DILLON CONSULTING

NOVA SCOTIA LANDS INC.

Phase II Environmental Site Assessment (Final)

Lake Enon Former Mill Site, Enon, Nova Scotia, PID Nos. 15551369, 15340045, and 15340052

October 2022 – 22-3723

October 7, 2022

Nova Scotia Lands Inc.
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Project Manager

Phase II Environmental Site Assessment
Lake Enon Former Mill Site, 2412 Loch Lomond Road
Parcel Identification Designation Numbers (PID Nos.): 15551369, 15340045, and 15340052

Dillon Consulting Limited (Dillon) is pleased to provide this Phase II Environmental Site Assessment (ESA) of the Lake Enon Former Mill property located at 2412 Loch Lomond Road in the Cape Breton Regional Municipality, Nova Scotia, and identified by PID Nos. 15551369, 15340045, and 15340052.

Should you have any questions, please do not hesitate to contact us.

Yours sincerely,

DILLON CONSULTING LIMITED

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Executive Summary

Dillon Consulting Limited (Dillon) was commissioned by Nova Scotia Lands Inc. (NSLI) to complete a Phase II Environmental Site Assessment (ESA) of the Lake Enon Former Mill property (herein referred to as the "site" or the "subject property") located at 2412 Loch Lomond Road, Enon), Nova Scotia. The former mill site was previously used as a milling facility for several materials including celestite, barium, and lead. Dillon completed a Phase I ESA at the site in April 2022 that indicated the presence of potentially contaminating activities (PCAs) on-site. From those PCAs, twelve areas of potential environmental concern (APECs) were identified for the site, as summarized in the table below.

Table ES 1: Summary of Identified Relevant APECs and COPCs

APEC No.	APEC	COPCs	Media of Concern	Comments
1	Tailings Pile/Pond	Metals, General Chemistry, PHCs, PAHs, VOCs, sVOCs, and TOC (Sed Only)	SW, Sed	Waste storage, aerial mapping surficial water present in this area
2	Waste Rock/Dump	Metals, General Chemistry, PHCs (GW Only), PAHs, VOCs, sVOCs, and TKN (GW Only)	Soil, GW	Waste/tailings soils area
3	Processing Area	Metals, General Chemistry, PHCs, PAHs, PCBs (Soil Only), VOCs, and sVOCs	Soil, GW	Processing of materials, heavy equipment storage, petroleum storage
4	Mill/Plant Area	Metals, General Chemistry, PHCs, PAHs , PCBs (Soil Only), VOCs, and sVOCs	Soil, GW	Processing of materials, heavy equipment storage, petroleum storage
5	Waste Rock/Dump	Metals, General Chemistry, PHCs (GW Only), PAHs, VOCs (Soil Only), and sVOCs (Soil Only)	Soil, GW	Waste/tailings soils area
6	Tailings Pile/Pond	Metals, General Chemistry, PHCs (SW and Sed Only), PAHs, VOCs, sVOCs, TOC (Sed Only), and TKN (GW Only)	SW, Sed, GW	Waste storage, aerial mapping surficial water present in this area
7	Settling Ponds	Metals, General Chemistry, PHCs (SW and Sed Only), PAHs, VOCs, sVOCs, TOC (Sed Only), and TKN (SW and GW Only)	SW, Sed, GW	Waste storage, aerial mapping surficial water present in this area
8	Lake Enon (Potential Receptor)	Metals, General Chemistry	SW, Sed	Lake Enon is identified as a potential receptor, given the nature of the site conditions, sediment and surface water quality should be evaluated
9	Waste Rock/Dump	Metals, PAHs, PCBs, VOCs, and sVOCs	Soil	Waste/tailings soils area
10	Tailings Disposal Area	Metals, General Chemistry, PHCs (GW Only), PAHs, VOCs, and sVOCs	Soil, GW	Waste/tailings storage, historical plans indicate a pond was previously located here

APEC No.	APEC	COPCs	Media of Concern	Comments
11	Tailings Disposal Area	Metals, General Chemistry, PHCs (GW Only) PAHs, VOCs (Soil Only), and sVOCs (Soil Only)	Soil, GW	Waste/tailings soils area
12	Former Pad Area	Metals, PAHs, VOCs, sVOCs, EC, and SAR	Soil	Former pad area used for storage, waste rock pile area

Notes:
Contaminant Abbreviations: PHCs – Petroleum Hydrocarbons (i.e, BTEX, modified TPH); BTEX – Benzene, Toluene, Ethylbenzene and Xylenes; PAHs- Polycyclic Aromatic Hydrocarbons; PCBs – Polychlorinated Biphenyls; VOCs – Volatile Organic Compounds; sVOCs – Semi-Volatile Organic Compounds; TOC – Total Organic Carbon; TKN – Total Kjeldahl Nitrogen, SAR – Sodium Adsorption Ratio; EC- Electrical Conductivity.

The Phase II ESA included the advancement of eight boreholes, installation of seven monitoring wells, completion of twelve test pits, and soil, groundwater, surface water and sediment sampling. The generalized groundwater flow direction in the assessment area is interpreted to be convergent towards Lake Enon. For comparison to the Nova Scotia Contaminated Sites Regulations (NS CSRs) Tier I Environmental Quality Standards (EQS), the site is considered to be commercial, potable with both fine and coarse-grained soil conditions. Findings of the Phase II ESA are as follows:

- Forty-one (41) soil samples were submitted for metals analysis, including free cyanide, total cyanide, and mercury. Metals exceedances of the Tier 1 EQS were reported in twenty-five (25) of the analyzed samples. Notable widespread exceedances include cadmium, selenium, and strontium. Although concentrations of iron exceeded the Tier 1 EQS in most analyzed samples, it is noted that the concentrations were below the Environment Canada Maximum Background value, therefore, iron concentrations are interpreted to be related to, or influenced by, background concentrations. Although lead concentrations exceeded the applicable Tier 1 EQS in the majority of the samples, comparison to the Mineral Occurrence Database, which findings indicated that the celestite ore mined in the Lake Enon Pit contained average lead concentrations of slightly less 5,000 mg/kg, leaves only two lead exceedances remaining (i.e., TH8 SS1 and TH9 SS1). The Mineral Occurrence Database also notes Sphalerite (ZnFeS) also co-presents with celestite in this region causing zinc to be naturally elevated within the soils found on-site (up to 3,600 mg/kg) resulting in no samples exceeding published background values for this local area. Similarly, barium is naturally occurring in this local area according to the Mineral Occurrence Database as barium sulphate with concentrations up to 10,100 mg/kg resulting in no samples exceeding the background values. As a result, the main metals of concern are cadmium and strontium, which exceed guidelines and background values in multiple locations across the site, with lesser occurrences of selenium, beryllium, manganese, and lead identified between two (2) to five (5) locations.
- Seven (7) soil samples were submitted for analysis of ARD parameters, including sodium adsorption ratio (SAR), electrical conductivity, calcium, and chloride. Based on the results, the rock has low acid generating potential and significantly more net neutralizing potential; no action is required to address acid production on this former mine site.
- Eight (8) groundwater samples were submitted for metals analysis, including free cyanide, total cyanide, and mercury, with the exception of MW5, which had insufficient water to collect samples

for full metals analysis. Metals concentrations in groundwater were generally below the Tier 1 EQS, with some exceptions (i.e., cobalt manganese, and strontium).

- Ten (10) sediment samples were submitted for analysis of metals. Metals concentrations in sediment were generally below the Tier 1 EQS, with some exceptions (i.e., cadmium, copper, lead, manganese, selenium, silver, and zinc). Select sediment samples were analyzed for PHCs. BTEX concentrations in the analyzed samples were below the Tier I EQS. Modified TPH concentrations exceeded the Tier I EQS. Due to the high organic content observed within the samples, reanalysis of the extractable hydrocarbons was completed following silica gel clean up. Although the Modified TPH exceedances decreased, they remained above the Tier I EQS; regardless, detectable extractable hydrocarbons are still suspected to be a false-positive owing to the higher natural organic sediment content and as PHCs were not identified as a concern in other on-site media.
- Eight (8) surface water samples were submitted for analysis of metals, including free cyanide, total cyanide, and mercury for analyzed samples. Metals concentrations in surface water were generally below the Tier 1 EQS, with some exceptions (i.e., aluminum, cadmium, lead, and zinc). One surface water sample was submitted for analysis of TKN. The TKN concentrations in the sample collected from SW4 was recorded as 0.16 mg/L; this analysis was completed as a surrogate to identify potential buried drum seeps/plume from historically used nitrogen-based chemicals that may have been historically buried on site. The relatively low TKN value indicates a low likelihood of a large-scale buried drum cache/plume at this location.

Following the initial Phase I/II Environmental Site Assessment work, Dillon completed a qualitative risk review of the site to identify relevant CoCs, media, pathways, receptors and potential risk. Based on the initial data obtained in the Phase II ESA, Dillon recommends further consideration of the remedial approach as presented in Appendix H.

1.0 Introduction

Dillon Consulting Limited (Dillon) was commissioned by Nova Scotia Lands Inc. (NSLI) to complete a Phase II Environmental Site Assessment (ESA) of the Lake Enon Former Mill property (herein referred to as the "site" or the "subject property") located at 2412 Loch Lomond Road, in the Cape Breton Regional Municipality (CBRM), Nova Scotia (see Figure 1, appended) for the site location). This report presents the Phase II ESA methodology (Section 2.0), results (Section 3.0), conceptual site model (CSM) (Section 4.0), summary and recommendations (Section 5.0).

1.1 Purpose

Prior to initiation of the Phase II ESA, Dillon completed a Phase I ESA (i.e., "Phase I Environmental Site Assessment (Draft), Lake Enon Former Mill Site, Cape Breton Regional Municipality, Nova Scotia, Property Identification Designation Numbers (PID Nos.): 15551369, 15340045, and 15340052", dated April 26, 2022) for the site. Findings of the Phase I ESA identified twelve on-site areas of potential environmental concern (APECs) (e.g., tailings piles/ponds, waste rock/dumps, former processing areas, former mill/plant area, settling ponds, and tailing disposals areas) with the following contaminants of potential concern (COPCs): metals, select organic compounds, petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and semi-volatile organic compounds (sVOCs). The full Phase I ESA report can be found in Appendix A for reference, and is discussed further in Section 1.2.

The Phase II ESA was completed in accordance with the Canadian Standards Association (CSA) Standard No. Z769-00 (R2018) and the Nova Scotia Contaminated Sites Regulations (NS CSRs) and associated Ministerial Protocols to identify and, where possible, delineate potential environmental contamination that may have resulted from historical activities on the former Lake Enon Mill site.

The findings presented in this report are based on limited visual observations made during Phase II ESA site visits, and an intrusive investigation, which consisted of drilling; test pitting; hand-augering; soil, sediment, and surface water sampling, and groundwater monitoring.

1.2 Background

The Lake Enon Former Mill (i.e., the site) is located in Enon, Nova Scotia along Loch Lomond Road, approximately 50 kilometers (km) southwest of Sydney in the Cape Breton Regional Municipality, and is situated adjacent to Lake Enon. The former mill site (PID Nos. 15551369, 15340045, 15340052) is owned by Nova Scotia Department of Natural Resources and Renewables (NSDNRR). Significant deposits of celestite, the principal source of strontium, were discovered from the Lower Windsor rock group in Enon in the early 1960s. The site was developed in the mid-1960s and was operational from 1969 through 1975 or 1976 by Kaiser Celestite Mining (Kaiser). During this time, ore was reportedly sourced from an

on-site pit, as well as a quarry to the north of the site. Concentrated ore was then sent to Kaiser's chemical plant in Point Edward, Nova Scotia to be converted to different strontium compounds.

In 1977, the site was purchased by Yava Mines Ltd. (Yava). Between 1979 and 1981, Yava operated the milling site to process lead ore from a nearby mine. The site was then acquired by Novex Mining and Exploration (Novex). From 1983 to 1984, Novex operated the mill site to process barite ore. In 1988, Lodestone operated the mill site to process a magnetite bulk sample from Bass River.

Buildings and processing equipment associated with the former mill operations were reportedly removed from the site in the mid-1990s.

Dillon completed a Phase I ESA at the site in April 2022. The Phase I ESA indicated the presence of potentially contaminating activities (PCAs). From those PCAs, twelve areas of potential environmental concern (APECs) were identified for the site, originating from on-site, as summarized in the table below.

Table 1: Summary of Identified Relevant APECs and COPCs

APEC No.	APEC	COPCs	Media of Concern	Comments
1	Tailings Pile/Pond	Metals, General Chemistry, PHCs, PAHs, VOCs, sVOCs, and TOC (Sed Only)	SW, Sed	Waste storage, aerial mapping surficial water present in this area
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3	Processing Area	Metals, General Chemistry, PHCs, PAHs, PCBs (Soil Only), VOCs, and sVOCs	Soil, GW	Processing of materials, heavy equipment storage, petroleum storage
4	Mill/Plant Area	Metals, General Chemistry, PHCs, PAHs , PCBs (Soil Only), VOCs, and sVOCs	Soil, GW	Processing of materials, heavy equipment storage, petroleum storage
5	Waste Rock/Dump	Metals, General Chemistry, PHCs (GW Only), PAHs, VOCs (Soil Only), and sVOCs (Soil Only)	Soil, GW	Waste/tailings soils area
6	Tailings Pile/Pond	Metals, General Chemistry, PHCs (SW and Sed Only), PAHs, VOCs, sVOCs, TOC (Sed Only), and TKN (GW Only)	SW, Sed, GW	Waste storage, aerial mapping surficial water present in this area
7	Settling Ponds	Metals, General Chemistry, PHCs (SW and Sed Only), PAHs, VOCs, sVOCs, TOC (Sed Only), and TKN (SW and GW Only)	SW, Sed, GW	Waste storage, aerial mapping surficial water present in this area
8	Lake Enon (Potential Receptor)	Metals, General Chemistry	SW, Sed	Lake Enon is identified as a potential receptor, given the nature of the site conditions, sediment and surface water quality should be evaluated

APEC No.	APEC	COPCs	Media of Concern	Comments
9	Waste Rock/Dump	Metals, PAHs, PCBs, VOCs, and sVOCs	Soil	Waste/tailings soils area
10	Tailings Disposal Area	Metals, General Chemistry, PHCs (GW Only), PAHs, VOCs, and sVOCs	Soil, GW	Waste/tailings storage, historical plans indicate a pond was previously located here
11	Tailings Disposal Area	Metals, General Chemistry, PHCs (GW Only) PAHs, VOCs (Soil Only), and sVOCs (Soil Only)	Soil, GW	Waste/tailings soils area
12	Former Pad Area	Metals, PAHs, VOCs, sVOCs, EC, and SAR	Soil	Former pad area used for storage, waste rock pile area

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The results of the Phase I ESA indicated that a Phase II ESA was required to characterize the APECs identified.

1.3 Regional Geology and Hydrogeology

To describe the regional physiography and expected hydrogeologic conditions beneath the subject property, the following documents were reviewed:

- Stea, R.R., Conley, H., and Brown, Y. (compilers) 1992: Surficial Geology of the Province of Nova Scotia; Nova Scotia Department of Natural Resources, Map 92-3, Scale 1:500,000;
- Keppie, J.D. (compiler) 2000: Geological Map of the Province of Nova Scotia; Nova Scotia Department of Natural Resources, Minerals and Energy Branch, Map ME 2000-1, Scale 1:500,000; and
- S.M. Barr, C.E. White (compilers) 2017: Bedrock Geology Map of the Grand Narrows Area, NTS 11F/15, Cape Breton, Inverness, Richmond and Victoria Counties, Nova Scotia; Nova Scotia Department of Natural Resources, Map ME 2017-014, Scale 1:50,000.

The surficial geology of the subject area consists of stony till plain and drumlins. Till is stony, sandy and consists of material derived from local bedrock sources, ranging in thickness from 2 meters (m) to 20 m. Drumlin facies are siltier due to erosion and incorporation of older till units by glaciers.

Due to the nature of the site, there is significant variability in soil stratigraphy depending on the area. Additionally, the grade of the site is even more variable depending on the area. For clarification purposes, soil stratigraphy has been grouped by area. Based on field observations made during drilling, test pitting, and hand-augering activities at the site, the following observations were found.

1.3.1 Historical Infrastructure Areas: APECs **3**, **4**, and **9**

Soil stratigraphy in this area generally consists of a layer of clay and gravel with varying amounts of sand organics underlain with fine grained sand and trace clays, with cobbles encountered at depths ranging from approximately 5.55 mbgs to 7.92 mbgs. A composite soil sample was collected from the combined area of APECs 3 and 4 which was submitted for grain size analysis. Based on the grain-size analysis, the sample was classified as coarse-gained soil.

1.3.2 Waste Rock Areas: APECs **2** and **5**

Soil stratigraphy in this area generally consists of a layer of intermixed clay, gravel, and sand with intermittent cobbles throughout followed by a gravelly base with varying amounts of sand and clay.

1.3.3 Tailings Pond Areas: APECs **10** and **11**

Soil stratigraphy in this area generally consists of a thin layer of organics underlain with fine-grained sand and trace clays, transitioning to a silty clay. A composite soil sample was collected from the combined area of APECs 10 and 11 and submitted for grain size analysis. Based on the grain-size analysis, the sample was classified as fine-grained soil.

1.3.4 Background Area

The “background” area selected for the site was located approximately 200 m east of Lock Lomond Road. Soil stratigraphy in this area generally consists of a thin layer of organics underlain with silt and gravel with varying amounts of sand and clay, with cobbles atop bedrock. Bedrock was encountered in the background area at a depth of 3.05 meters below ground surface (mbgs).

The regional bedrock geology of the subject area is mapped as variable. The Uist formation is present at the northwest portion of the site, northwest of the former pond. Between the former pond and tailings pond, the Loch Lomond formation is present. To the southeast of Lake Enon, the Enon formation is present, followed by the Grantmire formation, and then by the Chisholm Brook Plutonic Suite – mozzo granite. A small area of the Chisholm Plutonic Suite – granodiorite is present with the Loch Lomond formation on the southwest portion of the site. Bedrock mapping of the area also identified occurrence of strontium on the subject property, south of Lake Enon and north of the former tailings disposal pond. Bedrock was encountered at a depth of 3.05 mbgs during intrusive activities.

The topography of the site is flat to rolling with many surface boulders; drumlins-elongate or oval hills veneered by stony till with underlying multiple till layers. Based on the regional topography of the site, in addition to groundwater contours prepared with field survey data, the regional shallow groundwater flow is interpreted to be convergent towards Lake Enon.

1.4 Regulatory Framework

1.4.1 Nova Scotia Contaminated Sites Regulations and Associated Ministerial Protocols

The Phase II ESA for the site was conducted in accordance with the NS CSRs and associated Ministerial Protocols. The assessment work was conducted in accordance with the Ministerial Protocol PRO-200 (Environmental Site Assessment for Limited Remediation), specifically for an L3 ESA, which applies to the assessment of contamination from a single source or multiple sources with single or multiple contaminants of concern. Specifically, the criteria used to assess impacts at the site were the NS Tier 1 Environmental Quality Standards (EQS) (September 2021) for soil, sediment, groundwater and surface water for a property having commercial land-use, potable groundwater usage and both fine and coarse-grained soil conditions.

Metals concentrations were also compared to the Nova Scotia Maximum Concentration Background Levels for the Highlands Soil Zone, as presented in the Environment Canada's (EC) Background Soil Database and to background concentrations obtained from two on-site background soil samples collected as part of the Phase II ESA program (i.e., SSS26 (0.15-0.25 m) and MW1 SS2 (0.61-1.22 m)). Lead concentrations in soil were also compared to the Mineral Occurrence Database (G. J. DeMont, January 1992; July 1997; G. J. DeMont, August 2013), which findings indicated that the celestite ore mined in the Lake Enon Pit contained average lead concentrations of slightly less than 0.5% (5,000 mg/kg). Similarly, the Database notes Sphalerite (ZnFeS) also co-presents with Celestite in this region causing zinc to be naturally elevated within the soils found on site (up to 3600 mg/kg). Barium is also naturally occurring in this local area according to the Mineral Occurrence Database presenting as barium sulphate with concentrations up to 10,100 mg/kg.

2.0 Methodology

2.1 General

Dillon contacted public utilities including Bell Fiber 360, Bell Aliant, CBRM, and Nova Scotia Power Incorporated (NSPI) to confirm the presence/absence of their services at the site. Private utility clearances were provided by UCS Inc., a local utility locate contractor, prior to the initiation of the subsurface investigation. Underground utilities were marked in the field and reviewed prior to commencing drilling, test pitting, or hand-augering activities.

Dillon recorded GPS coordinates of sample locations using a handheld GPS device. Dillon completed an elevation survey of site monitoring wells on May 17, 2022. Coordinates were georeferenced using UTM Zone 20T, NAD 83. Locations of test pits, test holes, surface soil samples, and monitoring wells are presented in Figure 2 (appended). Site photographs are presented in Appendix B.

2.2 Monitoring Well Installation

Between May 9 and 11, 2022, Dillon coordinated with Nova Drilling Inc. (Nova) of Mount Uniacke, Nova Scotia to advance a total of eight (8) boreholes across the site to be completed as monitoring wells. One (1) location, BH6, was intended to be completed as a monitoring well (MW6) but was revised to a borehole in the field due to poor drilling conditions and consistent cave-ins. The monitor wells (i.e., MW1 through MW5, MW7 though MW8) were installed to depths ranging from 3.20 mbgs (MW1) to 7.92 mbgs (MW8). Boreholes were advanced using standards split spoon and auger methods. Soil stratigraphy was recorded along with soil observations such as the presence of debris, odours and staining.

Continuous discrete split-spoon soil samples were collected at 0.6 m intervals when possible. Soil samples proposed for analysis of PHCs, VOCs, and sVOCs were collected using a 10 mL Terracore sampler and stored in two 40 mL vials containing a methanol preservation agent, as well as a 60 mL laboratory-supplied glass sample container and a re-sealable plastic bag. Soil samples proposed for other analysis were collected and placed directly into one or laboratory-supplied 150 mL, 120 mL, and/or 60 mL glass sample container, depending on the proposed analysis. Dillon field personnel logged subsurface conditions encountered in each borehole at the time of sampling. Volatile organic compound (VOC) concentration measurements were obtained from the headspace of appropriate recovered soil samples using an RKI Eagle vapour meter with methane elimination, and calibrated to hexane. Soil samples from the drilling program were submitted to Bureau Veritas (BV) Laboratories in Sydney, Nova Scotia for the appropriate analysis as indicated in the Sampling Plan prepared for the site, presented in Appendix C.

Upon completion of the drilling, monitoring wells were installed using 50 mm diameter, Schedule 40, PVC screen (0.025 cm slot) and casing with silica sand filter pack and a bentonite seal. Each monitor well was sealed with a J-plug and finished with either a steel monument style protective casing, or an at-grade flush mount cover (i.e., MW4 and MW7). Borehole and monitoring well locations are presented on Figure 2 (appended). Borehole logs describing observations made during the drilling program and monitoring well construction details are presented in Appendix D.

2.3 Monitoring Well Development

On May 13, 2022, monitoring wells at the site were developed to remove water that was disturbed during the drilling process, and to enhance the operation of the screen and sand pack as an effective particulate filter system. Well development involved removal of a minimum of five (5) times the water column volume. At locations where purging five (5) times the water column was not feasible due to recharge conditions, the well was purged dry a minimum of five times. In order to reduce the potential of cross contamination between monitoring wells, each well was equipped with dedicated Waterra tubing and an inertial foot valve. A period of four (4) days was left between the initial well development and sampling to allow the wells to recover.

2.4 Test Pitting

Between May 11 and 13, 2022, a test pitting program was conducted to assess soil conditions on the subject property. Dillon retained B. Curry & Sons Construction Ltd. from Sydney, Nova Scotia to conduct the test pitting.

A total of twelve (12) test pits (i.e., TP1 through TP3, TP10 through TP17, and TP19) (note that while additional test pits were initially planned, several locations were converted to manual test holes in order to meet requirements set out in a NSDNRR Letter of Authority (which included considerations of potential bird nesting) were advanced to depths ranging from 2.1 to 3.0 mbgs using an excavator. Soil samples proposed for analysis of PHCs, VOCs, and sVOCs were collected using a 10 mL Terracore sampler and stored in two 40 mL vials containing a methanol preservation agent, as well as a 60 mL laboratory-supplied glass sample container and a re-sealable plastic bag. Soil samples proposed for other analysis were collected and placed directly into one or laboratory-supplied 150 mL, 120 mL, and/or 60 mL glass sample container, depending on the proposed analysis. Dillon field personnel logged subsurface conditions encountered in each borehole at the time of sampling. An RKI Eagle vapour meter was again used to obtain VOC concentration measurements from the headspace of appropriate recovered soil samples. Additional soil was collected from each location for the purpose of collecting representative composite grain size samples. Soil samples from the test pitting program were submitted to BV Labs in Sydney, Nova Scotia for the appropriate analysis, as indicated in the Sampling Plan prepared for the site, presented in Appendix C.

Upon completion of test pitting, the locations were backfilled with native material.

2.5 Shallow Surface Soil Sampling

Shallow surface soil sampling was completed between May 10 to 13, 2022 and May 18 to 19, 2022 in conjunction with other Phase II ESA activities at the site. Shallow surface soil samples were collected using hand tools (i.e., spade, hand-auger). Surface soil samples were collected directly from these tools and placed immediately in laboratory supplied containers and then placed in coolers containing ice pending delivery to BV Labs. Hand tools used for surface soil sample collection were decontaminated between each location using a phosphate free detergent and rinsed with distilled water. Additional soil was collected from each location for the purpose of collecting composite grain size samples. Surface soil samples were submitted to BV Labs for the appropriate analysis as indicated in the Sampling Plan prepared for the site, presented in Appendix C.

2.6 Groundwater Monitoring and Sampling

Between May 17 and 19, 2022, groundwater monitoring and sampling was completed at the site. In order to reduce the potential of cross contamination between monitoring wells, each well was equipped with dedicated low-density, HDPE tubing as well as silicone tubing. Prior to purging the well, the depth

to groundwater was measured from an established reference point (top of PVC casing) using an oil-water interface probe. Low flow sampling was used to minimize sample turbidity. Sample turbidity has the potential to bias the dissolved phase analytical results, as targeted substances present within or sorbed to soil particles may be released during sample preparation/analysis, resulting in an artificially high measurement.

A battery powered peristaltic pump set at a low pumping rate (e.g., 0.1 L/min) to minimize drawdown was utilized to purge and sample the monitoring wells. Monitoring wells were purged according to Dillon Standard Environmental Field Procedures and industry standards for low-flow groundwater sampling. Groundwater field parameters were measured using a Horiba U-52 multimeter calibrated according to the manufacture's published instructions and a flow-through cell. Field parameters recorded from the instrument included; pH, conductivity, dissolved oxygen, oxidation-reduction potential, turbidity and temperature. Groundwater field parameters and drawdown were monitored and recorded typically every three to five minutes. Once the monitored parameters had stabilized such that successive measurements were within 10%, a groundwater sample was collected.

The collected groundwater samples were directly placed into laboratory supplied containers. The sample containers were filled, labeled, and stored in a sample cooler containing ice pending delivery to BV Labs in Sydney, Nova Scotia for the appropriate analysis as indicated in the Sampling Plan prepared for the site, presented in Appendix C.

Groundwater monitoring was completed as scheduled, with the exception of monitoring well MW5, which had insufficient water to collect a sample for scheduled parameters; however, a partial sample was able to be collected from this location and submitted for analysis of metals. Unlike the remaining metals samples, the MW5 metals sample did not include free cyanide, total cyanide, or mercury due to the limited volume of groundwater recharge in this well. It should be noted that due to elevated turbidity levels in background monitoring well MW1, field filtering was not able to be completed and as a result, analytical mercury results for this location are for total mercury.

2.7 Surface Water Sampling

Between May 17 and 18, 2022, surface water sampling was completed in three on-site tailings or settling ponds, as well as Lake Enon. Surface water samples were collected as grab samples placed directly into laboratory-provided sample bottles containing the appropriate preservatives. Care was taken to collect surface water into the sample bottles at an angle slightly above horizontal such that preservatives were not lost. Surface water samples were collected prior to the collection of sediment samples to avoid potential sediment entering the surface water sample bottle. To minimize the potential for cross contamination, new nitrile gloves were used to collect each surface water sample. Sample bottles were placed into coolers containing ice for transport to BV Labs in Sydney, Nova Scotia for the appropriate analysis as indicated in the Sampling Plan prepared for the site, presented in Appendix C.

2.8 Sediment Sampling

Between May 17 and 18, 2022, sediment sampling was completed in three on-site tailings or settling ponds, as well as Lake Enon. Sediment samples were collected from a boat using a Ponar Sampler. The samples were transferred directly into laboratory supplied containers and immediately placed in coolers containing ice to maintain a temperature of less than 10°C. To minimize the potential for cross contamination, new nitrile gloves were used to collect each sample, and the Ponar Sampler was decontaminated between each sampling location using a phosphate-free detergent and rinsed with surface water from the site. Sediment samples were also collected for grain-size analysis in each of the ponds. Samples were submitted to BV Labs in Sydney, Nova Scotia for the appropriate analysis as indicated in the Sampling Plan prepared for the site, presented in Appendix C.

2.9 Quality Assurance and Quality Control

Quality Assurance/Quality Control (QA/QC) protocols were established and followed throughout the monitoring program. This included the collection of duplicate samples and the use of an equipment blank and a trip blank. As discussed in sections above, non-dedicated equipment, such as the oil-water interface probe, were decontaminated between sampling locations using a phosphate free detergent and distilled water. Methods used during the field work followed Dillon's Standard Environmental Field Procedures which are based on industry standards, and described in the respective sections above.

One (1) equipment blank and one trip blank were collected during the groundwater monitoring event completed on May 18, 2022. The equipment blank sample was submitted for analysis of groundwater COCs at the site, and the trip blank was submitted for analysis of PHCs and VOCs.

Blind field duplicate samples were also collected during the assessment including: three duplicate soil samples, one duplicate groundwater sample, and one duplicate sediment sample. Due to a field error, a duplicate surface water sample was not collected during the field program. To address this, Dillon requested that BV Labs extract a duplicate surface water sample from one of the original samples and run it as a duplicate. Additionally, BV Labs analyzed select laboratory duplicate samples as part of their internal QA program. The results of this testing were used to evaluate the reliability of the sampling.

Sample bottles were labelled with sample/location ID, project name and number, company name (Dillon), and time and date of collection. Once collected, samples were immediately placed in coolers containing ice to maintain a temperature of less than 10ºC. To minimize the potential for cross contamination, new nitrile gloves were used to collect each sample, and non-dedicated sampling equipment was decontaminated between each sampling location.

To evaluate the precision associated with sampling and analytical methods, the samples and their duplicates were used to calculate the relative percent difference (RPD). The RPD is defined as the absolute value of the variation between a sample's analytical concentration and its duplicate, when compared to the average concentration of the original and the duplicate in detected samples. The RPD is calculated using the following equation:

$$= \frac{|V_1 - V_2|}{\frac{(V_1+V_2)}{2}} \times 100$$

RPD is used to assess the validity of the field and laboratory analytical procedures for parameters analyzed that are greater than 10 times the reportable detection limit (RDL). Dillon set a screening-level RPD acceptance criterion of less than 50% for acceptability. As noted above, field duplicates were collected during each during the assessment, with RPDs calculated for each duplicate.

3.0 Results

3.1 Soil Quality

Soil analytical results are presented in Table E-1 of Appendix E and are summarized in the sections below. Laboratory Certificates of Analysis are provided in Appendix F.

3.1.1 Soil Stratigraphy

As noted previously, soil stratigraphy varies considerably across the site. For clarity purposes, site stratigraphy has been grouped into areas of the site that had previous served similar purposes when the site was operating as a mining and/or milling facility and is provided in Section 1.3.

As noted above, two grain-size samples were collected in different areas of the site and the results indicated one (1) sample was classified as fine-grained and one (1) sample was classified as coarse-grained. As such, the Nova Scotia Tier 1 EQS for both fine and coarse grained soils have been included in Table E-1 (appended in Appendix E).

