Appendix D

Ancillary Studies

DILLON CONSULTING

DILLON CONSULTING

BUILD NOVA SCOTIA

Habitat Assessments, Lake Enon Former Mill Site, Enon, Nova Scotia

December 2024 – 22-3723

DILLON
CONSULTING

275 Charlotte Street
Suite 206
Sydney, Nova Scotia
Canada
B1P 1C6
Telephone
902.562.9880
Fax
902.562.9890

December 19, 2024

Build Nova Scotia
Harbourside Place
45 Wabana Court
Sydney, Nova Scotia
B1P 0B9

Attention: Cory MacPhee, P.Eng.
Project Manager

2023 Habitat Assessments: Lake Enon Former Mill Site, 2412 Loch Lomond Road, Enon, Nova Scotia

Dillon Consulting Limited (Dillon) is pleased to provide this report to Build Nova Scotia as part of the human health and ecological risk assessment (HHERA) and ancillary assessment activities in association with the Lake Enon Former Mill property located at 2412 Loch Lomond Road in Enon, Nova Scotia. The purpose of this report is to present the results of the following environmental surveys completed in 2023:

- Benthic Habitat Assessment;
- Aquatic Habitat and Wetland Assessment; and,
- Terrestrial Habitat and Species at Risk Assessment.

Should you have any questions, please contact us.

Sincerely,

DILLON CONSULTING LIMITED

Kelly Regan, M.Sc.
Biologist, Associate

KSR:jes

Our file: 22-3723

Table of Contents

Figures

Tables

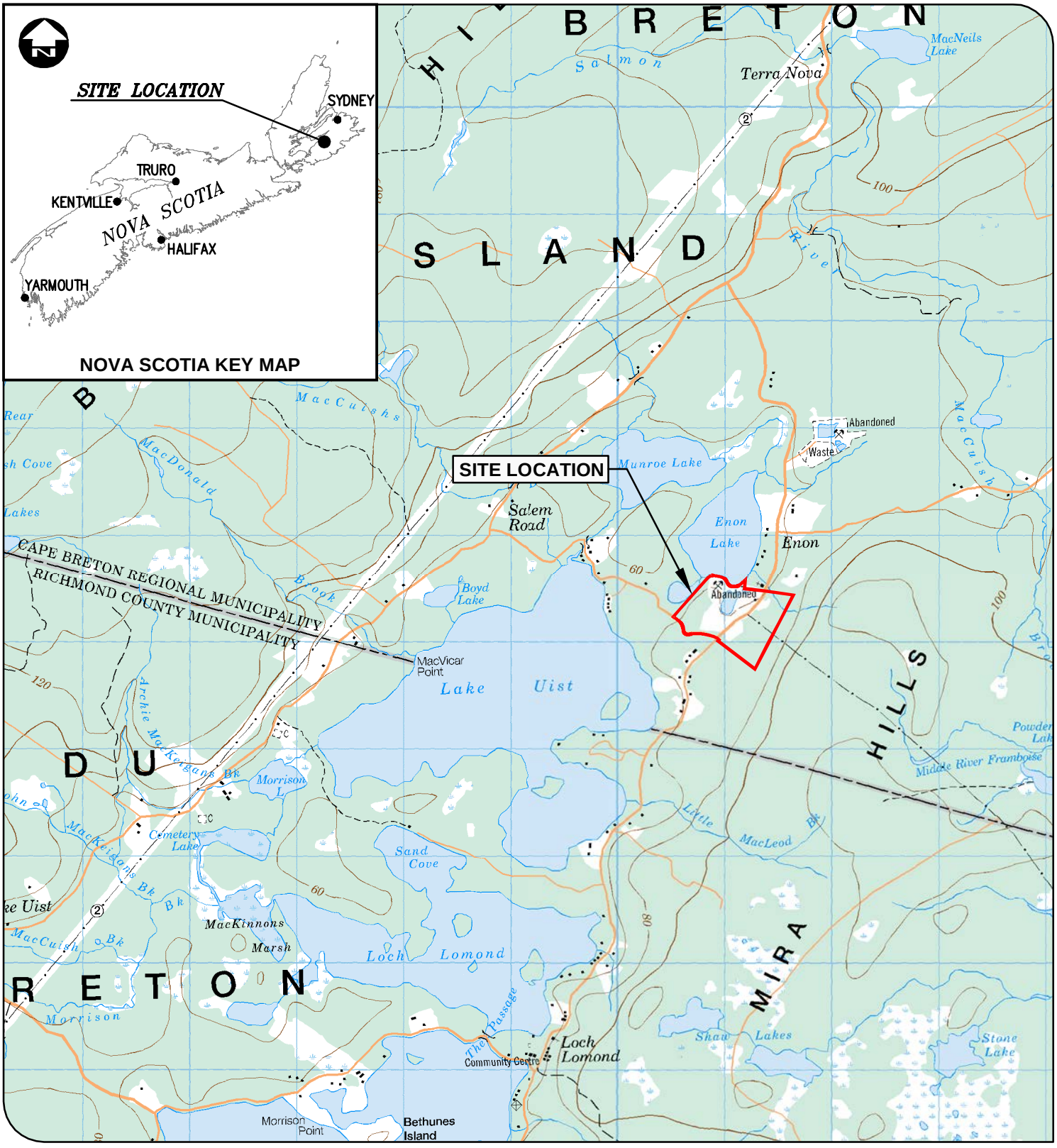
1.0 Introduction

Dillon Consulting Limited (Dillon) was retained by Build Nova Scotia, on behalf of the Nova Scotia Department of Natural Resources and Renewables (NSDNRR), to conduct a human health and ecological risk assessment (HHERA) for the Lake Enon Former Mill Property in Enon, Nova Scotia. The purpose of the habitat assessments is to characterize the available habitat on the site in order to provide technical information required for a HHERA.

The Lake Enon Former Mill (i.e., the Site) is located in Enon, Nova Scotia along Loch Lomond Road, approximately 50 kilometres (km) southwest of Sydney in the Cape Breton Regional Municipality (CBRM), and is situated adjacent to Lake Enon. The former mill site [Parcel Identification Designation Numbers (PID Nos.) 15551369, 15340045, 15340052] is owned by NSDNRR. The area of the site impacted by historical site activities comprises a smaller, localized portion of the site consisting of twelve (12) Areas of Environmental Concern (AECs) as identified in the Phase II Environmental Site Assessment (ESA). As exceedances are confirmed, the formerly labelled APECs are now referred to as AECs. The location of the Site is shown on **Figure D-1**, and the Site layout is shown on **Figure D-2**.

To inform the HHERA, ancillary assessment activities were conducted in July 2023, including the following:

1. A benthic habitat assessment of site-adjacent areas of Lake Enon. The purpose of this assessment is to have a record of the substrate and available habitat for relevant receptors within the near shore areas of Lake Enon. The benthic habitat assessment will also be used to evaluate the likelihood of aquatic species at risk (SAR) to be present (in addition to other receptors) and their exposure potential;
2. A survey of aquatic and wetland habitat areas within the study boundary. The purpose of the aquatic habitat and wetland assessment was to verify the presence of suitable habitat for amphibians and/or aquatic life receptors. Additionally, altering wetlands will be avoided if feasible; the mapped boundaries of wetlands will be required to alleviate adverse impacts during remediation (and will therefore be incorporated into the remedial action plan and remedial design as appropriate). Data obtained from the site visit will be used to assess the site suitability for SAR identified in the desktop assessment and will be used as a line of evidence in the Ecological Risk Assessment (ERA); and
3. A survey of terrestrial habitat and a desktop SAR assessment. The results of the priority species assessment include a description of suitable habitat for SAR and species of conservation concern (SoCC) fish with the potential to occur within the Site, as well as a summary identified potential habitat within the Site for those species.



BUILD NOVA SCOTIA
LAKE ENON FORMER MILL SITE
2023 HABITAT ASSESSMENT

SITE LOCATION MAP
FIGURE D-1

STUDY BOUNDARY

DILLON CONSULTING

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

CREATED BY: TLR
CHECKED BY: LJM
DESIGNED BY: RJE

File Location:
c:\pw working directory\projects
2022\dillon_50tlr\d0116416\223723-05-03_fig d-1.dwg
December, 18, 2024 1:30 PM

SCALE 1:50,000
0 250 500 1000m

N
W E
S

PROJECT: 22-3723

DATE: DECEMBER 2024

BUILD NOVA SCOTIA

LAKE ENON FORMER MILL SITE 2023 HABITAT ASSESSMENT

SITE PLAN AND STUDY BOUNDARY

FIGURE D-2

- STUDY BOUNDARY
- ASSESSMENT PROPERTIES
- PROPERTY LINE
- BERM
- DRAINAGE DITCH
- BROOK
- CULVERT
- OUTFALL
- VERTICAL DRAIN
- STEEP SLOPE
- AECs (AREA OF ENVIRONMENTAL CONCERN)

100 0 100

SCALE 1:6,000 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.

CREATED BY: TLR
CHECKED BY: LJM
DESIGNED BY: RJE

File Location:
c:\pw working directory\projects 2022\dillon_50tlr\d0116416\223723-05-03_fig d-2.dwg
December, 18, 2024 1:29 PM

DILLON CONSULTING

PROJECT: 22-3723

DATE: DECEMBER 2023

2.0 Methods

Prior to field assessments, Dillon reviewed readily-available public information from reputable sources to inform existing conditions of the Site and to guide the field surveys. Dillon completed a review of the following sources:

- Google Earth® satellite imagery;
- Atlantic Canada Conservation Centre Data Centre (AC CDC) Report 7760 for Lake Enon, Nova Scotia (AC CDC 2023a); and
- Publicly-available geographic information systems (GIS) map layers (NSDNRR 2023a).

High-resolution Google Earth imagery was available for the Site from July 2023, July 2017, April 2017, July 2012, and May 2007. The imagery was primarily reviewed for recent changes in land use (e.g., logging) and to identify landscape level features (e.g., topography, changes in vegetation regime) which could indicate a wetland.

2.1 Benthic Habitat Assessment

As part of the benthic habitat assessment, a biologist reviewed diver video and photographs, which were taken during the sediment sampling program on July 4, 2023. For each sample location, a brief description of the benthic substrate and, if visibility is suitable, benthic flora and fauna were visually identified.

2.2 Aquatic Habitat and Wetland Assessment

The aquatic surveys included a Watercourse/Fish Habitat Suitability Survey and Wetland Field Delineation. Field surveys of the aquatic habitats and wetlands for the Site were conducted on July 25 and 26, 2023 by Dillon biologists experienced in aquatic/fish habitat surveys as well as wetland identification and delineation.

2.2.1 Watercourses

A fish presence or absence visual survey was also conducted where fish habitat was present within the proposed Project area. Representative photos (provided in *Section 3.1*) and gloibal positioning system (GPS) points (using a handheld GPS unit and Arc Geographic Information Systems [ArcGIS] applications) were collected for each watercourse during the field assessments.

The presence and/or the potential presence of fish in each aquatic feature was evaluated based on visual confirmation of fish during field surveys, watercourse characterizations conducted during low and mid-stage flow conditions, and the desktop evaluation for fish species potentially present within the Site. The biophysical characteristics of each watercourse were evaluated for fish habitat potential based

on the habitat requirements for brook trout (*Salvelinus fontinalis*) and other acid-tolerant fish species with the potential to occur within the watercourses that enter the Site.

Suitable habitat characteristics, along with water quality to support aquatic species and direct observations of fish, were the basis of considerations on the likelihood of watercourses to support fish habitat. Watercourses were classed with the following descriptors:

- Unlikely to provide suitable fish habitat;
- May provide seasonally accessible fish habitat;
- Likely provides fish habitat; or
- Fish presence confirmed (i.e., fish observed).

An explanation was provided where fish habitat is possible but unconfirmed. Ephemeral streams and watercourses with barriers to fish passage were typically given a low rating, whereas permanent watercourses with direct observations of fish were given a higher rating for presence of fish habitat. Permanent or intermittent watercourses where fish were not observed that were considered likely to provide fish habitat, and/or contained seasonally-accessible fish habitat were also identified as such.

Water quality parameters were measured in-situ using a handheld YSI Professional Plus water quality meter (e.g., dissolved oxygen [DO], conductivity, water temperature, and pH). The Canadian Council of Ministers of the Environment (CCME) has published guidelines for pH and DO, which were used as indicators of suitability for aquatic life. Watercourses with pH and DO within the recommended range from the CCME for the protection of aquatic wildlife were considered to have a higher likelihood to provide suitable fish habitat. The CCME freshwater aquatic life (FWAL) range for pH is 5.0-9.0 and a minimum DO concentration of 6.5 mg/L is recommended for a watercourse to support cold water biota life stages (excluding early life stages) (CCME 1999).

During the aquatic habitat surveys, staff in the field recorded the locations of culverts and water flow directions using a handheld GPS to support a high-level understanding of Site flow paths and characteristics.

2.2.2 Wetlands

Wetlands present within the Site were delineated. The methods of wetland determination and delineation used in the wetland surveys are based upon established protocols for wetland delineation, in particular, the U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and the Northeast Regional Supplement (USACE 2012).

2.2.3 Wetland Sediment and Surface Water Sampling

Paired sediment and surface water samples were collected at four locations within wetlands on July 25 and 26, 2023. In-situ water quality parameters were collected in the water for dissolved oxygen (DO), specific conductivity, temperature and pH. Samples of surface water sediment were collected for metals

analysis and submitted to Bureau Veritas Laboratory in Sydney, Nova Scotia. The results will be compared to

2.3 Terrestrial Habitat and Species at Risk (SAR) Assessment

2.3.1 Desktop Review and Potential SAR List

Dillon reviewed documents, along with relevant federal and provincial guidance, and applicable regulations and legislation to develop a list of potential SAR and SoCC for the property. A site-specific AC CDC report was generated on July 7, 2023, and included historical observations of SAR and SoCC reported within 5 km of the Site's centre. For information purposes, the AC CDC report included historical SAR and SoCC observations from 100 km from the Site's centre, therefore it is important to note that some of species observed further from the site may not have suitable habitat present within the studied area. AC CDC data, the SAR registry (including applicable recovery strategies, action plans and management plans, including applicable provincial SAR management plans if federal plans not available), and available imagery and mapping were reviewed to inform the field visit and assessment.

The following definitions of SAR and SoCC applied to the assessment:

- Species at Risk (SAR): A species that is listed by the Nova Scotia *Endangered Species Act* (NSESA), or on Schedule 1 of the federal *Species at Risk Act* (SARA); and
- Species of Conservation Concern (SoCC) are those species that are not SAR but are listed in other parts of SARA, NSESA, by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), or are regionally rare or endangered by the Atlantic Canada Conservation Data Centre (AC CDC) (i.e., those species with AC CDC S-ranks of S1: Critically imperiled in province; S2: Imperiled in province; and S3: Vulnerable in province of Nova Scotia).

2.3.2 Terrestrial Habitat General Assessment

Prior to the Site visit, the biologists reviewed the results of previous soil sampling programs and the results of the desktop SAR screening assessment to identify areas prioritize during the visit. Terrestrial habitats within the Site were visually surveyed by Dillon biologists on July 25 and 26, 2023, with an emphasis on targeting terrestrial habitats with the potential to support sensitive species during the Site visit. During the biophysical assessment field surveys, Dillon biologists recorded visual observations of wildlife and other signs of wildlife in the form of dens, scat, browse marks, and/or wintering areas.

The survey timing coincided with the growing period when many priority species are expected to flower. A list of plant species for key habitats encountered within Site was recorded as a record of the baseline plant community. Although SAR or SoCC rare plants were not encountered, the procedure for rare plant of conservation status observation would include to record its location with coordinates recorded through the use of global positioning systems (GPS) and identified according to their status (e.g., provincially or nationally listed/COSEWIC listed/rare or uncommon).

3.0 Results

3.1 Benthic Habitat Assessment

A summary of the benthic habitat based on diver video and photographs collected during the sediment sampling program in July 2023 is presented in **Table 1**. The sample locations are shown on **Figure D-3**.

