0.05	mg/l	1.04	1.05	0.96%	Pass
POTASSIUM, T	0.05	0.05	mg/l	1.06	1.05	0.95%	Pass
SELENIUM, D	0.05	0.05	ug/l	0.065	<0.025	88.89%	Pass-1
SELENIUM, T	0.05	0.05	ug/l	<0.025	0.062	85.06%	Pass-1
SILVER, D	0.00001	0.00001	mg/l	0.000016	1.3e-005	20.69%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	8.9e-005	178.72%	Pass-1
SODIUM, D	0.05	0.05	mg/l	1.54	1.55	0.65%	Pass
SODIUM, T	0.05	0.05	mg/l	1.49	1.57	5.23%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000222	0.000191	15.01%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000182	0.000222	19.80%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00053	0.00058	9.01%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	4.0	3.8	5.13%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000170	0.000162	4.82%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000164	0.000173	5.34%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.719	0.703	2.25%	Pass
ZINC, T	0.003	0.003	mg/l	0.765	0.749	2.11%	Pass

Sample Date 28 July 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0049	0.0033	39.02%	Pass-1
ALUMINUM, T	0.003	0.003	mg/l	0.0255	0.0216	16.56%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00021	0.0003	35.29%	Pass-1
ARSENIC, T	0.0001	0.0001	mg/l	0.00028	0.00022	24.00%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0249	0.0249	0.00%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0249	0.0241	3.27%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.015	0.014	6.90%	Pass
BORON, T	0.01	0.01	mg/l	0.015	0.013	14.29%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000247	0.00026	5.13%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000460	0.000428	7.21%	Pass
CALCIUM, D	0.05	0.05	mg/l	66.3	66.8	0.75%	Pass
CALCIUM, T	0.05	0.05	mg/l	66.8	64	4.28%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00013	0.0001	26.09%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00024	0.00026	8.00%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00026	0.00025	3.92%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00535	0.00565	5.45%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00736	0.00721	2.06%	Pass
Hardness, Total or Dissolved CaCO ₃ , D	0.13	0.13	mg/l	235	239	1.69%	Pass
Hardness, Total or Dissolved CaCO ₃ , T	0.13	0.13	mg/l	225	216	4.08%	Pass
IRON, D	0.01	0.01	mg/l	0.030	0.028	6.90%	Pass
IRON, T	0.01	0.01	mg/l	0.103	0.095	8.08%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.0166	0.0176	5.85%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0335	0.0325	3.03%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0018	0.0012	40.00%	Pass-1
LITHIUM, T	0.001	0.001	mg/l	<0.00050	<0.0005	0.00%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	16.8	17.5	4.08%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	14.2	13.7	3.58%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.0167	0.0171	2.37%	Pass
MANGANESE, T	0.0001	0.0001	mg/l	0.0181	0.0175	3.37%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000553	0.000584	5.45%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000628	0.000636	1.27%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00160	0.00166	3.68%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00168	0.00158	6.13%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.25	8.24	0.12%	Pass
POTASSIUM, D	0.05	0.05	mg/l	1.18	1.2	1.68%	Pass
POTASSIUM, T	0.05	0.05	mg/l	1.06	1.05	0.95%	Pass
SELENIUM, D	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.63	1.67	2.42%	Pass
SODIUM, T	0.05	0.05	mg/l	1.57	1.55	1.28%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000147	0.000155	5.30%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000151	0.000146	3.37%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00061	0.00057	6.78%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	<1.5	<1.5	0.00%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000186	0.000203	8.74%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000196	0.000197	0.51%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.651	0.665	2.13%	Pass
ZINC, T	0.003	0.003	mg/l	0.710	0.685	3.58%	Pass