3.1.2 Metals

A total of forty-one (41) soil samples, including three (3) field duplicate samples and two (2) background samples, were submitted for metals analysis. Metals analysis included free cyanide, total cyanide, and mercury for analyzed samples. Metals exceeded the applicable NS Tier 1 EQS for at least one parameter in twenty-five (25) of the analyzed samples. Metals exceedances in soil are presented in Figure 3 (appended). Some notable, widespread exceedances are summarized below:

- The concentration of aluminum in sample TH21 SS1 (16,000 mg/kg) exceeded the applicable NS Tier 1 EQS (15,400 mg/kg); however, it is noted that this concentration is below the Highlands Soil Zone Environment Canada Maximum Background value of 28,000 mg/kg. Aluminum concentrations are interpreted to be related to, or influenced by, background concentrations;
- Arsenic concentrations (ranging from 12 mg/kg to 15 mg/kg) exceeded the applicable NS Tier 1 EQS (10 mg/kg) in four (4) soil samples; however, it is noted that this concentration is below the Highlands Soil Zone Environment Canada Maximum Background value of 16.8 mg/kg;
- Thirty-two (32) of the analyzed soil samples submitted for metals analysis had barium concentrations (ranging from 380 mg/kg to 1,100 mg/kg) that exceeded the applicable NS Tier 1 EQS (350 mg/kg). However, barium is naturally occurring in this local area with concentrations up to 10,100 mg/kg resulting in no samples exceeding the background values.
- Beryllium concentrations (of 1.2 mg/kg and 1.7 mg/kg) exceeded the applicable NS Tier 1 EQS (1 mg/kg) in two (2) soil samples;
- Cadmium concentrations (ranging from 1.2 mg/kg to 21 mg/kg) exceeded the applicable NS Tier 1 EQS (1 mg/kg) in most analyzed samples; however, when compared to background soil data fourteen (14) exceedances remain;
- Although concentrations of iron (ranging from 12,000 mg/kg to 29,000 mg/kg) exceeded the applicable NS Tier 1 EQS (11,000 mg/kg) in most analyzed samples, with some exceptions (i.e., seven (7) soil samples did not exceed), it is noted that the concentrations were well below the Environment Canada Maximum Background value of 52,000 mg/kg. Iron concentrations are interpreted to be related to, or influenced by, background concentrations;
- Lead concentrations (ranging from 130 mg/kg to 12,000 mg/kg) exceeded the applicable NS Tier 1 EQS (120 mg/kg) in almost every analyzed sample, with the exception of MW4 SS4, SSS21, and TP19 0.3M SS1. However, in comparison to the Mineral Occurrence Database, which findings indicated that the celestite ore mined in the Lake Enon Pit contained average lead concentrations of slightly less 5,000 mg/kg, only two (2) lead exceedances remain (i.e., TH8 SS1 and TH9 SS1).
- Manganese concentrations (ranging from 1,200 mg/kg to 6,100 mg/kg) exceeded the applicable NS Tier 1 EQS (360 mg/kg) in every analyzed sample, with the exception of SSS21; however, the majority of the concentrations were below the Environment Canada Maximum Background value of 4,340 mg/kg;
- Selenium concentrations (ranging from 1.2 mg/kg to 1.4 mg/kg) exceeded the applicable NS Tier 1 EQS (1 mg/kg) in five (5) soil samples;
- Strontium concentrations (ranging from 10,000 mg/kg to 20,000 mg/kg) exceeded the applicable NS Tier 1 EQS (9,400 mg/kg) in ten (10) soil samples; and
- Zinc concentrations (ranging from 250 mg/kg to 3,600 mg/kg) exceeded the applicable NS Tier 1 EQS (200 mg/kg) in most analyzed samples. Sphalerite (ZnFeS) also co-presents with celestite in this region according to the Mineral Occurrence Database causing zinc to be naturally elevated within the soils found (up to 3,600 mg/kg) resulting in no samples exceeding published background values for this local area.

3.1.3 Petroleum Hydrocarbons

A total of thirteen (13) soil samples, including one (1) field duplicate, were submitted for analysis of BTEX and modified TPH. Concentrations of BTEX parameters were below the laboratory detection limits. Modified TPH concentrations were either below laboratory detection limits or within the applicable NS Tier 1 EQS.

One (1) soil sample (i.e., SSS12) did not reach baseline at C32 and, therefore, analysis of petroleum hydrocarbon fractions F2-F4 was completed. As the sample still did not reach baseline at F4, F4 gravimetric (C50) analysis was subsequently completed.

3.1.4 Polycyclic Aromatic Hydrocarbons

A total of twenty-three (23) soil samples, including two (2) field duplicates, were submitted for analysis of PAHs. PAH concentrations were below laboratory detection limits as well as the applicable NS Tier 1 EQS.

3.1.5 Polychlorinated Biphenyls

A total of six (6) soil samples, including one (1) field duplicate, were submitted for analysis of PCBs. PCB concentrations were below laboratory detection limits as well as the applicable NS Tier 1 EQS.

3.1.6 Volatile Organic Compounds

A total of thirteen (13) soil samples, including one field duplicate, were submitted for analysis of VOCs. VOC concentrations in the analyzed samples were below laboratory detection limits as well as the applicable NS Tier 1 EQS.

3.1.7 Semi-Volatile Organic Compounds

A total of thirteen (13) soil samples, including one field duplicate, were submitted for analysis of sVOCs. sVOC concentrations in the analyzed samples were below laboratory detection limits as well as the applicable NS Tier 1 EQS.

3.1.8 Acid Rock Drainage

A total of seven (7) soil samples, including one (1) field duplicate, were submitted for analysis Acid Rock Drainage (ARD), including sodium adsorption ratio (SAR), electrical conductivity, calcium, and chloride. Based on the results, the rock has low acid generating potential and significantly more net neutralizing potential; no action is required to address acid production on this former mine site.

3.2 Groundwater Quality

Groundwater analytical results are presented in Table E-2 of Appendix E and are summarized in the sections below. Laboratory Certificates of Analysis are provided in Appendix F.

3.2.1 Groundwater Elevations

Groundwater was encountered during the May 17 to 19, 2022 sampling event at depths ranging from 1.16 meters below top of casing (mbtoc) (i.e., in MW3) to 5.78 mbtoc (i.e., in MW4). Based on the measured groundwater elevations, the generalized groundwater flow direction in the assessment area is interpreted to be convergent towards Lake Enon. Non-aqueous phase liquids (NAPL) were not observed in on-site monitoring wells during the groundwater monitoring event. A visible sheen was observed on groundwater in test pit TP13.

Table 2: Groundwater Elevations

Monitoring Well ID	Ground Surface Elevation (mASL)	Top of PVC Casing Elevation (mASL)	Depth to Groundwater (mbtoc)	Groundwater Elevation (mASL)
MW1	72.920	73.706	1.615	72.091
MW2	65.849	66.718	3.530	63.188
MW3	60.695	61.597	1.160	60.437
MW4	62.501	62.443	5.780	56.663
MW5	58.271	58.857	4.28	54.577
MW7	51.419	51.263	1.730	49.533
MW8	58.449	59.174	4.975	54.199

Notes:

1. *mbtoc – meters below top of casing*
2. *masl – meters above sea level*
3. *One (1) location, BH6, was intended to be completed as a monitoring well (MW6) but was revised to a borehole in the field due to poor drilling conditions and consistent cave-ins. Water level measurements were recorded May 17, 2022.*

Differences in relative water levels across the site may also be attributed to the heterogeneity of the waste rock piles, laydown areas, tailings ponds and infrastructure areas (soils and fill materials) and differences in drainage rates following precipitation events. Water will sometimes become temporarily perched and drain at variable rates depending on the nature of waste materials present in the vicinity of the monitoring wells.

Groundwater contours have been prepared based on survey and groundwater monitoring data and are presented in Figure 4 (appended).

3.2.2 Metals

A total of eight (8) groundwater samples, including one field duplicate, were submitted for metals analysis, which included free cyanide, total cyanide, and mercury for each of the analyzed sample, with

the exception of MW5. MW5 had insufficient water to collect a full metals sample, and analytical metals results for this location do not include these additional parameters. Of note, although the background sample collected from MW1 includes these additional parameters, the turbidity was elevated such that the mercury sample was not able to be field filtered and as a result, analytical mercury results for this location are for total mercury. Metals concentrations in groundwater were generally either below laboratory detection limits or within the applicable NS Tier 1 EQS, with some exceptions:

- Cobalt concentrations (ranging from 0.0049 mg/L and 0.0051 mg/L) in up gradient monitoring wells MW3 and its field duplicate, and MW4 exceeded the applicable NS Tier 1 EQS (0.0038 mg/L). Cobalt was below the NS Tier 1 values for the remaining downgradient wells;
- Manganese concentrations (ranging from 0.28 mg/L to 3.2 mg/L) in monitoring wells MW1, MW2, MW3 and its field duplicate, MW4, and MW7 exceeded the applicable NS Tier 1 EQS (0.12 mg/L); and,
- Strontium concentrations (ranging from 11 mg/L to 38 mg/L) in monitoring wells MW2, MW3 and its field duplicate, MW4, MW5, and MW7 exceeded the applicable NS Tier 1 EQS (2.4 mg/L).

It is noted that turbidity across the site was generally elevated. Elevated turbidity has the potential to bias the dissolved phase analytical results, as targeted substances present within or sorbed to soil particles may be released during sample preparation/analysis, resulting in an artificially high measurement.

3.2.3 Petroleum Hydrocarbons

A total of six (6) groundwater samples, including one (1) field duplicate, were submitted for analysis of PHCs including BTEX and Modified TPH. Petroleum hydrocarbon concentrations were below laboratory detection limits as well as the applicable NS Tier 1 EQS and as a result bore no hydrocarbon resemblance.

3.2.4 Polycyclic Aromatic Hydrocarbons

A total of six (6) groundwater samples, including one (1) field duplicate, were submitted for analysis of PAHs. PAH concentrations were below laboratory detection limits as well as the applicable NS Tier 1 EQS.

3.2.5 Semi-Volatile Organic Compounds

A total of four (4) groundwater samples, including one (1) field duplicate, were submitted for analysis of sVOCs. Concentrations of sVOC in groundwater were either below laboratory detection limits or within applicable NS Tier 1 EQS. Minor detections of 2, 4-dimethylphenol were recorded in samples collected from MW3 (parent and field duplicate).

3.2.6 Volatile Organic Compounds

A total of four (4) groundwater samples, including one (1) field duplicate, were submitted for analysis of VOCs. Concentrations of VOCs were below laboratory detection limits as well as the applicable NS Tier 1 EQS. It should be noted that the laboratory detection limits for several parameters (i.e., 1, 2-dibromoethane, bromomethane, carbon tetrachloride, vinyl chloride) were higher than the corresponding NS Tier 1 EQS.

3.2.7 Nutrients

One (1) groundwater sample (i.e., MW7) was submitted for TKN analysis to identify potential buried sources of nitrogen-based chemicals (floatation, coagulants, flocculants) used in historical processing activities. The TKN concentration in the sample collected from MW7 (downgradient of the former site buildings and drum storage area) was recorded as 0.16 mg/L, which is sufficiently low to not indicate leachate from process chemicals leaching to the groundwater and lake.

3.3 Sediment Quality

Sediment samples collected were submitted for analysis for at least one of the scheduled parameter groups and are discussed in the following sections. As mentioned, grain-size samples were collected at each of the sediment sample locations to account for potential variability in grain size within Lake Enon and on-site tailings ponds. CCME Tier 1 sediment guidelines for freshwater aquatic life for both fine and coarse-grained sediments have been included in analytical tables for comparative purposes only. Sediment analytical results are presented in Table E-3 of Appendix E and are summarized in the sections below. Laboratory Certificates of Analysis are provided in Appendix F.

3.3.1 Metals

A total of ten (10) sediment samples, including one (1) field duplicate, were submitted for analysis of metals. Metals concentrations in sediment were generally either below laboratory detection limits or within the applicable NS Tier 1 EQS, with some exceptions as follows:

- Cadmium concentrations (ranging from 3.9 mg/kg to 23 mg/kg) at lake locations SED2 and SED3, and ponds including SED4, SED5, SED6 and its field duplicate, SED8, and SED9 exceeded the applicable NS Tier 1 EQS (3.5 mg/kg);
- Copper concentrations (ranging from 110 mg/kg to 350 mg/kg) at locations SED4, SED5, SED8, and SED9 exceeded the applicable NS Tier 1 EQS (197 mg/kg);
- Lead concentrations (ranging from 210 mg/kg to 5,700 mg/kg) at locations SED2, SED3, SED4, SED5, SED6 and its field duplicate, SED7, SED8, and SED9 exceeded the applicable NS Tier 1 EQS (91.3 mg/kg). Lead was noted to decline in concentration from the secondary outfall pond to SED3, and then further off-shore at SED2;

- Manganese concentrations (ranging from 1,300 mg/kg to 17,000 mg/kg) at locations SED1, SED2, SED3, SED5, SED6 and its field duplicate, SED7, SED8, and SED9 exceeded the applicable NS Tier 1 EQS (1,100 mg/kg);
- Selenium concentrations (ranging from 2.5 mg/kg to 8.7 mg/kg) at locations SED4, SED5, SED6 and its field duplicate, and SED9 exceeded the applicable NS Tier 1 EQS (2 mg/kg);
- Silver concentrations (ranging from 0.57 mg/kg to 2.8 mg/kg) at locations SED2, SED3, SED4, SED5, SED6 and its field duplicate, SED7, SED8, and SED9 exceeded the applicable NS Tier 1 EQS (0.5 mg/kg);
- Zinc concentrations (ranging from 420 mg/kg to 3,100 mg/kg) at locations SED2, SED3, SED4, SED5, SED6 and its field duplicate, SED7, SED8, and SED9 exceeded the applicable NS Tier 1 EQS (315 mg/kg).

3.3.2 Petroleum Hydrocarbons

A total of seven (7) sediment samples, including one field duplicate, were submitted for analysis of PHCs including BTEX and Modified TPH. BTEX concentrations were below laboratory detection limits. Modified TPH concentrations within each of the analyzed sediment samples exceeded the Tier I EQS. Due to the high organic content observed within the samples, reanalysis of the extractable hydrocarbons was completed following silica gel clean up. Although the Modified TPH exceedances decreased, they remain above the Tier I EQS. Dillon suspects that the elevated hydrocarbon measurements are still an artifact of high non-petrogenic organic sediment content which can create false positives.

3.3.3 Polycyclic Aromatic Hydrocarbons

PAH concentrations in the seven (7) analyzed samples, which included one (1) field duplicate, were below laboratory detection limits.

3.3.4 Semi-Volatile Organic Compounds

A total of four (4) sediment samples, including one (1) field duplicate, were submitted for analysis of sVOCs. Concentrations of VOCs in the analyzed samples were below laboratory detection limits.

3.3.5 Volatile Organic Compounds

VOC concentrations in the four (4) analyzed samples, which included one (1) field duplicate, were below laboratory detection limits.

3.4 Surface Water Quality

Surface water analytical results are presented in Table E-4 of Appendix E and are summarized in the sections below. Laboratory Certificates of Analysis are provided in Appendix F.

3.4.1 Metals

A total of eight (8) unfiltered surface water samples were submitted for analysis of metals. Metals analysis included free cyanide, total cyanide, and mercury. Metals concentrations in surface water were generally either below laboratory detection limits or within the applicable NS Tier 1 EQS, with some exceptions as follows:

- Aluminum concentrations (ranging from 0.013 mg/L to 0.1 mg/L) at surface water locations SW1 (background), SW2, SW3, SW4, SW5, SW6, and SW8 exceeded the applicable NS Tier 1 EQS (0.005 mg/L);
- Cadmium concentrations at surface water locations SW4 and SW5 (0.00011 mg/L and 0.00012 mg/L, respectively) exceeded the applicable NS Tier 1 EQS (0.00009 mg/L);
- Lead concentrations (ranging from 0.0018 mg/L to 0.0071 mg/L) at surface water locations SW1, SW4, SW5, and SW8 exceeded the applicable NS Tier 1 EQS (0.001 mg/L); and
- Zinc concentrations (ranging from 0.013 mg/L to 0.018 mg/L) at surface water locations SW4, SW5, SW6, and SW8 exceeded the applicable NS Tier 1 EQS (0.007 mg/L).

3.4.2 Petroleum Hydrocarbons

A total of six (6) surface water samples, including one (1) lab duplicate, were submitted for analysis of PHCs including BTEX and Modified TPH. BTEX and Modified TPH concentrations were below laboratory detection limits and as a result bore no hydrocarbon resemblance.

3.4.3 Polycyclic Aromatic Hydrocarbons

A total of seven (7) surface water samples, including one (1) partial lab duplicate, were submitted for analysis of PAHs. PAH concentrations in surface water were either below laboratory detection limits or within the applicable NS Tier 1 EQS.

3.4.4 Semi-Volatile Organic Compounds

A total of five (5) surface water samples, including one (1) partial lab duplicate, were submitted for analysis of sVOCs. Concentrations of sVOC in surface water were either below laboratory detection limits or within the applicable NS Tier 1 EQS.

3.4.5 Volatile Organic Compounds

A total of four (4) surface water samples, including one lab duplicate, were submitted for analysis of VOCs. Concentrations of VOCs in the analyzed samples were below laboratory detection limits.

3.4.6 Nutrients

One (1) surface water sample was submitted for analysis of TKN. The TKN concentrations in the sample collected from SW4 was recorded as 0.16 mg/L. As noted previously TKN was used as a surrogate method to identify potential plumes or discharges of buried drums containing nitrogen-based products

(such as flocculants, floatation agents) in groundwater. The low TKN concentrations indicate a low likelihood of buried leaching chemicals used in historical operations.

3.5 Quality Assurance and Quality Control

A program to ensure quality assurance and control (QA/QC) was implemented throughout the Phase II ESA. The QA/QC program consisted of a number of elements:

- Collection of samples using protocols consistent with Dillon Standard Environmental Field Procedures and/or industry standards;
- Use of dedicated sampling equipment and/or adherence to established equipment cleaning protocols, where applicable;
- Use of laboratory supplied containers;
- Collection of blind field duplicates; and
- Implementation of laboratory QA/QC procedures including analysis of reference standards, laboratory blanks and replicates.

Validation criteria were established that required the analytical data to have an acceptable and documented level of precision, accuracy, representativeness, comparability and completeness (the PARCC criteria). The precision of the data for the samples collected was evaluated by calculating the Relative Percent Difference (RPD) between the original samples and its duplicate when the samples had concentrations greater than 10x the laboratory Reportable Detection Limit (RDL). A summary of the PARCC criteria comparison and calculated RPD values are presented below.

Laboratory QA/QC was performed on the following samples:

- Soil samples SSS23, TP3 (0-1M) SS3, TP15 (0-1M) SS3, TP16 (0-1M) SS3, TP16 (2-3M) SS1 and their corresponding field duplicates (i.e., SSS24, TP24 (0-1M) SS3, TP22 (0-1M) SS3, TP23 (0-1M) SS3, and TP23 (2-3M) SS1, respectively);
- Sediment sample SED6 and its field duplicate, SED10; and
- Groundwater sample MW3 and its field duplicate, MW9.

In order to assess the precision and accuracy of the laboratory results, the relative percent difference (RPD) was calculated for each parameter, where RPDs below 50% are deemed to be acceptable. RPD values were not calculated for parameters that had concentrations that were less than 10 times the MDL. Calculated RPD values are presented in Table E-5, Table E-6 and Table E-7 (see Appendix E) for soil, groundwater, and sediment, respectively. A summary of RPD results, where calculated, is presented below:

- RPDs for soil were generally below 50% for each parameter where they were calculated, with some exceptions. RPDs calculated for lead, strontium, and zinc were 140.35%, 61.22%, and 56.76%, respectively;

- RPDs for sediment were generally below 50% for each parameter where they were calculated, with some exceptions. The RPD calculated for total organic carbon was 98.51%; and
- Calculated RPDs for groundwater were well below 50%.

Elevated RPD values may also be attributed to the heterogeneity of the waste rock piles, laydown areas, tailings ponds and infrastructure areas.

A trip blank was also submitted for analysis of petroleum hydrocarbons (i.e., BTEX and modified TPH), and VOCs. An equipment blank was submitted for analysis of general chemistry, metals, petroleum hydrocarbons (i.e., BTEX and modified TPH), VOCs, and sVOCs. Trip blank concentrations for analyzed parameters were below laboratory detection limits and NS Tier 1 EQS. Some minor detections of general chemistry parameters and metals were observed in the equipment blank; however, detected concentrations were well below the applicable NS Tier 1 EQS. Remaining equipment blank concentrations were below laboratory detection limits and the applicable NS Tier 1 EQS. Analytical results for the trip blank and equipment blank are presented in Table E-8 of Appendix E. Laboratory certificates of analysis are presented in Appendix F.

4.0 Phase II Conceptual Site Model

4.1 Description of Contaminants

Soil concentrations of metals (i.e., aluminum, arsenic, barium, beryllium, cadmium, lead, manganese, strontium, selenium, vanadium, and zinc) have been detected above Tier I EQS based on soil samples collected from surface, boreholes and test pits located at the site. Some of these metals may be attributed to natural background concentrations of till and underlying bedrock.

Sediment concentrations of metals (i.e., cadmium, copper, lead, manganese, selenium, silver and zinc) and petroleum hydrocarbons (i.e., fuel oil and/or lube oil resemblance in on-site ponds) have been detected above Tier I EQS based on samples collected from collected from on-site tailings or settling ponds and the nearby Lake Enon.

Groundwater concentrations of metals (i.e., cobalt, manganese, and strontium) have been detected above Tier I EQS based on groundwater samples collected from monitoring wells located at the site.

Surface water concentrations of metals (i.e., aluminum, cadmium, lead, and zinc) have been detected above Tier I EQS based on samples collected from on-site tailings ponds and the nearby Lake Enon.

4.2 Receptors

The site is zoned for commercial land use, and neighbouring properties are zoned for residential and commercial land use. The site is currently vacant with no buildings present. Potential receptors for this pathway include workers, should intrusive work be conducted on-site who may come in contact with metals soil in the subsurface or potential trespassers (on-site).

No potable wells are currently located on site; however, the surrounding properties are serviced by individual potable wells with nearest residential building located approximately 200 m north/cross gradient to the site boundary.

The closest ecological receptor, Lake Enon, is identified as an ecological habitat of potential concern since it is within 200 m of the site (i.e., adjacent) (Atlantic RBCA, 2012).

4.3 Operable Pathways

4.3.1 Soil

Results of the Phase II ESA activities conducted for the site indicate that the documented residual metals impacts (i.e., cadmium, selenium, strontium, lead, manganese, and beryllium) pose a potential unacceptable risk to commercial receptors via soil ingestion or direct contact based on the applicable pathway specific standards (PSS). The site is currently vacant and on-site buildings have been removed; however, the site is not secure and as a result the pathway of soil ingestion or direct contact is operable.

Documented residual metals impacts (i.e., cadmium, selenium, lead, manganese, and beryllium) also pose a potential unacceptable risk to commercial receptors via soil leaching to potable groundwater based on the applicable PSS. No potable wells are present on-site, therefore this pathway is not operable. If there were to be a potable well installed on-site in the future, this pathway would be considered operable. It is further noted that the majority of the above noted metals impacts were not present in groundwater at concentrations above the Tier I EQS (the exception being manganese).

4.3.2 Groundwater

Results of the Phase II ESA activities conducted for the site indicate that the documented residual metals impacts (i.e., cobalt, manganese, and strontium) pose an unacceptable risk to commercial receptors via potable groundwater as drinking water based on the applicable PSS. As noted previously, no potable wells are present on-site, therefore this pathway is not operable. If there were to be a potable well installed on-site in the future, this pathway would be considered operable.

Based on groundwater monitoring locations and their proximity to a surface water body, documented residual metals impacts (i.e., strontium) in MW7 pose a potential unacceptable risk to groundwater

discharging to surface water based on the applicable PSS, and, therefore, this pathway considered to be operable. However, as noted in Section 4.3.4, strontium was not found in lake water or other pond surface water suggesting this is not an operational pathway.

4.3.3 Sediment

Results of the Phase II ESA activities conducted for the site indicate that the documented residual metals impacts (i.e., cadmium, copper, lead, manganese, selenium, silver, and zinc) pose a potential unacceptable risk to commercial receptors via freshwater sediment based on the applicable PSS. Documented residual petroleum hydrocarbon impacts (i.e., mTPH) do not pose an unacceptable risk to commercial receptors via freshwater sediment based on the applicable PSS. Lake Enon is located adjacent to the site, therefore, this pathway is considered operable.

4.3.4 Surface Water

Results of the Phase II ESA activities conducted for the site indicate that the documented residual metals impacts (i.e., aluminum, cadmium, lead, and zinc) pose a potential unacceptable risk to commercial receptors via surface water based on the applicable PSS. As noted previously, Lake Enon is located adjacent to the site, therefore this pathway would be considered operable.

5.0 Summary and Conclusions

The Phase II ESA included drilling, with monitoring well installation; test pitting; shallow test holes; and soil, groundwater, surface water and sediment sampling. Media analysis included: PHCs, PAHs, PCBs, VOCs, sVOCs, TOC, TKN, and/or SAR. Based on the measured groundwater elevations, the generalized groundwater flow direction in the assessment area is interpreted to be convergent towards Lake Enon. For comparison to the NS CSRs, the site is considered to be commercial, potable with both fine and coarse-grained soil conditions. Findings of the Phase II ESA are as follows:

- Forty-one (41) soil samples were submitted for metals analysis, including free cyanide, total cyanide, and mercury. Metals exceedances of the Tier 1 EQS were reported in twenty-five (25) of the analyzed samples. Notable widespread exceedances include cadmium, selenium, and strontium. Although concentrations of iron exceeded the Tier 1 EQS in most analyzed samples, it is noted that the concentrations were below the Environment Canada Maximum Background value, therefore, iron concentrations are interpreted to be related to, or influenced by, background concentrations. Although lead concentrations exceeded the applicable Tier 1 EQS in the majority of the samples, comparison to the Mineral Occurrence Database, which findings indicated that the celestite ore mined in the Lake Enon Pit contained average lead concentrations of slightly less 5,000 mg/kg, leaves only two lead exceedances remaining (i.e., TH8 SS1 and TH9 SS1). The Mineral Occurrence Database also notes Sphalerite (ZnFeS) also co-presents with celestite in this region causing zinc to be naturally elevated within the soils found on-site (up to 3,600 mg/kg) resulting in no samples exceeding

published background values for this local area. Similarly, barium is naturally occurring in this local area according to the Mineral Occurrence Database as barium sulphate with concentrations up to 10,100 mg/kg resulting in no samples exceeding the background values. As a result, the main metals of concern are cadmium and strontium, which exceed guidelines and background values in multiple locations across the site, with lesser occurrences of selenium, beryllium, manganese, and lead identified between two (2) to five (5) locations.

- Seven (7) soil samples were submitted for analysis of ARD parameters, including
- A total of seven (7) soil samples, including one (1) field duplicate, were submitted for analysis of ARD parameters, including sodium adsorption ratio (SAR), electrical conductivity, calcium, and chloride. Based on the results, the rock has low acid generating potential and significantly more net neutralizing potential; no action is required to address acid production on this former mine site.
- A total of eight (8) groundwater samples, including one (1) field duplicate, were submitted for metals analysis, including free cyanide, total cyanide, and mercury, with the exception of MW5. MW5 had insufficient water to collect a full metals sample. Metals concentrations in groundwater were generally either below laboratory detection limits or within the applicable NS Tier 1 EQS, with some exceptions (i.e., cobalt manganese, and strontium).
- A total of ten (10) sediment samples, including one (1) field duplicate, were submitted for analysis of metals. Metals concentrations in sediment were generally either below laboratory detection limits or within the applicable NS Tier 1 EQS, with some exceptions (i.e., cadmium, copper, lead, manganese, selenium, silver, and zinc). A total of seven (7) sediment samples, including one (1) field duplicate, were submitted for analysis of PHCs including BTEX and Modified TPH. BTEX concentrations in the analyzed samples were below laboratory detection limits. Modified TPH concentrations within each of the analyzed sediment samples exceeded the Tier I EQS. Due to the high organic content observed within the samples, reanalysis of the extractable hydrocarbons was completed following silica gel clean up. Although the Modified TPH exceedances decreased, they remain above the Tier I EQS but are still suspected to be a false-positive owing to the higher natural organic sediment content.
- A total of eight (8) surface water samples were submitted for analysis of metals. Metals analysis included free cyanide, total cyanide, and mercury. Metals concentrations in surface water were generally either below laboratory detection limits or within the applicable NS Tier 1 EQS, with some exceptions (i.e., aluminum, cadmium, lead, and zinc). One (1) surface water sample was submitted for analysis of TKN. The TKN concentrations in the sample collected from SW4 was recorded as 0.16 mg/L; this analysis was completed as a surrogate to identify potential buried drum seeps/plume from historically used nitrogen-based chemicals that may have been historically buried on site. The relatively low TKN value indicates a low likelihood of a large-scale buried drum cache/plume.

5.1 Notification of Contamination Protocol

As per the NS CSRs, a FRM-100 Notification of Contamination Form has been prepared for the site (Appendix G). The Notification FRM-100 was submitted to NSE on September 22, 2022.

5.2 Discussion and Recommendations

The site is generally covered with rock and limited soil. There is limited vegetation in the central areas of the site, although trees and shrubs are noted intermittently and around the site boundary. Key aspects about the site in considering potential remedies are as follows:

- The site is to remain commercial use;
- The site consists principally of coarse-grain soil (based on visual observations) and is categorized as potable; however, there are no on-site potable water supplies, and none are envisioned in the future;
- The selected remedial approach will not result in an additional future financial liability based on current provincial environmental guidelines and protocols; and
- The site is essentially deforested, empty gravel area offering little productive ecological habitat both currently and in the future. There is no plan to actively restore the site to a wooded, ecological habitat in the future, although this may happen gradually over time.

As noted previously, several planned test pits could not be completed in order to comply with conditions established within a Letter of Authority issued by NSDNRR (which included considerations of potential bird nesting). It is recommended that a Fall 2022 test pit program be completed to address assessment of sub-surface conditions in areas that had limited access during the initial Phase II ESA field program and also to attempt to achieve horizontal delineation of identified on-site impacts in soil. Follow-up groundwater sampling at monitoring wells MW5 and MW7 is also recommended at that time.

Following the initial Phase I/II Environmental Site Assessment work, Dillon completed a qualitative risk review of the site to identify relevant contaminants of concern (CoCs), media, pathways, receptors and potential risk (see Appendix H).

At this stage of the assessment, we recommend the following supplemental studies be undertaken to better refine this liability estimate:

- Obtain supplemental surface soil background data to help inform the risk assessment.
- Conduct a hydrologic and sediment transport study to determine if contaminated sediments and fines are being transported off-site to the adjacent lake (including two large storm events and a spring freshet event). Also confirm existing overall site drainage characteristics including the brook and culvert to determine the extent and requirements to control future long-term surface water flow within the context of the whole Site.
- Complete the Risk Assessment.
- Complete a Benthic Habitat Assessment for the lake.

6.0 Limitations

This report was prepared exclusively for the purposes, project and site location(s) outlined in the report. The report is based on information provided to, or obtained by Dillon Consulting Limited ("Dillon") as indicated in the report, and applies solely to site conditions existing at the time of the site investigation(s). Although a reasonable investigation was conducted by Dillon, Dillon's investigation was by no means exhaustive and cannot be construed as a certification of the absence of any contaminants from the site(s). Rather, Dillon's report represents a reasonable review of available information within an agreed work scope, schedule and budget. It is therefore possible that currently unrecognized contamination or potentially hazardous materials may exist at the site(s), and that the levels of contamination or hazardous materials may vary across the site(s). Further review and updating of the report may be required as local and site conditions, and the regulatory and planning frameworks, change over time.