In general, the sediment of Lake Enon within the area that was assessed is soft and appeared to be silt and sand. Rocky substrate with a coating of silt was observed near the SED 13 sampling location. The vegetation was typical of freshwater lakes and dominated by common pond weeds and aquatic grasses. Floater mussels (*Pyganodon* spp.) were observed at many of the sediment sampling sites both embedded in the substrate and as shell debris.

BUILD NOVA SCOTIA

LAKE ENON FORMER MILL SITE 2023 HABITAT ASSESSMENT

BENTHIC HABITAT ASSESSMENT LOCATIONS

FIGURE D-3

- STUDY BOUNDARY
- ASSESSMENT PROPERTIES
- PROPERTY LINE
- BERM
- DRAINAGE DITCH
- BROOK
- CULVERT
- OUTFALL
- VERTICAL DRAIN
- STEEP SLOPE
- AECs (AREA OF ENVIRONMENTAL CONCERN)
- SEDIMENT AND/OR SURFACE WATER SAMPLE LOCATION

100 0 100

SCALE 1:6,000 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.

CREATED BY: TLR
CHECKED BY: LJM
DESIGNED BY: RJE

File Location:
c:\pw working directory\projects 2022\dillon_50tlr\d0116416\223723-05-03_fig d-3.dwg
December, 18, 2024 2:04 PM

DILLON CONSULTING

PROJECT: 22-3723

DATE: DECEMBER 2024

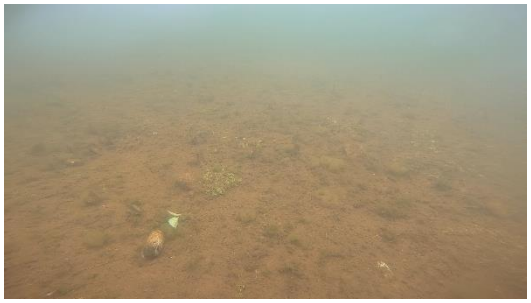
Table 1: Benthic Habitat Observations in Lake Enon

Location	Depth (m)	Substrate	Flora and Fauna	Representative Photo
SED11 (close to shore, adjacent to Site)	1.5	Very little substrate can be seen, silt is present on some vegetation. Extensive vegetation and sparse debris (organic, bivalve shells, etc.) and covering the substrate in this location.	*Nuphar variegata* (vareigated pond-lily) *Myriophyllum spp.* (*verticillatum, farwellii,* possibly both) *Vallisneria americana* (wild celery) *Potamogeton spp.* (*confervoides* or *foliosus*) *Pygonodon spp.* (Floater mussel)	
SED12 (close to shore, adjacent to Site)	<1	Soft, silty substrate with sparse vegetation and sparse debris (organic, bivalve shells, etc.).	*Vallisneria americana* (wild celery)	
SED13 (close to shore, north of Site)	<1	Mix of rocky and soft substrate. Sparse vegetation and sparse debris (organic, bivalve shells, etc.) with a layer of silt.	*Vallisneria americana* (wild celery) *Lobellia dortmanna* (water lobelia)	

Location	Depth (m)	Substrate	Flora and Fauna	Representative Photo
SED14/26 (close to shore, north of Site)	<1	Mix of soft and rocky substrate, very silty (large cloud at beginning of video). Sparse vegetation and extensive debris (organic, bivalve shells, etc.).	*Lobellia dortmanna* (water lobelia) *Myriophyllum spp.* *Potamogeton spp.* Colonial algae Pyganodon cataracta (Eastern floater)	
SED15 (north of Site)	3.7	Poor visibility. Soft, silty substrate with moderate debris (organic, bivalve shells, etc.).	Bivalves (possibly *Pygonodon spp.* floater mussel)	
SED16 (close to shore, northeast of Site)	2.5-3.5	Soft, silty substrate with sparse vegetation and sparse debris (organic, bivalve shells, etc.).	*Vallisneria americana* (wild celery) *Lobellia dortmanna* (water lobelia)	

Location	Depth (m)	Substrate	Flora and Fauna	Representative Photo
SED17 (towards middle of lake, further from Site)	4	Poor visibility. Soft, silty substrate with moderate debris (organic, bivalve shells, etc.).	Bivalves (possibly *Pygonodon spp.* floater mussel)	
SED18 (towards middle of lake, further from Site)	5.8	Poor visibility. Soft, silty substrate with moderate debris (organic, bivalve shells, etc.) including anthropogenic debris.	Bivalves (possibly *Pygonodon spp.* floater mussel)	
SED19 (further from Site)	4.6	Poor visibility. Soft, silty substrate with moderate debris (organic, bivalve shells, etc.).	Possibly living bivalves, likely *Utterbackiana implicata* (alewife floater)	

Location	Depth (m)	Substrate	Flora and Fauna	Representative Photo
SED20 (further from Site)	3	Soft, silty substrate with moderate vegetation and sparse debris (organic, bivalve shells, etc.).	*Myriophyllum spp.* *Potamogeton spp.* *Vallisneria americana* (wild celery) Bivalves (possibly *Pygonodon spp.* floater mussel)	
SED21 (towards middle of lake)	4.3	Soft, silty substrate with sparse debris (organic, bivalve shells, etc.).	None identified, bivalve shells	
SED22 (further from Site)	4.6	Soft, silty substrate with sparse debris (organic, bivalve shells, etc.).	*Pygonodon spp.* (floater mussels)	

Location	Depth (m)	Substrate	Flora and Fauna	Representative Photo
SED23 (further from Site, close to shoreline)	2.1	Soft, silty substrate with moderate vegetation and extensive debris (organic, bivalve shells, etc.).	*Myriophyllum spp.* *Potamogeton spp.* *Vallisneria americana* (wild celery) *Pygonodon spp.* (floater mussel)	
SED24 (far away from shore, far from Site)	5.8	Soft, silty substrate with sparse debris (organic, bivalve shells, etc.).	*Pygonodon spp.* (floater mussels)	
SED25 (close to shore, far from Site)	1	Soft, silty substrate with moderate vegetation and sparse debris (organic, bivalve shells, etc.).	*Lobellia dortmanna* (water lobelia) *Utterbackiana implicata* (alewife floater) *Pygonodon spp.* (floater mussel) Colonial algae	

3.2 Aquatic Habitat and Wetland Assessments

The Site is situated within the Grand Watershed (1FH), specifically the Grand River secondary watershed (1FH-5) which encompasses a drainage area of approximately 239 square kilometres; the Grand River generally flows southward towards the Atlantic Ocean. Local site drainage follows the topography of the Site and has been altered in some places with infilling and culverts; generally, Site drainage is toward Lake Enon.

Four watercourses and three wetlands were identified and assessed during the site visit on July 25 and 26, 2023, which were conducted within two and three days of significant precipitation. Precipitation data from the closest Environment and Climate Change Canada (ECCC) weather station to the site (i.e., Louisburg, Nova Scotia WMO#71596) was missing for the day prior to the delineation field visit. The Sydney, Nova Scotia weather station (WMO#71707) is 59 km northeast of the Site and reported >75 mm of precipitation between July 22 and 23, 2023 (ECCC 2023). The watercourses and wetland locations are shown below on **Figure D-4**.

BUILD NOVA SCOTIA

LAKE ENON FORMER MILL SITE
2023 HABITAT ASSESSMENT

WATERCOURSES AND WETLANDS WITHIN THE SITE

FIGURE D-4

- Wetland Sample Location
- Study Boundary
- Field Defined Watercourse
- AEC Area
- Presumed Wetland Extent
- Field Defined Wetland

SCALE 1:3,883

0 45 90 180 m

N
W E
S

MAP DRAWING INFORMATION:
DATA PROVIDED BY Build NS, GeoNova, ESRI

MAP CREATED BY: SCM
MAP CHECKED BY: KSR
MAP PROJECTION: NAD 1983 CSRS UTM Zone 20N

DILLON CONSULTING

PROJECT: 223723
DATE: 12/18/2024

FILE LOCATION: K:\GIS\2022\223723\Product\Client\Habitat Assessment\F4_Watercourses_and_Wetlands.mxd

3.2.1 Watercourses

Four watercourses and a drainage ditch were assessed on the Site. A summary of the observations and representative photos are presented below. The locations of the assessed watercourses and drainage ditch are presented above on **Figure D-4** and a summary of assessment parameters collected in the field are tabulated in **Table 2.**

Table 2: Watercourse Assessment Data Summary

Parameter	WC1	WC2	WC3	WC4
Wetted Width (m)	3.0	2.0	0.50	2.0
Channel Width (m)	4.0	3.0	1.0	3.0
Depth (m)	0.30	0.25	0.20	0.20
Substrate	Small gravel	Boulder	Boulder	Small gravel
Water Temperature (°C)	17.5	24.5	25.6	17.7
Dissolved Oxygen (DO) (mg/L)	9.82	7.59	6.87	8.39
Dissolved Oxygen (DO) (%)	102.6	91.1	84.1	88.1
Conductivity (µS/cm)	109	216	214	77
pH	6.85	7.18	7.19	7.02
Suitability for Fish Habitat	Confirmed (i.e., fish observed).	Confirmed (i.e., fish observed).	May provide seasonally accessible fish habitat	Unlikely to provide suitable fish habitat – fish habitat blocked downstream
Assessment Date	2023-07-26	2023-07-26	2023-07-26	2023-07-26

Further descriptions of each watercourse are as follows.

3.2.1.1 Watercourse 1 (WC1)

Watercourse 1 (WC1) is a permanent watercourse and drainage feature of the Site. Although fish were observed in this stream which flows northward into a culvert towards a human-made settling pond (AEC 7), fish passage is prevented upstream of this watercourse by rock and boulder infill. The stream has a substrate consisting of small gravel, and instream vegetation was absent. Limited cover is provided from the steep banks and herbaceous bank vegetation. The stream pH and DO measured in-situ were within the recommended ranges for freshwater aquatic life (FWAL) by the Canadian Council of Ministers

of the Environment (CCME). The stream is considered to provide suitable habitat for fish based on direct observations of fish; however, this watercourse is considered to not provide optimal browsing or rearing habitat for fish due to limited stream cover and passage to upstream watercourses.

Photos: Representative photos of Watercourse 1 (WC1) showing upstream (left) and downstream (right), July 26, 2023.

3.2.1.2 Watercourse 2 (WC2)

Watercourse 2 (WC 2) initiates from the outlet for a settling pond (AEC 7) and flows into Lake Enon. This watercourse is expected to support fish based on observations of fish in the settling pond. The stream pH and DO measured in-situ were within the recommended ranges for FWAL by the CCME. Stream cover is moderate and is provided by overhanging riparian vegetation that is dominated by shrubs. The boulder substrate is unlikely to support breeding; however, the stream is likely to support fish passage and foraging between Lake Enon and the human-made settling ponds.

Photos: Photos of Watercourse 2 (WC2) showing substrate (left) and upstream (right), July 26, 2023.

3.2.1.3 Watercourse 3 (WC3)

Watercourse 3 (WC3) initiates at the outlet for a settling pond (AEC 6) and flows into Lake Enon. The stream is likely to support fish passage between Lake Enon and the human-made settling pond. The stream pH and DO measured in-situ were within the recommended ranges for FWAL by the CCME. The narrow stream is surrounded by tall grass which could provide suitable cover and foraging for small or juvenile fish during some times of the year.

Photos: Photos of WC3 showing downstream (left) and instream vegetation (right), July 26, 2023.

3.2.1.4 Drainage Ditch

Drainage Ditch: An engineered drainage ditch between the Site access road and the settling pond at AEC 6 did not contain water during the field assessment. Given the significant rainfall prior to the Site visit and the high water stage observed at other locations, it is considered unlikely that the drainage ditch provides fish habitat and/or fish passage to adjacent watercourses and ponds.

Photos: Photos of the drainage ditch showing upstream (left) and downstream (right), July 26, 2023.

3.2.1.5 Watercourse 4 (WC4)

Watercourse 4 (WC4) is located northeast of AEC 5 and flows north into a culvert. The stream pH and DO measured in-situ were within the recommended ranges for FWAL by the CCME. Fish passage is likely to be prevented by infilled material north of the watercourse. The watercourse disappears underground directly under the southern extent of the drainage ditch.

Photos: Photos of WC4 showing upstream (left) and downstream (right), July 26, 2023.

3.2.2 Wetlands

Three wetlands were assessed and delineated within the Site during the Site visit conducted between July 25 and 26, 2023. In addition, a fourth wetland (WL4) was assessed but not field delineated. The locations and delineated boundaries of the wetlands are presented above on **Figure D-4** and a summary of assessment parameters collected in the field are tabulated in **Table 3.** A summary of the observations and representative photos are presented below.

Table 3: Summary of Site Wetlands

Wetland ID	Wetland Type	Approximate Size (ha)	Landscape Position	Landform	Water Flow Path
Wetland 1 (WL1)	Swamp/ Marsh	1.33	Lentic	Fringe	Bidirectional-non-tidal
Wetland 2 (WL2)	Swamp/ Marsh	0.21	Terrene	Basin	Paludified
Wetland 3 (WL3) ‡	Swamp/ Marsh	~3.8	Terrene	Basin	Outflow
Wetland 4 (WL4)*	Swamp	~2.9	Terrene	Fringe	Outflow

*not field delineated

‡ Partially field delineated

3.2.2.1 Wetland 1 (WL1)

Wetland 1 (WL1) is a lentic fringe swamp with some marsh components. Dominant vegetation per strata are summarized in **Table 4**. The willow (*salix sp*.) appears to have been eaten by insects and the remaining vegetation appeared to be healthy.

Assessment Point: **NAD 83** 20T 690895 E 5075466 N

Soil: 10 cm histosol underlain by clay (100% 5YR 5/1)

Hydrology indicators: Soil was saturated, the water table was near the surface and 2.5 cm of standing water at the assessment location. Other indicators of wetland hydrology include water-stained leaves, a hydrogen sulphide odour, and stunted/stressed vegetation.

Table 4: Dominant Vegetation at the Wetland 1 (WL1) Determination Assessment Point

Strata	Scientific Name	Common Name	% Total Cover	NS Wetland Indicator Rank
Tree	*Larix laricina*	American Larch	1	fac
Shrub	*Larix laricina*	American Larch	5	fac
Shrub	*Ilex verticillata*	Black Holly	5	facw+
Shrub	*Salix sp.*	a Willow	2	-
Shrub	*Abies balsamea*	Balsam Fir	1	fac
Shrub	*Morella pensylvanica*	Northern Bayberry	1	fac
Shrub	*Picea mariana*	Black Spruce	1	facw
Herb	*Typha latifolia*	Broad-Leaf Cattail	25	obl
Herb	*Eleocharis palustris*	Creeping Spike-Rush	25	obl
Herb	*Carex gynandra*	A Sedge	5	facw

Notes:
Obligate wetland (OBL) - Almost always occurs in wetlands under natural;
Facultative wetland (FACW) - Usually occurs in wetlands;
Facultative (FAC) - Equally likely to occur in wetlands and non-wetlands;
Facultative upland (FACU) - Usually occurs in non-wetlands, but occasionally found in wetlands;
Obligate upland (UPL) - Almost always occurs in non-wetlands under natural conditions.
A positive (+) or negative (−) sign is used for the facultative categories. The (+) sign indicates a frequency towards the wetter end of the category (more frequently found in wetlands) and the (−) sign indicates a frequency towards the drier end of the category (less frequently found in wetlands) (USACE 2012).

Photos: Representative photos of Wetland 1 (WL1) swamp (top) and marsh (bottom) wetland components, July 25, 2023.

3.2.2.2 Wetland 2 (WL2)

Wetland 2 (WL-2) is a swamp and marsh complex. The leaves of the black holly appeared to have been eaten by insects and the remaining vegetation observed appears relatively healthy. Dominant vegetation per strata is summarized in **Table 5**.

Assessment Point: NAD83 20T 690942 N 5075427 E

Soil: 10 cm of histosol underlain by clay and sandy loam (100% 5YR 3/3) (10-25 cm) until refusal at rock at 25 cm.