Sample Date 8 August 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0039	0.0038	2.60%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0386	0.0386	0.00%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00020	0.00024	18.18%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00023	0.00026	12.24%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0261	0.0266	1.90%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0271	0.0274	1.10%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.014	0.014	0.00%	Pass
BORON, T	0.01	0.01	mg/l	0.016	0.019	17.14%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000358	0.000328	8.75%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000488	0.000523	6.92%	Pass
CALCIUM, D	0.05	0.05	mg/l	74.4	75.1	0.94%	Pass
CALCIUM, T	0.05	0.05	mg/l	73.6	69.9	5.16%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	0.00019	0.00016	17.14%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00012	0.00011	8.70%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00032	0.00032	0.00%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00032	0.00031	3.17%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00697	0.00684	1.88%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00883	0.0095	7.31%	Pass
CYANIDE, T	0.002	0.002	mg/l	<0.0010	<0.001	0.00%	Pass
Hardness, Total or Dissolved CaCO ₃ , D	0.13	0.13	mg/l	265	266	0.38%	Pass
Hardness, Total or Dissolved CaCO ₃ , T	0.13	0.13	mg/l	259	253	2.34%	Pass
IRON, D	0.01	0.01	mg/l	0.021	0.018	15.38%	Pass
IRON, T	0.01	0.01	mg/l	0.076	0.077	1.31%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.0222	0.0195	12.95%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0345	0.0338	2.05%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0020	0.002	0.00%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0023	0.0022	4.44%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	19.2	19.1	0.52%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	18.2	18.9	3.77%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.0156	0.0158	1.27%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
MANGANESE, T	0.0001	0.0001	mg/l	0.0170	0.0174	2.33%	Pass
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000715	0.000727	1.66%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000736	0.000719	2.34%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00233	0.00213	8.97%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00204	0.00215	5.25%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.33	8.36	0.36%	Pass
POTASSIUM, D	0.05	0.05	mg/l	1.13	1.12	0.89%	Pass
POTASSIUM, T	0.05	0.05	mg/l	1.01	1.03	1.96%	Pass
SELENIUM, D	0.05	0.05	ug/l	<0.025	0.068	92.47%	Pass-1
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.78	1.74	2.27%	Pass
SODIUM, T	0.05	0.05	mg/l	1.60	1.66	3.68%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000151	0.00015	0.66%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000150	0.000147	2.02%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00100	0.00109	8.61%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	<1.5	<1.5	0.00%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000320	0.000307	4.15%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000318	0.000315	0.95%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.737	0.69	6.59%	Pass
ZINC, T	0.003	0.003	mg/l	0.765	0.776	1.43%	Pass

Sample Date 25 August 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0034	0.0042	21.05%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0312	0.0326	4.39%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00021	0.0002	4.88%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00024	0.00021	13.33%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0276	0.0274	0.73%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0276	0.0274	0.73%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.016	0.016	0.00%	Pass
BORON, T	0.01	0.01	mg/l	0.017	0.018	5.71%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000317	0.000319	0.63%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000451	0.000455	0.88%	Pass
CALCIUM, D	0.05	0.05	mg/l	79.2	78.3	1.14%	Pass
CALCIUM, T	0.05	0.05	mg/l	76.4	74.6	2.38%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00012	0.0001	18.18%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00026	0.00023	12.24%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00025	0.00025	0.00%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00756	0.00763	0.92%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.0104	0.0105	0.96%	Pass
Hardness, Total or Dissolved CaCO ₃ , D	0.13	0.13	mg/l	273	270	1.10%	Pass
Hardness, Total or Dissolved CaCO ₃ , T	0.13	0.13	mg/l	265	261	1.52%	Pass
IRON, D	0.01	0.01	mg/l	0.013	0.014	7.41%	Pass
IRON, T	0.01	0.01	mg/l	0.055	0.056	1.80%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.0172	0.0173	0.58%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0268	0.0269	0.37%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0021	0.0022	4.65%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0022	0.0025	12.77%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	18.2	18	1.10%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	18.1	18.2	0.55%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.00967	0.0094	2.83%	Pass
MANGANESE, T	0.0001	0.0001	mg/l	0.0113	0.0115	1.75%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1A Primary	PP 35-1A Secondary	Primary vs. Duplicate	RPD Score
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000768	0.000745	3.04%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000762	0.000765	0.39%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00174	0.00167	4.11%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00188	0.00181	3.79%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.29	8.35	0.72%	Pass
POTASSIUM, D	0.05	0.05	mg/l	1.05	1.05	0.00%	Pass
POTASSIUM, T	0.05	0.05	mg/l	1.05	1.07	1.89%	Pass
SELENIUM, D	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.73	1.74	0.58%	Pass
SODIUM, T	0.05	0.05	mg/l	1.71	1.72	0.58%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000150	0.000138	8.33%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000149	0.00015	0.67%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00101	0.00083	19.57%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	4.5	4.5	0.00%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000268	0.00028	4.38%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000272	0.000284	4.32%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.615	0.619	0.65%	Pass
ZINC, T	0.003	0.003	mg/l	0.660	0.651	1.37%	Pass