This report was prepared by Dillon for the sole benefit of our client Nova Scotia Lands Inc. The material in the report reflects Dillon's judgment in light of the information available to Dillon at the time of preparation. Any use which a third party (i.e. a party other than our Client or our Client's lending institution) makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

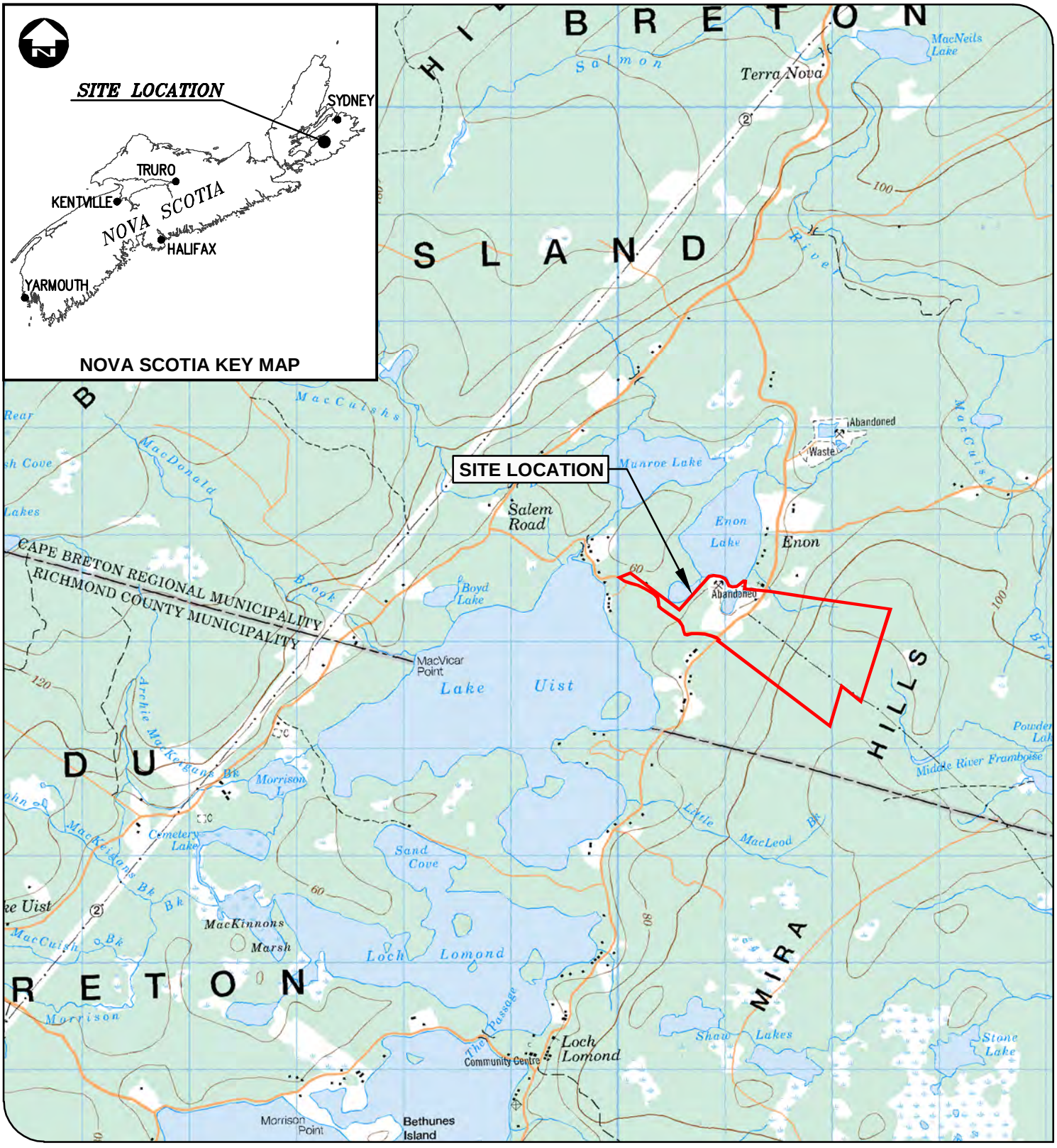
Respectfully Submitted,

DILLON CONSULTING LIMITED

Breagh Thomas, E.I.T.
Primary Report Producer

Andrew Thalheimer, P.Eng.
Site Professional

Figures



NOVA SCOTIA LANDS INC.

PHASE I AND II ESA
LAKE ENON FORMER MILL SITE, CBRM, NS

SITE LOCATION MAP
FIGURE 1

ASSESSMENT BOUNDARY

DILLON CONSULTING

MAP/DRAWING INFORMATION
National Topographic System Mapsheet 21A/02.

CREATED BY: TLR
CHECKED BY: NJW
DESIGNED BY: BCT

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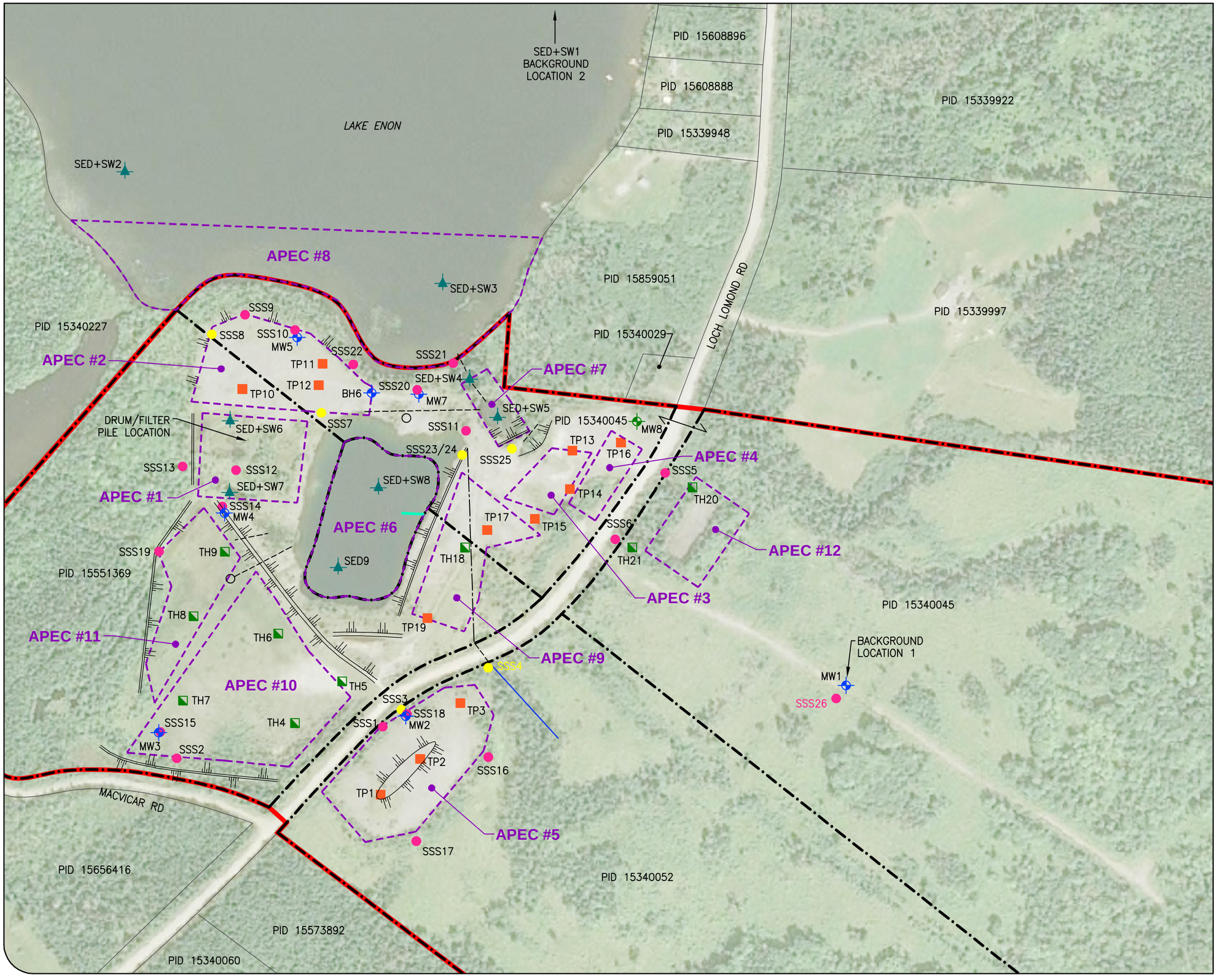
PROJECT: 22-3723

DATE: JULY 2022



NOVA SCOTIA LANDS INC.

PHASE I AND II ESA
LAKE ENON FORMER MILL SITE,
CBRM, NS

IDENTIFIED APECS AND SAMPLING PLAN

FIGURE 2

- ASSESSMENT BOUNDARY
- ASSESSMENT PROPERTIES
- PROPERTY LINE
- BERM
- DRAINAGE DITCH
- BROOK
- CULVERT
- OUTFALL
- VERTICAL DRAIN
- STEEP SLOPE
- APECs (AREA OF POTENTIAL CONCERN)
- MONITORING WELL
- DEEP MONITORING WELL
- SEDIMENT AND/OR SURFACE WATER SAMPLE LOCATION
- TEST PIT
- TEST HOLE
- ARD SHALLOW TEST HOLE
- SURFACE SOIL SAMPLE

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MAP/DRAWING INFORMATION
GeoNOVA Civic Address Finder, Nova Scotia Property Online and Bing Maps. Property lines are approximate only. This is not a legal survey.

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CHECKED BY: NJW
DESIGNED BY: BCT

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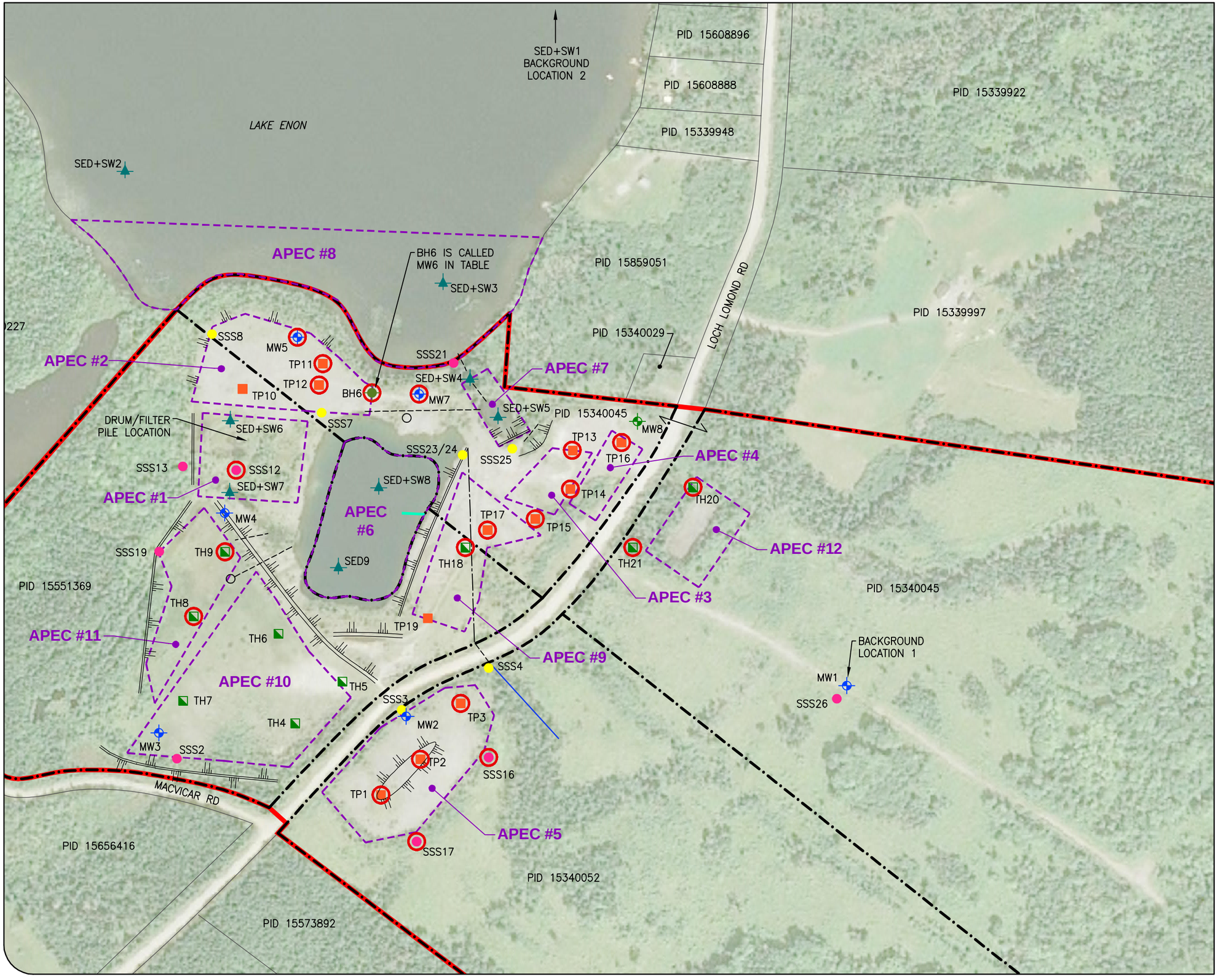
DILLON CONSULTING

PROJECT: 22-3723
DATE: JULY 2022



NOVA SCOTIA LANDS INC.

PHASE I AND II ESA
LAKE ENON FORMER MILL SITE, CBRM, NS

SOIL METAL EXCEEDANCES
FIGURE 3

- ASSESSMENT BOUNDARY
- ASSESSMENT PROPERTIES
- PROPERTY LINE
- BERM
- DRAINAGE DITCH
- BROOK
- CULVERT
- OUTFALL
- VERTICAL DRAIN
- STEEP SLOPE
- APECs (AREA OF POTENTIAL CONCERN)
- MONITORING WELL
- DEEP MONITORING WELL
- BOREHOLE
- SEDIMENT AND/OR SURFACE WATER SAMPLE LOCATION
- TEST PIT
- TEST HOLE
- ARD SHALLOW TEST HOLE
- SURFACE SOIL SAMPLE
- METAL EXCEEDANCES IN SOIL

100 0 100
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MAP/DRAWING INFORMATION
GeoNOVA Civic Address Finder, Nova Scotia Property Online and Bing Maps. Property lines are approximate only. This is not a legal survey.

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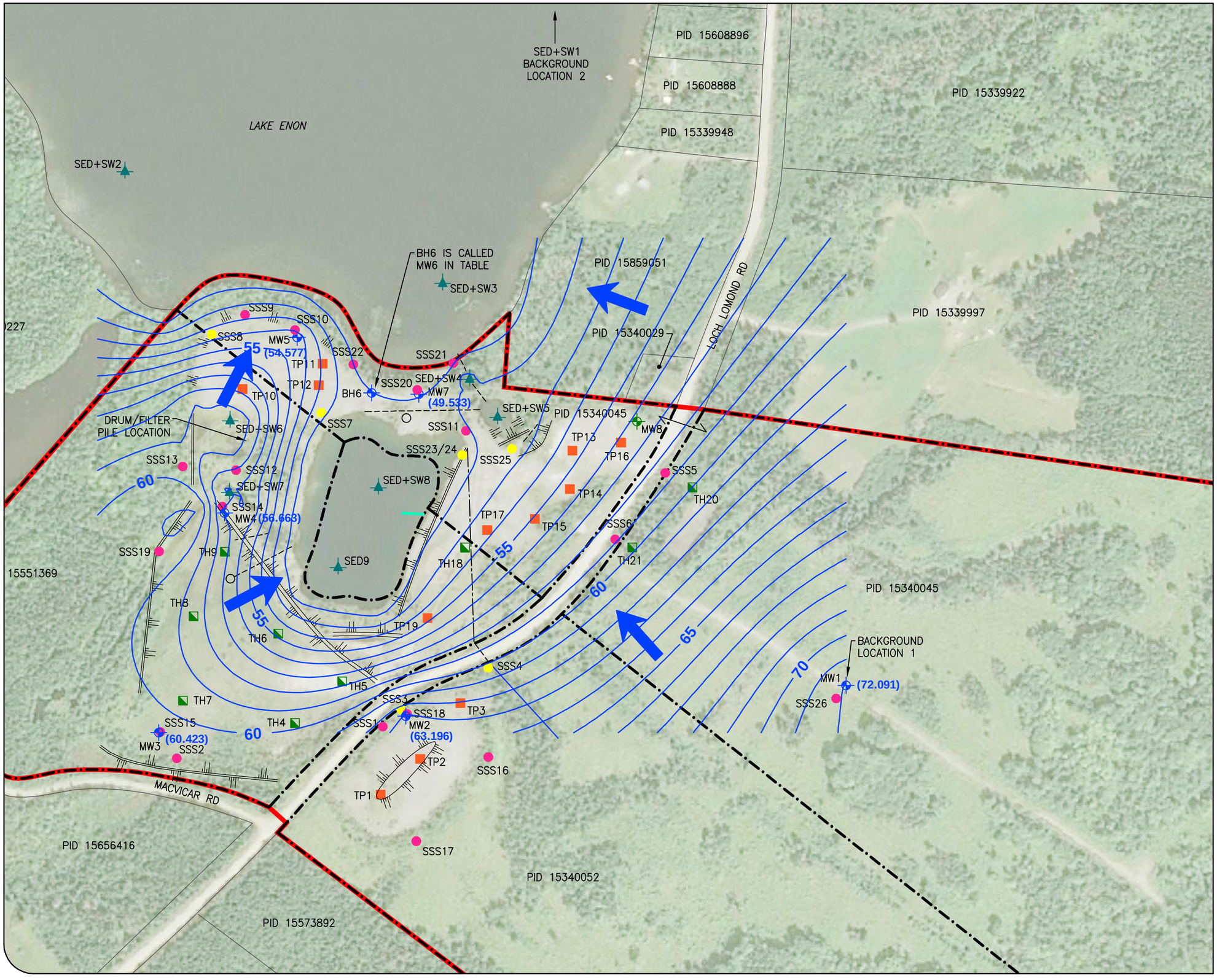
PROJECT: 22-3723
DATE: JULY 2022



NOVA SCOTIA LANDS INC.

PHASE I AND II ESA
LAKE ENON FORMER MILL SITE, CBRM, NS

GROUNDWATER CONTOURS
FIGURE 4

- ASSESSMENT BOUNDARY
- ASSESSMENT PROPERTIES
- PROPERTY LINE
- BERM
- DRAINAGE DITCH
- BROOK
- CULVERT
- OUTFALL
- VERTICAL DRAIN
- STEEP SLOPE
- MONITORING WELL
- DEEP MONITORING WELL
- SEDIMENT AND/OR SURFACE WATER SAMPLE LOCATION
- TEST PIT
- TEST HOLE
- ARD SHALLOW TEST HOLE
- SURFACE SOIL SAMPLE
- GROUNDWATER CONTOUR (m)
- (72.091) GROUNDWATER ELEVATION (m)
- INFERRED GROUNDWATER FLOW DIRECTION

100 0 100
SCALE 1:4,000 METRES

N W E S

MAP/DRAWING INFORMATION
GeoNOVA Civic Address Finder, Nova Scotia Property Online and Bing Maps. Property lines are approximate only. This is not a legal survey.

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DESIGNED BY: BCT

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PROJECT: 22-3723
DATE: JULY 2022

Contents of Appendix A have been removed due to document upload size limitations, please contact Build Nova Scotia to obtain Appendix A contents

Appendix A

Phase I Environmental Site Assessment

Appendix B

Site Photographs

Photo 1. Drilling of MW5, facing north (May 9, 2022).

Photo 2. Material recovered from MW7 (May 9, 2022).

Photo 3. Drilling of MW2, facing west towards Loch Lomond Road (May 10, 2022).

Photo 4. Removal of berm in front of access road to MW1 background location (May 11, 2022).

Photo 5. Drilling of MW1, background location, facing northwest (May 11, 2022).

Photo 6. Berm reinstated after drilling completed (May 11, 2022).

Photo 7. Test pit TP3, facing northwest (May 12, 2022).

Photo 8. Test pit TP3, 0 - 3.0 mbgs (May 12, 2022).

Photo 9. Test pit TP2, facing southwest (May 12, 2022).

Photo 10. Test pit TP2, 0 - 1.0 mbgs (May 12, 2022).

Photo 11. Test pit TP13, facing northeast towards Loch Lomond Road (May 11, 2022).

Photo 12. Visible sheen in test pit TP13 (May 11, 2022).

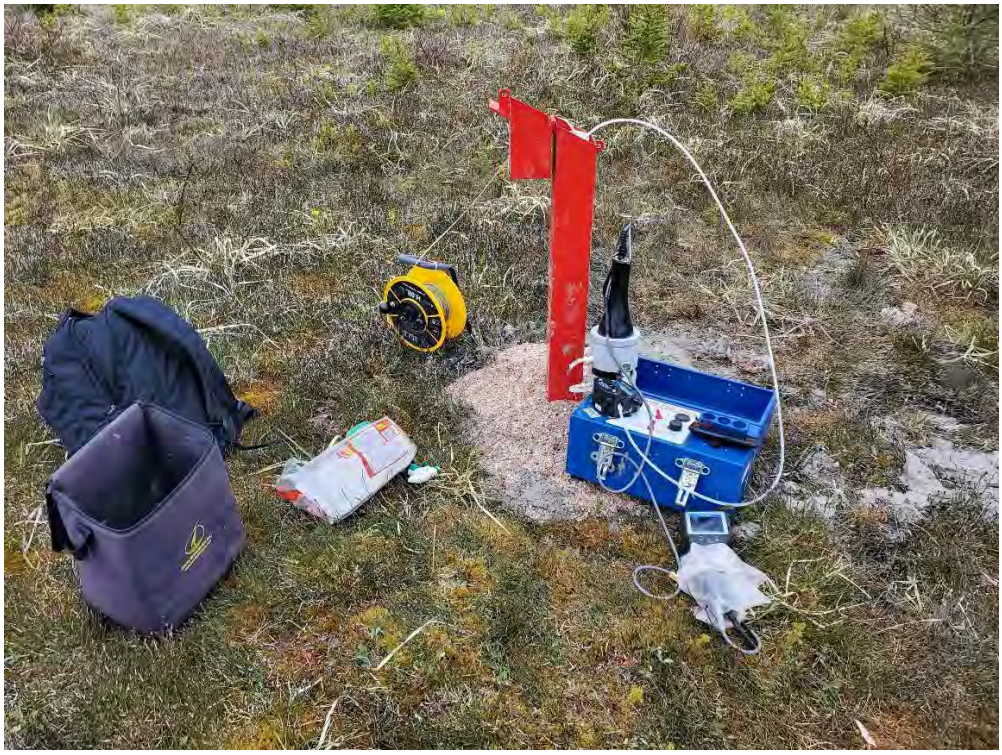

Photo 13. Low-flow sampling of MW3 (May 17, 2022).

Photo 14. SW1, SED1 background location in Enon Lake (May 18, 2022).

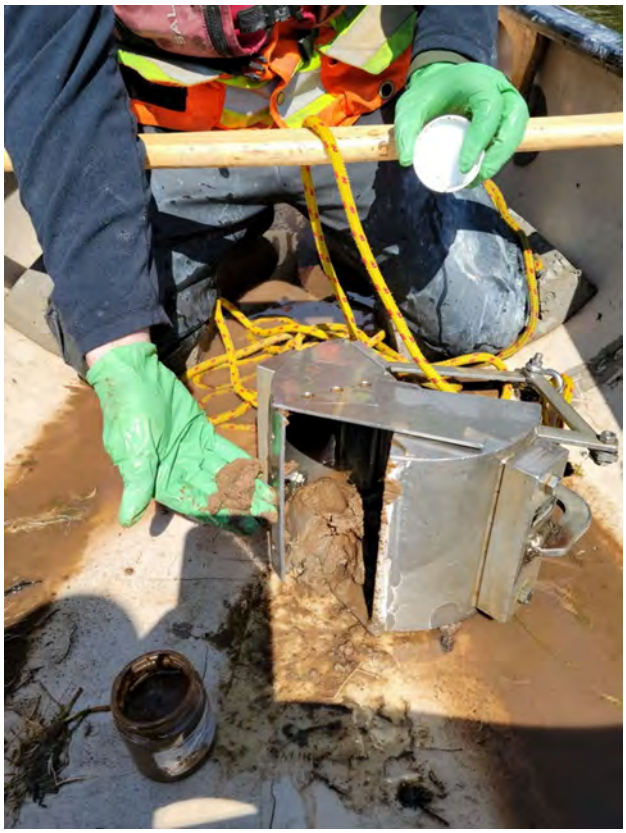

Photo 15. Material recovered from SED1 background location (May 18, 2022).

Photo 16. Material recovered from SED5 (May 17, 2022).

Photo 17. SW6, SED6 sampling location (May 18, 2022).

Photo 18. Material recovered from SED6 (May 18, 2022).

Photo 19. SW7, SED7 sampling location (May 18, 2022).

Photo 20. Material recovered from SED7 (May 18, 2022).

Photo 21. SSS4, acid rock drainage sampling location (May 10, 2022).

Photo 22. SSS17 sampling location, south of APEC #5 (May 13, 2022).

Photo 23. SSS21 sample location on eastern shore of Enon Lake (May 13, 2022).

Photo 24. SSS25 acid rock drainage sample location (May 19, 2022).

Photo 25. Test hole TH5 sampling location (May 18, 2022).

Photo 26. Material recovered from test hole 5, collected as sample TH5 SS1, 0.15-0.3 mbgs (May 18, 2022).

Photo 27. Test hole TH7 sampling location filled with water (May 18, 2022).

Photo 28. Material recovered from test hole TH7 (May 18, 2022).

Photo 29. Test hole TH20 sampling location (May 18, 2022).

Photo 30. Test hole TH20 (May 18, 2022).

Appendix C

Sampling Plan

Appendix C: Sampling Summary - Soil

APEC/Location	Location	Metals	PHC	PAH	VOC	sVOC	EC	SAR	Chloride	PCB
APEC 2 Waste Rock/Dump	TP10	1	1	1	1	1	0	0	0	0
	TP11	1	0	1	0	0	0	0	0	0
	TP12	1	0	1	0	0	0	0	0	0
APEC 3 Processing Area	TP15	2	1	1	1	1	0	0	0	1
	TP16	2	2	2	2	0	0	0	0	2
APEC 4 Mil/Plant Area	TP13	1	1	1	1	1	0	0	0	1
	TP14	1	1	1	1	1	0	0	0	1
APEC 5 Waste Rock/Dump	TP1	1	1	1	1	1	0	0	0	0
	TP2	1	0	1	0	0	0	0	0	0
	TP3	2	0	2	0	0	0	0	0	0
APEC 9 Waste Rock Dump	TP17	1	0	1	1	1	0	0	0	1
	TH18	1	0	1	0	0	0	0	0	0
	TP19	1	0	1	0	0	0	0	0	0
APEC 10 Tailings Disposal Area	TH4	1	1	1	1	1	0	0	0	0
	TH5	1	1	1	1	1	0	0	0	0
	TH6	1	0	1	0	0	0	0	0	0
	TH7	1	0	1	0	0	0	0	0	0
APEC 11 Tailings Disposal Area	TH8	1	1	1	1	1	0	0	0	0
	TH9	1	0	1	0	0	0	0	0	0
APEC 12 "the Pad" SE of Loch Lomond Rd	TH20	1	1	1	1	1	0	0	0	0
	TH21	1	1	1	1	1	0	0	0	0
Background Location (surface soil sample)	SSS26	1	0	0	0	0	0	0	0	0
Drilling program samples	NA	9	0	0	0	0	0	0	0	0
Downgradient of waste piles	NA	0	0	0	0	0	6	6	6	0
Across Site (Surface Soil Samples)	NA	8	1	0	0	0	0	0	0	0

Note: All values include QA/QC samples

Appendix C: Sampling Summary - Sediment

APEC	Location	Metals	PHC	PAH	VOC	sVOC	TOC
Enon Lake	SED1 (Background)	1	0	0	0	0	0
	SED2	1	0	0	0	0	0
	SED3	1	0	0	0	0	0
APEC 1 Tailings Pile/Pond	SED6	2	2	1	2	2	2
	SED7	1	1	1	0	0	1
APEC 6 Tailings Pile/Pond	SED8	1	1	1	1	1	1
	SED9	1	1	1	0	0	1
APEC 7 Settling Pond	SED4	1	1	1	1	1	1
	SED5	1	1	1	0	0	1

Note: All values include QA/QC samples

Appendix C: Sampling Summary - Groundwater

APEC	Location	General Chemistry	Metals	TKN	PHC	PAH	VOC	sVOC
Background	MW1	1	1	0	0	0	0	0
APEC 2 Waste Rock/Dump	MW5	1	1	0	0	0	0	0
APEC 3 -4 Processing Area	MW8	1	1	0	1	1	1	1
APEC 5 Waste Rock/Dump	MW2	1	1	0	1	1	0	0
Between APEC 2 and 7 (vertical delineation)	NA*	0	0	0	0	0	0	0
APEC 6-7	MW7	1	1	0	1	1	1	1
APEC 10 Tailings Disposal Area	MW3	2	2	0	2	2	2	1
APEC 11 Tailings Disposal Area	MW4	1	1	0	1	1	0	0

Note: All values include QA/QC samples

* Location was planned to be completed as MW6 but was converted to a borehole due to cave-ins.