Hydrology indicators: Soil was saturated, the water table was 2.5 cm below the surface and 5 cm of standing water at the assessment location. Other indicators of wetland hydrology include water-stained leaves, a hydrogen sulphide odour, and stunted/stressed vegetation.

Table 5: Dominant Vegetation at the Wetland 2 (WL2) Determination Assessment Point

Strata	Scientific Name	Common Name	% Total Cover	NS Wetland Indicator Rank
Tree	*Larix laricina*	American Larch	15	fac
Tree	*Abies balsamea*	Balsam Fir	10	fac
Shrub	*Abies balsamea*	Balsam Fir	15	fac
Shrub	*Ilex verticillata*	Black Holly	2	facw+
Shrub	*Betula alleghaniensis*	Yellow Birch	5	fac
Shrub	*Picea mariana*	Black Spruce	5	facw
Shrub	*Salix sp.*	a Willow	1	-
Herb	*Onoclea sensibilis*	Sensitive Fern	30	facw
Herb	*Typha latifolia*	Broad-Leaf Cattail	30	obl
Herb	*Equisetum arvense*	Field Horsetail	10	fac
Herb	*Rubus pubescens*	Dwarf Red Raspberry	5	fac
Herb	*Solidago rugosa*	Rough-Leaf Goldenrod	1	fac

Notes:
Obligate wetland (OBL) - Almost always occurs in wetlands under natural;
Facultative wetland (FACW) - Usually occurs in wetlands;
Facultative (FAC) - Equally likely to occur in wetlands and non-wetlands;
Facultative upland (FACU) - Usually occurs in non-wetlands, but occasionally found in wetlands;
Obligate upland (UPL) - Almost always occurs in non-wetlands under natural conditions.
A positive (+) or negative (−) sign is used for the facultative categories. The (+) sign indicates a frequency towards the wetter end of the category (more frequently found in wetlands) and the (−) sign indicates a frequency towards the drier end of the category (less frequently found in wetlands) (USACE 2012).

Photos: Representative photos of Wetland 2 (WL2) showing upstream (right) and downstream (left), July 26, 2023.

3.2.2.3 Wetland 3 (WL3)

Wetland 3 (WL-3) is located in the former tailings area. Vegetation observed appeared healthy, noting that there was a low diversity of plants observed. Dominant vegetation per strata are summarized in **Table 6**.

Assessment Point: 20T 690874 N 5075307 E

Soil: 13 cm of histosol underlain by clay (95% gley 5/10 and 5% 10YR 7/8) (13-40+ cm).

Hydrology indicators: Soil was saturated, the water table was near the surface and 2.5 cm of standing water at the assessment location. Other indicators of wetland hydrology included aquatic fauna, drainage patterns, a hydrogen sulfide odour and stunted/stressed vegetation.

Table 6: Dominant Vegetation at the Wetland 3 (WL3) Determination Assessment Point

Strata	Scientific Name	Common Name	% Total Cover	NS Wetland Indicator Rank
Shrub	*Larix laricina*	American Larch	1	fac
Shrub	*Morella pensylvanica*	Northern Bayberry	1	fac
Herb	*Typha latifolia*	Broad-Leaf Cattail	30	obl
Herb	*Equisetum sp.*	a Horsetail	40	No indicator rank
Herb	*Doellingeria umbellata*	Parasol White-Top	1	fac

Notes:
Obligate wetland (OBL) - Almost always occurs in wetlands under natural;
Facultative wetland (FACW) - Usually occurs in wetlands;
Facultative (FAC) - Equally likely to occur in wetlands and non-wetlands;
Facultative upland (FACU) - Usually occurs in non-wetlands, but occasionally found in wetlands;
Obligate upland (UPL) - Almost always occurs in non-wetlands under natural conditions.
A positive (+) or negative (−) sign is used for the facultative categories. The (+) sign indicates a frequency towards the wetter end of the category (more frequently found in wetlands) and the (−) sign indicates a frequency towards the drier end of the category (less frequently found in wetlands) (USACE 2012).

Photos: Representative photos of Wetland 3 (WL3), July 26, 2023.

3.2.2.4 Wetland 4 (WL4)

Wetland 4 boundaries were estimated based on Site mapping and not field delineated due to timing restraints. Representative photos of the wetland, which WC4 flows through, are presented below. The wetland is a swamp and the upland areas adjacent to it appeared to have been historically forested.

Photos: Representative photos of Wetland 4, July 26, 2023.

3.2.3 Wetland Surface Water and Sediment Sampling

Surface water and sediment samples were collected at four locations within wetlands. The sampling locations are shown on **Figure D-4** (above). The results for the surface water *in-situ* readings are summarized in **Table 7**. The metals results for surface water and sediment in comparison to relevant environmental standards are shown below on **Tables 8** and **9**, respectively.

Table 7: In-situ water Quality Readings for Wetland Surface Water

Parameter	Units	Sampling Location and Date			
		WL 1A	WL1B	WL2	WL3
		26 Jul 2023	26 Jul 2023	26 Jul 2023	26 Jul 2023
Temperature	**°C**	21.2	33.5	28.1	24.1
Conductivity	**mS/cm**	0.50	0.52	0.57	0.28
TDS	**g/L**	0.33	0.34	0.37	0.18
DO	**%**	69	41	49	26
DO	**mg/L**	6.1	2.9	3.8	2.2
pH	**-**	7.1	7.2	7.1	6.92
ORP	**mV**	-12.6	-161	4.0	12.7

Table 8: Metals in Wetland Surface Water

Parameter	Units	Environmental Standards		Sampling Location and Date			
		CWQG FWLA	NS Tier I EQS	WL 1A	WL1B	WL2	WL3
		FWAL	FW	26 Jul 2023	26 Jul 2023	26 Jul 2023	26 Jul 2023
Aluminium	mg/L	0.005	0.005	0.0082	0.13	0.027	0.02
Antimony	mg/L		0.009	<0.0010	<0.0010	<0.0010	<0.0010
Arsenic	mg/L	0.005	0.005	<0.0010	<0.0010	<0.0010	<0.0010
Barium	mg/L		1	0.081	0.26	0.89	0.4
Beryllium	mg/L		0.00015	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L			<0.0020	<0.0020	<0.0020	<0.0020
Boron	mg/L	1.5	1.5	<0.05	<0.05	<0.05	<0.05
Cadmium	mg/L	0.00009	0.00009	0.000037	0.00012	0.000052	0.00002
Calcium	mg/L			77	39	98	41
Chromium (Total, III+VI)	mg/L		0.0089	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt	mg/L		0.001	<0.00040	<0.00040	0.00097	0.00045
Copper	mg/L	0.002	0.002	<0.00050	0.00099	0.00069	0.00076
Iron	mg/L	0.3	0.3	<0.05	0.34	1.3	5.5
Lead	mg/L	0.001	0.001	0.00056	0.0048	0.033	0.0027
Magnesium	mg/L			7.2	5.2	10	6.3
Manganese	mg/L	0.43	0.43	0.023	0.43	7.6	0.87
Molybdenum	mg/L	0.073	0.073	<0.0020	0.0021	0.0026	<0.0020
Nickel	mg/L	0.025	0.025	<0.0020	<0.0020	<0.0020	<0.0020
Potassium	mg/L			0.92	1.4	1.2	0.9
Selenium	mg/L	0.001	0.001	<0.00050	0.0011	<0.00050	<0.00050
Silver	mg/L	0.00025	0.00025	<0.00010	<0.00010	<0.00010	<0.00010
Sodium	mg/L			5.7	2.8	5.8	3.3
Strontium	mg/L		21	19	20	15	6.1
Thallium	mg/L	0.0008	0.0008	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L			<0.0020	<0.0020	<0.0020	<0.0020
Titanium	mg/L			<0.0020	0.0034	<0.0020	<0.0020
Uranium	mg/L	0.015	0.015	0.0011	0.00087	0.0014	<0.00010
Vanadium	mg/L		0.12	<0.0020	<0.0020	<0.0020	<0.0020
Zinc	mg/L	0.007	0.007	0.011	0.052	0.0078	0.013

Environmental Standards

Nova Scotia Environment, September 2021, NS Tier I EQS Freshwater Surface Water

Canada Water Quality Guideline, Fresh Water Aquatic Life

Table 9: Metals in Wetland Sediments

Parameter	Units	Environmental Standards			Sampling Location and Date			
		CCME Tier 1 Commercial		NS Tier I EQS	WL 1A	WL1B	WL2	WL3
		Coarse	Fine	Fresh water	26 Jul 2023	26 Jul 2023	26 Jul 2023	26 Jul 2023
Aluminium	mg/kg	-	-	-	13,000	9,300	12,000	6,200
Antimony	mg/kg	40	40	25	<2.0	<2.0	<2.0	<2.0
Arsenic	mg/kg	12	12	17	7.8	4.6	5.8	12
Barium	mg/kg	2,000	2,000	-	74	630	360	900
Beryllium	mg/kg	8	8	-	<1.0	<1.0	<1.0	<1.0
Bismuth	mg/kg	-	-	-	<2.0	<2.0	<2.0	<2.0
Boron	mg/kg	-	-	-	<50	<50	<50	<50
Cadmium	mg/kg	22	22	3.5	0.58	3.8	1.8	1.8
Chromium (Total, III+VI)	mg/kg	87	87	90	17	12	16	17
Cobalt	mg/kg	300	300	-	6.6	8.5	9.4	8.4
Copper	mg/kg	91	91	197	11	34	17	7.3
Iron	mg/kg	-	-	43,766	23,000	17,000	21,000	12,000
Lead	mg/kg	260	260	91.3	100	280	120	10,000
Lithium	mg/kg	-	-	-	23	19	22	13
Manganese	mg/kg	-	-	1,100	1,700	3,200	1,900	2,600
Mercury	mg/kg	24	24	0.486	<0.10	<0.10	0.11	<0.10
Molybdenum	mg/kg	40	40	-	2.1	<2.0	<2.0	<2.0
Nickel	mg/kg	89	89	75	13	17	18	30
Rubidium	mg/kg	-	-	-	8.7	8.5	10	6.3
Selenium	mg/kg	2.9	2.9	2	0.88	0.95	<0.50	<0.50
Silver	mg/kg	40	40	0.5	<0.50	1.2	<0.50	1.4
Strontium	mg/kg	-	-	-	420	5,400	140	260
Thallium	mg/kg	1	1	-	0.23	0.32	0.24	0.44
Tin	mg/kg	300	300	-	<1.0	<1.0	<1.0	<1.0
Uranium	mg/kg	33	33	-	1.5	3.1	0.88	0.64
Vanadium	mg/kg	130	130	-	30	20	26	11
Zinc	mg/kg	410	410	315	230	770	290	300

Environmental Standards

CCME, See factsheet. , CCME Tier 1 Commercial (Coarse)

CCME, See factsheet. , CCME Tier 1 Commercial (Fine)

Nova Scotia Environment, October 2022, NS Tier I EQS Freshwater Sediment

3.3 Terrestrial Habitat and Species at Risk (SAR) Assessment

3.3.1 Desktop Review and Potential SAR List

The AC CDC report (AC CDC 2023a) included 104 historical records of rare and endangered flora and fauna comprised of 18 species within the 5 km radius of the Site centre. Excluding location sensitive species, this included five records of three vascular plant species and 52 records of 10 nonvascular flora and plant species; and 47 records of 18 vertebrate and no records of invertebrate fauna. A summary of priority species with AC CDC within 5 km of the Site center are listed in **Table 10.**

The Department of Natural Resources in each of the Maritime Provinces considers a number of species to be location sensitive. Concerns about exploitation of location-sensitive species precludes inclusion of precise coordinates in the AC CDC data report. According to the AC CDC (2023a) report for the Site, bat hibernacula or a bat species occurrences were recorded within 5 km of the Site and the exact location was omitted from the report above. Bat species in Nova Scotia that are listed as endangered by SARA and NS ESA are included in **Table 10**.

Table 10: SAR and SoCC within 5 km from the Site Centre (AC CDC 2023a)

Species Common Name	Scientific Name	Ranking	Number of Observations	Distance from Site Centre
Birds				
American Bittern	*Botaurus lentiginosus*	S3S4B,S4S5M	76	4.0 ± 7.0
American Kestrel	*Falco sparverius*	S3B,S4S5M	223	4.0 ± 7.0
Barn Swallow	***Hirundo rustica***	**SARA: T COSEWIC: SC NS ESA: E S3B**	**680**	**4.0 ± 7.0**
Boreal Chickadee	*Poecile hudsonicus*	S3	1147	4.0 ± 7.0
Canada Jay	*Perisoreus canadensis*	S3	519	2.8 ± 0.0
Cape May Warbler	*Setophaga tigrina*	S3B,SUM	100	4.0 ± 7.0
Chimney Swift	***Chaetura pelagica***	**SARA: T COSEWIC: T NS ESA: E S2S3B,S1M**	**76**	**4.0 ± 7.0**
Nelson's Sparrow	*Ammospiza nelsoni*	S3S4B	116	4.0 ± 7.0
Olive-sided Flycatcher	***Contopus cooperi***	**SARA: SC COSEWIC: SC NS ESA: T S3B**	**692**	**4.0 ± 7.0**
Pine Grosbeak	*Pinicola enucleator*	S3B,S5N,S5M	229	4.0 ± 7.0
Pine Siskin	*Spinus pinus*	S3	679	4.0 ± 7.0
Rusty Blackbird	***Euphagus carolinus***	**SARA: SC COSEWIC: SC NS ESA: E S2B**	**183**	**4.0 ± 7.0**
Wilson's Snipe	*Gallinago delicata*	S3B,S5M	499	0.6 ± 0.0
Wilson's Warbler	*Cardellina pusilla*	S3B,S5M	118	0.4 ± 0.0
Mammals				
Little Brown Myotis*	***Myotis lucifugus***	**SARA: E COSEWIC: E NS ESA: E S1**	**118**	**~4.8 ± 0.0**
Northern Myotis*	***Myotis septentrionalis***	**SARA: E COSEWIC: E NS ESA: E S1**		

Species Common Name	Scientific Name	Ranking	Number of Observations	Distance from Site Centre
Tricolored Bat*	***Perimyotis subflavus***	**SARA: E COSEWIC: E NS ESA: E S1**		
Canada Lynx	***Lynx canadensis***	**NS ESA: E S2S3**	**98**	**4.7 ± 1.0**
Herptiles				
Snapping turtle	***Chelydra serpentine***	**COSEWIC: SC SARA: SC NS ESA: V S3**	**118**	**4.9 ± 0.0**
Fish				
Alewife	*Alosa pseudoharengus*	S3B	53	1.5 ± 0.0
Atlantic Salmon - Eastern Cape Breton population	*Salmo salar pop. 4*	COSEWIC: SC S1	62	1.5 ± 0.0
Plants (Vascular)				
American Beech	*Fagus grandifolia*	S3S4	557	4.7 ± 0.0
Narrow Triangle Moonwort	*Botrychium lanceolatum ssp. angustisegmentum*	S2S3	9	4.4 ± 1.0
New Jersey Rush	***Juncus caesariensis***	**COSEWIC: SC SARA: SC NS ESA: V S3**	**240**	**4.2 ± 0.0**
Plants (Non-Vascular)				
a lichen	*Viridothelium virens*	S3	1	2.3 ± 5.0
Blue Felt Lichen	***Pectenia plumbea***	**COSEWIC: SC SARA: SC NS ESA: V S3**	**660**	**2.5 ± 0.0**
Blue-gray Moss Shingle Lichen	*Moelleropsis nebulosa*	S2S3	12	1.7 ± 0.0
Boreal Felt Lichen - Atlantic pop.	***Erioderma pedicellatum* (Atlantic pop.)**	**COSEWIC: E SARA: E NS ESA: E S1**	**297**	**1.6 ± 0.0**
Corrugated Shingles Lichen	*Fuscopannaria ahlneri*	S3	46	1.7 ± 0.0
Crusted Tarpaper Lichen	*Rostania occultata*	S3	2	1.7 ± 0.0
Fertile Shield Lichen	*Parmelia fertilis*	S2S3	13	2.3 ± 3.0
Oldgrowth Rag Lichen	*Platismatia norvegica*	S3	177	1.6 ± 0.0