Sample Date 8 September 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0054	0.0055	1.83%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0533	0.0497	6.99%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00011	0.00012	8.70%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00015	0.00014	6.90%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0145	0.0144	0.69%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0154	0.0152	1.31%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	<0.0050	<0.005	0.00%	Pass
BORON, T	0.01	0.01	mg/l	<0.0050	<0.005	0.00%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.0000699	6.38e-005	9.12%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000139	0.00014	0.72%	Pass
CALCIUM, D	0.05	0.05	mg/l	49.1	48.7	0.82%	Pass
CALCIUM, T	0.05	0.05	mg/l	50.1	49	2.22%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	0.00021	0.00019	10.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00029	0.00031	6.67%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00010	<5e-005	66.67%	Pass-1
COBALT, T	0.0001	0.0001	mg/l	0.00016	0.00015	6.45%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00479	0.00469	2.11%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00639	0.00633	0.94%	Pass
CYANIDE, T	0.002	0.002	mg/l	<0.0010	<0.001	0.00%	Pass
Hardness, Total or Dissolved CaCO3, D	0.13	0.13	mg/l	191	192	0.52%	Pass
Hardness, Total or Dissolved CaCO3, T	0.13	0.13	mg/l	197	194	1.53%	Pass
IRON, D	0.01	0.01	mg/l	<0.0050	<0.005	0.00%	Pass
IRON, T	0.01	0.01	mg/l	0.058	0.057	1.74%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.00174	0.00173	0.58%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.00726	0.00738	1.64%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0014	0.0016	13.33%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0015	0.0017	12.50%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	16.6	17.2	3.55%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
MAGNESIUM, T	0.005	0.005	mg/l	17.5	17.4	0.57%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.00283	0.00286	1.05%	Pass
MANGANESE, T	0.0001	0.0001	mg/l	0.00981	0.00964	1.75%	Pass
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000548	0.000557	1.63%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000580	0.000573	1.21%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00093	0.0009	3.28%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00114	0.00117	2.60%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.76	8.85	1.02%	Pass
POTASSIUM, D	0.05	0.05	mg/l	0.872	0.861	1.27%	Pass
POTASSIUM, T	0.05	0.05	mg/l	0.900	0.887	1.45%	Pass
SELENIUM, D	0.05	0.05	ug/l	0.067	0.062	7.75%	Pass
SELENIUM, T	0.05	0.05	ug/l	0.057	0.062	8.40%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.40	1.43	2.12%	Pass
SODIUM, T	0.05	0.05	mg/l	1.47	1.48	0.68%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000097	9.2e-005	5.29%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000101	0.000101	0.00%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00130	0.0015	14.29%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	<1.5	<1.5	0.00%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000262	0.00026	0.77%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000265	0.00026	1.90%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.0995	0.0982	1.32%	Pass
ZINC, T	0.003	0.003	mg/l	0.190	0.191	0.52%	Pass

Sample Date 11 June 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0045	0.0041	9.30%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0295	0.0268	9.59%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00013	0.00013	0.00%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00018	0.00016	11.76%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0173	0.0171	1.16%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0184	0.0175	5.01%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.011	0.011	0.00%	Pass
BORON, T	0.01	0.01	mg/l	0.011	0.011	0.00%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.0000828	7.99e-005	3.56%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000268	0.000271	1.11%	Pass
CALCIUM, D	0.05	0.05	mg/l	57.7	57.8	0.17%	Pass
CALCIUM, T	0.05	0.05	mg/l	55.4	55.6	0.36%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	0.00017	0.00017	0.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00026	0.00025	3.92%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00014	0.00013	7.41%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00020	0.0002	0.00%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00443	0.00453	2.23%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00599	0.00599	0.00%	Pass
Hardness, Total or D	0.13	0.13	mg/l	204	204	0.00%	Pass
Hardness, Total or D	0.13	0.13	mg/l	203	202	0.49%	Pass
IRON, D	0.01	0.01	mg/l	<0.0050	<0.005	0.00%	Pass
IRON, T	0.01	0.01	mg/l	0.039	0.035	10.81%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.00200	0.00209	4.40%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.00908	0.00865	4.85%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0014	0.0014	0.00%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0016	0.0015	6.45%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	14.6	14.4	1.38%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	15.7	15.5	1.28%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.00586	0.0058	1.03%	Pass
MANGANESE, T	0.0001	0.0001	mg/l	0.0145	0.0137	5.67%	Pass
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000536	0.000519	3.22%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000537	0.000527	1.88%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00098	0.00097	1.03%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00134	0.00118	12.70%	Pass
NITROGEN, AMMON	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	9.11	9.1	0.11%	Pass
POTASSIUM, D	0.05	0.05	mg/l	0.977	0.932	4.71%	Pass
POTASSIUM, T	0.05	0.05	mg/l	0.980	0.95	3.11%	Pass
SELENIUM, D	0.05	0.05	ug/l	0.053	<0.025	71.79%	Pass-1
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.43	1.39	2.84%	Pass
SODIUM, T	0.05	0.05	mg/l	1.50	1.46	2.70%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000134	0.000126	6.15%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000133	0.000122	8.63%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00100	0.00089	11.64%	Pass
TOTAL SUSPENDED	3	3	mg/l	<1.5	<1.5	0.00%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000211	0.000213	0.94%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000207	0.000192	7.52%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.130	0.136	4.51%	Pass
ZINC, T	0.003	0.003	mg/l	0.427	0.435	1.86%	Pass