Appendix C: Sampling Summary - Surface Water

APEC	Location	General Chemistry	Metals	TKN	PHC	PAH	VOC	sVOC
Enon Lake	SW1 (background)	1	1	0	0	0	0	0
	SW2	1	1	0	0	0	0	0
	SW3	1	1	0	0	0	0	0
APEC 1 Tailings Pile/Pond	SW6	1	1	0	1	1	1	1
	SW7	1	1	0	1	1	0	0
APEC 6 Tailings Pond	SW8	1	1	0	1	1	1	1
APEC 7 Settling Pond	SW4	1	1	1	1	1	1	1
	SW5	1	1	0	1	1	0	0

Note: All values include QA/QC samples

Appendix D

Borehole Logs

Test Pit and Test Hole Logs

Sample Location	Depth (mbgs)	UTM Northing	UTM Easting	Color	Description	Stains Y/N	Odours Y/N	VOC Reading (PPM)	Comments
TP1									
TP1-SS1	2 - 3	5075075.078	691054.8758	Red	Clay with sand and gravel	N	N	0	
TP1-SS2	1 - 2			Red	Clay with sand and gravel	N	N	0	
TP1-SS3	0 - 1			Red	Clay with sand and gravel	N	N	0	
TP2									
TP2-SS1	0 - 1	5075114	691098	Brown	Coarse sand, gravel and clay, with trace red clay	N	N	0	
TP2-SS2	1 - 2			Brown	Clay with sand and gravel	N	N	0	
TP2-SS3	2 - 3			Brown	Clay with sand and gravel	N	N	0	
TP3									
TP3-SS1	2 - 3	5075175	691142		Coarse sand and gravel with clay, damp			0	
TP3-SS2	1 - 2			Brown	Coarse sand and gravel with clay, damp to wet	N	N	0	
TP3-SS3	0 - 1			Brown	Sand and gravel, loose, damp			0	
TH4									
TH4-SS1	0 - 0.3	5075153.227	690961.3886	Brown/grey	Organics underlain with fine grained sand and trace clay	N	N	-	Groundwater encountered at 0.3m
TH4-SS2	1 - 1.25			Brown/Grey	Fine grained sand with grey clay, saturated	N	N	-	
TH5									
TH5-SS1	0.15 - 0.3	5075198.634	691012.7376	Brown to Grey	Sand, moist to wet	N	Y		
TH5-SS2	0.3 - 0.46			Brown to Grey	Sand, saturated	N	N		
TH6									
TH6-SS1	0 - 0.3	5075250.97	690943.0139	Brown/Grey	Organics underlain with fine grained sand and trace clay	N	N	-	Groundwater encountered at 0.25m
TH6-SS2	1 - 1.25			Grey	Clay with trace sand, saturated	N	N	-	
TH7									
TH7-SS1	0.3 - 0.41	5075177.639	690839.0617	Brown	Sand with grey clay, wet to saturated				Groundwater almost at surface
TH8									
TH8-SS1	0 - 0.3	5075269.838	690850.5366	Dark Brown	Organics	N	N		
TH8-SS2	0.3 - 0.4			Grey	Silty, clayey sand	N	N		
TH8-SS3	0.4 - 0.6			Grey	Silty sandy clay	N	N		
TH9									
TH9-SS1	0 - 0.3	5075340.472	690884.835	Dark Brown	Organics	N	N		Groundwater encountered at 0.1m
TH9-SS2	0.3 - 0.6			Grey	Clay	N	N		
TP10									
TP10-SS1	2 - 3	5075518	690904	Brown	Clay withblack organics, compact, damp	N	N	0	Groundwater encountered at 3.5m
TP10-SS2	1 - 2			Brown	Sandy clay with gravel, damp to moist	N	N	0	
TP10-SS3	0 - 1			Brown and Grey	Clay with sand and gravel, damp	N	N	0	
TP11									
TP11-SS1	2 - 3	5075545.547	690991.6194	Brown and Grey	Clay with sand and gravel, damp	N	N	0	
TP11-SS2	1 - 2			Brown	Clay with sand and gravel	N	N	0	
TP11-SS3	0 - 1			Brown	Clay with sand, gravel and cobble	N	N	0	

Sample Location	Depth (mbgs)	UTM Northing	UTM Easting	Color	Description	Stains Y/N	Odours Y/N	VOC Reading (PPM)	Comments
TP12									
TP12-SS1	2 - 3	5075522.111	690987.3112	Grey and Brown	Clay and gravel	N	N	0	
TP12-SS2	1 - 2			Grey and Brown	Clay and gravel	N	N	0	
TP12-SS3	0 - 1			Grey and Brown	Clay and gravel	N	N	0	
TP13									
TP13-SS1	2 - 3	5075450.95	691263.4485	Brown	Clay with sand and gravel,compact, damp to moist	N	N	5	
TP13-SS2	1 - 2			Brown	Sand and gravel with clay, damp	N	N	0	
TP13-SS3	0 - 1			Brown	Sand and gravel with clay, damp	N	N	0	
TP14									
TP14-SS1	2 - 3	5075408.818	691261.4111	Brown	Sand and gravel with trace clay, cobble, moist	N	N	-	
TP14-SS2	1 - 2			Brown	Clay and gravel	N	N	0	
TP14-SS3	0 - 1			Grey and Brown	Clay and gravel	N	N	0	
TP15									
TP15-SS1	2 - 3	5075376.212	691223.1095	Brown	Clay with red and brown clay, sand and gravel, compact, moist	N	N	5	
TP15-SS2	1 - 2			Brown	Coarse sand and gravel with cobble, moist	N	N	0	
TP15-SS3	0 - 1			Brown and Light Brown	Clay, compact, damp	N	N	0	Groundwater encountered at 1m
TP16									
TP16-SS1	2 - 3	5075459.506	691317.111	Brown	Sandy gravel and trace brown clay	N	N	0	
TP16-SS2	1 - 2			Light Brown	Silty clay with sand and gravel, compact, damp	N	N	0	
TP16-SS3	0 - 1				Silty clay with sand and gravel, compact, damp	N	N	0	
TP17									
TP17-SS1	2 - 3	5075364.033	691171.1599	Brown	Clay with trace gravel, compact, moist	N	N	0	
TP17-SS2	1 - 2			Brown	Clay with trace gravel, compact, moist	N	N	0	
TP17-SS3	0 - 1			Brown	Sand and gravel with trace clay, damp	N	N	0	
TH18									
TH18-SS1	0.15 - 0.3	5075344.933	691146.8583	Brown	Clay and organics, damp	N	N	-	
TH18-SS2	0.3 - 0.45			Brown	Clay with trace organics, soft, damp	N	N	-	
TH18-SS3	0.45 - 0.61			Brown	Clay and gravel and trace organics, soft, moist	N	N	0	
TH18-SS4	0.61 - 0.73			Brown	Clay and gravel and trace organics, soft, moist	N	N	-	
TP19									
TP19-SS1	0 - 0.3	5075267.799	691105.9348	Brown	Clay and gravel, compact, dry to damp	N	N	15	
TP19-SS2	1 - 2			Brown and Grey	Clay with gravel, damp	N	N	0	
TP19-SS3	2 - 3			Brown	Clay and gravel, damp	N	N	0	
TH20									
TH20-SS1	0.15 - 0.3	5075344.933	691146.858	Reddish Brown	Silty clay with gravel, trace organics, damp	N	N		
TH21									
TH21-SS1	0.15 - 0.3	5075267.799	691105.935	Reddish Brown	Clayey silt/silty clay with gravel, damp	N	N		

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BH6

Client: Nova Scotia Lands Inc.
Project: Lake Enon Phase II ESA
Project No.: 22-3723
Location: Lake Enon Former Mine Site
Drilling Co.: Nova Drilling Inc.
Drilling Method: Standard Split Spoon, Standard Auger
Supervised by: M. Smith
Date Started: 22-5-9
Date Completed: 22-5-9

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Notes	Sample Method	Sample Number	Sample N Value	Sample Rec %	Sample IBL(ppm or %LEL)	Depth Scale (m)
	Sand and Gravel Brown, loose, dry.		0.13							
	Clay and Gravel Brown, soft, damp.					SS1*	16	37.5	-	
			0.61							
	Compact, dry to damp					SS2	43	58.3	0	
1.0										1.0
						SS3	17	45.8	-	
	Sand and Gravel Greyish brown, loose, dry.		1.88			-	20	33.3	-	
2.0										2.0
				▽		-	23	37.5	0	
	Groundwater emcountered at 2.89 m Wet.		2.89							
3.0										3.0
						-	15	16.6	-	
						SS4	6	20.8	-	
4.0										4.0
			4.27							

LITHOLOGY SYMBOLS: Sandy Gravel; Gravelly Clay
SAMPLE TYPE: Split Spoon
▽ Water Found Depth

* Indicates sample submitted for analysis

DILLON MW LAKE ENON 2022 GINT LOGS.GPJ DILLON_MAY13_05.GDT 22-7-9

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MW1

Client: Nova Scotia Lands Inc.
Project: Lake Enon Phase II ESA
Project No.: 22-3723
Location: Lake Enon Former Mine Site
Drilling Co.: Nova Drilling Inc.
Drilling Method: Standard Split Spoon, Standard Auger
Supervised by: M. Smith
Date Started: 22-5-11 Date Completed: 22-5-11

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Well Construction Stick-up 0.79 m	Sample Method	Sample Number	Sample N Value	Sample Rec %	Sample IBL(ppm or %LEL)	Depth Scale (m)
	Organics Grass and rootmat.		0.05	Sand and Riser						
	Silty Sand and Gravel Brown, loose, dry. Trace clay and organics throughout.			Bentonite Seal and Riser		SS1	5	41.7	-	
	Silty Sand Brown, soft, damp. Trace clay and gravel throughout.		0.61	Sand and Riser		SS2*	11	50	0	
1.0										1.0
	Silty Clay and Gravel Brown, soft, damp to moist.		1.22			SS3	50+	50	-	
	Cobble Brown, wet.		1.53							
	Groundwater encountered at 1.83 m.		1.83							
2.0				Sand and Screen		-	-	-	-	2.0
3.0										3.0
	Bedrock		3.05	End Cap						
			3.2							

DILLON MW LAKE ENON 2022 GINT LOGS.GPJ DILLON_MAY13_05.GDT 22-7-9

▼ Static Water Level
▽ Water Found Depth

LITHOLOGY SYMBOLS: Organics; Silty Sand; Boulders and cobbles; Silty Sand and Gravel; Silty Clay and Gravel; Bedrock (General)

SAMPLE TYPE: Split Spoon; Auger

* Indicates sample submitted for analysis

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MW2

Client: Nova Scotia Lands Inc.
Project: Lake Enon Phase II ESA
Project No.: 22-3723
Location: Lake Enon Former Mine Site
Drilling Co.: Nova Drilling Inc.
Drilling Method: Standard Split Spoon, Standard Auger
Supervised by: M. Smith
Date Started: 22-5-10 Date Completed: 22-5-10

Depth Scale (m)	Stratigraphic Description	Depth (m)	Well Construction Stick-up 0.72 m	Sample Method	Number	N Value	Rec %	IBL(ppm or %LEL)	Depth Scale (m)
	Clay and Gravel Reddish brown, loose, damp. Trace organics throughout.		Sand and Riser		SS1	8	20.8	-	
	Cobble Grey, damp.	0.61			-	8	8.3	-	
1.0			Bentonite Seal and Riser						1.0
	Clay and Gravel Brown, soft, damp.	1.22							
	Cobble Grey, damp.	1.5	Sand and Riser		SS2*	20	62.5	0	
	Clay and Gravel Brown, soft, damp.	1.83			SS3	11	62.5	0	
2.0									2.0
	Trace black staining from 2.44 m to 3.05 m.	2.44			SS4	4	41.7	0	
3.0									3.0
	Moist to wet. Increasing moisture with depth.	3.05	Sand and Screen		SS5	12	50	0	
4.0					SS6	13	58.3	0	4.0
	Groundwater encountered at 4.27 m	4.27			SS7	13	91.7	0	
		4.88	End Cap						

▼ Static Water Level
▽ Water Found Depth

LITHOLOGY SYMBOLS: Gravelly Clay; Boulders and cobbles

SAMPLE TYPE: Split Spoon

* Indicates sample submitted for analysis

DILLON MW LAKE ENON 2022 GINT LOGS.GPJ DILLON_MAY13_05.GDT 22-7-9

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MW3

Client: Nova Scotia Lands Inc.
Project: Lake Enon Phase II ESA
Project No.: 22-3723
Location: Lake Enon Former Mine Site
Drilling Co.: Nova Drilling Inc.
Drilling Method: Standard Split Spoon, Standard Auger
Supervised by: M. Smith
Date Started: 22-5-10 Date Completed: 22-5-10

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Well Construction Stick-up 0.85 m	Sample Method	Sample Number	N Value	Rec %	IBL(ppm or %LEL)	Depth Scale (m)
	Organics Grass and rootmat.		0.05	Bentonite Seal and Riser						
	Silty Sand Grey, soft, wet. Oranics throughout. Groundwater encountered at approximately 0.3 m. Black and orange staining from 0.05 m to 0.61 m.			Sand and Riser		SS1*	3	91.7	0	
1.0						SS2	0	20.8	-	1.0
	Trace orange staining from 1.22 m to 1.83 m.		1.22			SS3	0.5	33.3	-	
2.0			1.83	Sand and Screen		SS4	0	25	0	2.0
3.0	**Clay** Reddish brown, silty, soft, damp.		2.95			SS5	13	50	-	3.0
						SS6	8	62.5	0	
			3.96	End Cap						

Static Water Level
Water Found Depth

LITHOLOGY SYMBOLS: Organics, Clay, Silty Sand

SAMPLE TYPE: Split Spoon

* Indicates sample submitted for analysis

DILLON MW LAKE ENON 2022 GINT LOGS GPJ DILLON_MAY13_05 GDT 22-7-9

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MW5

Client: Nova Scotia Lands Inc.
Project: Lake Enon Phase II ESA
Project No.: 22-3723
Location: Lake Enon Former Mine Site
Drilling Co.: Nova Drilling Inc.
Drilling Method: Standard Split Spoon, Standard Auger
Supervised by: M. Smith
Date Started: 22-5-9 Date Completed: 22-5-9

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Well Construction Stick-up 0.67 m	Sample Method	Number	N Value	Rec %	IBL(ppm or %LEL)	Depth Scale (m)
	Sand and Gravel Grey, loose, dry.			Sand and Riser						
	Clay and Gravel Brown, soft, damp. Increasing moisture with depth.		0.25	Bentonite Seal and Riser		SS1*	23	62.5	0	
1.0				Sand and Riser		SS2	10	37.5	-	1.0
						SS3	5	33.3	-	
2.0						SS4	11	33.3	-	2.0
	Wet.		2.44	Sand and Screen		SS5*	50+	16.6	0	
3.0						-	-	-	-	3.0
			3.66	End Cap						

Static Water Level
Water Found Depth

LITHOLOGY SYMBOLS: Fill, Gravelly Clay

SAMPLE TYPE: Split Spoon, Auger

* Indicates sample submitted for analysis

DILLON MW LAKE ENON 2022 GINT LOGS.GPJ DILLON_MAY13_05.GDT 22-7-9

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MW8

Client: Nova Scotia Lands Inc.
Project: Lake Enon Phase II ESA
Project No.: 22-3723
Location: Lake Enon Former Mine Site
Drilling Co.: Nova Drilling Inc.
Drilling Method: Standard Split Spoon, Augers, and Cores
Supervised by: M. Smith
Date Started: 22-5-11 Date Completed: 22-5-11

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Well Construction Stick-up 0.88 m	Sample Method	Sample Number	Sample N Value	Sample Rec %	Sample IBL(ppm or %LEL)	Depth Scale (m)
0	**Sand and Gravel** Brown, loose, dry.	Sandy Gravel		Sand and Riser		-	50+	29.2	0	0
1.0										1.0
2.0				Bentonite Seal and Riser		-	-	-	-	2.0
3.0										3.0
4.0	**Sandy Clay and Gravel** Brown,soft, moist to wet.	Sandy Clay and Gravel	3.81	Sand and Riser		SS1	-	-	0	4.0
5.0										5.0
6.0	**Clay and Cobble** Brown, moist to wet.	Gravelly Clay	5.55	Sand and Screen		-	-	-	-	6.0
7.0						SS2	-	-	5	7.0
			7.92	End Cap						

▼ Static Water Level

LITHOLOGY SYMBOLS: Sandy Gravel; Gravelly Clay; Sandy Clay and Gravel

SAMPLE TYPE: Split Spoon; Auger

* Indicates sample submitted for analysis

DILLON MW LAKE ENON 2022 GINT LOGS.GPJ DILLON_MAY13_05.GDT 22-7-9

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MW8

Client: Nova Scotia Lands Inc.
Project: Lake Enon Phase II ESA
Project No.: 22-3723
Location: Lake Enon Former Mine Site
Drilling Co.: Nova Drilling Inc.
Drilling Method: Standard Split Spoon, Augers, and Cores
Supervised by: M. Smith
Date Started: 22-5-11 Date Completed: 22-5-11

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Well Construction Stick-up 0.88 m	Sample Method	Sample Number	Sample N Value	Sample Rec %	Sample IBL(ppm or %LEL)	Depth Scale (m)
0	**Sand and Gravel** Brown, loose, dry.	Gravelly Clay		Sand and Riser		-	50+	29.2	0	0
1.0										1.0
2.0				Bentonite Seal and Riser		-	-	-	-	2.0
3.0										3.0
4.0	**Sandy Clay and Gravel** Brown,soft, moist to wet.	Sandy Clay and Gravel	3.81	Sand and Riser						4.0
5.0						SS1	-	-	0	5.0
6.0	**Clay and Cobble** Brown, moist to wet.	Sandy Gravel	5.55	Sand and Screen		-	50+	25	0	6.0
7.0						SS2	-	-	5	7.0
			7.92	End Cap						

Static Water Level

LITHOLOGY SYMBOLS: Sandy Gravel; Gravelly Clay; Sandy Clay and Gravel

SAMPLE TYPE: Split Spoon; Auger

* Indicates sample submitted for analysis

DILLON MW LAKE ENON 2022 GINT LOGS.GPJ DILLON_MAY13_05.GDT 22-7-9

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MW4

Client: Nova Scotia Lands Inc.
Project: Lake Enon Phase II ESA
Project No.: 22-3723
Location: Lake Enon Former Mine Site
Drilling Co.: Nova Drilling Inc.
Drilling Method: Standard Split Spoon, Standard Auger
Supervised by: M. Smith
Date Started: 22-5-10 Date Completed: 22-5-10

Depth Scale (m)	Stratigraphic Description	Lithology	Depth (m)	Well Construction	Sample Method	Sample Number	N Value	Rec %	IBL(ppm or %LEL)	Depth Scale (m)
	Clay and Gravel Brown, soft, damp. Trace orange staining throughout.			Sand and Riser		SS1*	9	50	0	
	Reddish brown, soft, damp to moist.		0.61	Bentonite Seal and Riser		SS2	11	54.2	-	
1.0	Brown, soft, moist. Trace black staining from 1.22 m to 1.83 m.		1.22	Sand and Riser		SS3	5	50	0	1.0
	Trace orange staining from 1.83 m to 2.44 m.		1.83			SS4*	9	66.6	0	
2.0						SS5	6	20.8	-	2.0
						-	5	8.3	0	
3.0						SS6	22	35.4	-	3.0
				Sand and Screen		SS7	15	83.3	0	
4.0						SS8	22	62.5	0	4.0
	Reddish brown, soft, damp. Trace organics.		4.88							
5.0	Groundwater encountered at approximately 5.49 m. Brown/grey, soft, saturated.		5.49			SS9	20	50	-	5.0
	Orange staining from approximately 6.01 m to 6.7 m.		6.01			SS10	26	50	0	
6.0			6.71			SS11	17	45.8	0	6.0
7.0			7.32	End Cap						7.0

DILLON MW LAKE ENON 2022 GINT LOGS GPJ DILLON_MAY13_05 GDT 22-7-9

▼ Static Water Level
▽ Water Found Depth

LITHOLOGY SYMBOLS: Gravelly Clay

SAMPLE TYPE: Split Spoon

* Indicates sample submitted for analysis

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MW7

Client: Nova Scotia Lands Inc.
Project: Lake Enon Phase II ESA
Project No.: 22-3723
Location: Lake Enon Former Mine Site
Drilling Co.: Nova Drilling Inc.
Drilling Method: Standard Split Spoon, Standard Auger
Supervised by: M. Smith
Date Started: 22-5-9 Date Completed: 22-5-9

Depth Scale (m)	Stratigraphic Description	Depth (m)	Well Construction	Sample Method	Sample Number	N Value	Rec %	IBL(ppm or %LEL)
	Clay and Gravel Brown, soft, damp.		Sand and Riser		SS1	9	58.3	0
	Gravel Grey, loose, damp.	0.61	Bentonite Seal and Riser					
1.0	**Clay and Gravel** Brown, soft, damp.	0.79	Sand and Riser		-	50	37.5	0
	Gravel Grey, loose, damp.	1.22						
	Clay and Gravel Brown, soft, moist to wet. Black staining from approximately 1.5 m to 1.8 m.	1.4			SS2*	32	45.8	0
2.0	Groundwater encountered at 2.13 m	2.13			SS3	5	29.2	-
	Gravel Grey, loose, wet.	2.44	Sand and Screen		-	9	33.3	-
3.0	**Sandy Clay** Brown, soft, moist.	3.05						
	Gravel Grey, loose, wet.	3.35			SS4	8	50	0
		3.66	End Cap					

Static Water Level
Water Found Depth

LITHOLOGY SYMBOLS: Gravelly Clay, Sandy Clay, Gravel

SAMPLE TYPE: Split Spoon

* Indicates sample submitted for analysis

DILLON MW_LAKE ENON 2022 GINT LOGS.GPJ DILLON_MAY13_05.GDT 22-7-9

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MW7

Client: Nova Scotia Lands Inc.
Project: Lake Enon Phase II ESA
Project No.: 22-3723
Location: Lake Enon Former Mine Site
Drilling Co.: Nova Drilling Inc.
Drilling Method: Standard Split Spoon, Standard Auger
Supervised by: M. Smith
Date Started: 22-5-9 Date Completed: 22-5-9

Depth Scale (m)	Stratigraphic Description	Depth (m)	Well Construction	Sample Method	Sample Number	N Value	Rec %	IBL (ppm or %LEL)	Depth Scale (m)
	Clay and Gravel Brown, soft, damp.		Sand and Riser		SS1	9	58.3	0	
	Gravel Grey, loose, damp.	0.61	Bentonite Seal and Riser						
1.0	**Clay and Gravel** Brown, soft, damp.	0.79	Sand and Riser		-	50	37.5	0	1.0
	Gravel Grey, loose, damp.	1.22							
	Clay and Gravel Brown, soft, moist to wet. Black staining from approximately 1.5 m to 1.8 m.	1.4			SS2*	32	45.8	0	
2.0	Groundwater encountered at 2.13 m	2.13	Sand and Screen		SS3	5	29.2	-	2.0
	Gravel Grey, loose, wet.	2.44			-	9	33.3	-	
3.0	**Sandy Clay** Brown, soft, moist.	3.05							3.0
	Gravel Grey, loose, wet.	3.35			SS4	8	50	0	
		3.66	End Cap						

DILLON MW LAKE ENON 2022 GINT LOGS GPJ DILLON_MAY13_05.GDT 22-7-9

▼ Static Water Level
▽ Water Found Depth

LITHOLOGY SYMBOLS: Gravelly Clay, Sandy Clay, Gravel

SAMPLE TYPE: Split Spoon

* Indicates sample submitted for analysis

Appendix E

Tables

Table E-1: Soil Analytical Results - Metals

				Metals														
				Aluminium	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Chromium (Total, III+VI)	Cobalt	Copper	Cyanide, free	Cyanide Total	Iron	Lead	Lithium
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				10	2	2	5	1	2	50	0.3	2	1	2	0.5	0.5	50	0.5	2
Mineral Occurrence Database							101000											5000	
Highlands Soil Zone EC Max Background Concentrations				28000	2	16.8	120	1		0.62	0.4	81	26	49			52000	84	
EC Database backgoround (EC ref 258,259,260)								0.4			0.4						19800 to 39000	9.6 to 14	
NS Tier I EQS Soil Commercial Potable Coarse				15,400	7.5	10	350	1	-	4,300	1	630	22	250	-	6.5	11,000	120	-
NS Tier I EQS Soil Commercial Potable Fine				15,400	7.5	10	350	1	-	4,300	1	630	22	250	-	6.5	11,000	120	-
MW1 SS2 - 0.61-1.22 m (Background Sample)				13,000	<2.0	6.2	400	<1	<2	<50	2.6	17	9.4	29	<0.5	<0.5	28,000	91	17
Field ID	Date	Sample Depth (mbgs)	Sample Type																
MW2 SS2	2022-05-10	1.22 - 1.83	Normal	12,000	<2.0	5.3	320	<1.0	<2.0	<50	1.4	17	10	19	<0.5	<0.5	24,000	130	23
MW3 SS1	2022-05-10	0.0 - 0.61	Normal	4,900	<2.0	7.8	450	<1.0	<2.0	<50	0.76	11	6.1	5.8	<0.5	<0.5	11,000	2,400	8.5
MW4 SS1	2022-05-10	0.0 - 0.61	Normal	12,000	<2.0	7	620	<1.0	<2.0	<50	2.6	15	9.7	26	<0.5	<0.5	22,000	300	20
MW4 SS4	2022-05-10	1.83 - 2.44	Normal	13,000	<2.0	6.7	480	<1.0	<2.0	<50	2.5	18	11	25	<0.5	<0.5	23,000	120	23
MW5 SS1	2022-05-09	0.0 - 0.61	Normal	4,300	<2.0	3.4	400	<1.0	<2.0	<50	7.6	5.9	4.8	58	<0.5	<0.5	9,600	170	7.3
MW5 SS5	2022-05-09	2.44 - 3.05	Normal	10,000	<2.0	4.5	620	<1.0	<2.0	<50	4.5	14	8.1	46	<0.5	<0.5	19,000	1,200	19
MW6 SS1*	2022-05-10	0.0 - 0.61	Normal	6,500	<2	3.1	540	<1.0	<2.0	<50	2.4	8.9	5.6	45	<0.5	<0.5	14,000	260	11
MW7 SS2	2022-05-09	1.22 - 1.83	Normal	7,400	<2	12	610	<1.0	<2.0	<50	21	21	15	53	<0.5	<0.5	23,000	150	15
Surface Soil Sampling																			
SSS2	2022-05-10	0.15 - 0.46	Normal	3,300	<2.0	7.0	600	<1.0	<2.0	<50	0.71	6.2	4.5	4.5	-	-	7,200	3,500	5.6
SSS12	2022-05-12	0.15 - 0.3	Normal	8,300	<2.0	4.4	740	<1.0	<2.0	<50	2.8	13	7.1	38	-	-	17,000	320	19
SSS13	2022-05-12	0.15 - 0.3	Normal	14,000	<2.0	7.4	280	<1.0	<2.0	<50	1.6	16	10	19	-	-	23,000	150	22
SSS16	2022-05-13	0.15 - 0.46	Normal	12,000	<2.0	6.2	660	<1.0	<2.0	<50	5.7	16	9.8	54	-	-	23,000	340	21
SSS17	2022-05-13	0.15 - 0.3	Normal	15,000	<2.0	5.8	170	<1.0	<2.0	<50	1.7	18	9.4	11	-	-	26,000	280	21
SSS19	2022-05-13	0.15 - 0.3	Normal	15,000	<2.0	6.4	290	<1.0	<2.0	<50	0.70	16	11	6.8	-	-	24,000	720	20
SSS21	2022-05-13	0.15 - 0.46	Normal	4,900	<2.0	<2.0	220	<1.0	<2.0	<50	0.74	4.5	2.9	13	-	-	8,200	50	7.5
SSS26	2022-05-19	0.15 - 0.25	Normal	9,700	<2.0	5.5	100	<1.0	<2.0	<50	0.72	9.8	6.1	5.3	-	-	22,000	67	10
Test Hole Sampling																			
TH4 SS1	2022-05-18	0 - 0.3	Normal	3,900	<2.0	12	380	<1.0	<2.0	<50	0.93	8.0	4.7	6.3	<0.50	<0.50	9,200	4,500	6.8
TH5 SS1	2022-05-18	0.15 - 0.3	Normal	3,300	<2.0	6.8	550	<1.0	<2.0	<50	0.72	7.5	4.5	4.3	<0.50	<0.51	7,400	4,000	7.1
TH6 SS2	2022-05-18	0.3 - 1.25	Normal	6,700	<2.0	6.7	550	<1.0	<2.0	<50	0.43	14	7.3	4.6	<0.50	<0.52	13,000	1,600	13
TH7 SS1	2022-05-18	0.3 - 0.4	Normal	3,500	<2.0	5.3	640	<1.0	<2.0	<50	<0.30	8.0	4.5	3.5	<0.50	<0.53	7,800	2,100	7.6
TH8 SS2	2022-05-18	0.4 - 0.6	Normal	9,300	<2.0	15	700	1.2	<2.0	<50	2.2	23	10	11	<0.50	<0.54	18,000	12,000	16
TH9 SS1	2022-05-18	0.3 - 0.6	Normal	13,000	<2.0	14	1,100	1.7	<2.0	<50	2.1	32	13	12	<0.50	<0.55	23,000	12,000	23
TH20 SS1	2022-05-18	0.15 - 0.3	Normal	14,000	<2.0	7.1	990	<1.0	<2.0	<50	3.3	19	8.0	34	<0.50	<0.50	29,000	1,400	20
TH21 SS1	2022-05-18	0.15 - 0.3	Normal	16,000	<2.0	5.2	990	<1.0	<2.0	<50	2.7	17	8.1	14	<0.50	<0.50	26,000	1,100	21
TH18 6"-12" SS1	2022-05-13	0.15 - 0.3	Normal	14,000	<2.0	6.4	460	<1.0	<2.0	<50	3.3	18	10	23	<0.50	<0.50	25,000	210	24
Test Pit Sampling																			
TP1 1-2M SS2	2022-05-13	1.0 - 2.0	Normal	11,000	<2.0	5.9	870	<1.0	<2.0	<50	3.2	14	8.9	66	<0.5	<0.5	29,000	340	20
TP2 0-1M SS1	2022-05-13	0.0 - 1.0	Normal	7,600	<2.0	7.6	750	<1.0	2.9	<50	7	9.6	8.3	110	<0.5	<0.5	20,000	520	15
TP3 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	14,000	<2.0	4.3	1,000	1	2	<50	1	17	8.4	45	<0.5	<0.5	21,000	190	27
TP24 0-1M SS3 (F/D)	2022-05-11	0.0 - 1.0	Field_D	13,000	<2.0	3.9	950	<1.0	<2.0	<50	0.99	16	8.3	48	<0.5	<0.5	20,000	180	26
TP10 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	9,200	<2.0	3.9	520	<1.0	<2.0	<50	2.1	11	8	34	<0.5	<0.5	16,000	290	17
TP11 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	10,000	<2.0	6.2	680	<1.0	<2.0	<50	5.3	13	8.4	34	<0.5	<0.5	20,000	260	19
TP12 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	7,500	<2.0	5.4	350	<1.0	2.1	<50	2.2	12	9.8	38	<0.5	<0.5	17,000	410	13
TP13 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	7,100	<2.0	5	540	<1.0	<2.0	<50	0.54	10	7.4	120	<0.5	<0.5	16,000	2,200	15
TP14 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	6,500	<2.0	2.2	530	<1.0	<2.0	<50	1.2	11	4.3	30	<0.5	<0.5	12,000	890	9.7
TP15 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	9,600	<2.0	4.3	620	<1.0	<2.0	<50	4.8	14	8.2	45	<0.5	<0.5	18,000	970	19
TP22 0-1M SS3 (F/D)	2022-05-12	0.0 - 1.0	Field_D	12,000	<2.0	6.3	750	<1.0	<2.0	<50	3.6	14	8.5	32	<0.5	<0.5	20,000	170	21
TP16 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	3,700	<2.0	2.2	530	<1.0	<2.0	<50	1.4	6	3.2	46	<0.5	<0.5	8,200	1,100	6.6
TP23 0-1M SS3 (F/D)	2022-05-12	0.0 - 1.0	Field_D	5,200	<2.0	2.7	670	<1.0	<2.0	<50	1.2	7.5	4	49	<0.5	<0.5	10,000	1,300	9.7
TP17 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	10,000	<2.0	4.9	680	<1.0	<2.0	<50	3.5	15	8.1	47	<0.5	<0.5	20,000	300	20
TP19 0.3M SS1	2022-05-13	0.0 - 0.3	Normal	11,000	<2.0	4.3	290	<1.0	<2.0	<50	1.5	16	9.6	18	<0.5	<0.5	22,000	90	21

Environmental Standards
* MW6 SS1 is from BH6 (i.e., on figure) which was initially planned to be a monitoring well; however, due to site conditions was converted to a borehole.
F/D denotes Field Duplicate Sample
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Fine
Environment Canada Background Soil Database (2004-2009) Version 1, March 2011
Mineral Occurrence Database (G. J. DeMont, January 1992; July 1997; G. J. DeMont, August 2013)
Highlands Soil Zone EC Max Background Concentrations
Highlight indicates concentration exceeds Tier I EQS and Background Concentrations