Species Common Name	Scientific Name	Ranking	Number of Observations	Distance from Site Centre
Salted Shell Lichen	*Coccocarpia palmicola*	S3S4	365	1.6 ± 0.0
Waterside Rockshag Lichen	*Ephebe lanata*	S3	4	2.8 ± 0.0

Notes:
Rows in **bold** represent an SAR, others are SoCC
From ACCDC 2023b:
S-rank refers to the Sub-national (Provincial) rank provided by the AC CDC and includes the following: S1 Critically Imperiled, S2 Imperiled, S3 Vulnerable, S4 Apparently Secure, S5 Secure and SU Unrankable. Rankings are frequently paired with the following breeding status qualifiers: B Breeding, N Non-breeding, and M Migrant
Conservation Status Categories: E Endangered, T Threatened, V Vulnerable, SC Special Concern
*Location sensitive species – location and species are not identified by the AC CDC

Additionally, boreal felt lichen and the following additional SoCC were identified within a 5 km radius from the Site and reported on inaturalist.org:

- Boreal Chickadee (*Poecile hudsonicus*), S3 (vulnerable in Nova Scotia); and
- Purple Finch (*Haemorhous purpureus*), S4S5B,S3S4N,S5M (vulnerable to apparently secure non-breeding population in Nova scotia; however, the breeding population is apparently secure to secure the migratory population is secure)

3.3.1.1 Species at Risk

Of the 12 species recorded, only 10 are considered to be SAR, as defined above, for this assessment. For potential SAR, a brief description of their suitable habitat requirements and available suitable habitat on the Site is provided in **Table 11**. This includes SAR that were observed during the field surveys and SAR that were documented by the AC CDC within 5 km of the Site centre (AC CDC 2023a).During the Site visits that were conducted in July 2023, no SAR were observed and the assessment included the identification of potential SAR habitat for screened SAR identified in **Section 3.3.1**. Potential suitable habitat for SAR species were identified for two SAR species; the Olive-sided Flycatcher and snapping turtle. An additional seven SAR were identified as having the potential to be present (either incidentally or occasionally foraging) due to the presence of suitable habitat adjacent to the Site. Information on SAR that have the potential to be present within the Site is provided below in **Table 11**.

Table 11: Suitable Habitat Descriptions for Potential SAR

Species	Suitable Habitat Description	Available Suitable Habitat within the Site	Species on site?
Barn Swallow *Hirundo rustica*	Typically inhabit open areas near human settlements and land uses including parks, ball fields, golf courses and agricultural fields where they forage for flying insects. These birds will typically construct their nests on human-made structures, and rarely in more natural locations such as cliffs, caves or hollowed trees (COSEWIC 2021). Feeds primarily on flying insects, but may occasionally take insects from the ground or on vegetation (NatureServe Explorer 2023).	Suitable nesting habitat is not present within the Site. Suitable habitat is adjacent to the Site and the species could potentially forage on the site.	AC CDC Records within 5 km
Chimney Swift *Chaetura pelagica*	Aerial foragers and tend to concentrated near water where flying insects are abundant (ECCC 2022a).	Suitable nesting habitat is not present within the Site. Suitable habitat is adjacent to the Site and the species could potentially forage on the site.	AC CDC Records within 5 km
Olive-sided Flycatcher ***Contopus cooperi***	**Nests in open, forested areas, often with many conspicuous perches (i.e., tall trees or snags alongside open areas) (ECCC 2016). Diet is comprised almost entirely of flying insects (NatureServe Explorer 2023).**	**Potential suitable habitat in forested areas (AEC 1, 4, 10 and 12)**	**AC CDC Records within 5 km**
Rusty Blackbird *Euphagus carolinus*	Breeds in the boreal forest, in habitat characterized by coniferous-dominated forests adjacent to wetlands (EC 2015). Rusty Blackbird diet includes invertebrates, seeds and fruits (NatureServe Explore 2023).	Potential to be present in coniferous forests, unlikely to be present in the AECs.	AC CDC Records within 5 km
Little Brown Myotis *Myotis lucifugus*	**Hibernation**: Subterranean features, such as caves, abandoned mines, hand-dug wells, cellars, tunnels, rock crevices or tree root hollows where light and noise levels are low (ECCC 2018). Hibernacula typically contain sections that have relatively stable temperatures (2-10 °C) and stable, high humidity levels (>80 %) (ECCC 2018).	Suitable roosting habitat is not present on the assessed areas of the site; bats may forage within the site on insects.	AC CDC Records within 5 km
Northern Myotis *Myotis septentrionalis*			
Tricolored Bat *Perimyotis subflavus*			

Species	Suitable Habitat Description	Available Suitable Habitat within the Site	Species on site?
	Roosting: Treed and forested habitat and man-made structures. Bats preferentially roost in older forest stands with higher snag densities compared to young forests (ECCC 2018). **Diet**: Include mainly flying insects, while the Northern Myotis may also glean prey from plants or the forest floor (NatureServe Explorer 2023).		
Canada Lynx *Lynx canadensis*	Lynx forage in habitats that are suitable for hare (habitat with hardwood browse and softwood cover); and maternal dens are typically situated in habitat that includes coarse woody debris (NSLRT 2006). Feeds primarily on small birds and mammals, particularly the snowshoe hare. Home range for male Canada Lynx averages 15 to 30 km^2, but may be much larger when prey is scarce. Mean population density ranges from 2 to 9 per 100 km^2 (NatureServe Explorer 2023).	The Site Is not located within the Cape Breton Island Lynx Range. Potential to be present in coniferous forests, unlikely to be present in the AECs.	AC CDC Records within 5 km
Snapping turtle *Chelydra serpentine*	**Slow-moving water with a soft mud bottom and dense aquatic vegetation (ECCC 2020a). Overwintering sites require water that is shallow enough for the turtle to reach the surface to breathe, but deep enough that it will not freeze to the bottom and mud deep enough for the turtle to bury itself (ECCC 2020a). Eggs are generally laid on sand or gravel banks near the water, in locations where vegetation is absent or sparse (ECCC 2020a). Diet includes a variety of vertebrates, invertebrates and plants (NatureServe Explorer 2023).**	**Potential suitable habitat within settling ponds and Lake Enon (AECs 6, 7 and 8)**	**AC CDC Records within 5 km**
Atlantic Salmon - Eastern Cape Breton population *Salmo salar* pop. 4	Requires rivers or streams that are generally clear, cool and well-oxygenated (COSEWIC 2010).	Suitable habitat not present within the Site.	AC CDC Records within 5 km
New Jersey Rush *Juncus caesariensis*	Bogs and fens in a geographically restricted area of southeastern Cape Breton Island, Nova Scotia (ECCC 2022b).	Suitable habitat not present within the Site.	AC CDC Records within 5 km

Species	Suitable Habitat Description	Available Suitable Habitat within the Site	Species on site?
Blue Felt Lichen *Pectenia plumbea*	Hardwood trees with mature bark and high humidity in woodlands (ECCC 2022c).	Suitable habitat not present within the Site.	AC CDC Records within 5 km
Boreal Felt Lichen - Atlantic pop. *Erioderma pedicellatum*	Cool, humid, forests containing Balsam Fir (*Abies balsamea*) (ECCC 2020b).	Suitable habitat not present within the Site.	AC CDC Records within 5 km
Legend: Bold denotes SAR with potential suitable habitat on the Site			
SAR with Potential suitable habitat near the Site, may incidentally be present on the Site.			

A document review for management plans for SAR with the potential to occur in the vicinity of the Site was conducted to identify potential Critical Habitat or other designated areas with significant habitat. Critical Habitat is defined under Section 2 of *SARA* as: "*the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species' Critical Habitat in the recovery strategy or in an action plan for the species.*" The following federal and/or provincial recovery strategies/plans and managements plans for potential SAR that have been published to date:

- Description of residence for Barn Swallow (*Hirundo rustica*) in Canada. (GOC 2019);
- Recovery Plan for the Barn Swallow (*Hirundo rustica*) in Nova Scotia (NSDLF 2020a);
- Recovery Strategy for the Chimney Swift (*Chaetura pelagica*) in Canada (ECCC 2022a);
- Recovery Plan for the Chimney Swift (*Chaetura pelagica*) in Nova Scotia (NSDNRR 2023b);
- Recovery Strategy for the Olive-sided Flycatcher (*Contopus cooperi*) in Canada (ECCC 2016);
- Recovery Plan for the Olive-sided Flycatcher (*Contopus cooperi*) in Nova Scotia (NSDLF 2021);
- Management Plan for the Rusty Blackbird (*Euphagus carolinus*) in Canada (EC 2015);
- Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*),and the Tri-colored Bat (*Perimyotis subflavus*) in Canada (ECCC 2018);
- Recovery Plan for Little brown myotis (*Myotis lucifugus*) in Nova Scotia (NSDLF 2020b);
- Recovery Plan for Northern Myotis (*Myotis septentrionalis*) in Nova Scotia (NSDLF 2020c);
- Recovery Plan for Tri-colored bat (*Perimyotis subflavus*) in Nova Scotia (NSDLF 2020d);
- Provincial Recovery Plan for the Canada Lynx (*Lynx canadensis*) (NSLRT 2006); and
- Management Plan for the Snapping Turtle (*Chelydra serpentina*) in Canada (ECCC 2020a).

3.3.2 Terrestrial Habitat General Assessment

The Site is within the Bras d'Or Lowlands Ecodistrict of the Northumberland/Bras d'Or Ecoregion of Nova Scotia (Neily et al. 2017). In general, the ecoregion is characterized by its proximity to the more temperate waters of the Northumberland Strait and the Bras d'Or Lakes, compared to either the Atlantic or Bay of Fundy (Neily et al. 2017). Locally, the Site is within the Spruce Pine Hummocks ecoelement (Neily et al. 2017). The terrestrial landscape has been influenced by the anthropogenic historical uses of the Site. Many of the forested areas on and adjacent to the Site have previously been harvested and are dominated by early successional and tolerant tree species and are in different stages of regeneration. Most of the forested areas are dominated by conifer trees (mainly Balsam fir [*Abies balsamia*], white pine [*Pinus strobus*], and black spruce [*Picea mariana*]); however, some areas of mixedwood forests contain maple and birch trees along with conifer trees as dominant tree species. Some areas previously used as settling ponds have developed into swamp and marsh wetland.

A site visit to characterize the terrestrial in the vicinity of the AECs on July 25 and 26, 2023, which were conducted within two and three days of significant precipitation. During the Site visits as well as other Site investigations conducted throughout 2023, wildlife or signs of wildlife observed were recorded and are summarized below in **Table 12**. The following is a summary of the habitat and representative field photos from assessment points with and adjacent to the AECs of the Site.

Table 12: Wildlife Observations

Species	Observations
Pickerel Frog (*Lithobates palustris*)	Observed July 26, 2023 in AEC6
Wood Frog (*Lithobates sylvaticus*)	Observed July 25, 2023 in AEC10
White-tailed Deer (*Odocoileus virginianus*)	Hoof prints Observed September 20, 2023 on top of coarse waste rock pile at AEC2
Northern Leopard Frog (*Lithobates pipiens*)	Observed September 20, 2023 in WL1
Snail (Gastropoda)	Observed September 20, 2023 in WL3

Photos: Representative photos of Wildlife.

The following is a summary of the habitat and representative field photos from assessment points with and adjacent to the AECs of the Site.

AEC 1

AEC 1 contained marsh, swamp and conifer-dominated wooded upland. The swamp and marsh wetlands consisted of the southern lobe of WL1 and the majority of WL2 (which extended into this AEC from the north and east, respectively) covered most of this AEC. The dominant species in wet areas was broadleaf cattail (*Typha latifolia*) with stunted conifer trees abundant in drier areas.

Photos from AEC 1, July 25, 2023.

AEC 2

This area has been infilled with gravel and has some weeds and hardy herbaceous plants (e.g., asters) growing across the area. Small and stunted conifer tree species were scattered throughout this area.

Photos from AEC 2, July 25, 2023.

AEC 3

AEC 3 consisted of an infilled gravel pit with small conifer trees (i.e., *Larix laricina* and *Picea spp*.) and herbaceous plants (e.g., golden rod (*Solidago rugose)* and other grasses.


Photos from AEC 3, July 25, 2023.

AEC 4

The northern portion of AEC 4 was similar to AECs with gravel infill (e.g., AEC 2) and the southern half contained dense vegetation, including invasive Japanese knotweed (*Reynoutria japonica*). Japanese knotweed was observed in two locations, one within and one adjacent and to the north of AEC 4. Vegetation in the southern portion appeared generally healthy. Trees present included larch, red spruce, and white ash. Shrubs present included alders, willow, Japanese knotweed, white meadowsweet, and elder berry. Herbaceous plants included dwarf raspberry, tall meadow rue, asters, and grasses.


Photos from AEC 4, July 26, 2023.

AEC 5

Healthy young spruce and larch were scattered on the infilled portion of this AEC. The boundaries of this AEC, the northeastern side in particular, have re-vegetated with conifer species. Trees included were mainly *Larix laricina* with lesser *Picea rubens* present. Young larch and *P. rubens* was present in the shrub layer and *Populus tremuloides, fraxinus americana* and *salix* spp. were present as well. Herbaceous layer was mainly aster and *Frangula virginiana*. Vegetation appeared healthy.

Photos from AEC 5, July 26, 2023.

AEC 6

AEC 6 consisted of a human-made settling pond. Small minnows were observed in the pond.

Photos from AEC 6, July 25, 2023.

AEC 7

AEC 7 was a human-made pond with *Typha latifolia* and *Alnus incana* along its edges. The habitat adjacent to the lake consisted of trees (*Picea spp., Larix laricina, Populus tremuloides; Salix spp., Alnus incana,* and *Picea spp*.); shrubs (*Solidago spp.*); and herbaceous plants (reed canary grass, clovers, *frangula spp*., and other grasses). Two culverts running under a berm connected two adjacent human-made ponds in this AEC.

Photos from AEC 7, July 25, 2023.

AEC 8

AEC 8 consists of Lake Enon. The shoreline of Lake Enon was a fringe swamp (WL1). Dominant trees adjacent to the lake included: *Abies balsamea, Larix laricina, Picea mariana, Salix spp*. Dominant shrubs included: *Betula allaghensis, picea mariana, Abies balsamea*. Dominant herbaceous plants included: *Tussilago farfara*, *Equisetum arvense, trientalis borealis, cornus canadensis*. Willows appeared to have been eaten by insects; the remaining vegetation appeared healthy.

Photos from AEC 8, July 25, 2023.

AEC 9

This AEC has been Infilled and was vegetated by scattered larch, spruce, asters, grasses and clover. Vegetation appeared healthy.

Photos from AEC 9, July 26, 2023.

AEC 10

The northen portion of AEC 10 was within WL3 and the southern portion was upland. The upland portion consisted of sparse shrub-sized connifer trees (*Picea rubens* and *Pinus banksiana*).

Photos from AEC 10, July 26, 2023.

AEC 11

This AEC was within WL3 and is a former tailings area. Vegetation seemed healthy although there was a low diversity of plants.

Photos from AEC 11, July 26, 2023.

AEC 12

This AEC contained a concrete pad with adjacent ditch and mixedwood forest. Trees included: *Salix spp, Larix laricina, Picea rubens*. Shrubs included: *Sambucas spp*., *salix spp*., *Fraxinus americana*, *Spirea spp.* Herbaceous plants included: *Rubus idaeas*, *Doellingeria umballata*, and *Solidago rugosa.*

Photos from AEC 12, July 26, 2023.

4.0 Conclusion and Summary

The above is a summary of habitat assessment results that were undertaken by Dillon to characterize the available habitat on the Site. The results provide technical information required for a human health and ecological risk assessment (HHERA) for the Lake Enon Former Mill Property in Enon, Nova Scotia.