Sample Date 24 June 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0055	0.0055	0.00%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0266	0.0359	29.76%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00015	0.00014	6.90%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00020	0.00022	9.52%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0182	0.0178	2.22%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0191	0.0195	2.07%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.011	0.011	0.00%	Pass
BORON, T	0.01	0.01	mg/l	0.010	0.011	9.52%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000110	9.91e-005	10.43%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000335	0.000355	5.80%	Pass
CALCIUM, D	0.05	0.05	mg/l	53.9	54.2	0.56%	Pass
CALCIUM, T	0.05	0.05	mg/l	55.6	55.5	0.18%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	0.00017	0.00018	5.71%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00029	0.00029	0.00%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00011	0.00011	0.00%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00018	0.00019	5.41%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00438	0.00424	3.25%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00622	0.00632	1.59%	Pass
CYANIDE, T	0.002	0.002	mg/l	<0.0010	<0.001	0.00%	Pass
Hardness, Total or Dissolved CaCO3, D	0.13	0.13	mg/l	198	195	1.53%	Pass
Hardness, Total or Dissolved CaCO3, T	0.13	0.13	mg/l	200	202	1.00%	Pass
IRON, D	0.01	0.01	mg/l	<0.0050	<0.005	0.00%	Pass
IRON, T	0.01	0.01	mg/l	0.044	0.051	14.74%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.00137	0.00131	4.48%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.00992	0.0102	2.78%	Pass
LITHIUM, D	0.001	0.001	mg/l	<0.00050	<0.0005	0.00%	Pass
LITHIUM, T	0.001	0.001	mg/l	<0.00050	<0.0005	0.00%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	15.4	14.6	5.33%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	14.9	15.5	3.95%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.00404	0.00399	1.25%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
MANGANESE, T	0.0001	0.0001	mg/l	0.0122	0.0126	3.23%	Pass
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000507	0.000502	0.99%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000529	0.00056	5.69%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00112	0.00116	3.51%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00144	0.00142	1.40%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.76	8.76	0.00%	Pass
POTASSIUM, D	0.05	0.05	mg/l	1.06	1.03	2.87%	Pass
POTASSIUM, T	0.05	0.05	mg/l	1.01	1.02	0.99%	Pass
SELENIUM, D	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.50	1.45	3.39%	Pass
SODIUM, T	0.05	0.05	mg/l	1.46	1.49	2.03%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000159	0.000163	2.48%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000160	0.000163	1.86%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00085	0.0011	25.64%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	11.2	8	33.33%	Pass-1
URANIUM, D	0.00001	0.00001	mg/l	0.000176	0.000182	3.35%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000192	0.000198	3.08%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.0397	0.0396	0.25%	Pass
ZINC, T	0.003	0.003	mg/l	0.348	0.358	2.83%	Pass

Sample Date 7 July 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0070	0.007	0.00%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0215	0.0238	10.15%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00015	0.00015	0.00%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00018	0.00019	5.41%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0162	0.0169	4.23%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0168	0.0167	0.60%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.017	0.016	6.06%	Pass
BORON, T	0.01	0.01	mg/l	0.018	0.017	5.71%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000148	0.000149	0.67%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000345	0.000335	2.94%	Pass
CALCIUM, D	0.05	0.05	mg/l	49.7	49.5	0.40%	Pass
CALCIUM, T	0.05	0.05	mg/l	50.6	50.5	0.20%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	0.00019	0.00021	10.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00025	0.00025	0.00%	Pass
COBALT, D	0.0001	0.0001	mg/l	<0.000050	0.0001	66.67%	Pass-1
COBALT, T	0.0001	0.0001	mg/l	0.00013	0.00014	7.41%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00434	0.00426	1.86%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00571	0.00578	1.22%	Pass
CYANIDE, T	0.002	0.002	mg/l	<0.0010	<0.001	0.00%	Pass
Hardness, Total or Dissolved CaCO3, D	0.13	0.13	mg/l	191	188	1.58%	Pass
Hardness, Total or Dissolved CaCO3, T	0.13	0.13	mg/l	193	190	1.57%	Pass
IRON, D	0.01	0.01	mg/l	0.015	0.014	6.90%	Pass
IRON, T	0.01	0.01	mg/l	0.053	0.051	3.85%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.00248	0.00222	11.06%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0104	0.0102	1.94%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0020	0.002	0.00%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0020	0.0021	4.88%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	16.3	15.6	4.39%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	16.1	15.5	3.80%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.00381	0.00389	2.08%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
MANGANESE, T	0.0001	0.0001	mg/l	0.00899	0.00854	5.13%	Pass
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000559	0.000527	5.89%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000551	0.000589	6.67%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00096	0.00097	1.04%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00111	0.00107	3.67%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.66	8.68	0.23%	Pass
POTASSIUM, D	0.05	0.05	mg/l	1.02	1.04	1.94%	Pass
POTASSIUM, T	0.05	0.05	mg/l	1.01	1	1.00%	Pass
SELENIUM, D	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.46	1.49	2.03%	Pass
SODIUM, T	0.05	0.05	mg/l	1.45	1.44	0.69%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000175	0.000174	0.57%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000175	0.000169	3.49%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00059	0.00054	8.85%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	5.5	5.9	7.02%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000187	0.000176	6.06%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000184	0.00018	2.20%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.0390	0.0389	0.26%	Pass
ZINC, T	0.003	0.003	mg/l	0.216	0.203	6.21%	Pass