Table E-1: Soil Analytical Results - Metals

				Metals												
				Manganese	Mercury	Molybdenum	Nickel	Rubidium	Selenium	Silver	Strontium	Thallium	Tin	Uranium	Vanadium	Zinc
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				2	0.1	2	2	2	0.5	0.5	5	0.1	1	0.1	2	5
Mineral Occurrence Database																3600
Highlands Soil Zone EC Max Background Concentrations				4340	0.121	1.1	48		0.8	0.5	5.3	0.4	0.7	1.2	86	270
EC Database backgoround (EC ref 258,259,260)								0.8		5				34 to 48		
NS Tier I EQS Soil Commercial Potable Coarse				360	24	15	70	-	1	77	9,400	1	9,400	30	39	200
NS Tier I EQS Soil Commercial Potable Fine				360	24	15	70	-	1	77	9,400	1	9,400	30	39	200
MW1 SS2 - 0.61-1.22 m (Background Sample)				2,300	<0.1	<2	16	7.9	<0.5	<0.5	37	0.22	<1	0.93	31	340
Field ID	Date	Sample Depth (mbgs)	Sample Type													
MW2 SS2	2022-05-10	1.22 - 1.83	Normal	1,200	<0.1	<2	20	9.2	<0.5	<0.5	1,300	0.2	<1.0	1.1	28	250
MW3 SS1	2022-05-10	0.0 - 0.61	Normal	1,900	<0.1	<2	17	4.2	<0.5	0.52	640	0.14	<1.0	0.43	8.3	160
MW4 SS1	2022-05-10	0.0 - 0.61	Normal	2,000	<0.1	<2	20	8.9	<0.5	0.64	4,300	0.44	<1.0	1.4	22	480
MW4 SS4	2022-05-10	1.83 - 2.44	Normal	1,600	<0.1	<2	22	10	<0.5	<0.5	2,000	0.25	<1.0	1.2	25	390
MW5 SS1	2022-05-09	0.0 - 0.61	Normal	6,900	<0.1	<2	7.6	3.7	0.66	1	3,600	0.15	<1.0	4.9	12	1,400
MW5 SS5	2022-05-09	2.44 - 3.05	Normal	2,200	<0.1	<2	18	11	0.59	1.5	16,000	0.36	<1.0	2.0	17	880
MW6 SS1*	2022-05-10	0.0 - 0.61	Normal	4,600	<0.1	<2	11	5.1	0.66	1.3	5,000	0.21	<1.0	2.8	17	500
MW7 SS2	2022-05-09	1.22 - 1.83	Normal	5,100	<0.1	5.9	18	7.3	1.4	4.3	5,000	0.44	<1.0	4.7	57	3,600
Surface Soil Sampling																
SSS2	2022-05-10	0.15 - 0.46	Normal	2,000	<0.10	<2	11	2.5	<0.50	0.66	65	0.11	<1.0	0.34	5.6	150
SSS12	2022-05-12	0.15 - 0.3	Normal	1,900	<0.10	<2	16	8.9	0.72	0.93	16,000	0.23	1.1	1.3	18	500
SSS13	2022-05-12	0.15 - 0.3	Normal	1,800	<0.10	<2	19	9.6	<0.50	<0.50	91	0.23	<1.0	0.97	25	260
SSS16	2022-05-13	0.15 - 0.46	Normal	4,300	<0.10	2.2	18	9.2	0.78	1.0	2,100	0.32	<1.0	2.6	24	860
SSS17	2022-05-13	0.15 - 0.3	Normal	3,400	<0.10	<2	14	13	1.3	<0.50	1,200	0.26	<1.0	1.6	33	380
SSS19	2022-05-13	0.15 - 0.3	Normal	3,100	<0.10	<2	13	12	0.73	<0.50	54	0.22	<1.0	0.87	30	180
SSS21	2022-05-13	0.15 - 0.46	Normal	360	<0.10	<2	4.9	3.4	<0.50	<0.50	500	<0.10	<1.0	0.49	11	170
SSS26	2022-05-19	0.15 - 0.25	Normal	2,200	<0.10	2.6	6.5	6.2	<0.50	<0.50	13	0.13	<1.0	1.3	26	170
Test Hole Sampling																
TH4 SS1	2022-05-18	0 - 0.3	Normal	1,500	<0.10	<2	11	3.6	<0.50	0.87	110	0.20	<1.0	0.35	6.3	180
TH5 SS1	2022-05-18	0.15 - 0.3	Normal	1,800	<0.10	<2	13	3.2	<0.50	0.68	210	0.22	<1.0	0.35	5.5	440
TH6 SS2	2022-05-18	0.3 - 1.25	Normal	1,800	<0.10	<2	22	5.1	<0.50	<0.50	1,200	0.15	<1.0	0.46	11	140
TH7 SS1	2022-05-18	0.3 - 0.4	Normal	1,400	<0.10	<2	13	3.1	<0.50	<0.50	380	0.14	<1.0	0.29	6.3	86
TH8 SS2	2022-05-18	0.4 - 0.6	Normal	3,300	<0.10	<2	45	10	<0.50	1.9	420	0.36	<1.0	1.3	15	390
TH9 SS1	2022-05-18	0.3 - 0.6	Normal	3,000	<0.10	2.0	63	14	<0.50	2.0	290	0.37	<1.0	1.4	20	440
TH20 SS1	2022-05-18	0.15 - 0.3	Normal	1,800	0.12	<2	15	13	0.92	1.5	8,200	0.31	1.4	2.3	39	720
TH21 SS1	2022-05-18	0.15 - 0.3	Normal	2,200	0.17	<2	10	14	1.2	0.92	8,800	0.31	1.1	1.7	39	400
TH18 6"-12" SS1	2022-05-13	0.15 - 0.3	Normal	2,000	<0.10	<2	21	13	<0.5	<0.5	480	0.26	<1.0	1.2	30	510
Test Pit Sampling																
TP1 1-2M SS2	2022-05-13	1.0 - 2.0	Normal	3,300	<0.1	3.9	18	10	0.77	0.86	7,000	0.28	<1.0	3.8	23	830
TP2 0-1M SS1	2022-05-13	0.0 - 1.0	Normal	6,100	<0.1	2.9	13	7.7	1.3	2.5	3,800	0.41	<1.0	5.8	17	1,500
TP3 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	1,200	<0.1	<2	20	16	<0.5	0.78	13,000	0.19	<1.0	1.6	22	410
TP24 0-1M SS3 (F/D)	2022-05-11	0.0 - 1.0	Field_D	1,200	<0.1	<2	19	14	<0.5	0.69	10,000	0.19	<1.0	1.4	21	390
TP10 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	2,800	<0.1	<2	14	7.7	1	0.86	6,200	0.29	<1.0	2.3	22	410
TP11 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	3,800	<0.1	2	16	10	0.85	1.4	5,300	0.38	<1.0	3.4	21	1,000
TP12 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	3,600	<0.1	2.2	17	12	1.2	1.5	3,000	0.52	<1.0	11	15	640
TP13 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	2,700	<0.1	<2	12	6.8	0.64	1.4	19,000	0.16	<1.0	4.1	18	390
TP14 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	1,500	<0.1	<2	7.6	4	<0.5	0.56	20,000	<0.1	<1.0	1.4	23	260
TP15 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	2,200	<0.1	<2	17	11	0.6	1.3	16,000	0.3	<1.0	1.9	16	950
TP22 0-1M SS3 (F/D)	2022-05-12	0.0 - 1.0	Field_D	1,600	<0.1	<2	17	12	<0.5	0.9	8,500	0.36	<1.0	2	23	530
TP16 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	1,800	<0.1	<2	5.9	3.9	<0.5	0.84	21,000	<0.1	<1.0	1.6	9.7	300
TP23 0-1M SS3 (F/D)	2022-05-12	0.0 - 1.0	Field_D	1,900	<0.1	<2	7.1	5.6	<0.5	1.5	27,000	0.12	<1.0	1.7	14	350
TP17 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	2,100	<0.1	<2	16	10	0.68	1.1	15,000	0.32	<1.0	2.2	23	570
TP19 0.3M SS1	2022-05-13	0.0 - 0.3	Normal	1,400	<0.1	<2	20	9.8	<0.5	<0.5	1,200	0.2	<1.0	1	25	260

Environmental Standards
* MW6 SS1 is from BH6 (i.e., on figure) which was initially planned to be a monitorin
F/D denotes Field Duplicate Sample
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable C
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Fi
Environment Canada Background Soil Database (2004-2009) Version 1, March 2011
Mineral Occurrence Database (G. J. DeMont, January 1992; July 1997; G. J. DeMont,
Highlands Soil Zone EC Max Background Concentrations
Highlight indicates concentration exceeds Tier I EQS and Bacl

22-3723
Phase II ESA - Lake Enon Former Mill Site

Table E-1: Soil Analytical Results - Petroleum Hyrdocarbons

DILLON CONSULTING

				BTEX				Petroleum Hydrocarbons (PHCs)									
				Benzene	Toluene	Ethylbenzene	Xylene Total	PHC F1-BTEX (C6-C10-BTEX)	EPH >C10-C16	EPH >C16-C21	EPH >C21-C32	F2 (C10-C16 Hydrocarbons)	F3 (C16-C34 Hydrocarbons)	F4 (C34-C50 Hydrocarbons)	Modified TPH (Tier 1)	Hydrocarbon Resemblance	Reached Baseline at C32
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg				mg/kg	-	-
EQL				0.005	0.05	0.01	0.05	2.5	10	10	15				15	-	-
NS Tier I EQS Soil Commercial Potable Coarse				0.042	0.35	0.043	0.73	-	-	-	-	-	-	-	940* 1800** 10,000***	-	-
NS Tier I EQS Soil Commercial Potable Fine				0.094	0.74	0.089	1.5	-	-	-	-	-	-	-	1,900* 4,400** 10,000***	-	-
Field ID	Date	Sample Depth (mbgs)	Sample Type														
Surface Soil Sampling																	
SSS12	2022-05-12	0.15 - 0.3	Normal	<0.0050	<0.050	<0.010	<0.050	<2.5	23	79	2,500	17	950	510	2,600***	1[#1]	1[#2]
Test Hole Sampling																	
TH4 SS1	2022-05-18	0 - 0.3	Normal	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TH5 SS1	2022-05-18	0.15 - 0.3	Normal	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TH8 SS2	2022-05-18	0.4 - 0.6	Normal	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TH20 SS1	2022-05-18	0.15 - 0.3	Normal	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TH21 SS1	2022-05-18	0.15 - 0.3	Normal	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
Test Pit Sampling																	
TP1 1-2M SS2	2022-05-13		Normal	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TP10 2-3M SS1	2022-05-12		Normal	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TP13 2-3M SS1	2022-05-11	2.0 - 3.0	Normal	<0.005	<0.05	<0.01	<0.05	<2.5	<10	<10	<15	-	-	-	<15	No Resemblance	-
TP14 2-3M SS1	2022-05-11	2.0 - 3.0	Normal	<0.005	<0.05	<0.01	<0.05	<2.5	<10	<10	22	-	-	-	22***	1[#4]	1[#3]
TP15 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	<0.005	<0.05	<0.01	<0.05	<2.5	<10	<10	21	-	-	-	21***	1[#4]	1[#3]
TP16 (2-3M) SS1	2022-05-11	2.0 - 3.0	Normal	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	<10	44	-	-	-	44***	1[#1]	1[#3]
TP23 (2-3M) SS1 (F/D)	2022-05-12	2.0 - 3.0	Field_D	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	<10	35	-	-	-	35***	1[#1]	1[#3]
TP17 0-1M SS3	2022-05-12		Normal	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-

Comments
#1 Lube oil fraction.
#2 NO
#3 YES
#4 Possible lube oil fraction.
*Modified TPH (Gasoline)
**Modified TPH (Fuel)
***Modified TPH (Lube)

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Fine

Table E-1: Soil Analytical Results - Polycyclic Aromatic Hydrocarbons

DILLON CONSULTING

				Polycyclic Aromatic Hydrocarbons (PAHs)																				
				1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(b+j)fluoranthene	Benzo(e)pyrene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Perylene	Phenanthrene	Pyrene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NS Tier I EQS Soil Commercial Potable Coarse				30	30	8,000	23	37,000	12	14	1.2	1.2	-	250	1.2	1.2	78	8.8	5,300	4,100	98	25	-	17	3,200
NS Tier I EQS Soil Commercial Potable Fine				42	42	8,000	32	37,000	6.4	7	0.64	0.64	-	130	0.64	0.64	40	4.4	5,300	4,100	51	28	-	24	3,200
Field ID	Date	Sample Depth (mbgs)	Sample Type																						
Test Hole Sampling																									
TH4 SS1	2022-05-18	0 - 0.3	Normal	<0.03	<0.03	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TH5 SS1	2022-05-18	0.15 - 0.3	Normal	<0.03	<0.03	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TH6 SS2	2022-05-18	0.3 - 1.25	Normal	0.020	0.031	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.031	<0.010
TH7 SS1	2022-05-18	0.3 - 0.4	Normal	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TH8 SS2	2022-05-18	0.4 - 0.6	Normal	<0.03	0.04	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TH9 SS1	2022-05-18	0.3 - 0.6	Normal	0.015	0.023	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010
TH20 SS1	2022-05-18	0.15 - 0.3	Normal	<0.03	<0.03	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TH21 SS1	2022-05-18	0.15 - 0.3	Normal	<0.06	<0.06	<0.06	<0.1	<0.06	<0.1	<0.1	-	<0.2	<0.1	<0.2	-	<0.06	<0.1	<0.1	<0.1	<0.06	<0.2	<0.06	-	<0.1	<0.1
TH18 6"-12" SS1	2022-05-13	0.15 - 0.3	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Test Pit Sampling																									
TP1 1-2M SS2	2022-05-13	1.0 - 2.0	Normal	<0.03	<0.03	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TP2 0-1M SS1	2022-05-13	0.0 - 1.0	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TP3 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TP24 0-1M SS3 (F/D)	2022-05-11	0.0 - 1.0	Field_D	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TP10 2-3M SS1	2022-05-12	2.0 - 3.0	Normal	<0.03	<0.03	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TP11 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TP12 0-1M SS3	2022-05-11	0.0 - 1.0	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TP13 2-3M SS1	2022-05-11	2.0 - 3.0	Normal	0.05	0.05	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TP14 2-3M SS1	2022-05-11	2.0 - 3.0	Normal	<0.03	<0.03	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	0.06	<0.03	<0.08	<0.03	-	<0.05	<0.05
TP15 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	<0.03	<0.03	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TP16 (2-3M) SS1	2022-05-11	2.0 - 3.0	Normal	<0.03	<0.03	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TP23 (2-3M) SS1 (F/D)	2022-05-12	2.0 - 3.0	Field_D	<0.03	<0.03	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TP17 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	<0.03	<0.03	<0.03	<0.05	<0.03	<0.05	<0.05	-	<0.1	<0.05	<0.1	-	<0.03	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	-	<0.05	<0.05
TP19 1-2M SS2	2022-05-13	1.0 - 2.0	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Fine

Table E-1: Soil Analytical Results - Polychlorinated Biphenyls

				Polychlorinated Biphenyls (PCBs)							
				Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
NS Tier I EQS Soil Commercial Potable Coarse				-	-	-	-	-	-	-	33
NS Tier I EQS Soil Commercial Potable Fine				-	-	-	-	-	-	-	33
Field ID	Date	Sample Depth (mbgs)	Sample Type								
Test Pit Sampling											
TP13 2-3M SS1	2022-05-11	2.0 - 3.0	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TP14 2-3M SS1	2022-05-11	2.0 - 3.0	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TP15 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TP16 (2-3M) SS1	2022-05-11	2.0 - 3.0	Normal	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
TP23 (2-3M) SS1 (F/D)	2022-05-12	2.0 - 3.0	Field_D	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
TP17 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Fine

Table E-1: Soil Analytical Results - Volatile Orgainc Compounds

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				Volatile Organic Compounds (VOCs)																											
				1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromoethane (Ethylene Dibromide)	1,2-Dichloroethane	1,2-Dichloropropane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroethane	Chloroform	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dichloromethane	Methyl tert-Butyl Ether (MTBE)	Styrene	Trichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichlorofluoromethane	Vinyl chloride
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.01	0.025	0.025	0.05	0.025	0.01	0.025	0.2	0.01	0.025	0.025	0.025	0.025	0.025	0.01	0.025	0.025	0.025	0.025	0.025	0.02
NS Tier I EQS Soil Commercial Potable Coarse				6.1	0.14	0.42	0.47	0.17	0.0048	0.033	0.16	1.5	2.3	0.0016	0.0069	0.22	1.5	-	0.14	0.24	0.59	0.32	0.062	42	0.01	0.2	0.25	-	-	0.0079
NS Tier I EQS Soil Commercial Potable Fine				27	0.19	0.73	0.6	0.38	0.0062	0.025	0.68	1.9	2.9	0.012	0.037	0.61	0.91	-	0.53	1	0.81	0.21	0.044	66	0.13	0.57	1.4	-	-	0.06
Field ID	Date	Sample Depth (mbgs)	Sample Type																												
Test Hole Sampling																															
TH4 SS1	2022-05-18	0 - 0.3	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TH5 SS1	2022-05-18	0.15 - 0.3	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TH8 SS2	2022-05-18	0.4 - 0.6	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TH20 SS1	2022-05-18	0.15 - 0.3	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TH21 SS1	2022-05-18	0.15 - 0.3	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
Test Pit Sampling																															
TP1 1-2M SS2	2022-05-13	1.0 - 2.0	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TP10 2-3M SS1	2022-05-12	2.0 - 3.0	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TP13 2-3M SS1	2022-05-11	2.0 - 3.0	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TP14 2-3M SS1	2022-05-11	2.0 - 3.0	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TP15 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TP16 (2-3M) SS1	2022-05-11	2.0 - 3.0	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TP23 (2-3M) SS1 (F/D)	2022-05-12	2.0 - 3.0	Field_D	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
TP17 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02

Comments

EQL higher than guideline(s)

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Fine

Table E-1: Soil Analytical Results - Semi-Volatile Orgainc Compounds

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				Semi Volatile Organic Compounds (SVOCs)										Energetics		Anilines	Phenolics									Phthalates		
				1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Bis(2-chloroethyl)ether	Bis(2-chloroisopropyl) ether	Hexachlorobenzene	Hexachlorobutadiene	Hexachloroethane	2,4-Dinitrotoluene	2,6-Dinitrotoluene	4-chloroaniline	2,3,4,5 & 2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2-Chlorophenol	3,4,5-Trichlorophenol	Pentachlorophenol	Phenol	Bis(2-ethylhexyl) phthalate	Diethylphthalate	Dimethyl phthalate
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.025	0.025	0.025	0.2	0.1	0.5	0.5	0.5	0.1	0.1	0.2	0.2	0.08	0.1	0.2	0.5	0.08	0.1	0.1	0.09	1	0.2	0.2
NS Tier I EQS Soil Commercial Potable Coarse				0.18	24	0.098	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.6	3.8	-	-	-
NS Tier I EQS Soil Commercial Potable Fine				0.097	34	0.051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.6	3.8	-	-	-
Field ID	Date	Sample Depth (mbgs)	Sample Type																									
Test Hole Sampling																												
TH4 SS1	2022-05-18	0 - 0.3	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TH5 SS1	2022-05-18	0.15 - 0.3	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TH8 SS2	2022-05-18	0.4 - 0.6	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TH20 SS1	2022-05-18	0.15 - 0.3	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TH21 SS1	2022-05-18	0.15 - 0.3	Normal	<0.025	<0.025	<0.025	<0.4	<0.2	<1	<1	<1	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<1	<0.2	<0.2	<0.2	<0.2	<2	<0.4	<0.4
Test Pit Sampling																												
TP1 1-2M SS2	2022-05-13	1.0 - 2.0	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TP16 (2-3M) SS1	2022-05-11	2.0 - 3.0	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TP23 (2-3M) SS1 (F/D)	2022-05-12	2.0 - 3.0	Field_D	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TP10 2-3M SS1	2022-05-12	2.0 - 3.0	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TP13 2-3M SS1	2022-05-11	2.0 - 3.0	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TP14 2-3M SS1	2022-05-11	2.0 - 3.0	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TP15 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2
TP17 0-1M SS3	2022-05-12	0.0 - 1.0	Normal	<0.025	<0.025	<0.025	<0.2	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.2	<0.08	<0.1	<0.2	<0.5	<0.08	<0.1	<0.1	<0.09	<1	<0.2	<0.2

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Fine

Table E-1: Soil Analytical Results - Acid Rock Drainage

				ARD														
				Paste pH	Acid Production Potential	Neutralizing Potential pH 8.3	Net NP pH 8.3	NP/AP	Total Sulfur	Sulfate (as S)	Sulfide	Calcium	Magnesium	Sodium	Sodium Adsorption Ratio (SAR)	Electrical Conductivity (Lab)	Chloride
				-	Kg CaCO3/tonne	Kg CaCO3/tonne	Kg CaCO3/tonne	-	%	%	%	mg/L	mg/L	mg/L	SAR	µS/cm	mg/kg
EQL												0.1	0.1	0.1	-	1	5
EC Database backgoround (EC ref 258,259,260)				-	-	-	-	-	-	-	-	-	171 to 690	-	-	-	-
NS Tier I EQS Soil Commercial Potable Coarse				-	-	-	-	-	-	-	-	-	-	-	-	-	100
NS Tier I EQS Soil Commercial Potable Fine				-	-	-	-	-	-	-	-	-	-	-	-	-	100
Field ID	Date	Sample Depth (mbgs)	Sample Type														
Surface Soil Sampling																	
SSS3	2022-05-10	0.15 - 0.46	Normal	-	0.1	4.9	4.8	39.6	0.015	0.011	0.004	48	2	2.6	0.099	170	15
SSS4	2022-05-10	0.15 - 0.46	Normal	-	0.6	35.1	34.5	59.2	0.125	0.106	0.019	52	2.4	2.6	0.095	200	18
SSS7	2022-05-11	0.15 - 0.3	Normal	-	50.6	173	123	3.4	2.18	0.562	1.62	49	4.1	2	0.075	280	14
SSS8	2022-05-12	0.15 - 0.3	Normal	-	44.7	175	130	3.9	2.00	0.570	0.808	49	1.5	1.5	0.059	210	28
SSS23	2022-05-18	0.15 - 0.25	Normal	8.1	31.9	99.0	67.0	3.1	1.90	0.879	1.02	28	1.7	1.4	0.072	180	8.7
SSS24 (F/D)	2022-05-18	0.15 - 0.25	Field_D	8.0	39.9	94.1	54.2	2.4	2.13	0.853	1.28	28	1.6	1.2	0.060	170	7.3
SSS25	2022-05-19	0.05 - 0.25	Normal	8.0	19.1	69.9	50.8	3.7	0.750	0.139	0.611	34	1.2	3.4	0.16	130	7.9

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Soil Commercial Potable Fine
Environment Canada Background Soil Database (2004-2009) Version 1, March 2011

Table E-2: Groundwater Analytical Results - General Chemistry

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	General Chemistry																			Calculated Parameters								
	Carbonate as caco3	Alkalinity (total)	Ammonia as N	Total Kjeldahl Nitrogen (TKN)	Nitrate (as N)	Nitrite + Nitrate as N	Nitrite (as N)	Phosphate	Phosphorus (filtered)	Electrical Conductivity (Lab)	Chloride (filtered)	Colour	Total Organic Carbon (TOC)	pH (Lab)	Silica (SiO2)	Sulphate (filtered)	Hardness as CaCO3 (Measured)	Turbidity	Langelier Index (@ 4C)	Langelier Index (@ 20C)	Saturation pH (@ 20C)	Saturation @4C	Alkalinity (Bicarbonate as CaCO3)	Ionic Balance	Anions Total	Cations Total	Total Dissolved Solids (Calc.)
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	-	mg/L	pH Units	mg/L	mg/L	mg/L	NTU	N/A	N/A	N/A	N/A	mg/L	%	meq/L	meq/L	mg/L
EQL	1	2	0.05	0.1	0.05	0.05	0.01	0.01	0.1	1	1	5	0.5	-	0.5	2	1	0.1	-	-	-	-	1	-	-	-	1
NS Tier I EQS Com/Ind Potable Coarse	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NS Tier I EQS Com/Ind Potable Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field ID	Date	Sample Type																										
MW1	2022-05-17	Normal	<1.0	85	0.088	-	0.12	0.12	<0.010	<0.010	<0.1	220	7.4	<5.0	0.88	7.71	4.6	7.8	79	88	-0.518	-0.267	7.98	8.23	84	5.05	2.07	2.29	120
MW2	2022-05-17	Normal	2.2	350	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	780	4.5	<5.0	2.0	7.83	11	31	430	3.9	0.822	1.07	6.76	7.00	350	6.63	7.74	8.84	420
MW3	2022-05-17	Normal	2.1	510	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	1,700	8.9	<5.0	2.1	7.63	6.6	460	1,100	12	1.05	1.29	6.34	6.58	510	6.43	20.0	22.8	1,200
MW9 (F/D)	2022-05-17	Field_D	2.0	510	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	1,700	10	<5.0	2.0	7.63	6.6	460	1,100	9.6	1.04	1.28	6.35	6.59	510	5.41	20.1	22.4	1,200
MW4	2022-05-17	Normal	2.2	380	0.21	-	<0.050	<0.050	0.091	<0.010	<0.1	980	6.1	<5.0	1.8	7.79	8.7	120	540	35	0.867	1.11	6.68	6.92	380	3.55	10.3	11.1	570
MW7	2022-05-17	Normal	<1.0	120	0.12	0.16	0.057	0.057	<0.010	<0.010	<0.1	420	5.9	<5.0	1.2	7.94	3.0	78	190	6.9	0.175	0.425	7.51	7.76	120	1.69	4.21	4.07	240
MW8	2022-05-17	Normal	1.6	240	<0.050	-	0.23	0.23	<0.010	<0.010	<0.1	570	6.5	<5.0	0.67	7.85	8.8	41	310	62	0.557	0.805	7.05	7.30	240	5.52	5.82	6.50	320

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Fine

Table E-2: Groundwater Analytical Results - Metals

			Metals															
			Aluminium (filtered)	Antimony (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Bismuth (filtered)	Boron (filtered)	Cadmium (filtered)	Calcium (filtered)	Chromium (Total, III+VI) (filtered)	Cobalt (filtered)	Copper (filtered)	Cyanide, free	Cyanide Total	Iron (filtered)	Lead (filtered)	Magnesium (filtered)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.005	0.001	0.001	0.001	0.0001	0.002	0.05	0.00001	0.1	0.001	0.0004	0.0005	0.001	0.005	0.05	0.0005	0.1
NS Tier I EQS Com/Ind Potable Coarse			-	0.006	0.01	1	0.004	-	5	0.005	-	0.05	0.0038	2	-	0.2	-	0.005	-
NS Tier I EQS Com/Ind Potable Fine			-	0.006	0.01	1	0.004	-	5	0.005	-	0.05	0.0038	2	-	0.2	-	0.005	-
Field ID	Date	Sample Type																	
MW1	2022-05-17	Normal	<0.0050	<0.0010	<0.0010	0.4	<0.00010	<0.0020	<0.05	0.00035	28	<0.0010	0.00072	<0.00050	<0.0010	<0.0050	<0.05	<0.00050	2.2
MW2	2022-05-17	Normal	<0.0050	<0.0010	<0.0010	0.26	<0.00010	<0.0020	<0.05	0.00093	140	<0.0010	0.00073	0.0012	<0.0010	<0.0050	<0.05	<0.00050	18
MW3	2022-05-17	Normal	<0.0050	<0.0010	<0.0010	0.016	<0.00010	<0.0020	<0.05	0.000099	340	<0.0010	0.0053	<0.00050	<0.0010	<0.0050	<0.05	0.0023	64
MW9 (F/D)	2022-05-17	Field_D	<0.0050	<0.0010	<0.0010	0.015	<0.00010	<0.0020	<0.05	0.000095	330	<0.0010	0.0051	<0.00050	<0.0010	<0.0050	<0.05	0.0017	64
MW4	2022-05-17	Normal	0.015	<0.0010	0.0022	0.12	<0.00010	<0.0020	<0.05	0.00046	170	<0.0010	0.0049	<0.00050	<0.0010	<0.0050	<0.05	<0.00050	28
MW5	2022-05-18	Normal	0.01	0.0017	0.0020	0.11	<0.00010	<0.0020	<0.05	0.00020	99	<0.0010	0.0011	0.035	-	-	<0.05	0.0048	12
MW7	2022-05-17	Normal	<0.0050	<0.0010	<0.0010	0.18	<0.00010	<0.0020	<0.05	0.00024	64	<0.0010	<0.00040	0.0011	<0.0010	<0.0050	<0.05	<0.00050	7.8
MW8	2022-05-17	Normal	<0.0050	<0.0010	<0.0010	0.093	<0.00010	<0.0020	<0.05	0.00010	100	<0.0010	<0.00040	<0.00050	<0.0010	<0.0050	<0.05	<0.00050	14

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Fine

Table E-2: Groundwater Analytical Results - Petroleum Hydrocarbons

	BTEX				Petroleum Hydrocarbons (PHCs)						
	Benzene	Toluene	Ethylbenzene	Xylene Total	PHC F1-BTEX (C6-C10-BTEX)	EPH >C10-C16	EPH >C16-C21	EPH >C21-C32	Modified TPH (Tier 1)	Hydrocarbon Resemblance	Reached Baseline at C32
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-	-
EQL	0.001	0.001	0.001	0.001	0.09	0.05	0.05	0.09	0.09	-	-
NS Tier I EQS Com/Ind Potable Coarse	0.005	0.024	0.0016	0.02	-	-	-	-	4.4* 3.2** 7.8***	-	-
NS Tier I EQS Com/Ind Potable Fine	0.005	0.024	0.0016	0.02	-	-	-	-	4.4* 3.2** 7.8***	-	-

Field ID	Date	Sample Type										
MW2	2022-05-17	Normal	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance	NA
MW3	2022-05-17	Normal	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance	NA
MW9 (F/D)	2022-05-17	Field_D	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance	NA
MW4	2022-05-17	Normal	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance	NA
MW7	2022-05-18	Normal	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance	NA
MW8	2022-05-17	Normal	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance	NA

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Fine
*Modified TPH (Gasoline)
**Modified TPH (Fuel)
***Modified TPH (Lube)

Table E-2: Groundwater Analytical Results - Polycyclic Aromatic Hydrocarbons

	Polycyclic Aromatic Hydrocarbons (PAHs)																				
	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Perylene	Phenanthrene	Pyrene
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.00005	0.00005	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.0002	0.00001	0.00001	0.00001
NS Tier I EQS Com/Ind Potable Coarse	0.012	0.012	1.4	0.0045	-	-	0.00004	-	-	-	-	-	-	-	-	0.94	-	0.47	-	-	0.71
NS Tier I EQS Com/Ind Potable Fine	0.012	0.012	1.4	0.0045	-	-	0.00004	-	-	-	-	-	-	-	-	0.94	-	0.47	-	-	0.71
Field ID	Date	Sample Type																			
MW2	2022-05-17	Normal	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.00020	<0.000010	<0.000010	<0.000010
MW3	2022-05-17	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.00005	<0.00005	<0.00001	-	<0.00005	<0.00005	-	<0.00005	<0.00005	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.00005	<0.0001	<0.00005
MW9 (F/D)	2022-05-17	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.00005	<0.00005	<0.00001	-	<0.00005	<0.00005	-	<0.00005	<0.00005	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.00005	<0.0001	<0.00005
MW4	2022-05-17	Normal	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.00020	<0.000010	<0.000010	<0.000010
MW7	2022-05-17	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.00005	<0.00005	<0.00001	-	<0.00005	<0.00005	-	<0.00005	<0.00005	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.00005	<0.0001	<0.00005
MW8	2022-05-17	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.00005	<0.00005	<0.00001	-	<0.00005	<0.00005	-	<0.00005	<0.00005	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.00005	<0.0001	<0.00005

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Fine

Table E-2: Groundwater Analytical Results - Volatile Organic Compounds

				Volatile Organic Compounds (VOCs)																														
				1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromoethane (Ethylene Dibromide)	1,2-Dichloroethane	1,2-Dichloropropane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dichloromethane	Methyl tert-Butyl Ether (MTBE)	Styrene	Trichloroethene	Tetrachloroethene	Trihalomethanes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichlorofluoromethane	Vinyl chloride
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL				0.001	0.0005	0.001	0.002	0.0005	0.0002	0.001	0.0005	0.001	0.001	0.0005	0.0005	0.001	0.001	0.008	0.001	0.008	0.0005	0.0005	0.003	0.002	0.001	0.001	0.001	0.01	0.001	0.0005	0.0005	0.008	0.0005
NS Tier I EQS Com/Ind Potable Coarse				10	0.0034	0.012	3.7	0.014	0.00034	0.005	0.0099	0.1	0.1	0.033	0.002	0.08	0.19	-	0.08	0.038	0.07	0.0067	0.05	-	0.1	0.005	0.01	-	0.1	-	-	0.002
NS Tier I EQS Com/Ind Potable Fine				10	0.0034	0.012	3.7	0.014	0.00034	0.005	0.0099	0.1	0.1	0.051	0.002	0.08	0.19	-	0.08	0.038	0.07	0.0067	0.05	-	0.1	0.005	0.01	-	0.1	-	-	0.002
Field ID	Date	Sample Type																																
MW3	2022-05-17	Normal		<0.0010	<0.00050	<0.0010	<0.0020	<0.00050	<0.00020	<0.0010	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0010	<0.0010	<0.0080	<0.0010	<0.0080	<0.00050	<0.00050	<0.0030	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.0080	<0.00050
MW9 (F/D)	2022-05-17	Field_D		<0.0010	<0.00050	<0.0010	<0.0020	<0.00050	<0.00020	<0.0010	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0010	<0.0010	<0.0080	<0.0010	<0.0080	<0.00050	<0.00050	<0.0030	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.0080	<0.00050
MW7	2022-05-17	Normal		<0.0010	<0.00050	<0.0010	<0.0020	<0.00050	<0.00020	<0.0010	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0010	<0.0010	<0.0080	<0.0010	<0.0080	<0.00050	<0.00050	<0.0030	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.0080	<0.00050
MW8	2022-05-17	Normal		<0.0010	<0.00050	<0.0010	<0.0020	<0.00050	<0.00020	<0.0010	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0010	<0.0010	<0.0080	<0.0010	<0.0080	<0.00050	<0.00050	<0.0030	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.0080	<0.00050