A benthic habitat assessment of site-adjacent areas of Lake Enon. Was conducted to record of the substrate and available habitat for relevant receptors within the near shore areas of Lake Enon and evaluate the likelihood of aquatic species at risk (SAR) to be present (in addition to other receptors) and their exposure potential. In general, the sediment of Lake Enon within the area that was assessed is soft and appeared to be silt and sand. The vegetation was typical of freshwater lakes and dominated by common pond weeds and aquatic grasses. Floater mussels (Pyganodon spp.) were observed at many of the sediment sampling sites both embedded in the substrate and as shell debris. No SAR or potential SAR were identified within the benthic habitat at Lake Enon.

A survey of aquatic and wetland habitat areas within the study primarily to verify the presence of suitable habitat for amphibians and/or aquatic life receptors. Four watercourses and a drainage ditch were assessed on the Site. Fish were observed in two watercourses (i.e., WC1 and WC2) and WC3 was assessed to provide seasonally accessible fish habitat. WC4 and the drainage ditch were considered unlikely to provide suitable fish habitat. Four wetlands were identified within the Site during the Site visit. The wetlands were classified as swamps and marches and totalled approximately 8.2 ha.

A survey of terrestrial habitat and wildlife findings are presented above for each AEC. A desktop SAR assessment identified potential SAR with suitable habitat. During the Site visit, no SAR were observed within the site.

5.0 Closure

This appendix was prepared by Dillon Consulting Limited (Dillon) for Build Nova Scotia on behalf of the Nova Scotia Department of Natural Resources and Renewables (NSDNRR), in support of the Human Health and Ecological Risk Assessment and Ancillary Assessment Activities: Lake Enon Former Mill Site, Enon, Nova Scotia (Report). Dillon has used the degree of care and skill ordinarily exercised under similar circumstances at the time the work was performed by reputable members of the environmental consulting profession practicing in Canada. Dillon assumes no responsibility for conditions which were beyond its scope of work. There is no warranty expressed or implied by Dillon.

The material in the report reflects Dillon's best judgment in light of the information available to Dillon at the time of preparation. Any use which a third party 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.

6.0 References

AC CDC (Atlantic Canada Conservation Data Centre). 2023a. DATA REPORT 7760: Lake Enon, NS. Prepared July 7, 2023.

AC CDC (Atlantic Canada Conservation Data Centre). 2023b Understanding Ranks. Available at: http://www.accdc.com/en/rank-definitions.html Accessed July 2023

CCME (Canadian Council of Ministers of the Environment). 1999. Canadian water quality guidelines for the protection of aquatic life: Dissolved oxygen (freshwater). In: Canadian environmental quality guidelines, 1999, Canadian Council of Ministers of the Environment, Winnipeg.

COSEWIC (Committee on the Status of Endangered Wildlife in Canada). 2010. COSEWIC assessment and status report on the Atlantic Salmon *Salmo salar* (Nunavik population, Labrador population, Northeast Newfoundland population, South Newfoundland population, Southwest Newfoundland population, Northwest Newfoundland population, Quebec Eastern North Shore population, Quebec Western North Shore population, Anticosti Island population, Inner St. Lawrence population, Lake Ontario population, Gaspé-Southern Gulf of St. Lawrence population, Eastern Cape Breton population, Nova Scotia Southern Upland population, Inner Bay of Fundy population, Outer Bay of Fundy population) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xlvii + 136 pp. (http://registrelep-sararegistry.gc.ca/sar/assessment/status_e.cfm).

COSEWIC (Committee on the Status of Endangered Wildlife in Canada). 2021. COSEWIC assessment and status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 60 pp.

EC (Environment Canada). 2015. Management Plan for the Rusty Blackbird (*Euphagus carolinus*) in Canada. *Species at Risk Act* Management Plan Series. Environment Canada, Ottawa. iv + 26 pp.

EC (Environment Change). 2016. Recovery Strategy for the Olive-sided Flycatcher (*Contopus cooperi*) in Canada. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. vii + 52 pp.

ECCC (Environment and Climate Change Canada). 2018. Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*),and the Tri-colored Bat (*Perimyotis subflavus*) in Canada. *Species at Risk Act* Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. ix + 172 pp.

ECCC (Environment and Climate Change Canada). 2020a. Management Plan for the Snapping Turtle (*Chelydra serpentina*) in Canada. *Species at Risk Act* Management Plan Series. Environment and Climate Change Canada, Ottawa, iv + 40 p.

ECCC (Environment and Climate Change Canada). 2020b. Amended Recovery Strategy for the Boreal Felt Lichen (Erioderma pedicellatum), Atlantic population, in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. viii + 49 pp.

ECCC (Environment and Climate Change Canada). 2022a. Recovery Strategy for the Chimney Swift (*Chaetura pelagic*a) in Canada [Proposed]. *Species at Risk Act* Recovery Strategy Series, Environment and Climate Change Canada, Ottawa, ix + 147 pp.

ECCC (Environment and Climate Change Canada). 2022. Amended Recovery Strategy, Action Plan and Management Plan for Multiple Species of Atlantic Coastal Plain Flora in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. x + 142 pp.

ECCC (Environment and Climate Change Canada). 2022c. Management Plan for the Blue Felt Lichen (Degelia plumbea) in Canada. Species at Risk Act Management Plan Series. Environment and Climate Change Canada, Ottawa. iv + 23 pp.

ECCC (Environment and Climate Change Canada). 2023. Historical Data. Available at: https://climate.weather.gc.ca/historical_data/search_historic_data_e.html

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss.

GOC (Government of Canada). 2019. *Species at Risk Act* Public Registry. Residence Descriptions. Description of residence for Barn Swallow (*Hirundo rustica*) in Canada. May 2019.

NatureServe Explorer. 2023. NatureServe Network Biodiversity Location Data accessed through NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. Available https://explorer.natureserve.org. Accessed: September, 2023.

Neily, P., S. Basquill, E. Quigley, and K. Keys. 2017. Ecological Land Classification for Nova Scotia. Prepared by the Nova Scotia Department of Natural Resources, Renewable Resources Branch. Available at https://novascotia.ca/natr/forestry/ecological/pdf/Ecological-Land-Classification-guide.pdf. Accessed July 2023

NSDLF (Nova Scotia Department of Lands and Forestry). 2020a. Recovery Plan for the Barn Swallow (*Hirundo rustica*) in Nova Scotia [Final]. Nova Scotia *Endangered Species Act* Recovery Plan Series.

NSDLF (Nova Scotia Department of Lands and Forestry). 2020b. Recovery Plan for Little brown myotis (*Myotis lucifugus*) in Nova Scotia [Final]. Nova Scotia *Endangered Species Act* Recovery Plan Series.

NSDLF (Nova Scotia Department of Lands and Forestry). 2020c. Recovery Plan for Northern Myotis (*Myotis septentrionalis*) in Nova Scotia [Final]. Nova Scotia *Endangered Species Act* Recovery Plan Series.

NSDLF (Nova Scotia Department of Lands and Forestry). 2020d. Recovery Plan for Tri-colored bat (*Perimyotis subflavus*) in Nova Scotia [Final]. Nova Scotia Endangered Species Act Recovery Plan Series.

NSDLF (Nova Scotia Department of Lands and Forestry). 2021. Recovery Plan for the Olive-sided Flycatcher (*Contopus cooperi*) in Nova Scotia [Final]. Nova Scotia *Endangered Species Act* Recovery Plan Series.

NSDNRR (Nova Scotia Department of Natural Resources and Renewables). 2023a. Provincial Landscape Viewer. Available at: https://nsgi.novascotia.ca/plv/

NSDNRR (Nova Scotia Department of Natural Resources and Renewables). 2023b. Recovery Plan for the Chimney Swift (*Chaetura pelagica*) in Nova Scotia [Final]. Nova Scotia *Endangered Species Act* Recovery Plan Series.

NSLRT (Nova Scotia Lynx Recovery Team). 2006. Provincial Recovery Plan for the Canada Lynx (*Lynx canadensis*), Nova Scotia. 32 pp.

USACE (United States Army Corps of Engineers). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Draft), ed. J.S. Wakely, R.W. Lichvar and C.V. Noble. Vicksburg, MS: US Army Engineer Research and Development Center.