Sample Date 21 July 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0078	0.0074	5.26%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0271	0.0262	3.38%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00018	0.00018	0.00%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00022	0.00021	4.65%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0184	0.0182	1.09%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0186	0.0184	1.08%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.017	0.016	6.06%	Pass
BORON, T	0.01	0.01	mg/l	0.016	0.016	0.00%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000170	0.000164	3.59%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000405	0.000411	1.47%	Pass
CALCIUM, D	0.05	0.05	mg/l	57.1	56.5	1.06%	Pass
CALCIUM, T	0.05	0.05	mg/l	54.9	54.7	0.36%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	0.00027	0.00026	3.77%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00031	0.00033	6.25%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00011	<5e-005	75.00%	Pass-1
COBALT, T	0.0001	0.0001	mg/l	0.00013	0.00014	7.41%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00482	0.0048	0.42%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00699	0.0068	2.76%	Pass
CYANIDE, T	0.002	0.002	mg/l	<0.0010	<0.001	0.00%	Pass
Hardness, Total or Dissolved CaCO3, D	0.13	0.13	mg/l	216	210	2.82%	Pass
Hardness, Total or Dissolved CaCO3, T	0.13	0.13	mg/l	208	210	0.96%	Pass
IRON, D	0.01	0.01	mg/l	0.015	0.014	6.90%	Pass
IRON, T	0.01	0.01	mg/l	0.070	0.067	4.38%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.00345	0.00325	5.97%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0129	0.013	0.77%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0019	0.0018	5.41%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0019	0.002	5.13%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	17.8	16.7	6.38%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	17.3	17.7	2.29%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.00422	0.00407	3.62%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
MANGANESE, T	0.0001	0.0001	mg/l	0.00884	0.00906	2.46%	Pass
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000563	0.0006	6.36%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000599	0.000616	2.80%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00117	0.00119	1.69%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00142	0.00141	0.71%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	9.16	9.17	0.11%	Pass
POTASSIUM, D	0.05	0.05	mg/l	1.18	1.17	0.85%	Pass
POTASSIUM, T	0.05	0.05	mg/l	1.17	1.12	4.37%	Pass
SELENIUM, D	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.53	1.5	1.98%	Pass
SODIUM, T	0.05	0.05	mg/l	1.55	1.51	2.61%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000167	0.000166	0.60%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000178	0.000171	4.01%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00074	0.00064	14.49%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	4.2	4.6	9.09%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000184	0.000188	2.15%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000195	0.0002	2.53%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.0755	0.0736	2.55%	Pass
ZINC, T	0.003	0.003	mg/l	0.224	0.225	0.45%	Pass

Sample Date 4 August 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0069	0.0067	2.94%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0502	0.0545	8.21%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00018	0.00017	5.71%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00022	0.00021	4.65%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0180	0.0173	3.97%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0194	0.0192	1.04%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.014	0.014	0.00%	Pass
BORON, T	0.01	0.01	mg/l	0.015	0.015	0.00%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.000103	9.6e-005	7.04%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.000342	0.000353	3.17%	Pass
CALCIUM, D	0.05	0.05	mg/l	60.6	58.4	3.70%	Pass
CALCIUM, T	0.05	0.05	mg/l	62.9	65.1	3.44%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	0.00019	0.00019	0.00%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00032	0.00028	13.33%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00012	0.00011	8.70%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00017	0.00017	0.00%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00460	0.00435	5.59%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00712	0.0072	1.12%	Pass
CYANIDE, T	0.002	0.002	mg/l	<0.0010	<0.001	0.00%	Pass
Hardness, Total or Dissolved CaCO3, D	0.13	0.13	mg/l	220	211	4.18%	Pass
Hardness, Total or Dissolved CaCO3, T	0.13	0.13	mg/l	224	230	2.64%	Pass
IRON, D	0.01	0.01	mg/l	0.012	0.01	18.18%	Pass
IRON, T	0.01	0.01	mg/l	0.094	0.096	2.11%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.00181	0.00157	14.20%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.0180	0.0174	3.39%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0019	0.0018	5.41%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0020	0.002	0.00%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	16.6	15.8	4.94%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	16.3	16.4	0.61%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.00293	0.00268	8.91%	Pass
MANGANESE, T	0.0001	0.0001	mg/l	0.00871	0.00843	3.27%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000579	0.000611	5.38%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000661	0.000609	8.19%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00129	0.0013	0.77%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00159	0.00166	4.31%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.57	8.58	0.12%	Pass
POTASSIUM, D	0.05	0.05	mg/l	1.07	1.07	0.00%	Pass
POTASSIUM, T	0.05	0.05	mg/l	1.09	1.06	2.79%	Pass
SELENIUM, D	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SELENIUM, T	0.05	0.05	ug/l	<0.025	<0.025	0.00%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.57	1.55	1.28%	Pass
SODIUM, T	0.05	0.05	mg/l	1.56	1.54	1.29%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000145	0.000138	4.95%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000156	0.000155	0.64%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00178	0.00188	5.46%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	13.6	14.6	7.09%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000224	0.000222	0.90%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000246	0.00023	6.72%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.0139	0.0131	5.93%	Pass
ZINC, T	0.003	0.003	mg/l	0.194	0.19	2.08%	Pass