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Fine

Table E-2: Groundwater Analytical Results - Semi-Volatile Organic Compounds

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	Semi Volatile Organic Compounds (SVOCs)								Energetics		Anilines	Phenolics									Phthalates		
	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	3,3-Dichlorobenzidine	Bis(2-chloroethyl)ether	Hexachlorobenzene	Hexachlorobutadiene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	4-chloroaniline	2,3,4,5 & 2,3,4,6-Tetrachlorophenol	2,3,6-Trichlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2-Chlorophenol	Pentachlorophenol	Bis(2-ethylhexyl) phthalate	Diethylphthalate	Dimethyl phthalate
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.0001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0001	0.0001	0.0003	0.0003	0.001	0.001	0.0005	0.0002	0.0002	0.0001	0.0005	0.002	0.0001	0.0001	0.001	0.0001	0.0001
NS Tier I EQS Com/Ind Potable Coarse	-	0.2	0.059	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06	-	-	-
NS Tier I EQS Com/Ind Potable Fine	-	0.2	0.059	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06	-	-	-
Field ID	Date	Sample Type																					
MW3	2022-05-17	Normal	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0003	<0.0003	<0.001	<0.001	<0.0005	<0.0002	<0.0002	<0.0001	0.0010	<0.002	<0.0001	<0.0001	<0.001	<0.0001	<0.0001
MW9 (F/D)	2022-05-17	Field_D	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0003	<0.0003	<0.001	<0.001	<0.0005	<0.0002	<0.0002	<0.0001	0.0009	<0.002	<0.0001	<0.0001	<0.001	<0.0001	<0.0001
MW7	2022-05-17	Normal	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0003	<0.0003	<0.001	<0.001	<0.0005	<0.0002	<0.0002	<0.0001	<0.0005	<0.002	<0.0001	<0.0001	<0.001	<0.0001	<0.0001
MW8	2022-05-17	Normal	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0003	<0.0003	<0.001	<0.001	<0.0005	<0.0002	<0.0002	<0.0001	<0.0005	<0.002	<0.0001	<0.0001	<0.001	<0.0001	<0.0001

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Fine

Table E-3: Sediment Analytical Results - Metals and Physical Properties

			Physical Properties		General Chemistry	Metals													
			Moisture Content	Sieve - #200 (>0.075mm)	Total Organic Carbon	Aluminium	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Chromium (Total, III+VI)	Cobalt	Copper	Cyanide, free	Cyanide Total
			%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	1	500	10	2	2	5	1	2	50	0.3	2	1	2	0.5-1	0.5-1
NS Tier I EQS Freshwater Sediment			-	-	-	-	25	17	-	-	-	-	3.5	90	-	197	-	-
Field ID	Date	Sample Type																
SED1 (BACKGROUND)	2022-05-18	Normal	-	-	-	7,800	<2.0	3.5	230	<1.0	<2.0	<50	1.2	9.3	5.2	7.2	<0.50	<0.50
SED2	2022-05-18	Normal	-	-	-	17,000	<2.0	5.9	1,100	<1.0	<2.0	<50	3.9	17	11	17	<1.0	<1.0
SED3	2022-05-18	Normal	-	12	-	19,000	<2.0	5.9	740	<1.0	<2.0	<50	6.0	21	11	29	<1.0	<1.0
SED4	2022-05-17	Normal	79	4	33,000	18,000	<2.0	7.5	180	1.3	<2.0	<50	16	24	19	120	<1.0	<1.0
SED5	2022-05-17	Normal	76	-	25,000	12,000	<2.0	6.0	420	<1.0	<2.0	<50	12	19	17	110	<1.0	<1.0
SED6	2022-05-18	Normal	71	-	34,000	11,000	<2.0	5.2	540	<1.0	<2.0	<50	6.9	16	11	45	<1.0	<1.0
SED10	2022-05-18	Field_D	76	-	100,000	12,000	<2.0	5.4	570	<1.0	<2.0	<50	7.4	16	11	48	<1.0	<1.0
SED7	2022-05-18	Normal	44	-	2,000	14,000	<2.0	8.6	560	1.4	<2.0	<50	1.3	26	12	16	<0.50	<0.50
SED8	2022-05-17	Normal	54	-	2,900	12,000	<2.0	11	400	1.3	<2.0	<50	12	22	35	150	<0.50	<0.50
SED9	2022-05-17	Normal	62	2	1,800	15,000	<2.0	7.7	440	1.3	<2.0	<50	23	22	79	350	<1.0	<1.0

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Freshwater Sediment

Table E-3: Sediment Analytical Results - Metals and Physical Properties

			Physical Properties		Metals															
			Moisture Content	Sieve - #200 (>0.075mm)	Iron	Lead	Lithium	Manganese	Mercury	Molybdenum	Nickel	Rubidium	Selenium	Silver	Strontium	Thallium	Tin	Uranium	Vanadium	Zinc
			%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	1	50	0.5	2	2	0.1	2	2	2	0.5	0.5	5	0.1	1	0.1	2	5
NS Tier I EQS Freshwater Sediment			-	-	43,766	91.3	-	1,100	0.486	-	75	-	2	0.5	-	-	-	-	-	315
Field ID	Date	Sample Type																		
SED1 (BACKGROUND)	2022-05-18	Normal	-	-	13,000	71	11	2,100	<0.10	<2.0	9.1	6.3	<0.50	<0.50	150	0.11	<1.0	1.2	16	180
SED2	2022-05-18	Normal	-	-	25,000	210	25	17,000	<0.10	4.2	18	14	1.2	0.57	400	0.26	1.2	2.5	34	560
SED3	2022-05-18	Normal	-	12	25,000	530	29	1,300	0.13	<2.0	22	16	1.2	1.1	390	0.33	1.2	3.5	35	880
SED4	2022-05-17	Normal	79	4	27,000	5,000	36	1,100	0.30	7.5	45	19	8.7	2.1	3,800	0.82	<1.0	6.4	32	3,100
SED5	2022-05-17	Normal	76	-	22,000	3,100	27	1,900	0.30	5.3	29	13	5.5	1.7	17,000	0.49	<1.0	3.8	21	2,300
SED6	2022-05-18	Normal	71	-	20,000	390	25	3,000	<0.10	3.3	22	13	4.9	1.7	3,500	0.45	<1.0	5.6	23	2,800
SED10	2022-05-18	Field_D	76	-	20,000	390	25	2,800	<0.10	5.9	23	14	6.7	1.9	3,200	0.53	<1.0	8.2	24	3,100
SED7	2022-05-18	Normal	44	-	26,000	1,800	29	1,600	<0.10	<2.0	47	16	<0.50	0.85	600	0.42	<1.0	1.3	24	420
SED8	2022-05-17	Normal	54	-	23,000	5,700	25	1,900	0.12	3.2	51	14	1.8	2.1	2,300	0.54	<1.0	2.0	21	1,600
SED9	2022-05-17	Normal	62	2	24,000	2,200	29	1,500	0.16	2.1	46	20	2.5	2.8	1,200	0.71	1.1	2.2	26	2,800

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Freshwater Sediment

Table E-3: Sediment Analytical Results - Petroleum Hydrocarbons

	BTEX				Petroleum Hydrocarbons (PHCs)						
	Benzene	Toluene	Ethylbenzene	Xylene Total	PHC F1-BTEX (C6-C10-BTEX)	EPH >C10-C16	EPH >C16-C21	EPH >C21-C32	Modified TPH (Tier 1)	Hydrocarbon Resemblance	Reached Baseline at C32
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	-
EQL	0.005	0.05	0.01	0.05	2.5	10	10	15	15	-	-
NS Tier I EQS Freshwater Sediment	1.2	1.4	1.2	1.3	-	-	-	-	15* 25** 43***	-	-
Field ID	Date	Sample Type										
SED4	2022-05-17	Normal	<0.0050	<0.050	<0.010	<0.050	<2.5	86	330	490	910**	1[#1]	1[#6]
SED5	2022-05-17	Normal	<0.0050	<0.050	<0.010	<0.050	<2.5	54	200	370	620**	1[#2]	1[#6]
SED6	2022-05-18	Normal	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	66	57	120**	1[#3]	1[#6]
SED10	2022-05-18	Field D	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	79	93	170***	1[#4]	1[#6]
SED7	2022-05-18	Normal	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	<10	36	36**	1[#5]	1[#6]
SED8	2022-05-17	Normal	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	34	74	110***	1[#4]	1[#6]
SED9	2022-05-17	Normal	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	16	58	74**	1[#3]	1[#6]

Comments
*Modified TPH (Gasoline)
**Modified TPH (Fuel)
***Modified TPH (Lube)
#1 One product in fuel / lube range. Possible lube oil fraction.
#2 One product in fuel / lube range. Unidentified compound(s) in fuel oil range. Lube oil fraction.
#3 Unidentified compound(s) in fuel oil range. Possible lube oil fraction.
#4 Lube oil fraction.
#5 Unidentified compound(s) in fuel oil range. Lube oil fraction.
#6 YES

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Freshwater Sediment

Table E-3: Sediment Analytical Results - Polycyclic Aromatic Hydrocarbons

			Polycyclic Aromatic Hydrocarbons (PAHs)																					
			1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(b+j)fluoranthene	Benzo(e)pyrene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Perylene	Phenanthrene	Pyrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NS Tier I EQS Freshwater Sediment			0.201	0.201	0.0889	0.128	0.245	0.385	0.782	13.4	13.4	-	0.32	13.4	13.4	0.862	0.135	2.355	0.144	3.2	0.391	-	0.515	0.875
Field ID	Date	Sample Type																						
SED4	2022-05-17	Normal	<0.2	<0.2	<0.2	<0.3	<0.2	<0.3	<0.3	-	<0.5	<0.3	<0.5	-	<0.2	<0.3	<0.3	<0.3	<0.2	<0.4	<0.2	-	<0.3	<0.3
SED5	2022-05-17	Normal	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
SED6	2022-05-18	Normal	<0.2	<0.2	<0.2	<0.3	<0.2	<0.3	<0.3	-	<0.6	<0.3	<0.6	-	<0.2	<0.3	<0.3	<0.3	<0.2	<0.5	<0.2	-	<0.3	<0.3
SED10	2022-05-18	Field_D	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.4	-	<0.8	<0.4	<0.8	-	<0.2	<0.4	<0.4	<0.4	<0.2	<0.6	<0.2	-	<0.4	<0.4
SED7	2022-05-18	Normal	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
SED8	2022-05-17	Normal	<0.06	<0.06	<0.06	<0.1	<0.06	<0.1	<0.1	-	<0.2	<0.1	<0.2	-	<0.06	<0.1	<0.1	<0.1	<0.06	<0.2	<0.06	-	<0.1	<0.1
SED9	2022-05-17	Normal	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

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Table E-3: Sediment Analytical Results - Volatile Organic Compounds

			Volatile Organic Compounds (VOCs)																													
			1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromoethane (Ethylene Dibromide)	1,2-Dichloroethane	1,2-Dichloropropane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroethane	Chloroform	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dichloromethane	Methyl tert-Butyl Ether (MTBE)	Styrene	Trichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichlorofluoromethane	Vinyl chloride
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.01	0.025	0.025	0.05	0.025	0.01	0.025	0.2	0.01	0.025	0.025	0.025	0.025	0.025	0.01	0.025	0.025	0.025	0.025	0.025	0.02
NS Tier I EQS Freshwater Sediment			0.03	1.4	-	-	-	-	-	-	-	0.65	-	1.2	0.41	-	-	-	-	-	-	-	-	0.22	0.41	-	-	-	-	-
Field ID	Date	Sample Type																														
SED4	2022-05-17	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
SED6	2022-05-18	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
SED10	2022-05-18	Field_D	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02
SED8	2022-05-17	Normal	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.05	<0.025	<0.01	<0.025	<0.2	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.01	<0.025	<0.025	<0.025	<0.025	<0.025	<0.02

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Nova Scotia Environment, September 2021, NS Tier I EQS Freshwater Sediment

Table E-3: Sediment Analytical Results - Semi-Volatile Organic Compounds

			Semi Volatile Organic Compounds (SVOCs)								Energetics		Anilines	NA	Phenolics								Phthalates		
			1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Bis(2-chloroethyl)ether	Bis(2-chloroisopropyl) ether	Hexachlorobenzene	Hexachlorobutadiene	Hexachloroethane	2,4-Dinitrotoluene	2,6-Dinitrotoluene	4-chloroaniline	2,3,4,6 + 2,3,4,5-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2-Chlorophenol	3,4,5-Trichlorophenol	Pentachlorophenol	Phenol	Bis(2-ethylhexyl) phthalate	Diethylphthalate	Dimethyl phthalate
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.025	0.025	0.025	0.4	0.2	1	1	1	0.2	0.2	0.4	0.4	0.2	0.2	0.4	1	0.2	0.2	0.2	0.2	2	0.4	0.4
NS Tier I EQS Freshwater Sediment			0.33	1.7	0.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-
Field ID	Date	Sample Type																							
SED4	2022-05-17	Normal	<0.025	<0.025	<0.025	<1	<0.5	<3	<3	<3	<0.5	<0.5	<1	<1	<0.4	<0.5	<1	<3	<0.4	<0.5	<0.5	<0.5	<5	<1	<1
SED6	2022-05-18	Normal	<0.025	<0.025	<0.025	<1	<0.6	<3	<3	<3	<0.6	<0.6	<1	<1	<0.5	<0.6	<1	<3	<0.5	<0.6	<0.6	<0.5	<6	<1	<1
SED10	2022-05-18	Field_D	<0.025	<0.025	<0.025	<2	<0.8	<4	<4	<4	<0.8	<0.8	<2	<2	<0.6	<0.8	<2	<4	<0.6	<0.8	<0.8	<0.7	<8	<2	<2
SED8	2022-05-17	Normal	<0.025	<0.025	<0.025	<0.4	<0.2	<1	<1	<1	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<1	<0.2	<0.2	<0.2	<0.2	<2	<0.4	<0.4

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Table E-4: Surface Water Anaytical Results - General Chemistry

			General Chemistry																		Calculated Parameters								
			Carbonate as caco3	Alkalinity (total)	Ammonia as N	Total Kjeldahl Nitrogen (TKN)	Nitrate (as N)	Nitrite + Nitrate as N	Nitrite (as N)	Phosphate	Phosphorus	Electrical Conductivity (Lab)	Chloride (filtered)	Colour	Cyanide, free	Cyanide Total	Total Organic Carbon (TOC)	pH (Lab)	Silica (SiO2)	Sulphate (filtered)	Hardness as CaCO3 (Measured)	Turbidity	Langelier Index (@ 4C)	Langelier Index (@ 20C)	Saturation pH (@ 20C)	Saturation @4C	Alkalinity (Bicarbonate as CaCO3)	Ionic Balance	Anions Total	Cations Total	Total Dissolved Solids (Calc.)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	-	mg/L	mg/L	mg/L	pH Units	mg/L	mg/L	mg/L	NTU	N/A	N/A	N/A	N/A	mg/L	%	meq/L	meq/L	mg/L
EQL			1	2	0.05	0.1	0.05	0.05	0.01	0.01	0.1	1	1	5	0.001	0.005	0.5		0.5	2	1	0.1					1				1
NS Tier I EQS Freshwater Surface Water																0.005															
Field ID	Date	Sample Type																													
SW1 (BACKGROUND)	2022-05-18	Normal	<1.0	22	0.073	-	<0.050	<0.050	<0.010	<0.010	<0.1	120	5.8	10	<0.0010	<0.0050	3.7	7.48	1.3	22	44	1.3	-1.56	-1.31	8.79	9.04	22	0.470	1.06	1.05	63
SW2	2022-05-18	Normal	<1.0	24	0.059	-	<0.050	<0.050	<0.010	<0.010	<0.1	120	5.9	10	<0.0010	<0.0050	3.1	7.33	1.5	21	45	1.1	-1.66	-1.41	8.74	8.99	24	0.00	1.09	1.09	65
SW3	2022-05-18	Normal	<1.0	25	0.063	-	<0.050	<0.050	<0.010	<0.010	<0.1	120	5.9	12	<0.0010	<0.0050	3.3	7.44	1.3	22	45	0.94	-1.55	-1.30	8.73	8.99	25	1.82	1.12	1.08	66
SW4	2022-05-17	Normal	<1.0	91	<0.050	0.16	<0.050	<0.050	<0.010	<0.010	<0.1	250	4.9	8.4	<0.0010	<0.0050	4.0	8.02	0.74	30	110	2.8	-0.0670	0.184	7.84	8.09	90	3.82	2.58	2.39	140
SW5	2022-05-17	Normal	1.1	92	0.11	-	<0.050	<0.050	<0.010	<0.010	<0.1	250	5.3	9.3	<0.0010	<0.0050	3.6	8.10	0.52	30	110	3.6	0.00900	0.259	7.84	8.09	90	5.03	2.61	2.36	140
SW6	2022-05-18	Normal	1.7	130	0.17	-	<0.050	<0.050	<0.010	<0.010	<0.1	310	3.9	17	<0.0010	<0.0050	11	8.15	1.3	30	140	1.4	0.265	0.516	7.63	7.88	130	6.75	3.32	2.90	170
SW7	2022-05-18	Normal	1.4	150	0.13	-	<0.050	<0.050	<0.010	<0.010	<0.1	380	5.6	12	<0.0010	<0.0050	4.1	8.02	1.3	44	180	0.99	0.295	0.545	7.47	7.72	140	2.17	4.00	3.83	210
SW8	2022-05-17	Normal	<1.0	79	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	220	4.8	8.7	<0.0010	<0.0050	3.3	8.12	1.8	26	96	2.7	-0.0890	0.162	7.96	8.21	78	3.93	2.25	2.08	120

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Table E-4: Surface Water Anaytical Results - Metals

			Metals														
			Aluminium	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium (Total, III+VI)	Cobalt	Copper	Cyanide, free	Cyanide Total	Iron	Lead
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.005	0.001	0.001	0.001	0.0001	0.002	0.05	0.00001	0.1	0.001	0.0004	0.0005	0.001	0.005	0.05	0.0005
NS Tier I EQS Freshwater Surface Water			0.005	0.009	0.005	1	0.00015		1.5	0.00009		0.0089	0.001	0.002		0.005	0.3	0.001
Field ID	Date	Sample Type																
SW1 (BACKGROUND)	2022-05-18	Normal	0.052	<0.0010	<0.0010	0.082	<0.00010	<0.0020	<0.05	0.000015	15	<0.0010	<0.00040	0.00051	<0.0010	<0.0050	<0.05	0.0018
SW2	2022-05-18	Normal	0.047	<0.0010	<0.0010	0.066	<0.00010	<0.0020	<0.05	<0.000010	16	<0.0010	<0.00040	<0.00050	<0.0010	<0.0050	<0.05	<0.00050
SW3	2022-05-18	Normal	0.052	<0.0010	<0.0010	0.069	<0.00010	<0.0020	<0.05	0.000011	16	<0.0010	<0.00040	<0.00050	<0.0010	<0.0050	<0.05	0.00053
SW4	2022-05-17	Normal	0.055	<0.0010	<0.0010	0.33	<0.00010	<0.0020	<0.05	0.00011	37	<0.0010	<0.00040	0.00094	<0.0010	<0.0050	0.065	0.0056
SW5	2022-05-17	Normal	0.073	<0.0010	<0.0010	0.38	<0.00010	<0.0020	<0.05	0.00012	36	<0.0010	<0.00040	0.0011	<0.0010	<0.0050	0.073	0.0071
SW6	2022-05-18	Normal	0.013	<0.0010	<0.0010	0.31	<0.00010	<0.0020	<0.05	0.000017	43	<0.0010	<0.00040	<0.00050	<0.0010	<0.0050	<0.05	0.00078
SW7	2022-05-18	Normal	<0.0050	<0.0010	<0.0010	0.24	<0.00010	<0.0020	<0.05	<0.000010	57	<0.0010	<0.00040	<0.00050	<0.0010	<0.0050	<0.05	<0.00050
SW8	2022-05-17	Normal	0.1	<0.0010	<0.0010	0.31	<0.00010	<0.0020	<0.05	0.000039	32	<0.0010	<0.00040	0.00094	<0.0010	<0.0050	0.11	0.0026

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Table E-4: Surface Water Anaytical Results - Petroleum Hydrocarbons

			BTEX				Petroleum Hydrocarbons (PHCs)					
			Benzene	Toluene	Ethylbenzene	Xylene Total	PHC F1-BTEX (C6-C10-BTEX)	EPH >C10-C16	EPH >C16-C21	EPH >C21-C32	Modified TPH (Tier 1)	Hydrocarbon Resemblance
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-
EQL			0.001	0.001	0.001	0.001	0.09	0.05	0.05	0.09	0.09	
NS Tier I EQS Freshwater Surface Water			2.1	0.77	0.32	0.33					0.1	
Field ID	Date	Sample Type										
SW4	2022-05-17	Normal	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance
SW5	2022-05-17	Normal	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance
SW6	2022-05-18	Normal	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance
SW6 DUP	2022-05-18	Field_D	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance
SW7	2022-05-18	Normal	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance
SW8	2022-05-17	Normal	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance

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Table E-4: Surface Water Anaytical Results - Polycyclic Aromatic Hydrocarbons

			Polycyclic Aromatic Hydrocarbons (PAHs)																			
			1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Perylene	Phenanthrene	Pyrene
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.00005	0.00005	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.0002	0.00001	0.00001	0.00001
NS Tier I EQS Freshwater Surface Water			0.002	0.002	0.0058		0.000012	0.000018	0.000015						0.0001		0.00004	0.003		0.0011		0.0004	0.000025
Field ID	Date	Sample Type																					
SW4	2022-05-17	Normal	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.00001	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0002	<0.000010	<0.000010	<0.000010
SW5	2022-05-17	Normal	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.00020	<0.000010	<0.000010	<0.000010
SW6	2022-05-18	Normal	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.00001	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0002	<0.000010	0.000010	<0.000010
SW6 DUP	2022-05-18	Field_D	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.00020	<0.000010	<0.000010	<0.000010
SW7	2022-05-18	Normal	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.00020	<0.000010	<0.000010	<0.000010
SW8	2022-05-17	Normal	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.00001	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0002	<0.000010	<0.000010	<0.000010

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Table E-4: Surface Water Anaytical Results - Volatile Organic Compounds

			Volatile Organic Compounds (VOCs)																														
			1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromoethane (Ethylene Dibromide)	1,2-Dichloroethane	1,2-Dichloropropane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dichloromethane	Methyl tert-Butyl Ether (MTBE)	Styrene	Trichloroethene	Tetrachloroethene	Trihalomethanes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichlorofluoromethane	Vinyl chloride
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.0005	0.001	0.002	0.0005	0.0002	0.001	0.0005	0.001	0.001	0.0005	0.0005	0.001	0.001	0.008	0.001	0.008	0.0005	0.0005	0.003	0.002	0.001	0.001	0.001	0.001	0.0005	0.0005	0.008	0.0005
NS Tier I EQS Freshwater Surface Water			0.01	0.07	0.8	0.2	0.04	0.005	0.1	0.0007	0.2	0.06	0.0009	0.0133	0.0013	0.04	1.1	0.0018	0.7	0.2	0.007	0.0981	10	0.072	0.021	0.11		0.2			0.6
Field ID	Date	Sample Type																															
SW4	2022-05-17	Normal	<0.0010	<0.00050	<0.0010	<0.0020	<0.00050	<0.00020	<0.0010	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0010	<0.0010	<0.0080	<0.0010	<0.0080	<0.00050	<0.00050	<0.0030	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.0080	<0.00050
SW6	2022-05-18	Normal	<0.0010	<0.00050	<0.0010	<0.0020	<0.00050	<0.00020	<0.0010	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0010	<0.0010	<0.0080	<0.0010	<0.0080	<0.00050	<0.00050	<0.0030	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.0080	<0.00050
SW6 DUP	2022-05-18	Field_D	<0.0010	<0.00050	<0.0010	<0.0020	<0.00050	<0.00020	<0.0010	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0010	<0.0010	<0.0080	<0.0010	<0.0080	<0.00050	<0.00050	<0.0030	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.0080	<0.00050
SW8	2022-05-17	Normal	<0.0010	<0.00050	<0.0010	<0.0020	<0.00050	<0.00020	<0.0010	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.0010	<0.0010	<0.0080	<0.0010	<0.0080	<0.00050	<0.00050	<0.0030	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.0080	<0.00050

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Table E-4: Surface Water Anaytical Results - Semi-Volatile Organic Compounds

			Semi Volatile Organic Compounds (SVOCs)								Energetics		Anilines	Phenolics									Phthalates		
			1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	3,3-Dichlorobenzidine	Bis(2-chloroethyl)ether	Hexachlorobenzene	Hexachlorobutadiene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	4-chloroaniline	2,3,4,6 + 2,3,4,5-Tetrachlorophenol	2,3,6-Trichlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2-Chlorophenol	Pentachlorophenol	Bis(2-ethylhexyl) phthalate	Diethylphthalate	Dimethyl phthalate
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.0001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0001	0.0001	0.0003	0.0003	0.001	1	0.0005	0.0002	0.0002	0.0001	0.0005	0.002	0.0001	0.0001	0.001	0.0001	0.0001
NS Tier I EQS Freshwater Surface Water				0.0007	0.15	0.026																0.0005			
Field ID	Date	Sample Type																							
SW4	2022-05-17	Normal	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0003	<0.0003	<0.001	<0.001	<0.0005	<0.0002	<0.0002	<0.0001	<0.0005	<0.002	<0.0001	<0.0001	<0.001	<0.0001	<0.0001
SW6	2022-05-18	Normal	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0003	<0.0003	<0.001	<0.001	<0.0005	<0.0002	<0.0002	<0.0001	<0.0005	<0.002	<0.0001	<0.0001	<0.001	0.0001	<0.0001
SW6 DUP	2022-05-18	Field_D	-	<0.00050	<0.0010	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW8	2022-05-17	Normal	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0003	<0.0003	<0.001	<0.001	<0.0005	<0.0002	<0.0002	<0.0001	<0.0005	<0.002	<0.0001	<0.0001	<0.001	0.0001	<0.0001

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Table E-5: Quality Assurance/Quality Control - Soil RPD Values

Field ID			SSS23	SSS24	RPD	TP16 (2-3M) SS1	TP23 (2-3M) SS1	RPD	TP3 0-1M SS3	TP24 0-1M SS3	RPD	TP15 0-1M SS3	TP22 0-1M SS3	RPD	TP16 0-1M SS3	TP23 0-1M SS3	RPD
Date			2022-05-18	2022-05-18		2022-05-11	2022-05-12		2022-05-11	2022-05-11		2022-05-12	2022-05-12		2022-05-12	2022-05-12	
Sample Type			Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D	
	Unit	EQL															
Physical Properties																	
Moisture Content	%	1	-	-		8.3	7.6		10	15	40.00%	14	-	-	-	-	-
General Chemistry																	
Sodium Adsorption Ratio (SAR)	SAR		0.072	0.060	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical Conductivity (Lab)	µS/cm	1	180	170	0.057143	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/kg	5	8.7	7.3	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide, free	mg/kg	0.5	-	-	-	-	-	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-
Cyanide Total	mg/kg	0.5	-	-	-	-	-	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-
Metals																	
Aluminium	mg/kg	10	-	-	-	-	-	-	14,000	13,000	7.41%	9,600	12,000	22.22%	3,700	5,200	33.71%
Antimony	mg/kg	2	-	-	-	-	-	-	<2	<2	-	<2	<2	-	<2	<2	-
Arsenic	mg/kg	2	-	-	-	-	-	-	4.3	3.9	-	4.3	6.3	-	2.2	2.7	-
Barium	mg/kg	5	-	-	-	-	-	-	1,000	950	5.13%	620	750	18.98%	530	670	23.33%
Beryllium	mg/kg	1	-	-	-	-	-	-	1	<1	-	<1	<1	-	<1	<1	-
Bismuth	mg/kg	2	-	-	-	-	-	-	2	<2	-	<2	<2	-	<2	<2	-
Boron	mg/kg	50	-	-	-	-	-	-	<50	<50	-	<50	<50	-	<50	<50	-
Cadmium	mg/kg	0.3	-	-	-	-	-	-	1	0.99	-	4.8	3.6	0.285714286	1.4	1.2	-
Calcium	mg/L	0.1	28	28	0	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (Total, III+VI)	mg/kg	2	-	-	-	-	-	-	17	16	-	14	14	-	6	7.5	-
Cobalt	mg/kg	1	-	-	-	-	-	-	8.4	8.3	-	8.2	8.5	-	3.2	4	-
Copper	mg/kg	2	-	-	-	-	-	-	45	48	6.45%	45	32	33.77%	46	49	6.32%
Iron	mg/kg	50	-	-	-	-	-	-	21,000	20,000	4.88%	18,000	20,000	10.53%	8,200	10,000	19.78%
Lead	mg/kg	0.5	-	-	-	-	-	-	190	180	5.41%	970	170	140.35%	1,100	1,300	16.67%
Lithium	mg/kg	2	-	-	-	-	-	-	27	26	3.77%	19	21	10.00%	6.6	9.7	-
Magnesium	mg/L	0.1	1.7	1.6	6.06%	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	mg/kg	2	-	-	-	-	-	-	1,200	1,200	0.00%	2,200	1,600	31.58%	1,800	1,900	5.41%
Mercury	mg/kg	0.1	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-
Molybdenum	mg/kg	2	-	-	-	-	-	-	<2	<2	-	<2	<2	-	<2	<2	-
Nickel	mg/kg	2	-	-	-	-	-	-	20	19	-	17	17	-	5.9	7.1	-
Rubidium	mg/kg	2	-	-	-	-	-	-	16	14	-	11	12	-	3.9	5.6	-
Selenium	mg/kg	0.5	-	-	-	-	-	-	<0.5	<0.5	-	0.6	<0.5	-	<0.5	<0.5	-
Silver	mg/kg	0.5	-	-	-	-	-	-	0.78	0.69	-	1.3	0.9	-	0.84	1.5	-
Sodium	mg/L	0.1	1.4	1.2	15.38%	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	mg/kg	50	-	-	-	-	-	-	13,000	10,000	26.09%	16,000	8,500	61.22%	21,000	27,000	25.00%
Thallium	mg/kg	0.1	-	-	-	-	-	-	0.19	0.19	-	0.3	0.36	-	<0.1	0.12	-
Tin	mg/kg	1	-	-	-	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Uranium	mg/kg	0.1	-	-	-	-	-	-	1.6	1.4	13.33%	1.9	2	5.13%	1.6	1.7	6.06%
Vanadium	mg/kg	2	-	-	-	-	-	-	22	21	4.65%	16	23	-	9.7	14	-
Zinc	mg/kg	5	-	-	-	-	-	-	410	390	5.00%	950	530	56.76%	300	350	15.38%
BTEX																	
Benzene	mg/kg	0.005	-	-	-	<0.0050	<0.0050	-	-	-	-	<0.005	-	-	-	-	-
Toluene	mg/kg	0.05	-	-	-	<0.050	<0.050	-	-	-	-	<0.05	-	-	-	-	-
Ethylbenzene	mg/kg	0.01	-	-	-	<0.010	<0.010	-	-	-	-	<0.01	-	-	-	-	-
Xylene Total	mg/kg	0.05	-	-	-	<0.050	<0.050	-	-	-	-	<0.05	-	-	-	-	-
Petroleum Hydrocarbons (PHCs)																	
PHC F1-BTEX (C6-C10-BTEX)	mg/kg	2.5	-	-	-	<2.5	<2.5	-	-	-	-	<2.5	-	-	-	-	-
EPH >C10-C16	mg/kg	10	-	-	-	<10	<10	-	-	-	-	<10	-	-	-	-	-
EPH >C16-C21	mg/kg	10	-	-	-	<10	<10	-	-	-	-	<10	-	-	-	-	-
EPH >C21-C32	mg/kg	15	-	-	-	44	35	-	-	-	-	21	-	-	-	-	-
Modified TPH (Tier 1)	mg/kg	15	-	-	-	44	35	-	-	-	-	21	-	-	-	-	-
Hydrocarbon Resemblance	-		-	-	-	1[#1]	1[#1]	-	-	-	-	1[#3]	-	-	-	-	-
Reached Baseline at C32	-		-	-	-	1[#2]	1[#2]	-	-	-	-	1[#2]	-	-	-	-	-

Table E-5: Quality Assurance/Quality Control - Soil RPD Values

Field ID			SSS23	SSS24	RPD	TP16 (2-3M) SS1	TP23 (2-3M) SS1	RPD	TP3 0-1M SS3	TP24 0-1M SS3	RPD	TP15 0-1M SS3	TP22 0-1M SS3	RPD	TP16 0-1M SS3	TP23 0-1M SS3	RPD
Date			2022-05-18	2022-05-18		2022-05-11	2022-05-12		2022-05-11	2022-05-11		2022-05-12	2022-05-12		2022-05-12	2022-05-12	
Sample Type			Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D	
	Unit	EQL															
Polycyclic Aromatic Hydrocarbons (PAHs)																	
1-Methylnaphthalene	mg/kg	0.01	-	-	-	<0.03	<0.03	-	<0.01	<0.01	-	<0.03	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.01	-	-	-	<0.03	<0.03	-	<0.01	<0.01	-	<0.03	-	-	-	-	-
Acenaphthene	mg/kg	0.01	-	-	-	<0.03	<0.03	-	<0.01	<0.01	-	<0.03	-	-	-	-	-
Acenaphthylene	mg/kg	0.01	-	-	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.05	-	-	-	-	-
Anthracene	mg/kg	0.01	-	-	-	<0.03	<0.03	-	<0.01	<0.01	-	<0.03	-	-	-	-	-
Benz(a)anthracene	mg/kg	0.01	-	-	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.05	-	-	-	-	-
Benzo(a) pyrene	mg/kg	0.01	-	-	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.05	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.01	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-
Benzo(b+j)fluoranthene	mg/kg	0.02	-	-	-	<0.1	<0.1	-	<0.02	<0.02	-	<0.1	-	-	-	-	-
Benzo(e)pyrene	mg/kg	0.05	-	-	-	<0.05	<0.05	-	-	-	-	<0.05	-	-	-	-	-
Benzo(g,h,i)perylene	mg/kg	0.01	-	-	-	<0.1	<0.1	-	<0.01	<0.01	-	<0.1	-	-	-	-	-
Benzo(j)fluoranthene	mg/kg	0.01	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.01	-	-	-	<0.03	<0.03	-	<0.01	<0.01	-	<0.03	-	-	-	-	-
Chrysene	mg/kg	0.01	-	-	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.05	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.01	-	-	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.05	-	-	-	-	-
Fluoranthene	mg/kg	0.01	-	-	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.05	-	-	-	-	-
Fluorene	mg/kg	0.01	-	-	-	<0.03	<0.03	-	<0.01	<0.01	-	<0.03	-	-	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	-	-	-	<0.08	<0.08	-	<0.01	<0.01	-	<0.08	-	-	-	-	-
Naphthalene	mg/kg	0.01	-	-	-	<0.03	<0.03	-	<0.01	<0.01	-	<0.03	-	-	-	-	-
Perylene	mg/kg	0.01	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-
Phenanthrene	mg/kg	0.01	-	-	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.05	-	-	-	-	-
Pyrene	mg/kg	0.01	-	-	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.05	-	-	-	-	-

Comments
RPD values have not been calculated where the parameter concentration is less than 10 times the EQL.