Appendix E

Site Data Summaries

Table E-1 Soil Analytical Results Metals

				Physical		ARD			Metals																	Metals												
				Moisture Content	Soluable pH	Sodium Adsorption Ratio (SAR)	Electrical Conductivity (Lab)	Chloride	Aluminium	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium (Total, III+VI)	Cobalt	Copper	Cyanide, free	Cyanide Total	Iron	Lead	Lithium	Manganese	Mercury	Molybdenum	Nickel	Rubidium	Selenium	Silver	Strontium	Thallium	Tin	Uranium	Vanadium	Zinc
				%		SAR	µS/cm	mg/kg																		mg/kg												
EQL				1	-	-	1	5	10	2	2	5	1	2	50	0.3	0.1	2	1	2	0.5	0.5	50	0.5	2	2	0.1	2	2	2	0.5	0.5	5	0.1	1	0.1	2	5
Highlands Soil Zone EC Max Background Concentrations				-	-	-	-	-	28000	2	16.8	120	1	-	0.62	0.4	-	81	26	49	-	-	52000	84		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)				-	-	-	-	-	-	-	-	-	0.4	-	-	0.4	-	-	-	-	-	-	19800 to 39000	9.6 to 14						0.8		5				34 to 48		
NS Tier I EQS Soil Commercial Potable Coarse				-	-	-	-	100	15,400	7.5	10	350	1	-	4,300	1	-	630	22	250	-	6.5	11,000	120	-	360	24	15	70	-	1	77	9,400	1	9,400	30	39	200
NS Tier I EQS Soil Commercial Potable Fine				-	-	-	-	100	15,400	7.5	10	350	1	-	4,300	1	-	630	22	250	-	6.5	11,000	120	-	360	24	15	70	-	1	77	9,400	1	9,400	30	39	200
On-Site Background Samples (Dillon 2022-2023)																																						
Field ID	**Date**	**(mbgs)**	**Type**																																			
MW1 SS2	5/11/2022	0.6-1.22	Normal	-	-	-	-	-	13,000	<2.0	6.2	400	<1.0	<2.0	<50	2.6	-	17	9.4	29	<0.5	<0.5	28,000	91	17	2,300	<0.1	<2	16	7.9	<0.5	<0.5	37	0.22	<1.0	0.93	31	340
SSS26	5/18/2022	0.61-1.22	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	2,200	<0.10	2.6	6.5	6.2	<0.5	<0.5	13	0.13	<1.0	1.3	26	170
SSS33	12/7/2022	0.15-0.25	Normal	-	-	-	-	-	7,600	<2.0	<2.0	22	<1.0	<2.0	<50	<0.30	-	4.5	<1.0	<2.0	-	-	1,400	11	<2.0	28	<0.10	<2.0	<2.0	4.3	<0.50	<0.50	<5.0	<0.10	<1.0	0.22	8.9	<5.0
SSS34	12/7/2022	0.1-0.15	Normal	-	-	-	-	-	4,200	<2.0	2.9	11	<1.0	<2.0	<50	<0.30	-	3.9	<1.0	<2.0	-	-	6,400	7.0	2.4	13	<0.10	<2.0	<2.0	6.1	<0.50	<0.50	<5.0	0.14	<1.0	0.17	13	<5.0
SSS37	12/7/2022	0.1-0.15	Normal	-	-	-	-	-	32,000	<2.0	3.2	94	1.3	<2.0	<50	1.0	-	7.9	3.3	7.4	-	-	5,600	60	3.9	4,000	0.56	<2.0	3.7	5.4	14	1.1	36	0.26	1.6	3.9	7.8	45
SSS38	12/7/2022	0-0.12	Normal	-	-	-	-	-	38,000	<2.0	5.5	130	<1.0	<2.0	<50	0.54	-	19	10	10	-	-	29,000	63	36	5,000	0.23	<2.0	12	28	2.4	0.75	25	0.42	<1.0	1.4	39	200
SSS39	12/7/2022	0.05-0.15	Normal	-	-	-	-	-	18,000	<2.0	5.4	150	<1.0	<2.0	<50	0.46	-	13	6.5	11	-	-	25,000	54	19	520	0.12	<2.0	9.4	14	0.76	1.3	73	0.15	<1.0	0.94	31	220
SSS41	12/7/2022	0-0.1	Normal	-	-	-	-	-	22,000	<2.0	5.8	170	1.6	<2.0	<50	0.63	-	21	7.8	13	-	-	27,000	74	23	770	0.17	<2.0	11	15	1.4	0.59	17	0.26	<1.0	2.2	40	300
SSS42	12/7/2022	0.05-0.15	Normal	-	-	-	-	-	19,000	<2.0	5.1	540	1.1	<2.0	<50	1.3	-	15	9.4	6.3	-	-	28,000	98	22	2,800	0.17	<2.0	9.4	23	1.4	<0.50	39	0.28	<1.0	1.3	39	190
SSS43	12/7/2022	0-0.15	Normal	-	-	-	-	-	5,400	<2.0	<2.0	14	<1.0	<2.0	<50	<0.30	-	<2.0	<1.0	<2.0	-	-	2,000	7.1	<2.0	32	<0.10	<2.0	<2.0	8.7	<0.50	<0.50	<5.0	<0.10	<1.0	0.29	8.5	<5.0
SSS45	12/7/2022	0.02-0.1	Normal	-	-	-	-	-	13,000	<2.0	3.3	390	<1.0	<2.0	<50	0.61	-	12	6.0	4.6	-	-	19,000	160	15	790	0.13	<2.0	5.2	20	0.66	<0.50	470	0.26	<1.0	0.98	38	170
TH47	6/20/2023	0-0.15	Normal	-	-	-	-	-	29000	<2.0	4.1	70	<1.0	<2.0	<50	<0.30	-	12	13	6.5	-	-	20,000	64	22	2,900	0.39	<2.0	7.0	16	3.4	<0.50	44	0.23	<1.0	1.8	25	78
TH47	6/20/2023	0-0.15	Normal	-	-	-	-	-	31000	<2.0	3.9	59	<1.0	<2.0	<50	<0.30	-	13	13	6.0	-	-	22,000	53	24	2,900	0.34	<2.0	7.1	18	3.3	<0.50	29	0.25	<1.0	1.9	27	79
TH48	6/20/2023	0-0.15	Normal	-	-	-	-	-	15000	<2.0	5.0	470	<1.0	<2.0	<50	1.4	-	11	5.4	7.9	-	-	26,000	110	17	2,900	0.20	2.7	7.2	23	0.80	<0.50	230	0.22	<1.0	1.2	35	220
TH50	6/20/2023	0-0.15	Normal	-	-	-	-	-	3900	<2.0	<2.0	75	<1.0	<2.0	<50	<0.30	-	2.5	1.0	<2.0	-	-	6,000	32	<2.0	260	0.13	<2.0	<2.0	15	<0.50	<0.50	36	<0.10	<1.0	0.48	10	21
TH51	6/20/2023	0-0.15	Normal	-	-	-	-	-	9500	<2.0	<2.0	37	<1.0	<2.0	<50	<0.30	-	5.1	1.3	2.5	-	-	7,400	18	5.5	91	0.16	<2.0	3.4	12	<0.50	<0.50	19	0.11	<1.0	0.38	18	26
TH52	6/20/2023	0-0.15	Normal	-	-	-	-	-	17000	<2.0	6.0	350	1.5	<2.0	<50	2.5	-	16	7.0	13	-	-	24,000	110	22	2,100	0.17	<2.0	11	16	1.3	<0.50	26	0.24	<1.0	1.9	35	320
TH53	6/20/2023	0-0.15	Normal	-	-	-	-	-	20000	<2.0	5.1	520	1.4	<2.0	<50	1.9	-	17	10	13	-	-	28,000	170	24	5,200	0.19	2.3	10	25	1.9	0.62	67	0.37	1.1	1.8	43	290
TH61	6/20/2023	0-0.15	Normal	-	-	-	-	-	24000	<2.0	3.5	450	<1.0	<2.0	<50	0.36	-	18	4.5	5.9	-	-	22,000	93	35	690	0.29	2.6	8.7	28	1.2	0.53	66	0.38	1.6	1.6	40	250
TH72	6/21/2023	0-0.15	Normal	-	-	-	-	-	7700	<2.0	5.2	16	<1.0	<2.0	<50	<0.30	-	6.7	<1.0	<2.0	-	-	7,600	19	4.0	19	<0.10	<2.0	2.1	12	<0.50	<0.50	<5.0	0.14	<1.0	0.30	23	8.0
TH73	6/21/2023	0-0.15	Normal	-	-	-	-	-	6600	<2.0	5.5	24	<1.0	<2.0	<50	<0.30	-	5.1	<1.0	<2.0	-	-	11,000	16	2.2	24	<0.10	<2.0	<2.0	7.9	<0.50	<0.50	5.8	0.11	<1.0	0.24	26	6.6
TH75	9/20/2023	0-0.15	Normal	-	4.80	-	-	-	17,000	<2.0	2.8	110	<1.0	<2.0	<50	0.61	-	6.0	11	10	-	-	9,300	140	7.0	2,800	0.45	<2.0	8.3	8.1	2.9	0.54	70	0.17	1.7	0.77	13	61
TH75	9/20/2023	0.30-0.75	Normal	-	-	-	-	-	17,000	<2.0	4.9	34	<1.0	<2.0	<50	<0.30	-	14	8.5	7.8	-	-	25,000	24	20	930	0.14	<2.0	11	10	0.68	<0.50	7.8	0.12	<1.0	0.89	27	140
TP35	9/20/2023	0-0.15	Normal	-	5.21	-	-	-	16000	<2.0	5.0	150	<1.0	<2.0	<50	0.31	-	17	9.0	7.6	-	-	27,000	63	22	2,100	0.14	2.1	10	14	1.0	<0.50	34	0.21	<1.0	1.4	37	240
TP35	9/20/2023	0.15-1.0	Normal	-	-	-	-	-	13000	<2.0	6.2	1100	<1.0	<2.0	<50	3.6	-	18	10	42	-	-	29,000	63	21	4,100	<0.10	<2.0	18	10	<0.50	<0.50	18	0.27	<1.0	1.0	31	500
Dillon Background Min									3,900	<2.0	<2.0	11	<1.0	<2.0	<50	<0.30	-	<2.0	<1.0	<2.0	-	-	1,400	7	<2.0	13	<0.10	<2.0	<2.0	4.3	<0.50	<0.50	<5.0	<0.10	<1.0	0.17	7.8	<5.0
Dillon Background Max									38,000	<2.0	6.2	540	1.6	<2.0	<50	2.6	-	21	13	29	-	-	31,000	170	41	5,200	0.56	2.7	16	29	14	1.3	470	0.42	1.7	3.9	43	340
Field ID	**Date**	**(mbgs)**	**Type**																																			
Monitoring Wells																																						
MW2 SS2	5/10/2022	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	1,200	<0.1	<2.0	20	9.2	<0.50	<0.50	1,300	0.2	<1.0	1.1	28	250
MW3 SS1	5/10/2022	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	1,900	<0.1	<2.0	17	4.2	<0.50	0.52	640	0.14	<1.0	0.43	8.3	160
MW4 SS1	5/10/2022	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	2,000	<0.1	<2.0	20	8.9	<0.50	0.64	4,300	0.44	<1.0	1.4	22	480
MW4 SS4	5/10/2022	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	1,600	<0.1	<2.0	22	10	<0.50	<0.50	2,000	0.25	<1.0	1.2	25	390
MW5 SS1	5/9/2022	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	6,900	<0.1	<2.0	7.6	3.7	0.66	1	3,600	0.15	<1.0	4.9	12	1,400
MW5 SS5	5/9/2022	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	2,200	<0.1	<2.0	18	11	0.59	1.5	16,000	0.36	<1.0	2.0	17	880
MW5-D SS10	12/2/2022	7.32 - 7.92	Normal	-	-	-	-	-	12,000	<2.0	6.3	420	<1.0	<2.0	<50	1.4	-	21	10	19	-	-	22,000	84	23	1,500	0.11	<2.0	21	11	<0.50	<0.50	280	0.24	<1.0	1.1	24	270
MW6 SS1*	5/10/2022	0.0 - 0.61	Normal	-	-	-	-	-	6,500	<2.0	3.1	540	<1.0	<2.0	<50	2.4	-	8.9	5.6	45	<0.5	<0.5	14,000	260	11	4,600	<0.1	<2.0	11	5.1	0.66	1.3	5,000	0.21	<1.0	2.8	17	500
MW7 SS2	5/9/2022	1.22 - 1.83	Normal	-	-	-	-	-	7,400	<2.0	12	610	<1.0	<2.0	<50	21	-	21	15	53	<0.5	<0.5	23,000	150	15	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	5/10/2022	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	2,000	<0.10	<2	11	2.5	<0.50	0.66	65	0.11	<1.0	0.34	5.6	150
SSS3	5/10/2022	0.15 - 0.46	Normal	-	0.099	0.099	170	15	-	-	-	-	-	-	-	-	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS4	5/10/2022	0.15 - 0.46	Normal	-	0.095	0.095	200	18	-	-	-	-	-	-	-	-	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS7	5/11/2022	0.15 - 0.3	Normal	-	0.075	0.075	280	14	-	-	-	-	-	-	-	-	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS8	5/12/2022	0.15 - 0.3	Normal	-	0.059	0.059	210	28	-	-	-	-	-	-	-	-	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS12	5/12/2022	0.15 - 0.3	Normal	16	-	-	-	-	8,300	<2.0	4.4	740	<1.0	<2.0	<50	2.8	-	13	7.1	38	-	-	17,000	320	19	1,900	<0.10	<2	16	8.9	0.72	0.93	16,000	0.23	1.1	1.3	18	500
SSS13	5/12/2022	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	1,800	<0.10	<2	19	9.6	<0.50	<0.50	91	0.23	<1.0	0.97	25	260
SSS16	5/13/2022	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	4,300	<0.10	2.2	18	9.2	0.78	1.0	2,100	0.32	<1.0	2.6	24	860
SSS17	5/13/2022	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	3,400	<0.10	<2	14	13	1.3	<0.50	1,200	0.26	<1.0	1.6	33	380
SSS19	5/13/2022	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	3,100	<0.10	<2	13	12	0.73	<0.50	54	0.22	<1.0	0.87	30	180
SSS21	5/13/2022	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	360	<0.10	<2	4.9	3.4	<0.50	<0.50	500	<0.10	<1.0	0.49	11	170
SSS27	12/2/2022	0 - 0.15	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30,000	-	-	-	-	-	-	-	-	-		-	-	-	-
SSS28	12/2/2022	0 - 0.08	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS29	12/2/2022	0 - 0.1	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,300	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS30	12/2/2022	0 - 0.15	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS31	12/2/2022	0 - 0.07	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	320	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS32	12/2/2022	0 - 0.08	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	580	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS35	12/7/2022	0.05 - 0.15	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS36	12/7/2022	0.03 - 0.15	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS40	12/7/2022	0 - 0.15	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS40 (F/D)	12/7/2022	0 - 0.15	Field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS44	12/7/2022	0 - 0.15	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS23	5/18/2022	0.15 - 0.25	Normal	-	0.072	0.072	180	8.7	-	-	-	-	-	-	-	-	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS24 (F/D)	5/18/2022	0.15 - 0.25	Field_D	-	0.060	0.060	170	7.3	-	-	-	-	-	-	-	-	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS25	5/19/2022	0.05 - 0.25	Normal	-	0.16	0.16	130	7.9	-	-	-	-	-	-	-	-	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSS46	12/7/2022	0 - 0.15	Normal	-	-	-	-	-	13,000	<2.0	4.5	250	<1.0	<2.0	<50	0.82	-	11	6.7	9.1	-	-	24,000	130	15	2,400	0.13	<2.0	6.7	15	0.72	0.52	130	0.21	<1.0	0.78	36	220