Sample Date 18 August 2021

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	0.001	0.001	mg/l	0.0074	0.0077	3.97%	Pass
ALUMINUM, T	0.003	0.003	mg/l	0.0342	0.0374	8.94%	Pass
ANTIMONY, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	0.0001	0.0001	mg/l	0.00023	0.00023	0.00%	Pass
ARSENIC, T	0.0001	0.0001	mg/l	0.00025	0.00025	0.00%	Pass
BARIUM, D	0.0001	0.0001	mg/l	0.0189	0.0189	0.00%	Pass
BARIUM, T	0.0001	0.0001	mg/l	0.0194	0.0196	1.03%	Pass
BERYLLIUM, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
BORON, D	0.01	0.01	mg/l	0.016	0.016	0.00%	Pass
BORON, T	0.01	0.01	mg/l	0.016	0.017	6.06%	Pass
CADMIUM, D	0.000005	0.000005	mg/l	0.0000079	7.6e-006	3.87%	Pass
CADMIUM, T	0.000005	0.000005	mg/l	0.0000859	9.54e-005	10.48%	Pass
CALCIUM, D	0.05	0.05	mg/l	58.7	58.5	0.34%	Pass
CALCIUM, T	0.05	0.05	mg/l	61.6	62.5	1.45%	Pass
CHROMIUM, D	0.0001	0.0001	mg/l	0.00023	0.00025	8.33%	Pass
CHROMIUM, T	0.0001	0.0001	mg/l	0.00027	0.0003	10.53%	Pass
COBALT, D	0.0001	0.0001	mg/l	0.00012	0.00012	0.00%	Pass
COBALT, T	0.0001	0.0001	mg/l	0.00016	0.00015	6.45%	Pass
COPPER, D	0.0002	0.0002	mg/l	0.00623	0.0062	0.48%	Pass
COPPER, T	0.0005	0.0005	mg/l	0.00883	0.00898	1.68%	Pass
CYANIDE, T	0.002	0.002	mg/l	<0.0010	<0.001	0.00%	Pass
Hardness, Total or Dissolved CaCO3, D	0.13	0.13	mg/l	224	224	0.00%	Pass
Hardness, Total or Dissolved CaCO3, T	0.13	0.13	mg/l	232	235	1.28%	Pass
IRON, D	0.01	0.01	mg/l	0.011	0.011	0.00%	Pass
IRON, T	0.01	0.01	mg/l	0.059	0.058	1.71%	Pass
LEAD, D	0.00005	0.00005	mg/l	0.000977	0.000973	0.41%	Pass
LEAD, T	0.00005	0.00005	mg/l	0.00744	0.00747	0.40%	Pass
LITHIUM, D	0.001	0.001	mg/l	0.0020	0.0021	4.88%	Pass
LITHIUM, T	0.001	0.001	mg/l	0.0022	0.0024	8.70%	Pass
MAGNESIUM, D	0.005	0.005	mg/l	18.9	18.9	0.00%	Pass
MAGNESIUM, T	0.005	0.005	mg/l	18.9	19.2	1.57%	Pass
MANGANESE, D	0.0001	0.0001	mg/l	0.00274	0.00282	2.88%	Pass