RPD value exceeds 50%

Table E-6: Quality Assurance/Quality Control - Groundwater RPD Values

DILLON CONSULTING

			MW3	MW9	RPD
			2022-05-17	2022-05-17	
			Normal	Field_D	
	Unit	EQL			
General Chemistry					
Carbonate as caco3	mg/L	1	2.1	2.0	-
Alkalinity (total)	mg/L	2	510	510	0.00%
Ammonia as N	mg/L	0.05	<0.050	<0.050	-
Nitrate (as N)	mg/L	0.05	<0.050	<0.050	-
Nitrite + Nitrate as N	mg/L	0.05	<0.050	<0.050	-
Nitrite (as N)	mg/L	0.01	<0.010	<0.010	-
Phosphate	mg/L	0.01	<0.010	<0.010	-
Phosphorus (filtered)	mg/L	0.1	<0.1	<0.1	-
Electrical Conductivity (Lab)	µS/cm	1	1,700	1,700	0.00%
Chloride (filtered)	mg/L	1	8.9	10	11.64%
Colour	-	5	<5.0	<5.0	-
Cyanide, free	mg/L	0.001	<0.0010	<0.0010	-
Cyanide Total	mg/L	0.005	<0.0050	<0.0050	-
Total Organic Carbon (TOC)	mg/L	0.5	2.1	2.0	-
pH (Lab)	pH Units		7.63	7.63	-
Silica (SiO2)	mg/L	0.5	6.6	6.6	0.00%
Sulphate (filtered)	mg/L	10	460	460	0.00%
Hardness as CaCO3 (Measured)	mg/L	1	1,100	1,100	0.00%
Turbidity	NTU	0.1	12	9.6	22.22%
Metals					
Aluminium (filtered)	mg/L	0.005	<0.0050	<0.0050	-
Antimony (filtered)	mg/L	0.001	<0.0010	<0.0010	-
Arsenic (filtered)	mg/L	0.001	<0.0010	<0.0010	-
Barium (filtered)	mg/L	0.001	0.016	0.015	6.45%
Beryllium (filtered)	mg/L	0.0001	<0.00010	<0.00010	-
Bismuth (filtered)	mg/L	0.002	<0.0020	<0.0020	-
Boron (filtered)	mg/L	0.05	<0.05	<0.05	-
Cadmium (filtered)	mg/L	0.00001	0.000099	0.000095	-
Calcium (filtered)	mg/L	0.1	340	330	2.99%
Chromium (Total, III+VI) (filtered)	mg/L	0.001	<0.0010	<0.0010	-
Cobalt (filtered)	mg/L	0.0004	0.0053	0.0051	3.85%
Copper (filtered)	mg/L	0.0005	<0.00050	<0.00050	-
Iron (filtered)	mg/L	0.05	<0.05	<0.05	-
Lead (filtered)	mg/L	0.0005	0.0023	0.0017	-
Magnesium (filtered)	mg/L	0.1	64	64	0.00%
Manganese (filtered)	mg/L	0.002	3.2	3.1	3.17%
Mercury (filtered)	mg/L	0.000013	<0.000013	<0.000013	-
Molybdenum (filtered)	mg/L	0.002	<0.0020	<0.0020	-
Nickel (filtered)	mg/L	0.002	0.045	0.046	2.20%
Potassium (filtered)	mg/L	0.1	14	13	7.41%
Selenium (filtered)	mg/L	0.0005	<0.00050	<0.00050	-
Silver (filtered)	mg/L	0.0001	<0.00010	<0.00010	-
Sodium (filtered)	mg/L	0.1	5.6	5.5	1.80%
Strontium (filtered)	mg/L	0.02	26	25	3.92%
Thallium (filtered)	mg/L	0.0001	<0.00010	<0.00010	-
Tin (filtered)	mg/L	0.002	<0.0020	<0.0020	-
Titanium (filtered)	mg/L	0.002	<0.0020	<0.0020	-
Uranium (filtered)	mg/L	0.0001	0.0029	0.0029	0.00%
Vanadium (filtered)	mg/L	0.002	<0.0020	<0.0020	-
Zinc (filtered)	mg/L	0.005	0.013	0.013	-
Calculated Parameters					
Langelier Index (@ 4C)	N/A		1.05	1.04	-
Langelier Index (@ 20C)	N/A		1.29	1.28	-
Saturation pH (@ 20C)	N/A		6.34	6.35	-
Saturation @4C	N/A		6.58	6.59	-
Alkalinity (Bicarbonate as CaCO3)	mg/L	1	510	510	0.00%
Ionic Balance	%		6.43	5.41	-
Anions Total	meq/L		20.0	20.1	-
Cations Total	meq/L		22.8	22.4	-
Total Dissolved Solids (Calc.)	mg/L	1	1,200	1,200	0.00%
BTEX					
Benzene	mg/L	0.001	<0.0010	<0.0010	-
Toluene	mg/L	0.001	<0.0010	<0.0010	-
Ethylbenzene	mg/L	0.001	<0.0010	<0.0010	-
Xylene Total	mg/L	0.001	<0.0010	<0.0010	-
Xylene (m & p)	mg/L	0.002	<0.0020	<0.0020	-
Xylene (o)	mg/L	0.001	<0.0010	<0.0010	-
Petroleum Hydrocarbons (PHCs)					
PHC F1-BTEX (C6-C10-BTEX)	mg/L	0.09	<0.090	<0.090	-
EPH >C10-C16	mg/L	0.05	<0.050	<0.050	-
EPH >C16-C21	mg/L	0.05	<0.050	<0.050	-
EPH >C21-C32	mg/L	0.09	<0.090	<0.090	-
Modified TPH (Tier 1)	mg/L	0.09	<0.090	<0.090	-
Hydrocarbon Resemblance	-		1	1	-
Polycyclic Aromatic Hydrocarbons (PAHs)					
1-Methylnaphthalene	mg/L	0.0002	<0.0002	<0.0002	-
2-Methylnaphthalene	mg/L	0.0002	<0.0002	<0.0002	-
Acenaphthene	mg/L	0.0002	<0.0002	<0.0002	-
Acenaphthylene	mg/L	0.0002	<0.0002	<0.0002	-
Anthracene	mg/L	0.00005	<0.00005	<0.00005	-
Benz(a)anthracene	mg/L	0.00005	<0.00005	<0.00005	-
Benzo(a) pyrene	mg/L	0.00001	<0.00001	<0.00001	-
Benzo(b+j)fluoranthene	mg/L	0.00005	<0.00005	<0.00005	-
Benzo(g,h,i)perylene	mg/L	0.00005	<0.00005	<0.00005	-
Benzo(k)fluoranthene	mg/L	0.00005	<0.00005	<0.00005	-
Chrysene	mg/L	0.00005	<0.00005	<0.00005	-
Dibenz(a,h)anthracene	mg/L	0.0001	<0.0001	<0.0001	-
Fluoranthene	mg/L	0.0002	<0.0002	<0.0002	-
Fluorene	mg/L	0.0002	<0.0002	<0.0002	-
Indeno(1,2,3-c,d)pyrene	mg/L	0.0001	<0.0001	<0.0001	-
Naphthalene	mg/L	0.0002	<0.0002	<0.0002	-
Perylene	mg/L	0.00005	<0.00005	<0.00005	-
Phenanthrene	mg/L	0.0001	<0.0001	<0.0001	-
Pyrene	mg/L	0.00005	<0.00005	<0.00005	-
Volatile Organic Compounds (VOCs)					
1,1,1-Trichloroethane	mg/L	0.001	<0.0010	<0.0010	-
1,1,2,2-Tetrachloroethane	mg/L	0.0005	<0.00050	<0.00050	-
1,1,2-Trichloroethane	mg/L	0.001	<0.0010	<0.0010	-
1,1-Dichloroethane	mg/L	0.002	<0.0020	<0.0020	-
1,1-Dichloroethene	mg/L	0.0005	<0.00050	<0.00050	-
1,2-Dibromoethane (Ethylene Dibromide)	mg/L	0.0002	<0.00020	<0.00020	-

Table E-6: Quality Assurance/Quality Control - Groundwater RPD Values

DILLON CONSULTING

			MW3	MW9	RPD
			2022-05-17	2022-05-17	
			Normal	Field_D	
	Unit	EQL			
1,2-Dichloroethane	mg/L	0.001	<0.0010	<0.0010	-
1,2-Dichloropropane	mg/L	0.0005	<0.00050	<0.00050	-
Bromodichloromethane	mg/L	0.001	<0.0010	<0.0010	-
Bromoform	mg/L	0.001	<0.0010	<0.0010	-
Bromomethane	mg/L	0.0005	<0.00050	<0.00050	-
Carbon tetrachloride	mg/L	0.0005	<0.00050	<0.00050	-
Chlorobenzene	mg/L	0.001	<0.0010	<0.0010	-
Chlorodibromomethane	mg/L	0.001	<0.0010	<0.0010	-
Chloroethane	mg/L	0.008	<0.0080	<0.0080	-
Chloroform	mg/L	0.001	<0.0010	<0.0010	-
Chloromethane	mg/L	0.008	<0.0080	<0.0080	-
cis-1,2-Dichloroethene	mg/L	0.0005	<0.00050	<0.00050	-
cis-1,3-Dichloropropene	mg/L	0.0005	<0.00050	<0.00050	-
Dichloromethane	mg/L	0.003	<0.0030	<0.0030	-
Methyl tert-Butyl Ether (MTBE)	mg/L	0.002	<0.0020	<0.0020	-
Styrene	mg/L	0.001	<0.0010	<0.0010	-
Trichloroethene	mg/L	0.001	<0.0010	<0.0010	-
Tetrachloroethene	mg/L	0.001	<0.0010	<0.0010	-
Trihalomethanes	mg/L	0.001	<0.0010	<0.0010	-
trans-1,2-Dichloroethene	mg/L	0.0005	<0.00050	<0.00050	-
trans-1,3-Dichloropropene	mg/L	0.0005	<0.00050	<0.00050	-
Trichlorofluoromethane	mg/L	0.008	<0.0080	<0.0080	-
Vinyl chloride	mg/L	0.0005	<0.00050	<0.00050	-
Semi Volatile Organic Compounds (SVOCs)					
1,2,4-Trichlorobenzene	mg/L	0.0001	<0.0001	<0.0001	-
1,2-Dichlorobenzene	mg/L	0.0005	<0.0005	<0.0005	-
1,3-Dichlorobenzene	mg/L	0.0005	<0.0005	<0.0005	-
1,4-Dichlorobenzene	mg/L	0.0005	<0.0005	<0.0005	-
3,3-Dichlorobenzidine	mg/L	0.0005	<0.0005	<0.0005	-
Bis(2-chloroethyl)ether	mg/L	0.0005	<0.0005	<0.0005	-
Hexachlorobenzene	mg/L	0.0001	<0.0001	<0.0001	-
Hexachlorobutadiene	mg/L	0.0001	<0.0001	<0.0001	-
Energetics					
2,4-Dinitrotoluene	mg/L	0.0003	<0.0003	<0.0003	-
2,6-Dinitrotoluene	mg/L	0.0003	<0.0003	<0.0003	-
Anilines					
4-chloroaniline	mg/L	0.001	<0.001	<0.001	-
Phenolics					
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	mg/L	0.001	<0.001	<0.001	-
2,3,6-Trichlorophenol	mg/L	0.0005	<0.0005	<0.0005	-
2,4,5-Trichlorophenol	mg/L	0.0002	<0.0002	<0.0002	-
2,4,6-Trichlorophenol	mg/L	0.0002	<0.0002	<0.0002	-
2,4-Dichlorophenol	mg/L	0.0001	<0.0001	<0.0001	-
2,4-Dimethylphenol	mg/L	0.0005	0.0010	0.0009	-
2,4-Dinitrophenol	mg/L	0.002	<0.002	<0.002	-
2-Chlorophenol	mg/L	0.0001	<0.0001	<0.0001	-
Pentachlorophenol	mg/L	0.0001	<0.0001	<0.0001	-
Phthalates					
Bis(2-ethylhexyl) phthalate	mg/L	0.001	<0.001	<0.001	-
Diethylphthalate	mg/L	0.0001	<0.0001	<0.0001	-
Dimethyl phthalate	mg/L	0.0001	<0.0001	<0.0001	-

Comments
RPD values have not been calculated where the parameter concentration is less than 10 times the EQL.

Table E-7: Quality Assurance/Quality Control - Sediment RPD Values

			Field ID	SED6	SED10	RPD
			Date	2022-05-18	2022-05-18	
			Sample Type	Normal	Field_D	
	Unit	EQL				
Physical Properties						
Moisture Content	%	1		71	76	6.80%
General Chemistry						
Cyanide, free	mg/kg	1		<1.0	<1.0	-
Cyanide Total	mg/kg	1		<1.0	<1.0	-
Total Organic Carbon (TOC)	mg/kg	500		34,000	100,000	98.51%
Metals						
Aluminium	mg/kg	10		11,000	12,000	8.70%
Antimony	mg/kg	2		<2.0	<2.0	-
Arsenic	mg/kg	2		5.2	5.4	-
Barium	mg/kg	5		540	570	5.41%
Beryllium	mg/kg	1		<1.0	<1.0	-
Bismuth	mg/kg	2		<2.0	<2.0	-
Boron	mg/kg	50		<50	<50	-
Cadmium	mg/kg	0.3		6.9	7.4	6.99%
Chromium (Total, III+VI)	mg/kg	2		16	16	-
Cobalt	mg/kg	1		11	11	0.00%
Copper	mg/kg	2		45	48	6.45%
Iron	mg/kg	50		20,000	20,000	0.00%
Lead	mg/kg	0.5		390	390	0.00%
Lithium	mg/kg	2		25	25	0.00%
Manganese	mg/kg	2		3,000	2,800	6.90%
Mercury	mg/kg	0.1		<0.10	<0.10	-
Molybdenum	mg/kg	2		3.3	5.9	-
Nickel	mg/kg	2		22	23	4.44%
Rubidium	mg/kg	2		13	14	-
Selenium	mg/kg	0.5		4.9	6.7	-
Silver	mg/kg	0.5		1.7	1.9	-
Strontium	mg/kg	5		3,500	3,200	8.96%
Thallium	mg/kg	0.1		0.45	0.53	-
Tin	mg/kg	1		<1.0	<1.0	-
Uranium	mg/kg	0.1		5.6	8.2	37.68%
Vanadium	mg/kg	2		23	24	4.26%
Zinc	mg/kg	5		2,800	3,100	10.17%
BTEX						
Benzene	mg/kg	0.005		<0.0050	<0.0050	-
Toluene	mg/kg	0.05		<0.050	<0.050	-
Ethylbenzene	mg/kg	0.01		<0.010	<0.010	-
Xylene Total	mg/kg	0.05		<0.050	<0.050	-
Xylene (m & p)	mg/kg	0.025		<0.025	<0.025	-
Xylene (o)	mg/kg	0.025		<0.025	<0.025	-
Petroleum Hydrocarbons (PHCs)						
PHC F1-BTEX (C6-C10-BTEX)	mg/kg	2.5		<2.5	<2.5	-
EPH >C10-C16	mg/kg	10		<10	<10	-
EPH >C16-C21	mg/kg	10		79	100	-
EPH >C21-C32	mg/kg	15		110	180	48.28%
Modified TPH (Tier 1)	mg/kg	15		190	290	41.67%
Hydrocarbon Resemblance	-			1[#1]	1[#1]	-
Reached Baseline at C32	-			1[#2]	1[#2]	-
Polycyclic Aromatic Hydrocarbons (PAHs)						
1-Methylnaphthalene	mg/kg	0.2		<0.2	<0.2	-
2-Methylnaphthalene	mg/kg	0.2		<0.2	<0.2	-
Acenaphthene	mg/kg	0.2		<0.2	<0.2	-
Acenaphthylene	mg/kg	0.3		<0.3	<0.4	-
Anthracene	mg/kg	0.2		<0.2	<0.2	-
Benz(a)anthracene	mg/kg	0.3		<0.3	<0.4	-
Benzo(a) pyrene	mg/kg	0.3		<0.3	<0.4	-
Benzo(b+j)fluoranthene	mg/kg	0.6		<0.6	<0.8	-
Benzo(e)pyrene	mg/kg	0.3		<0.3	<0.4	-
Benzo(g,h,i)perylene	mg/kg	0.6		<0.6	<0.8	-
Benzo(k)fluoranthene	mg/kg	0.2		<0.2	<0.2	-
Chrysene	mg/kg	0.3		<0.3	<0.4	-
Dibenz(a,h)anthracene	mg/kg	0.3		<0.3	<0.4	-
Fluoranthene	mg/kg	0.3		<0.3	<0.4	-
Fluorene	mg/kg	0.2		<0.2	<0.2	-
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5		<0.5	<0.6	-
Naphthalene	mg/kg	0.2		<0.2	<0.2	-
Phenanthrene	mg/kg	0.3		<0.3	<0.4	-
Pyrene	mg/kg	0.3		<0.3	<0.4	-
Volatile Organic Compounds (VOCs)						
1,1,1-Trichloroethane	mg/kg	0.025		<0.025	<0.025	-
1,1,2,2-Tetrachloroethane	mg/kg	0.025		<0.025	<0.025	-
1,1,2-Trichloroethane	mg/kg	0.025		<0.025	<0.025	-
1,1-Dichloroethane	mg/kg	0.025		<0.025	<0.025	-
1,1-Dichloroethene	mg/kg	0.025		<0.025	<0.025	-
1,2-Dibromoethane (Ethylene Dibromide)	mg/kg	0.025		<0.025	<0.025	-
1,2-Dichloroethane	mg/kg	0.025		<0.025	<0.025	-
1,2-Dichloropropane	mg/kg	0.01		<0.01	<0.01	-
Bromodichloromethane	mg/kg	0.025		<0.025	<0.025	-
Bromoform	mg/kg	0.025		<0.025	<0.025	-
Bromomethane	mg/kg	0.05		<0.05	<0.05	-
Carbon tetrachloride	mg/kg	0.025		<0.025	<0.025	-
Chlorobenzene	mg/kg	0.01		<0.01	<0.01	-
Chlorodibromomethane	mg/kg	0.025		<0.025	<0.025	-
Chloroethane	mg/kg	0.2		<0.2	<0.2	-
Chloroform	mg/kg	0.01		<0.01	<0.01	-
cis-1,2-Dichloroethene	mg/kg	0.025		<0.025	<0.025	-
cis-1,3-Dichloropropene	mg/kg	0.025		<0.025	<0.025	-
Dichloromethane	mg/kg	0.025		<0.025	<0.025	-
Methyl tert-Butyl Ether (MTBE)	mg/kg	0.025		<0.025	<0.025	-
Styrene	mg/kg	0.025		<0.025	<0.025	-
Trichloroethene	mg/kg	0.01		<0.01	<0.01	-
Tetrachloroethene	mg/kg	0.025		<0.025	<0.025	-
trans-1,2-Dichloroethene	mg/kg	0.025		<0.025	<0.025	-
trans-1,3-Dichloropropene	mg/kg	0.025		<0.025	<0.025	-
Trichlorofluoromethane	mg/kg	0.025		<0.025	<0.025	-
Vinyl chloride	mg/kg	0.02		<0.02	<0.02	-
Semi Volatile Organic Compounds (SVOCs)						
1,2-Dichlorobenzene	mg/kg	0.025		<0.025	<0.025	-
1,3-Dichlorobenzene	mg/kg	0.025		<0.025	<0.025	-
1,4-Dichlorobenzene	mg/kg	0.025		<0.025	<0.025	-
Bis(2-chloroethyl)ether	mg/kg	1		<1	<2	-

Table E-7: Quality Assurance/Quality Control - Sediment RPD Values

			Field ID	SED6	SED10	RPD
			Date	2022-05-18	2022-05-18	
			Sample Type	Normal	Field_D	
	Unit	EQL				
Bis(2-chloroisopropyl) ether	mg/kg	0.6		<0.6	<0.8	-
Hexachlorobenzene	mg/kg	3		<3	<4	-
Hexachlorobutadiene	mg/kg	3		<3	<4	-
Hexachloroethane	mg/kg	3		<3	<4	-
Energetics						
2,4-Dinitrotoluene	mg/kg	0.6		<0.6	<0.8	-
2,6-Dinitrotoluene	mg/kg	0.6		<0.6	<0.8	-
Anilines						
4-chloroaniline	mg/kg	1		<1	<2	-
Phenolics						
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	mg/kg	1		<1	<2	-
2,4,5-Trichlorophenol	mg/kg	0.5		<0.5	<0.6	-
2,4,6-Trichlorophenol	mg/kg	0.6		<0.6	<0.8	-
2,4-Dimethylphenol	mg/kg	1		<1	<2	-
2,4-Dinitrophenol	mg/kg	3		<3	<4	-
2-Chlorophenol	mg/kg	0.5		<0.5	<0.6	-
3,4,5-Trichlorophenol	mg/kg	0.6		<0.6	<0.8	-
Pentachlorophenol	mg/kg	0.6		<0.6	<0.8	-
Phenol	mg/kg	0.5		<0.5	<0.7	-
Phthalates						
Bis(2-ethylhexyl) phthalate	mg/kg	6		<6	<8	-
Diethylphthalate	mg/kg	1		<1	<2	-
Dimethyl phthalate	mg/kg	1		<1	<2	-

Comments
RPD values have not been calculated where the parameter concentration is less than 10 times the EQL.

RPD value exceeds 50%

Table E-8: Quality Assurance/Quality Control - Equipment Blank and Trip Blank Analytical Results

DILLON CONSULTING

					Field ID	EQUIPMENT BLANK	TRIP BLANK
					Date	2022-05-17	2022-05-17
					Sample Type	Normal	Normal
	Unit	EQL	NS Tier I EQS Com/Ind Potable Coarse	NS Tier I EQS Com/Ind Potable Fine		
General Chemistry						
Carbonate as caco3	mg/L	1	-	-	<1.0	-
Alkalinity (total)	mg/L	2	-	-	<2.0	-
Ammonia as N	mg/L	0.05	-	-	<0.050	-
Nitrate (as N)	mg/L	0.05	-	-	<0.050	-
Nitrite + Nitrate as N	mg/L	0.05	-	-	<0.050	-
Nitrite (as N)	mg/L	0.01	-	-	<0.010	-
Phosphate	mg/L	0.01	-	-	<0.010	-
Phosphorus	mg/L	0.1	-	-	<0.1	-
Electrical Conductivity (Lab)	µS/cm	1	-	-	2.0	-
Chloride (filtered)	mg/L	1	-	-	<1.0	-
Colour	-	5	-	-	<5.0	-
Cyanide, free	mg/L	0.001	-	-	<0.0010	-
Cyanide Total	mg/L	0.005	0.2	0.2	<0.0050	-
Total Organic Carbon (TOC)	mg/L	0.5	-	-	<0.50	-
pH (Lab)	pH Units		-	-	6.44	-
Silica (SiO2)	mg/L	0.5	-	-	<0.50	-
Sulphate (filtered)	mg/L	2	-	-	2.4	-
Hardness as CaCO3 (Measured)	mg/L	1	-	-	<1.0	-
Turbidity	NTU	0.1	-	-	0.16	-
Metals						
Aluminium	mg/L	0.005	-	-	0.0059	-
Antimony	mg/L	0.001	0.006	0.006	<0.0010	-
Arsenic	mg/L	0.001	0.01	0.01	<0.0010	-
Barium	mg/L	0.001	1	1	<0.0010	-
Beryllium	mg/L	0.0001	0.004	0.004	<0.00010	-
Bismuth	mg/L	0.002	-	-	<0.0020	-
Boron	mg/L	0.05	5	5	<0.05	-
Cadmium	mg/L	0.00001	0.005	0.005	<0.000010	-
Calcium	mg/L	0.1	-	-	0.14	-
Chromium (Total, III+VI)	mg/L	0.001	0.05	0.05	<0.0010	-
Cobalt	mg/L	0.0004	0.0038	0.0038	<0.00040	-
Copper	mg/L	0.0005	2	2	<0.00050	-
Iron	mg/L	0.05	-	-	<0.05	-
Lead	mg/L	0.0005	0.005	0.005	0.0013	-
Magnesium	mg/L	0.1	-	-	<0.1	-
Manganese	mg/L	0.002	0.12	0.12	0.0023	-
Mercury	mg/L	0.000013	0.001	0.001	<0.000013	-
Molybdenum	mg/L	0.002	0.07	0.07	<0.0020	-
Nickel	mg/L	0.002	0.1	0.1	<0.0020	-
Potassium	mg/L	0.1	-	-	<0.1	-
Selenium	mg/L	0.0005	0.05	0.05	<0.00050	-
Silver	mg/L	0.0001	-	-	<0.00010	-
Sodium	mg/L	0.1	-	-	<0.1	-
Strontium	mg/L	0.002	2.4	2.4	0.0070	-
Thallium	mg/L	0.0001	0.002	0.002	<0.00010	-
Tin	mg/L	0.002	2.4	2.4	<0.0020	-
Titanium	mg/L	0.002	-	-	<0.0020	-
Uranium	mg/L	0.0001	0.02	0.02	<0.00010	-
Vanadium	mg/L	0.002	0.0062	0.0062	<0.0020	-
Zinc	mg/L	0.005	-	-	0.0077	-
Calculated Parameters						
Alkalinity (Bicarbonate as CaCO3)	mg/L	1	-	-	<1.0	-
Ionic Balance	%		-	-	66.7	-
Anions Total	meq/L		-	-	0.0500	-
Cations Total	meq/L		-	-	0.0100	-
Total Dissolved Solids (Calc.)	mg/L	1	-	-	3.0	-
BTEX						
Benzene	mg/L	0.001	0.005	0.005	<0.0010	<0.0010
Toluene	mg/L	0.001	0.024	0.024	<0.0010	<0.0010
Ethylbenzene	mg/L	0.001	0.0016	0.0016	<0.0010	<0.0010
Xylene Total	mg/L	0.001	0.02	0.02	<0.0010	<0.0010
Xylene (m & p)	mg/L	0.002	-	-	<0.0020	<0.0020
Xylene (o)	mg/L	0.001	-	-	<0.0010	<0.0010
Petroleum Hydrocarbons (PHCs)						
PHC F1-BTEX (C6-C10-BTEX)	mg/L	0.09	-	-	<0.090	<0.090
EPH >C10-C16	mg/L	0.05	-	-	<0.050	<0.050
EPH >C16-C21	mg/L	0.05	-	-	<0.050	<0.050
EPH >C21-C32	mg/L	0.09	-	-	<0.090	<0.090
Modified TPH (Tier 1)	mg/L	0.09	3.2	3.2	<0.090	<0.090
Hydrocarbon Resemblance	-		-	-	No Resemblance	No Resemblance
Polycyclic Aromatic Hydrocarbons (PAHs)						
1-Methylnaphthalene	mg/L	0.0002	0.012	0.012	<0.0002	-
2-Methylnaphthalene	mg/L	0.0002	0.012	0.012	<0.0002	-
Acenaphthene	mg/L	0.0002	1.4	1.4	<0.0002	-
Acenaphthylene	mg/L	0.0002	0.0045	0.0045	<0.0002	-
Anthracene	mg/L	0.00005	-	-	<0.00005	-
Benz(a)anthracene	mg/L	0.00005	-	-	<0.00005	-
Benzo(a) pyrene	mg/L	0.00001	0.00004	0.00004	<0.00001	-
Benzo(b+j)fluoranthene	mg/L	0.00005	-	-	<0.00005	-
Benzo(g,h,i)perylene	mg/L	0.00005	-	-	<0.00005	-
Benzo(k)fluoranthene	mg/L	0.00005	-	-	<0.00005	-
Chrysene	mg/L	0.00005	-	-	<0.00005	-
Dibenz(a,h)anthracene	mg/L	0.0001	-	-	<0.0001	-
Fluoranthene	mg/L	0.0002	-	-	<0.0002	-
Fluorene	mg/L	0.0002	0.94	0.94	<0.0002	-
Indeno(1,2,3-c,d)pyrene	mg/L	0.0001	-	-	<0.0001	-
Naphthalene	mg/L	0.0002	0.47	0.47	<0.0002	-
Perylene	mg/L	0.00005	-	-	<0.00005	-
Phenanthrene	mg/L	0.0001	-	-	<0.0001	-
Pyrene	mg/L	0.00005	0.71	0.71	<0.00005	-
Volatile Organic Compounds (VOCs)						
1,1,1-Trichloroethane	mg/L	0.001	10	10	<0.0010	<0.0010
1,1,2,2-Tetrachloroethane	mg/L	0.0005	0.0034	0.0034	<0.00050	<0.00050
1,1,2-Trichloroethane	mg/L	0.001	0.012	0.012	<0.0010	<0.0010
1,1-Dichloroethane	mg/L	0.002	3.7	3.7	<0.0020	<0.0020
1,1-Dichloroethene	mg/L	0.0005	0.014	0.014	<0.00050	<0.00050
1,2-Dibromoethane (Ethylene Dibromide)	mg/L	0.0002	0.00034	0.00034	<0.00020	<0.00020
1,2-Dichloroethane	mg/L	0.001	0.005	0.005	<0.0010	<0.0010
1,2-Dichloropropane	mg/L	0.0005	0.0099	0.0099	<0.00050	<0.00050
Bromodichloromethane	mg/L	0.001	0.1	0.1	<0.0010	<0.0010
Bromoform	mg/L	0.001	0.1	0.1	<0.0010	<0.0010
Bromomethane	mg/L	0.0005	0.033	0.051	<0.00050	<0.00050