Table E-1 Soil Analytical Results Metals

				Physical		ARD			Metals																	Metals											
				Moisture Content	Soluable pH	Sodium Adsorption Ratio (SAR)	Electrical Conductivity (Lab)	Chloride	Aluminium	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium (Total, III+VI)	Cobalt	Copper	Cyanide, free	Cyanide Total	Iron	Lead	Lithium	Manganese	Mercury	Molybdenum	Nickel	Rubidium	Selenium	Silver	Strontium	Thallium	Tin	Uranium	Vanadium	Zinc
				%		SAR	µS/cm	mg/kg																		mg/kg											
EQL				1	-	-	1	5	10	2	2	5	1	2	50	0.3	0.1	2	1	2	0.5	0.5	50	0.5	2	2	0.1	2	2	2	0.5	0.5	5	0.1	1	0.1	2	5
Highlands Soil Zone EC Max Background Concentrations				-	-	-	-	-	28000	2	16.8	120	1	-	0.62	0.4	-	81	26	49	-	-	52000	84		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)				-	-	-	-	-	-	-	-	-	0.4	-	-	0.4	-	-	-	-	-	-	19800 to 39000	9.6 to 14						0.8		5				34 to 48		
NS Tier I EQS Soil Commercial Potable Coarse				-	-	-	-	100	15,400	7.5	10	350	1	-	4,300	1	-	630	22	250	-	6.5	11,000	120	-	360	24	15	70	-	1	77	9,400	1	9,400	30	39	200
NS Tier I EQS Soil Commercial Potable Fine				-	-	-	-	100	15,400	7.5	10	350	1	-	4,300	1	-	630	22	250	-	6.5	11,000	120	-	360	24	15	70	-	1	77	9,400	1	9,400	30	39	200
Test Hole Sampling																																					
TH4 SS1	**5/18/2022**	**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	1,500	<0.10	<2	11	3.6	<0.50	0.87	110	0.20	<1.0	0.35	6.3	180
TH5 SS1	**5/18/2022**	**0.15 - 0.3**	**Normal**	19	-	-	-	-	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	1,800	<0.10	<2	13	3.2	<0.50	0.68	210	0.22	<1.0	0.35	5.5	440
TH6 SS2	**5/18/2022**	**0.3 - 1.25**	**Normal**	20	-	-	-	-	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	1,800	<0.10	<2	22	5.1	<0.50	<0.50	1,200	0.15	<1.0	0.46	11	140
TH7 SS1	**5/18/2022**	**0.3 - 0.4**	**Normal**	20	-	-	-	-	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	1,400	<0.10	<2	13	3.1	<0.50	<0.50	380	0.14	<1.0	0.29	6.3	86
TH8 SS2	**5/18/2022**	**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	3,300	<0.10	<2	45	10	<0.50	1.9	420	0.36	<1.0	1.3	15	390
TH9 SS1	**5/18/2022**	**0 - 0.3**	**Normal**	28	-	-	-	-	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	3,000	<0.10	2.0	63	14	<0.50	2.0	290	0.37	<1.0	1.4	20	440
TH18 6"-12" SS1	**5/13/2022**	**0.15 - 0.3**	**Normal**	16	-	-	-	-	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	2,000	<0.10	<2	21	13	<0.5	<0.5	480	0.26	<1.0	1.2	30	510
TH20 SS1	**5/18/2022**	**0.15 - 0.3**	**Normal**	25	-	0.19	160	-	14,000	<2.0	7.1	990	<1.0	<2.0	<50	3.3	37	19	8.0	34	<0.50	<0.50	29,000	1,400	20	1,800	0.12	<2	15	13	0.92	1.5	8,200	0.31	1.4	2.3	39	720
TH21 SS1	**5/18/2022**	**0.15 - 0.3**	**Normal**	36	-	0.29	91	-	16,000	<2.0	5.2	990	<1.0	<2.0	<50	2.7	10	17	8.1	14	<0.50	<0.50	26,000	1,100	21	2,200	0.17	<2	10	14	1.2	0.92	8,800	0.31	1.1	1.7	39	400
TH34 0-0.15M	**10/18/2022**	**0-0.15**	**Normal**	-	-	-	-	-	9,600	<2.0	3.1	280	<1.0	<2.0	<50	0.80	-	10	5.8	6.9	-	-	14,000	120	18	550	<0.10	<2.0	9.3	10	1.8	<0.50	1,800	0.14	<1.0	3.6	20	180
TH35 0-0.15M	**10/18/2022**	**0-0.15**	**Normal**	-	-	-	-	-	8,600	<2.0	3.6	550	<1.0	<2.0	<50	0.70	-	9.5	4.5	11	-	-	12,000	63	13	480	0.12	<2.0	8.6	9.6	0.90	<0.50	1,800	0.17	<1.0	1.8	20	150
TH36 0-0.15M	**10/18/2022**	**0-0.15**	**Normal**	-	-	-	-	-	13,000	<2.0	6.7	250	<1.0	<2.0	<50	1.9	-	17	10	17	-	-	23,000	110	21	1700	<0.10	<2.0	22	8.6	<0.50	<0.50	24	0.22	<1.0	0.93	25	200
TH36 0.15-0.8M	**10/18/2022**	**0.15-0.8**	**Normal**	-	-	-	-	-	13,000	<2.0	7.2	210	<1.0	<2.0	<50	1.6	-	19	11	19	-	-	25,000	120	25	1,000	<0.10	<2.0	23	11	<0.50	<0.50	34	0.31	<1.0	0.84	23	210
TH37 0-0.15M	**10/18/2022**	**0-0.15**	**Normal**	-	-	-	-	-	13,000	<2.0	5.1	73	<1.0	<2.0	<50	<0.30	-	15	7.8	4.9	-	-	19,000	100	19	1200	0.11	<2.0	9.2	14	0.67	<0.50	30	0.17	<1.0	0.74	27	120
TH37 0.15-0.85M	**10/18/2022**	**0.15-0.85**	**Normal**	-	-	-	-	-	14,000	<2.0	6.7	170	<1.0	<2.0	<50	2.9	-	18	11	20	-	-	24,000	140	25	1,900	<0.10	<2.0	24	10	<0.50	<0.50	13	0.29	<1.0	0.74	26	290
TH38 0-0.15M	**10/18/2022**	**0-0.15**	**Normal**	-	-	-	-	-	13,000	<2.0	6.0	190	<1.0	<2.0	<50	1.2	-	15	9.9	9.6	-	-	22000	380	18	2000	<0.10	<2.0	9.7	13	0.70	<0.50	47	0.21	<1.0	0.83	32	290
TH38 0.15-0.95M	**10/18/2022**	**0.15-0.95**	**Normal**	-	-	-	-	-	13,000	<2.0	6.8	270	<1.0	<2.0	<50	5.2	-	17	11	26	-	-	25,000	260	22	2,600	<0.10	<2.0	21	9.2	<0.50	<0.50	26	0.28	<1.0	0.99	28	700
TH39 0-0.15M	**10/18/2022**	**0-0.15**	**Normal**	-	-	-	-	-	15,000	<2.0	6.0	260	<1.0	<2.0	<50	2.2	-	16	11	8.4	-	-	26,000	330	20	4,600	0.16	<2.0	13	14	0.84	<0.50	81	0.26	<1.0	0.94	33	350
TH39 0.15-0.75M	**10/18/2022**	**0.15-0.75**	**Normal**	-	-	-	-	-	12,000	<2.0	6.2	250	<1.0	<2.0	<50	4.6	-	17	11	21	-	-	27,000	340	21	3,300	<0.10	2.4	19	8.3	<0.50	<0.50	45	0.23	<1.0	1.3	28	520
TH40 0-0.15M	**10/18/2022**	**0-0.15**	**Normal**	-	-	-	-	-	17,000	<2.0	6.4	720	<1.0	<2.0	<50	12	-	18	13	17	-	-	21,000	750	21	2,200	0.35	2.7	14	18	2.3	1.7	1,800	0.46	1.3	2.9	37	690
TH40 0.15-0.9M	**10/18/2022**	**0.15-0.9**	**Normal**	-	-	-	-	-	11,000	<2.0	7.1	610	<1.0	<2.0	<50	8.5	-	15	11	33	-	-	25,000	220	20	3,200	<0.10	2.1	19	9.5	<0.50	0.60	140	0.23	<1.0	1.3	26	840
TH41 0-0.15M	**10/18/2022**	**0-0.15**	**Normal**	-	-	-	-	-	18,000	<2.0	7.4	510	<1.0	<2.0	<50	2.1	-	23	11	19	-	-	29000	720	23	4,500	0.27	2.3	13	17	1.6	1.4	1,800	0.37	1.1	3.0	41	520
TH41 0.15-0.75M	**10/18/2022**	**0.15-0.75**	**Normal**	-	-	-	-	-	9,800	<2.0	7.2	540	<1.0	<2.0	<50	5.0	-	15	8.2	36	-	-	20,000	200	18	2,400	<0.10	<2.0	16	8.1	<0.50	0.52	140	0.27	<1.0	1.4	24	740
TH42 0-0.15M	**10/18/2022**	**0-0.15**	**Normal**	-	-	-	-	-	19,000	<2.0	5.9	750	<1.0	<2.0	<50	1.2	-	18	8.7	8.3	-	-	30,000	470	19	5,500	0.16	3.3	7.4	26	1.0	0.51	920	0.43	1.4	1.6	49	250
TH42 0.15-0.6M	**10/18/2022**	**0.15-0.6**	**Normal**	-	-	-	-	-	13,000	<2.0	5.9	92	<1.0	<2.0	<50	0.81	-	17	6.6	11	-	-	25,000	140	20	2,600	0.12	<2.0	11	8.5	0.50	<0.50	250	0.20	<1.0	1.3	32	340
TH43 0-0.15M	**10/18/2022**	**0-0.15**	**Normal**	-	-	-	-	-	19,000	<2.0	4.8	610	<1.0	<2.0	<50	1.8	-	19	9.1	15	-	-	25,000	430	24	2,000	0.17	<2.0	12	13	1.1	0.80	480	0.37	1.1	1.8	42	360
TH43 0.15-1.05M	**10/18/2022**	**0.15-1.05**	**Normal**	-	-	-	-	-	11,000	<2.0	5.9	360	<1.0	<2.0	<50	3.5	-	15	9.2	29	-	-	24,000	190	19	1,900	<0.10	<2.0	16	7.4	<0.50	<0.50	21	0.23	<1.0	1.2	28	440
TH43 0.15 1.05M (DUP2 F/D)	**10/18/2022**	**0.15-1.05**	**Field_D**	-	-	-	-	-	12,000	<2.0	6.6	380	<1.0	<2.0	<50	3.5	-	16	9.3	29	-	-	25,000	200	18	2,300	<0.10	<2.0	16	7.7	<0.50	<0.50	28	0.24	<1.0	1.1	28	460
TH44 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	12,000	<2.0	6.0	630	<1.0	<2.0	<50	3.0	-	16	9.9	18	-	-	23,000	470	20	2,300	0.14	<2.0	18	10	<0.50	<0.50	710	0.26	<1.0	1.2	27	420
TH45 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	16,000	<2.0	5.5	210	<1.0	<2.0	<50	1.2	-	16	8.7	12	-	-	24,000	220	21	2,200	0.17	<2.0	11	14	0.93	0.72	91	0.26	<1.0	1.1	40	400
TH45 0-0.15M (DUP 23-A) (F/D)	**6/20/2023**	**0-0.15**	**Field_D**	-	-	-	-	-	17,000	<2.0	5.3	230	<1.0	<2.0	<50	1.3	-	15	8.4	12	-	-	23,000	220	20	2,100	0.10	<2.0	10	15	0.82	0.72	120	0.27	<1.0	1.0	38	390
TH46 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	15,000	<2.0	8.7	650	1.3	<2.0	<50	25	-	16	6.9	15	-	-	36,000	170	17	4,400	0.17	12	11	15	0.98	<0.50	120	0.32	<1.0	2.4	73	350
TH49 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	12,000	<2.0	5.0	1500	<1.0	<2.0	<50	3.4	-	15	9.3	28	-	-	18,000	180	24	2,700	0.12	2.8	20	13	3.5	1.2	4,100	0.28	<1.0	6.3	23	1,200
TH54 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	11,000	<2.0	6.7	110	<1.0	<2.0	<50	0.89	-	14	11	6.6	-	-	21,000	200	18	1,900	0.12	2.1	9.0	14	0.93	<0.50	130	0.25	<1.0	1.1	27	200
TH55 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	13,000	<2.0	4.5	120	<1.0	<2.0	<50	0.35	-	13	7.8	5.1	-	-	18,000	120	18	1,300	0.13	<2.0	7.3	15	0.91	<0.50	72	0.23	<1.0	0.83	29	120
TH55 0-0.15M (DUP 23-C) (F/D)	**6/20/2023**	**0-0.15**	**Field_D**	-	-	-	-	-	13,000	<2.0	4.4	110	<1.0	<2.0	<50	0.37	-	13	8.2	5.0	-	-	18,000	120	16	1,400	0.10	<2.0	6.7	15	0.81	<0.50	71	0.23	<1.0	0.80	29	110
TH56 0-0.15M	**6/21/2023**	**0-0.15**	**Normal**	-	-	-	-	-	3,900	<2.0	<2.0	150	<1.0	<2.0	<50	0.40	-	2.7	1.3	3.0	-	-	5,600	83	5.0	260	0.13	<2.0	2.2	3.9	<0.50	<0.50	230	<0.10	<1.0	0.30	9.2	78
TH57 0-0.15M	**6/21/2023**	**0-0.15**	**Normal**	-	-	-	-	-	16,000	<2.0	8.3	360	<1.0	<2.0	<50	1.6	-	17	11	9.5	-	-	28,000	260	33	8,900	0.16	3.4	12	21	1.9	<0.50	2,600	0.37	1.2	8.9	33	620
TH58 0-0.15M	**6/21/2023**	**0-0.15**	**Normal**	-	-	-	-	-	12,000	<2.0	6.4	100	<1.0	<2.0	<50	0.34	-	15	11	5.9	-	-	21,000	160	15	3,100	0.11	<2.0	8.1	16	0.77	<0.50	20	0.25	1.0	0.92	30	120
TH59 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	8,100	<2.0	3.0	600	<1.0	<2.0	<50	1.5	-	13	6.2	27	-	-	16,000	690	14	1,600	<0.10	<2.0	11	5.1	<0.50	0.57	14,000	0.14	<1.0	1.4	23	360
TH60 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	18,000	<2.0	7.0	670	1.1	<2.0	<50	5.9	-	19	12	15	-	-	29,000	360	23	8,700	0.17	<2.0	15	20	1.5	0.84	480	0.41	1.1	2.0	40	570
TH62 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	16,000	<2.0	6.0	680	<1.0	<2.0	<50	1.4	-	17	9.3	13	-	-	25,000	120	21	2,600	0.11	<2.0	11	18	0.84	<0.50	43	0.26	1.0	1.3	37	260
TH63 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	3,700	<2.0	<2.0	160	<1.0	<2.0	<50	0.33	-	5.1	<1.0	<2.0	-	-	15,000	59	2.4	49	<0.10	<2.0	<2.0	7.3	<0.50	<0.50	52	<0.10	<1.0	0.46	26	23
TH64 0-0.15M	**6/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	13,000	<2.0	4.5	210	<1.0	<2.0	<50	0.59	-	14	8.1	9.1	-	-	21,000	240	16	1,600	0.10	<2.0	6.9	11	0.56	0.62	140	0.19	<1.0	0.75	38	240
TH65 0-0.15M	**6/21/2023**	**0-0.15**	**Normal**	-	-	-	-	-	12,000	<2.0	5.8	54	<1.0	<2.0	<50	<0.30	-	14	11	5.0	-	-	22,000	110	15	1,700	0.10	<2.0	6.9	13	0.76	<0.50	9.9	0.22	<1.0	0.83	28	89
TH66 0-0.15M	**6/21/2023**	**0-0.15**	**Normal**	-	-	-	-	-	13,000	<2.0	6.8	73	<1.0	<2.0	<50	<0.30	-	16	17	6.1	-	-	23,000	140	12	2,300	0.15	<2.0	7.3	18	0.84	<0.50	13	0.26	1.1	0.80	34	83
TH67 0-0.15M	**6/21/2023**	**0-0.15**	**Normal**	-	-	-	-	-	20,000	<2.0	8.6	87	<1.0	<2.0	<50	<0.30	-	22	13	7.1	-	-	34,00	140	26	2,300	0.14	<2.0	11	28	1.0	<0.50	14	0.37	1.2	1.0	43	120
TH68 0-0.15M	**6/21/2023**	**0-0.15**	**Normal**	-	-	-	-	-	26,000	<2.0	8.1	94	<1.0	<2.0	<50	<0.30	-	24	39	6.5	-	-	34,000	290	28	4,200	0.14	<2.0	9.3	28	1.2	<0.50	30	0.41	1.3	0.85	52	110
TH69 0-0.15M	**6/21/2023**	**0-0.15**	**Normal**	-	-	-	-	-	15,000	<2.0	4.1	170	<1.0	<2.0	<50	0.46	-	14	7.5	5.3	-	-	18,000	170	23	2,000	0.14	<2.0	8.8	13	0.73	<0.50	41	0.22	<1.0	0.71	30	130
TH70 0-0.15M	**6/21/2023**	**0-0.15**	**Normal**	-	-	-	-	-	11,000	<2.0	5.3	84	<1.0	<2.0	<50	0.33	-	12	4.8	5.0	-	-	17,000	96	13	680	0.11	<2.0	5.7	12	0.51	<0.50	12	0.17	1.1	0.65	30	94
TH71 0-0.15M	**6/21/2023**	**0-0.15**	**Normal**	-	-	-	-	-	14,000	<2.0	6.7	310	<1.0	<2.0	<50	1.2	-	21	12	19	-	-	26,000	190	30	1,200	<0.10	<2.0	26	14	<0.50	<0.50	34	0.29	<1.0	0.91	27	230
TH74 0-0.15M	**9/20/2023**	**0-0.15**	**Normal**	-	5.87	-	-	-	17,000	<2.0	5.8	490	1.1	<2.0	<50	3.1	-	18	13	13	-	-	28,000	190	21	4,100	0.16	<2.0	13	23	1.1	<0.50	190	0.30	5.0	1.4	42	370
TH74 0.30-1.0M	**9/20/2023**	**0.3-1.0**	**Normal**	-	-	-	-	-	15,000	<2.0	4.2	120	<1.0	<2.0	<50	2.3	-	15	9.3	22	-	-	28,000	91	21	2,100	<0.10	<2.0	16	10	<0.50	<0.50	70	0.21	<1.0	1.3	40	480
TH75 0-1.15M	**9/20/2023**	**0-0.15**	**Normal**	-	-	-	-	-	15,000	<2.0	4.2	120	<1.0	<2.0	<50	2.3	-	15	9.2	22	-	-	28,000	91	21	2,100	<0.10	<2.0	16	10	<0.50	<0.50	70	0.21	<1.0	1.3	40	480
TH76 1.05-1.20M	**9/20/2023**	**1.05-1.20**	**Normal**	-	-	-	-	-	15,000	<2.0	7.3	830	<1.0	<2.0	<50	1.9	-	20	12	16	-	-	27,000	810	25	2,400	0.11	<2.0	19	15	0.54	<0.50	200	0.26	<1.0	1.2	35	340
TH77 0-0.15M	**9/20/2023**	**0-0.15**	**Normal**	-	4.31	-	-	-	1,900	<2.0	69	16	<1.0	<2.0	<50	<0.30	-	4.3	7.2	22	-	-	13,000	45	<2.0	29	<0.10	4.2	6.6	2.2	<0.50	<0.50	29	<0.10	<1.0	0.33	12	13
TH77 0.3-1.0M	**9/20/2023**	**0.3-1.0**	**Normal**	-	-	-	-	-	20,000	<2.0	11	40	<1.0	<2.0	<50	0.70	-	22	12	23	-	-	33,000	170	28	2,200	0.12	2.3	22	10	1.3	<0.50	62	0.33	<1.0	1.5	37	350
TH78 1.0-1.5M	**9/20/2023**	**1.0-1.5**	**Normal**	-	-	-	-	-	14,000	<2.0	9.1	210	<1.0	<2.0	<50	1.7	-	19	12	24	-	-	26,000	120	27	1,500	<0.10	<2.0	25	13	<0.50	<0.50	190	0.30	<1.0	1.0	27	250