Analyte	Detection Limit Pri.	Detection Limit Dup.	Units	PP 35-1B Primary	PP 35-1B Secondary	Primary vs. Duplicate	RPD Score
MANGANESE, T	0.0001	0.0001	mg/l	0.00659	0.00656	0.46%	Pass
MERCURY, D	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	0.000005	0.000005	mg/l	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	0.00005	0.00005	mg/l	0.000776	0.000758	2.35%	Pass
MOLYBDENUM, T	0.00005	0.00005	mg/l	0.000798	0.000764	4.35%	Pass
NICKEL, D	0.0005	0.0005	mg/l	0.00116	0.00122	5.04%	Pass
NICKEL, T	0.0005	0.0005	mg/l	0.00140	0.00136	2.90%	Pass
NITROGEN, AMMONIA (AS N)	0.05	0.05	mg/l	<0.025	<0.025	0.00%	Pass
pH, LAB	0.1	0.1	ph units	8.50	8.53	0.35%	Pass
POTASSIUM, D	0.05	0.05	mg/l	1.06	1.06	0.00%	Pass
POTASSIUM, T	0.05	0.05	mg/l	1.05	1.05	0.00%	Pass
SELENIUM, D	0.05	0.05	ug/l	0.064	0.055	15.13%	Pass
SELENIUM, T	0.05	0.05	ug/l	0.063	0.052	19.13%	Pass
SILVER, D	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	0.00001	0.00001	mg/l	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	0.05	0.05	mg/l	1.68	1.72	2.35%	Pass
SODIUM, T	0.05	0.05	mg/l	1.72	1.72	0.00%	Pass
THALLIUM, D	0.00001	0.00001	mg/l	0.000138	0.000136	1.46%	Pass
THALLIUM, T	0.00001	0.00001	mg/l	0.000142	0.000143	0.70%	Pass
TIN, D	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TIN, T	0.0001	0.0001	mg/l	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	0.0003	0.0003	mg/l	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	0.0003	0.0003	mg/l	0.00104	0.00081	24.86%	Pass
TOTAL SUSPENDED SOLIDS, LAB	3	3	mg/l	6.2	5.6	10.17%	Pass
URANIUM, D	0.00001	0.00001	mg/l	0.000289	0.000288	0.35%	Pass
URANIUM, T	0.00001	0.00001	mg/l	0.000293	0.000305	4.01%	Pass
VANADIUM, D	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	0.0005	0.0005	mg/l	<0.00025	<0.00025	0.00%	Pass
ZINC, D	0.001	0.001	mg/l	0.0083	0.0088	5.85%	Pass
ZINC, T	0.003	0.003	mg/l	0.0875	0.0864	1.27%	Pass

Sample Date 1 September

Analyte	Units	Detection Limit Pri.	Detection Limit Dup.	PP 35-9 Primary	PP 35-9 Secondary	Primary vs. Duplicate	RPD Score
ALUMINUM, D	mg/l	0.001	0.001	0.0012	0.0013	8.00%	Pass
ALUMINUM, T	mg/l	0.003	0.003	0.0058	0.004	36.73%	Pass-1
ANTIMONY, D	mg/l	0.0001	0.0001	<0.000050	<5e-005	0.00%	Pass
ANTIMONY, T	mg/l	0.0001	0.0001	<0.000050	<5e-005	0.00%	Pass
ARSENIC, D	mg/l	0.0001	0.0001	0.00048	0.00051	6.06%	Pass
ARSENIC, T	mg/l	0.0001	0.0001	0.00050	0.0005	0.00%	Pass
BARIUM, D	mg/l	0.0001	0.0001	0.0150	0.0149	0.67%	Pass
BARIUM, T	mg/l	0.0001	0.0001	0.0150	0.0153	1.98%	Pass
BERYLLIUM, D	mg/l	0.0001	0.0001	<0.000050	<5e-005	0.00%	Pass
BERYLLIUM, T	mg/l	0.0001	0.0001	<0.000050	<5e-005	0.00%	Pass
BORON, D	mg/l	0.01	0.01	0.078	0.08	2.53%	Pass
BORON, T	mg/l	0.01	0.01	0.081	0.084	3.64%	Pass
CADMIUM, D	mg/l	0.000005	0.000005	<0.0000025	<2.5e-006	0.00%	Pass
CADMIUM, T	mg/l	0.000005	0.000005	0.0000069	<2.5e-006	93.62%	Pass-1
CALCIUM, D	mg/l	0.05	0.05	139	137	1.45%	Pass
CALCIUM, T	mg/l	0.05	0.05	140	137	2.17%	Pass
CHROMIUM, D	mg/l	0.0001	0.0001	<0.000050	<5e-005	0.00%	Pass
CHROMIUM, T	mg/l	0.0001	0.0001	0.00013	0.00011	16.67%	Pass
COBALT, D	mg/l	0.0001	0.0001	<0.000050	<5e-005	0.00%	Pass
COBALT, T	mg/l	0.0001	0.0001	<0.000050	<5e-005	0.00%	Pass
COPPER, D	mg/l	0.0002	0.0002	0.00047	<0.0001	129.82%	Pass-1
COPPER, T	mg/l	0.0005	0.0005	<0.00025	<0.00025	0.00%	Pass
CYANIDE, T	mg/l	0.002	0.002	<0.0010	<0.001	0.00%	Pass
Hardness, Total or Dissolved CaCO ₃ , D	mg/l	0.13	0.13	642	625	2.68%	Pass
Hardness, Total or Dissolved CaCO ₃ , T	mg/l	0.13	0.13	647	636	1.71%	Pass
IRON, D	mg/l	0.01	0.01	0.277	0.275	0.72%	Pass
IRON, T	mg/l	0.01	0.01	0.366	0.364	0.55%	Pass
LEAD, D	mg/l	0.00005	0.00005	<0.000025	<2.5e-005	0.00%	Pass
LEAD, T	mg/l	0.00005	0.00005	0.000061	<2.5e-005	83.72%	Pass-1
LITHIUM, D	mg/l	0.001	0.001	0.0179	0.0179	0.00%	Pass
LITHIUM, T	mg/l	0.001	0.001	0.0180	0.0182	1.10%	Pass
MAGNESIUM, D	mg/l	0.005	0.005	71.5	69	3.56%	Pass
MAGNESIUM, T	mg/l	0.005	0.005	72.3	71.3	1.39%	Pass
MANGANESE, D	mg/l	0.0001	0.0001	0.0369	0.0335	9.66%	Pass