Table E-8: Quality Assurance/Quality Control - Equipment Blank and Trip Blank Analytical Results

					Field ID	EQUIPMENT BLANK	TRIP BLANK
					Date	2022-05-17	2022-05-17
					Sample Type	Normal	Normal
	Unit	EQL	NS Tier I EQS Com/Ind Potable Coarse	NS Tier I EQS Com/Ind Potable Fine		
Carbon tetrachloride	mg/L	0.0005	0.002	0.002	<0.00050	<0.00050
Chlorobenzene	mg/L	0.001	0.08	0.08	<0.0010	<0.0010
Chlorodibromomethane	mg/L	0.001	0.19	0.19	<0.0010	<0.0010
Chloroethane	mg/L	0.008	-	-	<0.0080	<0.0080
Chloroform	mg/L	0.001	0.08	0.08	<0.0010	<0.0010
Chloromethane	mg/L	0.008	0.038	0.038	<0.0080	<0.0080
cis-1,2-Dichloroethene	mg/L	0.0005	0.07	0.07	<0.00050	<0.00050
cis-1,3-Dichloropropene	mg/L	0.0005	0.0067	0.0067	<0.00050	<0.00050
Dichloromethane	mg/L	0.003	0.05	0.05	<0.0030	<0.0030
Methyl tert-Butyl Ether (MTBE)	mg/L	0.002	-	-	<0.0020	<0.0020
Styrene	mg/L	0.001	0.1	0.1	<0.0010	<0.0010
Trichloroethene	mg/L	0.001	0.005	0.005	<0.0010	<0.0010
Tetrachloroethene	mg/L	0.001	0.01	0.01	<0.0010	<0.0010
Trihalomethanes	mg/L	0.001	-	-	<0.0010	<0.0010
trans-1,2-Dichloroethene	mg/L	0.0005	0.1	0.1	<0.00050	<0.00050
trans-1,3-Dichloropropene	mg/L	0.0005	-	-	<0.00050	<0.00050
Trichlorofluoromethane	mg/L	0.008	-	-	<0.0080	<0.0080
Vinyl chloride	mg/L	0.0005	0.002	0.002	<0.00050	<0.00050
Semi Volatile Organic Compounds (SVOCs)						
1,2,4-Trichlorobenzene	mg/L	0.0001	-	-	<0.0001	-
1,2-Dichlorobenzene	mg/L	0.0005	0.2	0.2	<0.0005	<0.00050
1,3-Dichlorobenzene	mg/L	0.0005	0.059	0.059	<0.0005	<0.0010
1,4-Dichlorobenzene	mg/L	0.0005	0.005	0.005	<0.0005	<0.0010
3,3-Dichlorobenzidine	mg/L	0.0005	-	-	<0.0005	-
Bis(2-chloroethyl)ether	mg/L	0.0005	-	-	<0.0005	-
Hexachlorobenzene	mg/L	0.0001	-	-	<0.0001	-
Hexachlorobutadiene	mg/L	0.0001	-	-	<0.0001	-
Energetics						
2,4-Dinitrotoluene	mg/L	0.0003	-	-	<0.0003	-
2,6-Dinitrotoluene	mg/L	0.0003	-	-	<0.0003	-
Anilines						
4-chloroaniline	mg/L	0.001	-	-	<0.001	-
Phenolics						
2,3,4,5 & 2,3,4,6-Tetrachlorophenol	mg/L	0.001	-	-	<0.001	-
2,3,6-Trichlorophenol	mg/L	0.0005	-	-	<0.0005	-
2,4,5-Trichlorophenol	mg/L	0.0002	-	-	<0.0002	-
2,4,6-Trichlorophenol	mg/L	0.0002	-	-	<0.0002	-
2,4-Dichlorophenol	mg/L	0.0001	-	-	<0.0001	-
2,4-Dimethylphenol	mg/L	0.0005	-	-	<0.0005	-
2,4-Dinitrophenol	mg/L	0.002	-	-	<0.002	-
2-Chlorophenol	mg/L	0.0001	-	-	<0.0001	-
Pentachlorophenol	mg/L	0.0001	0.06	0.06	<0.0001	-
Phthalates						
Bis(2-ethylhexyl) phthalate	mg/L	0.001	-	-	<0.001	-
Diethylphthalate	mg/L	0.0001	-	-	<0.0001	-
Dimethyl phthalate	mg/L	0.0001	-	-	<0.0001	-

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Coarse
Nova Scotia Environment, September 2021, NS Tier I EQS Com/Ind Potable Fine

Contents of Appendix F have been removed due to document upload size limitations, please contact Build Nova Scotia to obtain Appendix F contents

Appendix F

Laboratory Certificates of Analysis

Appendix G

NSE Checklist

Notification of Free Product or Contamination

This form is for all sites with contamination or free product requiring written notification.

NOVA SCOTIA

☑ New submission ☐ Updated form NSE file number (mandatory for updated form) **33000-** _____

Instructions for completing this form

- All relevant sections of this form are to be completed.
- Signatures on this form are required from the managing site professional or any other person providing the notice.
- All regulatory protocols must be followed, and all forms/checklists must be completed separately for each property. This means that a source property and an impacted third-party property must have all documents filed separately. Once the source property or impacted third-party property is identified by the check box below, all subsequent reference on this form/checklist are to that site owner.
- If cleanup is being completed following the 30-day verification exemption, this form will not be required.
- Forms/checklists must be complete before filing.

1 - Site Location and Contact Information

Details provided on this form are applicable to ☑ Source Property **or** ☐ Impacted Third Party Property

Site Location
Mandatory must be completed.

Site Address 2412 Loch Lomond Road | City Enon, NS
Parcel Identification Number (PID) 15551369, 15340045, and 15340052 | Postal Code
GPS (NAD83 UTM coordinates, source central point) Easting 691265.71 | Northing 5075355.69
Zone (select one) ☐ 19 ☑ 20 ☐ 21
Description (optional) Former Enon Mill Site

Property Owner
Mandatory must be completed.

Name Karen Gatien Deputy Minister Dept Natural Resources & Renewables | Phone (902) 424-4450
Email Karen.Gatien@novascotia.ca | Fax
Recognized Agent (if applicable) Donnie Burke, Executive Director (donnie.burke@novascotia.ca)
Company Name (if applicable) Nova Scotia Lands Inc. | City Sydney, NS
Mailing Address 45 Wabana Court, P.O. Box 430, Station A | Postal Code B1P 6H2
Preferred method of correspondence (select one) ☐ Letter **or** ☑ Email

Contact for Correspondence
If different than above.

Name Peter Geddes, Executive Director | Phone (902) 424-4988
Email Peter.Geddes@novascotia.ca | Fax
Recognized Agent (if applicable)
Company Name (if applicable) Dept of Natural Resources and Renewables | City Halifax, NS
Mailing Address 1701 Hollis Street, P.O. Box 698 | Postal Code B1P 0B9
Preferred method of correspondence (select one) ☐ Letter **or** ☑ Email

Site Professional
Mandatory must be completed.

Name Andrew Thalheimer, P. Eng. | Phone (902) 450-5015
Email athalheimer@dillon.ca | Fax (902) 450-2008
Company Name Dillon Consulting Limited | City Halifax, NS
Mailing Address 137 Chain Lake Drive | Postal Code B3S 1B3
Professional Registration Number 8147
Preferred method of correspondence (select one) ☐ Letter **or** ☑ Email

Notification of Free Product or Contamination

This form is for all sites with contamination or free product requiring written notification.

NOVA SCOTIA

Person Providing Notice If different than above.

Name _____ Phone _____

Email _____ Fax _____

Recognized Agent (if applicable) _____

Company Name (if applicable) _____ City _____

Mailing Address _____ Postal Code _____

Preferred method of correspondence (select one) ☐ Letter **or** ☐ Email

Are there any impacted third-party properties? ☐ Yes ☑ No

Impacted Third-Party Property Information

Applicable to Source Property Notifications only.

Site Location Mandatory must be completed.

Site Address _____ City _____

Parcel Identification Number (PID) _____ Postal Code _____

GPS (NAD83 UTM coordinates, source central point) Easting _____ Northing _____

Zone (select one) ☐ 19 ☐ 20 ☐ 21

Description (optional) _____

Source Property Information

Applicable to Third-Party Property Notifications

Site Location Mandatory must be completed.

Site Address _____ City _____

Parcel Identification Number (PID) _____ Postal Code _____

NSE Source File Number 33000- _____ ☐ Unknown Source Property

GPS (NAD83 UTM coordinates, source central point) Easting _____ Northing _____

Zone (select one) ☐ 19 ☐ 20 ☐ 21

Description (optional) _____

2 - Notification of Free Product in Soil or Groundwater

This section is not applicable if no Free Product has been identified as defined in PRO-100, Notification of Contamination Protocol.

Type of free product Check all applicable.	**Observed in Soil**	**Measured in Groundwater**
Gasoline	☐	☐
Fuel Oil (No. 2)	☐	☐
Lube Oil	☐	☐
Hydrocarbon mixture	☐	☐
Mineral oil	☐	☐
Glycols	☐	☐
DNAPL and Chlorinated Solvent	☐	☐

Type of free product Check all applicable.	**Observed in Soil**	**Measured in Groundwater**
Other (describe)	☐	☐

3 - Type of Contamination in Soil, Sediment, Surface Water or Groundwater

Type of Contamination Check all applicable.	**Soil**	**Sediment**	**Surface Water**	**Groundwater**	**Volume of release** (not vol. of media impacted)
Inorganic Parameters (metals)	☑	☑	☑	☑	Unknown
Petroleum Hydrocarbon Parameters	☐	☐	☐	☐	
Polycyclic Aromatic Hydrocarbon (PAH) Parameters	☐	☐	☐	☐	
Volatile Organic Compound (VOC) Parameters	☐	☐	☐	☐	
Pesticides	☐	☐	☐	☐	
PCBs	☐	☐	☐	☐	
Dioxins and Furans	☐	☐	☐	☐	
Pentachlorophenol	☐	☐	☐	☐	
Organotins	☐	☐	☐	☐	
Glycols	☐	☐	☐	☐	
Phenol	☐	☐	☐	☐	
PFAS compounds	☐	☐	☐	☐	
Other (describe)	☐	☐	☐	☐	

Add Row Delete Row

4 - Site Characterization

Cause of Release Other (discharge, historical, unknown)

Most Sensitive land use

☐ Agricultural ☑ Commercial
☐ Residential/Parkland ☐ Industrial

Groundwater potability of site (potable or non-potable according to Appendix 1, Figure 3 of Notification Protocol)

☑ Potable ☐ Non-potable

Check all that apply.

- ☐ Yes ☑ No Property is a Registered Public Drinking Water Supply
- ☐ Yes ☑ No Property is within Municipal drinking water source protection area
- ☑ Yes ☐ No Is contamination known or suspected to directly impact surface water or sediment?
- ☐ Yes ☑ No Is contamination known or suspected to directly impact a drinking water supply on or off the site?
- ☐ Yes ☑ No Are volatile contaminants known or suspected to affect indoor building spaces requiring immediate or short-term actions for the protection of health or safety on or off the site?
- ☑ Yes ☐ No Is contaminated soil at ground surface in an area where receptors could be exposed?
- ☐ Yes ☑ No Are immediate actions necessary to protect people or the environment from known contamination at the site?
  - ☐ Yes ☐ No If yes, are maintenance of any exposure management controls required?
  - ☐ Yes ☐ No If yes, conditions associated with the maintenance of any exposure management controls and monitoring have been documented, provided and explained to the applicable site owner, and are attached to this form.

5 - Signatures

Confirmation that notifications have been made in accordance with Section 8 and 9 of the Contaminated Sites Regulations.

☑ All known impacted property owners (source and third party)

Name (print) Andrew Thalheimer, P. Eng. Professional Registration Number/Stamp 8147

Site Professional

Signature Andrew H Thalheimer, P.Eng. Digitally signed by Andrew H Thalheimer, P.Eng. Date: 2022.09.12 08:48:42 -03'00' Date 2022/09/12

Site Professional YYYY/MM/DD

Name of Person Providing Notice (if different than above) (print) _____

Signature _____ Date _____

YYYY/MM/DD

Return completed form and associated documents to your local Nova Scotia Environment Office.
Find office locations online novascotia.ca/nse/dept/regional-office-locations.asp or call 1-877-936-8476

Appendix H

Remedial Options

Technical Memo

To: Cory MacPhee, P.Eng.

From: Michael Charles

cc: Nadine Wambolt

Date: October 7, 2022

Subject: Lake Enon, Preliminary Remedial Options (FINAL)

Our File: 22-3723

As requested, we have prepared the following remedial options review and recommended approach for the former Lake Enon facility. There are several options that could be applied; however, we believe that a major remediation effort for the entire site may not be necessary provided a successful outcome of a recommended site specific risk assessment and possibly addressing local areas with high metals impacts.

Summary of Site Conditions

The site is generally covered with rock and limited soil. There is limited vegetation in the central areas of the site, although trees and shrubs are noted intermittently and around the site boundary. Key aspects about the site in considering potential remedies are as follows:

- The site is to remain commercial industrial use;
- The site consists principally of coarse-grain soil and is categorized as potable; however, there are no on-site potable water supplies, and none are envisioned in the future;
- The selected remedial approach will not result in a future financial liability based on current provincial environmental guidelines and protocols; and
- The site is essentially deforested, empty gravel area offering little productive ecological habitat.

Following the initial Phase I/II Environmental Site Assessment work, Dillon completed a qualitative risk review of the site to identify relevant contaminants of concern (CoCs), media, pathways, receptors and potential risk Attachment 1. The review was based first on assessing the soil, sediment and water data to provincial Nova Scotia Contaminated Sites Regulations (NSCSRs) Tier 1 Environmental Quality Standards (EQS), and in some cases assessing the Tier 2 guidance. A summary of the qualitative review is presented in Table 1.

Table 1: Summary of Site Risks

Environmental Media	CoC	Active Pathway	Receptor	Carried Forward
Groundwater	MW5: Sr, MW7: Mn, Sr Other Wells: Co, Sr, Mn	Groundwater to surface water/lake	Freshwater aquatic life	Possible
Surface Water	Al, Cd, Pb, Zn	Runoff to lake Recreational User Ingestion	Freshwater aquatic life	Yes
Sediment	Lake: Mn, Pb, Cd, Zn Site Ponds: Cd, Cu, Pb, Se, Ag, Zn	Direct contact Ingestion	Freshwater aquatic life Trespasser	Yes
Soil	Over Tier 1: Be, Cd, Mn, Pb, Sr, Se Over Tier 2 - Soil Contact or background: Pb, Sr, Mn (see note)	Direct contact Ingestion	Trespasser Worker Ecological	Yes

Note: Soil parameters were compared to Tier 1, and where found to exceed were then compared to background and then Tier 2 pathway specific guidelines; only Tier 2 exceedances are noted in Table 1. See Attachment 1 for details

Strontium was found in groundwater but not in lake surface water samples. Strontium in surface water may not be ultimately carried forward depending on the outcome of future recommended groundwater sampling (groundwater to surface water pathway may not be complete), as the only environmental monitor well where potential issues were present had limited water (i.e., MW5) after the purging recovery period (and results may be reflective of sediment in the well disturbed during sampling); additional sampling is recommended before groundwater is carried forward.

In addition to chemical risks, physical hazards such as scrap metal, empty drums and steep embankments (generally less than 2.5 to 1) may need to be addressed. The extent and need for embankment reshaping will be made once more detailed local topography and site evaluations are made in future.

Remedial Option Considerations

The un-forested area of the site is approximately 17.2 hectares including a large settling pond measuring approximately 650 m^2. Based on the distribution of soil impacts and the likelihood that soil has been placed, reworked and possibly moved on several occasions over the site history, rock and soils with heavy metal impacts are likely present above Tier 1 guidelines throughout. Based on monitor well and borehole data, the impacted rock and soil likely extend at least seven to ten meters, so the total volume is in the order of 1.7 million m^3. Based on the Phase II ESA data, APEC 11, and possibly portions of adjacent APEC 10 exceed Tier 2 environmental soil guidelines and will likely need to have some form of remediation (depending on the outcomes of a risk assessment).

Potential remedies were considered but subsequently dismissed from further consideration as noted:

1. No further action: this option would assume the site is left as is and assumes that the current conditions of the site do not represent a chemical or physical hazard. In addition, the option assumes that there is no adverse effects to the lake from past deposition of tailings, and that no future loss of contaminated site tailings/fines will occur. This option was not carried forward as, although no industrial activity has occurred on site for several decades, there are sediment impacts off shore and there is no data to demonstrate further loss of fines to the environment will not occur. In addition, surface soils in some areas have very high metal concentrations (up to 12,000 mg/kg lead APEC 11 in surface soils to depth up to 0.6m below grade), which present a potential risk to both human and ecological receptors.
2. Excavation, transport and off-site disposal of metal impacted soil and sediment. This option would be extremely expensive given the volume of waste rock and tailings (~1.7millon m^3), and could create a greater environmental risk to the adjacent lake during execution of work due to likely loss of contaminated fines. Further, a new receiving facility would likely need to be built and permitted to accept the material.
3. Infilling the tailings and sediment pond, infilling wetlands and standing water areas, regrading the entire site followed by placement of organic fill and hydroseed. This option would require the existing tailings pond and secondary pond to be dewatered completely to allow pond infilling and prevent loss of contaminated water and suspended sediments to the lake. The cost to construct a treatment facility and importing clean fill cap and topsoil to cover a reshaped/flattened site would be expensive.
4. Construction of an on-site landfill to contain excavated impacted rock, soil, and sediment. In addition, the existing tailings and surface water ponds would need to be excavated and impacted material placed in the landfill along with other soil and fill brought to site to infill the ponds. This option would require a new landfill to be constructed to contain the large volume of impacted rock and soil. Waste rock and tailings would be placed within the landfill. The footprint of an on-site landfill would likely exceed the available space within the site boundaries. This option would also be expensive and would require perpetual monitoring, care and maintenance.

Based on the initial data obtained in the Phase II ESA, Dillon recommends further consideration of the following remedial approach:

1. Completion of a quantitative risk assessment and benthic habitat study to develop site specific target levels (SSTLs) for sediments, soil and water.
2. Removal of metal surficial debris.
3. Complete a detailed site topographic profile and identify embankments greater than 2.5:1. Complete a geotechnical assessment of long-term slope stability of steep embankments (less than 2.5:1) and regrade select areas to promote long-term stability.
4. Redirecting existing drainage pathways coming from off-site areas away from the main Settling Pond including the existing culvert conveying periodic flows from the brook across Lock Lomond Road.
5. General shaping and grading of the site to control surface drainage (where needed).
6. Shaping and grading APEC 11, and possibly portions of APEC 10, capping with a minimum 350mm thick common fill cover followed by placement of 150mm topsoil and hydroseed.
7. No requirements for capping areas exhibiting COCs with concentrations below the SSTLs with a topsoil/vegetation.
8. Constructing a perimeter fence around the site.
9. Long-term monitoring over 25 years using a graduated frequency.

Although lead concentrations were screened against the regional background values and the Mineral Occurrence Database, lead concentrations were frequently noted above the Tier I EQS and the site background samples. The proposed remedy assumes the site will remain undeveloped in the future and access will remain restricted. If future development is to occur that would change the land-use (i.e., from former mine/mining operation), disturb the soils, or change the fencing configuration such that access is not restricted (i.e., permits common user access), lead in soil should be managed to prevent unacceptable risks due to inhalation (e.g., dust) or soil contact.

Depending on the outcomes of recommended supplementary sampling, this option may also include infilling the secondary pond (APEC 7) and constructing a passive engineered wetland to filter contaminated suspended sediments remobilized during peak flow events. Sizing and practical implementation of a wetland would depend on a more detailed assessment of site flow, peak flow surface water chemistry, and site topography.

Depending on outcomes of the fall sampling program, the proposed remedy may also include excavating and relocating the large soil stockpile across Lock Lomond road (APEC 5) and possibly impacted surface soil from APEC 12 north of the stockpile to consolidate impacted material within the main site footprint. This latter option would reduce potential exposure from trespassers and eliminate the need to construct additional fencing around the perimeter of APEC 5 and APEC 12.

Once site restoration is completed, a surface water quality monitoring program would be required to confirm the effectiveness of the remedy. Based on initial estimates, the surface water monitoring would include any direct discharge point(s) from the site (such as culverts) as well as the Tailings Pond, the secondary pond, and designated areas in the lake. Frequency of annual surface water sampling events following completion of site construction works are estimated as follows:

- Year 1, 2, 3, 4, 5 once annually;
- Year 7, 10 once annually; and
- Year 15, 20, and 25 once annually.

Sampling would be discontinued providing trends in key indicator compounds remain stable or are declining over four consecutive sampling events. If increasing trends are being detected, an assessment of the site conditions would be completed and the frequency of testing adjusted as recommended at that time. During each sampling event, a site inspection would also be completed to confirm there are no adverse physical changes to the site, such as embankment sluffing or erosion.

At this stage of the assessment, we recommend the following supplemental studies be undertaken to better refine this liability estimate.

1. Obtain supplemental surface soil background data to help inform the risk assessment.
2. Conduct a hydrologic and sediment transport study to determine if contaminated sediments and fines are being transported off-site to the adjacent lake (including two large storm events and a spring freshet event). Also confirm existing overall site drainage characteristics including the brook and culvert to determine the extent and requirements to control future long-term surface water flow within the context of the whole Site.
3. Complete the Risk Assessment.
4. Complete a Benthic Habitat Assessment for the lake.

As noted previously, the qualitative risk review is included in Attachment 1.

ATTACHMENT 1

Lake Enon: Former Lead, Selenium, Barium Ore Processing Facility

The following table summarizes potential CoCs, operable pathways, potential receptors, exceedance details an discussion/recommendations for metal impacts across the site and the adjacent lake receiving environment.

Elevated manganese may be due to local geology and organic degradation processes; both soil and sediment data needs to be closer evaluated for manganese if it is to be advanced as a CoC.

Key pathways to consider are soil contact (trespassers), sediment/erosion loss to ponds and subsequently through a culvert to the lake, or directly to the lake along the shoreline. In addition, it is apparent that historic deposition of metals including cadmium, copper, lead, selenium, silver, and zinc have resulted in impacts to off-shore sediments if compared to the Tier 1 guidelines. There is some evidence that dissolved metals from the rock dump adjacent to the shoreline (MW5 of APEC 2) may also be discharging to the lake. However, another round of sampling should be done to confirm this outcome (note that groundwater Tier 1 is groundwater-to-surface water check, but those metals identified were not found to exceed in the lake surface water).

Environmental Media	CoC's	Potential Pathway	Receptor	Pathway Complete	Notes	Discussion and Recommendation
Groundwater	Near-shoreline wells: MW5: Sr MW7: Sr, Mn Other wells: Co, Sr, Mn	Groundwater to off-site potable water wells.	Off-site groundwater well, adjacent residential properties	No	Cobalt only found locally in MW3, MW4 within the upgradient area of site. Downgradient wells had levels below Tier 1. Strontium is found 10x Tier standards (groundwater to surface water check) in MW3, MW4, and MW5. Groundwater gradients indicate site groundwater is directed to the site ponds or the lake. No gradients are directed off-site. Note strontium is below Tier 1 standards in lake surface water (and all other surface water samples from site). Manganese (above aesthetic objective) present in all but MW5 (adjacent to the lake) and MW8 (adjacent to off-site properties).	Possibly No Action. If we compare near-shoreline monitor wells MW5 and MW7 chemistry to FWAL surface water guidelines, Cu, Pb, Sr and Zn would exceed. However, lake samples (SW2 SW3) near the shoreline do not have exceedances to the FWAL guidance. There was limited sample recovery from MW5 so the data may be suspect and should be retested in the fall to confirm. Groundwater pathway to human receptors incomplete.
		Groundwater to lake	Freshwater aquatic organisms	No	None of these parameters are above guidelines in the lake (SW1, SW2, and SW3). However, in groundwater in near-shoreline wells MW5	
Surface water	Al, Cd, Pb, Zn	Ingestion/bio-uptake	Freshwater aquatic organisms. Recreational User	Yes	Lake: Aluminum in the lake, off-shore concentrations similar to the background reference sample (from north end of Lake Enon). No action recommended Lead is just marginally above guideline in the lake background concentrations (0.0018 vs 0.001 mg/L). Well below of surface water adjacent to site. Main Tailings Pond (APEC 6: SW8) Zinc, lead and aluminum are above FWAL guidelines. Aluminum is 10x higher than downgradient receiving pond APEC7. Zinc and lead concentrations are similar in Tailings Pond to APEC7 Secondary Pond (APEC 7: SW4, SW5) Cadimium, lead, and zinc exceed FWAL, but these are not seen downgradient in the lake above guideline.	APEC 7 (secondary pond) may have seasonal variations in water quality, especially during the spring freshet or intense rainfall events. Follow-up sampling is recommended to determine if there are periods where impacted water or sediments are being discharged to the lake through the culvert. May benefit by installing a flow meter to see how "spikey" the discharge is in peak rain of freshet. While the lake does not have elevated metal concentrations above guidelines, the discharge from APEC 7 will need to be either risk assessed or the Tailings Pond and Secondary Pond (APEC7) will need to be infilled. If infilled, some form of engineered wetland or passive filtration would be needed to remove remnant suspended sediments from entering the lake after remediation due to upgradient surface water discharges from the site in general.

Environmental Media	CoC's	Potential Pathway	Receptor	Pathway Complete	Notes	Discussion and Recommendation
Sediment	Cd, Cu, Pb, Se, Ag, Zn	Ingestion, bio-uptake Ingestion	Benthic invertebrates, freshwater organisms Recreational swimmers (note this needs to be checked as part of a risk assessment, as there are no NSE guidelines for swimmer ingestion)	Yes	Lake Sediments Manganese in the lake may be due to natural depositional material. Background sample is 2x that of NS Tier 1. Lead is 2-5 times guideline offshore. Highest lake sediment concentration (SW3) is near the outfall from APEC 7, declines with distance to SW2. APEC 7 (secondary pond) has high lead up to 5000 mg/kg (upgradient tailings pond has 5700 mg/kg). Cadmium and silver both analytically equivalent to the guideline for SW2, but 2x guideline by outfall sample (SW3) near discharge of APEC 7. Zinc is 2-3 times guideline and 3-5x background in off-shore samples APEC 7 Secondary Pond Cadmium, copper, lead, selenium, silver, zinc up to 10x the guideline and background. Tailings Pond (Sed9) Cadmium, copper, lead, selenium, silver and zinc all 2 to 9 times guidelines. Except for copper, concentrations are similar to the downstream secondary pond (APEC 7)	Sediments are generally highest in the secondary pond (APEC 7) although many parameters are of similar order of magnitude above the guidelines for both the Tailings Pond and the Secondary Pond. Sediment metals concentrations decrease at the lake sampling station off-shore of the outfall (SW3) and further drop with distance (SW2). Remedial options could include removal, or conducting human health and ecological risk assessment including a benthic habitat study to determine if elevated metal concentrations are resulting in adverse effects to the freshwater habitat or to recreational swimmers. If the risk assessment determines there is no residual risk to elevated metals concentrations. For the Secondary Pond (APEC 7), it may be necessary to cap existing impacted material and possibly cap them and construct a passive engineered wetland treatment system over the footprint to collect surface water flows and remove suspended particulate derived from the upgradient Tailings Pond and general site surface water drainage. A study will be needed to confirm whether sediments are remobilized during high flow events. This would include both a flow study and chemistry (peak flow)
Soil	Over Tier 1: Ba, Cd, Mn, Sr, Zn Over Tier 2 Soil Contact Check (and local/regional background values): Pb, Sr, Mn	Soil Contact (note, other pathway checks such as soil to groundwater leaching measured directly via groundwater or surface water analysis)	Trespasser	Yes	Lead exceeded the Tier 2 soil contact check guidelines for 22 of 375 samples analysed. [carried forward] Strontium exceeded the Tier 2 soil contact check guidelines for 10 of 35 samples analysed. [carried forward] Manganese exceeded the Tier 2 soil contact check guidelines and the local background reference sample (MW1) for 11 of 34 samples analysed. [carried forward] Barium did not exceed the Tier 2 soil contact check guidelines. Barium was not found in groundwater above Tier 1 guidelines (i.e., did not exceed the groundwater to surface water check). Cadmium was not found in groundwater above Tier 1 guidelines (leaching to potable groundwater check) and was below the Tier 2 soil contact check guidelines. Zinc was at least 10x below the Tier 2 soil contact check guidelines and not found in groundwater.	In general, samples where lead was exceeded also had strontium. The majority of samples were from the surface to near surface. Lead was highest (12,000 mg/kg) at TP8 and TP9 in the former rock dump (APEC 11). Preliminary thoughts: a deeper assessment through risk assessment is needed to determine if options such as "fencing the site" or remediating select portions to some SSTL could be done. Without that, regrading and capping the entire site (~17.5 hectares) including infilling the main settling pond (with a depth of 7m) would be necessary, followed by placement of a vegetative cover. The volume of cover fill would be approximately 87,000 m3 assuming a cover thickness of 0.5m plus approximately 84,000 m3 to infill the settling ponds (max depth 7.5m, avg estimated as 3m) for a total of 171,000 m3 (~342,000 tonne). To supply and place common fill alone (not including water treatment to drain the ponds) is approximately $8.5million (assuming a supply and place cost of common fill at $25/tonne) Surprisingly the other minerals processed here (barium and selenium) were not a soil issue.

Notes:

1) CoCs based on exceedance to NSE Tier 1 Guidelines

References

Dillon, Phase I Environmental Site Assessment Updated Draft, Lake Enon Former Mill Site, Enon, Nova Scotia, PID Nos. 15551369, 15340045, and 15340052, August 2022.

Environmental Site Assessment for Limited Remediation Protocol, Adopted by the Minister of Environment Pursuant to the Contaminated Sites Regulations, September 2021.

Nova Scotia Maximum Concentration Background Levels for the Highlands Soil Zone as presented in the Environment Canada's (EC) Background Soil Database (Version No. 1) (March 2011).

Stea, R.R., Conley, H., and Brown, Y. (compilers) 1992: Surficial Geology of the Province of Nova Scotia; Nova Scotia Department of Natural Resources, Map 92-3, Scale 1:500,000.

S.M. Barr, C.E. White (compilers) 2017: Bedrock Geology Map of the Grand Narrows Area, NTS 11F/15, Cape Breton, Inverness, Richmond and Victoria Counties, Nova Scotia; Nova Scotia Department of Natural Resources, Map ME 2017-014, Scale 1:50,000.

The Canadian Standard Association (CSA) Standard Z769-00 for Phase II ESAs CSA, (reaffirmed in 2018).