Analyte	Units	Detection Limit Pri.	Detection Limit Dup.	PP 35-9 Primary	PP 35-9 Secondary	Primary vs. Duplicate	RPD Score
MANGANESE, T	mg/l	0.0001	0.0001	0.0354	0.0345	2.58%	Pass
MERCURY, D	mg/l	0.000005	0.000005	<0.0000025	<2.5e-006	0.00%	Pass
MERCURY, T	mg/l	0.000005	0.000005	<0.0000025	<2.5e-006	0.00%	Pass
MOLYBDENUM, D	mg/l	0.00005	0.00005	0.000144	0.000155	7.36%	Pass
MOLYBDENUM, T	mg/l	0.00005	0.00005	0.000138	0.00016	14.77%	Pass
NICKEL, D	mg/l	0.0005	0.0005	<0.00025	<0.00025	0.00%	Pass
NICKEL, T	mg/l	0.0005	0.0005	<0.00025	<0.00025	0.00%	Pass
NITROGEN, AMMONIA (AS N)	mg/l	0.01	0.01	0.085	0.017	133.33%	Pass-1
pH, LAB	ph units	0.1	0.1	7.80	7.82	0.26%	Pass
POTASSIUM, D	mg/l	0.05	0.05	2.45	2.36	3.74%	Pass
POTASSIUM, T	mg/l	0.05	0.05	2.39	2.36	1.26%	Pass
SELENIUM, D	ug/l	0.05	0.05	<0.025	<0.025	0.00%	Pass
SELENIUM, T	ug/l	0.05	0.05	<0.025	<0.025	0.00%	Pass
SILVER, D	mg/l	0.00001	0.00001	<0.0000050	<5e-006	0.00%	Pass
SILVER, T	mg/l	0.00001	0.00001	<0.0000050	<5e-006	0.00%	Pass
SODIUM, D	mg/l	0.05	0.05	16.3	15.8	3.12%	Pass
SODIUM, T	mg/l	0.05	0.05	16.4	17.3	5.34%	Pass
THALLIUM, D	mg/l	0.00001	0.00001	<0.0000050	<5e-006	0.00%	Pass
THALLIUM, T	mg/l	0.00001	0.00001	<0.0000050	<5e-006	0.00%	Pass
TIN, D	mg/l	0.0001	0.0001	<0.000050	<5e-005	0.00%	Pass
TIN, T	mg/l	0.0001	0.0001	<0.000050	<5e-005	0.00%	Pass
TITANIUM, D	mg/l	0.0003	0.0003	<0.00015	<0.00015	0.00%	Pass
TITANIUM, T	mg/l	0.0003	0.0003	<0.00015	<0.00015	0.00%	Pass
TOTAL SUSPENDED SOLIDS, LAB	mg/l	3	3	6.6	8.8	28.57%	Pass
URANIUM, D	mg/l	0.00001	0.00001	0.000239	0.000239	0.00%	Pass
URANIUM, T	mg/l	0.00001	0.00001	0.000242	0.000249	2.85%	Pass
VANADIUM, D	mg/l	0.0005	0.0005	<0.00025	<0.00025	0.00%	Pass
VANADIUM, T	mg/l	0.0005	0.0005	<0.00025	<0.00025	0.00%	Pass
ZINC, D	mg/l	0.001	0.001	0.0023	0.001	78.79%	Pass-1
ZINC, T	mg/l	0.003	0.003	0.0033	<0.0015	75.00%	Pass-1

Sample collected on 27 Oct 2021

Notes:

RPD Control Limits

Pass - RPD \leq 30%

Pass-1 - RPD $>$ 30%, Analysis results $<$ 10 times Detection Limit

Pass-2 - RPD $>$ 30% and RPD \leq 50%, Analysis result $>$ 10 times Detection Limit and $<$ 20 times Detection Limit