Table E-1 Soil Analytical Results Metals

				Physical		ARD			Metals													
				Moisture Content	Soluable pH	Sodium Adsorption Ratio (SAR)	Electrical Conductivity (Lab)	Chloride	Aluminium	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium (Total, III+VI)	Cobalt	Copper	Cyanide, free	Cyanide Total
				%		SAR	µS/cm	mg/kg														
EQL				1	-	-	1	5	10	2	2	5	1	2	50	0.3	0.1	2	1	2	0.5	0.5
Highlands Soil Zone EC Max Background Concentrations				-	-	-	-	-	28000	2	16.8	120	1	-	0.62	0.4	-	81	26	49	-	-
EC Database backgoround (EC ref 258,259,260)				-	-	-	-	-	-	-	-	-	0.4	-	-	0.4	-	-	-	-	-	-
NS Tier I EQS Soil Commercial Potable Coarse				-	-	-	-	100	15,400	7.5	10	350	1	-	4,300	1	-	630	22	250	-	6.5
NS Tier I EQS Soil Commercial Potable Fine				-	-	-	-	100	15,400	7.5	10	350	1	-	4,300	1	-	630	22	250	-	6.5
Test Pit Sampling																						
TP1 1-2M SS2	**5/13/2022**	**1.0 - 2.0**	**Normal**	13	-	-	-	-	11,000	<2.0	5.9	870	<1.0	<2.0	<50	3.2	-	14	8.9	66	<0.5	<0.5
TP2 0-1M SS1	**5/13/2022**	**0 - 1.0**	**Normal**	7.7	-	-	-	-	7,600	<2.0	7.6	750	<1.0	2.9	<50	7	-	9.6	8.3	110	<0.5	<0.5
TP3 0-1M SS3	**5/11/2022**	**0 - 1.0**	**Normal**	10	-	-	-	-	14,000	<2.0	4.3	1,000	1	2	<50	1	-	17	8.4	45	<0.5	<0.5
TP24 0-1M SS3 (F/D)	**5/11/2022**	**0 - 1.0**	**Field_D**	15	-	-	-	-	13,000	<2.0	3.9	950	<1.0	<2.0	<50	0.99	-	16	8.3	48	<0.5	<0.5
TP10 0-1M SS3	**5/12/2022**	**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
TP10 2-3M SS1	**5/12/2022**		**Normal**	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11 0-1M SS3	**5/11/2022**	**0 - 1.0**	**Normal**	11	-	-	-	-	10,000	<2.0	6.2	680	<1.0	<2.0	<50	5.3	-	13	8.4	34	<0.5	<0.5
TP12 0-1M SS3	**5/11/2022**	**0 - 1.0**	**Normal**	15	-	-	-	-	7,500	<2.0	5.4	350	<1.0	2.1	<50	2.2	-	12	9.8	38	<0.5	<0.5
TP13 0-1M SS3	**5/11/2022**	**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
TP13 2-3M SS1	**5/11/2022**		**Normal**	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14 0-1M SS3	**5/11/2022**	**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
TP14 2-3M SS1	**5/11/2022**		**Normal**	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15 0-1M SS3	**5/12/2022**	**0 - 1.0**	**Normal**	14	-	-	-	-	9,600	<2.0	4.3	620	<1.0	<2.0	<50	4.8	-	14	8.2	45	<0.5	<0.5
TP22 0-1M SS3 (F/D)	**5/12/2022**	**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
TP16 0-1M SS3	**5/12/2022**	**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
TP23 0-1M SS3 (F/D)	**5/12/2022**	**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
TP16 (2-3M) SS1	**5/11/2022**		**Normal**	8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23 (2-3M) SS1 (F/D)	**5/12/2022**		**Field_D**	7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17 0-1M SS3	**5/12/2022**	**0 - 1.0**	**Normal**	12	-	-	-	-	10,000	<2.0	4.9	680	<1.0	<2.0	<50	3.5	-	15	8.1	47	<0.5	<0.5
TP19 0.3M SS1	**5/13/2022**	**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
TP19 1-2M SS2	**5/13/2022**		**Normal**	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP22 0-0.15M	**10/12/2022**	**0-0.15**	**Normal**	-	-	-	-	-	9400	<2.0	9.5	610	<1.0	<2.0	<50	5.9	-	18	120	74	-	-
TP22 0.15-1.0M	**10/12/2022**	**0.15-1.0**	**Normal**	-	-	-	-	-	9,500	<2.0	8.2	570	<1.0	<2.0	<50	6.1	-	15	270	100	-	-
TP24 0-0.15M	**10/12/2022**	**0-0.15**	**Normal**	-	-	-	-	-	12,000	<2.0	6.3	300	<1.0	<2.0	<50	5.6	-	14	11	30	-	-
TP25 0-0.15M	**10/12/2022**	**0-0.15**	**Normal**	-	-	-	-	-	18000	<2.0	5.2	210	<1.0	<2.0	<50	1.0	-	15	9.7	14	-	-
TP25 0.15-1.0M	**10/12/2022**	**0.15-1.0**	**Normal**	-	-	-	-	-	11,000	<2.0	5.3	700	<1.0	<2.0	<50	4.3	-	13	8.4	31	-	-
TP26 0-0.15M	**10/12/2022**	**0-0.15**	**Normal**	18000	-	<2.0	7.2	990	18000	<2.0	7.2	990	<1.0	<2.0	<50	6.7	-	21	9.7	43	-	-
TP26 1-2M	**10/12/2022**	**1-2**	**Normal**	-	-	-	-	-	13,000	<2.0	6.5	560	<1.0	<2.0	<50	4.0	-	16	9.8	32	-	-
TP27 0-0.15M	**10/12/2022**	**0-0.15**	**Normal**	-	-	-	-	-	6,600	<2.0	6.8	670	<1.0	<2.0	<50	8.5	-	9.7	8.6	52	-	-
TP28 0-1M	**10/12/2022**	**0-1**	**Normal**	-	-	-	-	-	9,300	<2.0	4.5	720	<1.0	<2.0	<50	3.2	-	12	8.1	38	-	-
TP28 2-3M	**10/12/2022**	**2-3**	**Normal**	-	-	-	-	-	8,700	<2.0	4.3	580	<1.0	<2.0	<50	3.4	-	11	8.2	38	-	-
TP29 0-0.15M	**10/13/2022**	**0-0.15**	**Normal**	4000	-	<2.0	4.8	500	4,000	<2.0	4.8	500	<1.0	<2.0	<50	0.66	-	8.6	5.0	4.3	-	-
TP30 2-3M	**10/13/2022**	**2-3**	**Normal**	-	-	-	-	-	2,800	<2.0	9.3	370	<1.0	<2.0	<50	0.87	-	5.7	4.3	4.1	-	-
TP31 0-0.15M	**10/13/2022**	**0-0.15**	**Normal**	-	-	-	-	-	3,900	<2.0	8.7	960	<1.0	<2.0	<50	0.67	-	9.2	4.8	4.1	-	-
TP31 0.15-1.0M	**10/13/2022**	**0.15-1.0**	**Normal**	-	-	-	-	-	16,000	<2.0	12	1100	2.0	<2.0	<50	1.3	-	34	14	10	-	-
TP32 0-0.15M	**10/13/2022**	**0-0.15**	**Normal**	-	-	-	-	-	10,000	<2.0	2.9	940	<1.0	<2.0	<50	1.3	-	14	7.2	23	-	-
TP34 2.0-2.45M	**9/20/2023**	**2.0-2.45M**	**Normal**	-	-	-	-	-	18,000	2.5	7.3	720	<1.0	<2.0	<50	2.6	-	28	11	40	-	-
TP36 0.015-1.0M	**9/20/2023**	**0.15-1.0M**	**Normal**	-	-	-	-	-	12,000	<2.0	7.3	710	<1.0	<2.0	<50	4.2	-	18	11	55	-	-
TP36 3.0-3.5M	**9/20/2023**	**3.0-3.5M**	**Normal**	-	-	-	-	-	12,000	<2.0	6.8	880	<1.0	<2.0	<50	5.1	-	18	12	62	-	-
TP37 3.0-4.0M	**9/20/2023**	**3.0-4.0M**	**Normal**	-	-	-	-	-	13,000	<2.0	6.6	140	<1.0	<2.0	<50	3.5	-	17	11	35	-	-
TP37 3.0-4.0M (F/D)	**9/20/2023**	**3.0-4.0M**	**Field_D**	-	-	-	-	-	13,000	<2.0	7.0	210	<1.0	<2.0	<50	6.2	-	19	12	36	-	-
TP38 0.15-1.0M	**9/20/2023**	**0.15-1.0M**	**Normal**	-	-	-	-	-	13,000	<2.0	6.5	260	<1.0	<2.0	<50	6.4	-	16	12	29	-	-
TP38 3.0-3.6M	**9/20/2023**	**3.0-3.6M**	**Normal**	-	-	-	-	-	13,000	<2.0	5.7	730	<1.0	<2.0	<50	4.1	-	18	11	24	-	-
TP39* 3.0-4.0M	**9/20/2023**	**3.0-4.0M**	**Normal**	-	-	-	-	-	12,000	<2.0	5.2	460	<1.0	<2.0	<50	3.0	-	17	9.5	20	-	-
TP40 0.015-1.0M	**9/20/2023**	**0.15-1.0M**	**Normal**	-	5.61	-	-	-	11,000	<2.0	6.8	40	<1.0	<2.0	<50	0.38	-	16	11	9.9	-	-
TP40 3.0-4.0M	**9/20/2023**	**3.0-4.0M**	**Normal**	-	-	-	-	-	14,000	<2.0	7.0	180	<1.0	<2.0	<50	0.93	-	23	13	20	-	-

	Metals															
	Iron	Lead	Lithium	Manganese	Mercury	Molybdenum	Nickel	Rubidium	Selenium	Silver	Strontium	Thallium	Tin	Uranium	Vanadium	Zinc
				mg/kg												
EQL	50	0.5	2	2	0.1	2	2	2	0.5	0.5	5	0.1	1	0.1	2	5
Highlands Soil Zone EC Max Background Concentrations	52000	84		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)	19800 to 39000	9.6 to 14						0.8		5				34 to 48		
NS Tier I EQS Soil Commercial Potable Coarse	11,000	120	-	360	24	15	70	-	1	77	9,400	1	9,400	30	39	200
NS Tier I EQS Soil Commercial Potable Fine	11,000	120	-	360	24	15	70	-	1	77	9,400	1	9,400	30	39	200
Test Pit Sampling																
TP1 1-2M SS2	29,000	340	20	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	20,000	520	15	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	21,000	190	27	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)	20,000	180	26	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	16,000	290	17	2,800	<0.1	<2	14	7.7	1	0.86	6,200	0.29	<1.0	2.3	22	410
TP10 2-3M SS1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11 0-1M SS3	20,000	260	19	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	17,000	410	13	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	16,000	2,200	15	2,700	<0.1	<2	12	6.8	0.64	1.4	19,000	0.16	<1.0	4.1	18	390
TP13 2-3M SS1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14 0-1M SS3	12,000	890	9.7	1,500	<0.1	<2	7.6	4	<0.5	0.56	20,000	<0.1	<1.0	1.4	23	260
TP14 2-3M SS1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15 0-1M SS3	18,000	970	19	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)	20,000	170	21	1,600	<0.1	<2	17	12	<0.5	0.9	8,500	0.36	<1.0	2	23	530
TP16 0-1M SS3	8,200	1,100	6.6	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)	10,000	1,300	9.7	1,900	<0.1	<2	7.1	5.6	<0.5	1.5	27,000	0.12	<1.0	1.7	14	350
TP16 (2-3M) SS1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23 (2-3M) SS1 (F/D)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17 0-1M SS3	20,000	300	20	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	22,000	90	21	1,400	<0.1	<2	20	9.8	<0.5	<0.5	1,200	0.2	<1.0	1	25	260
TP19 1-2M SS2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP22 0-0.15M	49000	14,000	16	1,600	0.20	2.6	20	10	<0.50	2.2	6,300	0.33	<1.0	1.3	36	730
TP22 0.15-1.0M	100,000	6,500	18	1,800	0.23	4.0	25	14	0.78	1.8	11000	0.28	<1.0	1.8	57	800
TP24 0-0.15M	23,000	280	17	3,800	<0.10	<2.0	15	7.9	<0.50	<0.50	200	0.31	<1.0	1.4	31	530
TP25 0-0.15M	24,000	220	21	1,700	0.16	<2.0	10	10	0.84	1.0	300	0.25	<1.0	1.0	40	390
TP25 0.15-1.0M	21,000	140	18	2,100	<0.10	<2.0	15	8.0	<0.50	<0.50	75	0.28	<1.0	1.2	25	670
TP26 0-0.15M	28,000	740	21	3,200	0.17	2.0	17	15	0.87	1.8	5,600	0.34	2.7	2.3	42	920
TP26 1-2M	27,000	180	20	2,800	<0.10	<2.0	17	7.2	<0.50	0.54	320	0.24	5.5	1.5	35	580
TP27 0-0.15M	14,000	190	14	6,500	<0.10	2.8	14	7.0	0.93	2.1	5,500	0.36	<1.0	5.8	14	1,500
TP28 0-1M	17,000	290	18	3,100	<0.10	<2.0	16	8.8	0.63	1.1	7,300	0.31	<1.0	2.7	20	740
TP28 2-3M	16,000	580	18	3,100	<0.10	<2.0	15	8.0	1.0	1.3	6,700	0.36	<1.0	3.0	20	780
TP29 0-0.15M	7800	3,100	6.4	1,700	<0.10	<2.0	14	3.6	<0.50	<0.50	670	0.13	<1.0	0.33	7.2	130
TP30 2-3M	6,700	3,800	5.5	1,900	<0.10	<2.0	10	3.0	<0.50	0.83	460	0.15	<1.0	0.39	4.7	140
TP31 0-0.15M	8300	2,600	6.7	2,300	<0.10	<2.0	15	4.2	<0.50	0.63	240	0.15	<1.0	0.48	6.8	130
TP31 0.15-1.0M	26,000	6,300	29	1,900	<0.10	<2.0	69	15	<0.50	1.3	690	0.36	<1.0	1.1	25	390
TP32 0-0.15M	16,000	87	22	1,200	<0.10	<2.0	18	10	0.69	0.76	14,000	0.18	<1.0	1.1	16	310
TP34 2.0-2.45M	45,000	7,000	26	1,500	0.13	2.5	21	7.9	<0.50	1.1	7,000	0.16	2.2	1.7	60	540
TP36 0.015-1.0M	24,000	210	22	2,400	<0.10	<2.0	20	10	<0.50	0.72	110	0.37	<1.0	1.9	28	810
TP36 3.0-3.5M	24,000	190	23	2,500	<0.10	<2.0	20	10	<0.50	1.0	150	0.37	<1.0	2.1	28	860
TP37 3.0-4.0M	26,000	240	21	3.300	<0.10	<2.0	20	7.9	<0.50	<0.50	320	0.33	<1.0	1.3	28	720
TP37 3.0-4.0M (F/D)	27,000	240	22	3.200	<0.10	<2.0	22	8.6	<0.50	<0.50	1,100	0.34	<1.0	1.3	29	790
TP38 0.15-1.0M	23,000	190	21	2,800	<0.10	<2.0	20	8.4	<0.50	<0.50	280	0.26	<1.0	1.6	28	600
TP38 3.0-3.6M	24,000	270	21	2,000	<0.10	<2.0	18	8.8	<0.50	<0.50	370	0.21	<1.0	1.3	34	510
TP39* 3.0-4.0M	22,000	200	23	1,700	<0.10	<2.0	19	10	<0.50	<0.50	220	0.27	<1.0	1.2	28	460
TP40 0.015-1.0M	22,000	82	21	1,500	<0.10	<2.0	17	8.5	<0.50	<0.50	6.9	0.18	<1.0	0.82	22	130
TP40 3.0-4.0M	26,000	64	25	1,100	<0.10	<2.0	27	11	<0.50	<0.50	22	0.28	<1.0	1.1	28	150

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, October 2020, NS Tier I EQS Soil Commercial Potable Coarse

Nova Scotia Environment, October 2022, NS Tier I EQS Soil Commercial Potable Fine

Environment Canada Background Soil Database (2004-2009) Version 1, March 2011

Highlands Soil Zone EC Max Background Concentrations

Highlight	Indicates concentration exceeds Tier I EQS
Highlight	Indicates concentration exceeds Tier I EQS and Background

Table E-2 Soil Analytical Results BTEX and PHCs

				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	**5/12/2022**	**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	#2
Test Hole Sampling																	
TH4 SS1	**5/18/2022**	**0 - 0.3**	**Normal**	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TH5 SS1	**5/18/2022**	**0.15 - 0.3**	**Normal**	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TH8 SS2	**5/18/2022**	**0.4 - 0.6**	**Normal**	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TH20 SS1	**5/18/2022**	**0.15 - 0.3**	**Normal**	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TH21 SS1	**5/18/2022**	**0.15 - 0.3**	**Normal**	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
Test Pit Sampling																	
TP1 1-2M SS2	**5/13/2022**	**1.0 - 2.0**	**Normal**	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TP10 2-3M SS1	**5/12/2022**	**2.0 - 3.0**	**Normal**	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TP13 2-3M SS1	**5/11/2022**	**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	**5/11/2022**	**2.0 - 3.0**	**Normal**	<0.005	<0.05	<0.01	<0.05	<2.5	<10	<10	22	-	-	-	22***	#4	#3
TP15 0-1M SS3	**5/12/2022**	**0.0 - 1.0**	**Normal**	<0.005	<0.05	<0.01	<0.05	<2.5	<10	<10	21	-	-	-	21***	#4	#3
TP16 (2-3M) SS1	**5/11/2022**	**2.0 - 3.0**	**Normal**	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	<10	44	-	-	-	44***	#1	#3
TP23 (2-3M) SS1 (F/D)	**5/12/2022**	**2.0 - 3.0**	**Field_D**	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	<10	35	-	-	-	35***	#1	#3
TP17 0-1M SS3	**5/12/2022**	**0.0 - 1.0**	**Normal**	<0.02	<0.05	<0.025	<0.05	-	-	-	-	-	-	-	-	-	-
TP34 0.15-1.0M	**9/20/2023**	**0.15 - 1.0**	**Normal**	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	18	80	-	-	-	99**	#5	#3
TP34 2.0-2.45M	**9/20/2023**	**2.0 - 2.45**	**Normal**	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	<10	50	-	-	-	50***	#4	#3

Comments

#1 Lube oil fraction.
#2 NO
#3 YES
#4 Possible lube oil fraction.
#5 One product in fuel/lube range, 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-3 Groundwater Analytical Results PAHs

				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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/13/2022**	**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	**5/13/2022**	**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	**5/13/2022**	**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	**5/11/2022**	**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)	**5/11/2022**	**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	**5/12/2022**	**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	**5/11/2022**	**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	**5/11/2022**	**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	**5/11/2022**	**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	**5/11/2022**	**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	**5/12/2022**	**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	**5/11/2022**	**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)	**5/12/2022**	**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	**5/12/2022**	**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	**5/13/2022**	**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-4 Groundwater Analytical Results VOCs

	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	**5/18/2022**	**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	<0.02
TH5 SS1	**5/18/2022**	**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	<0.02
TH8 SS2	**5/18/2022**	**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	<0.02
TH20 SS1	**5/18/2022**	**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	<0.02
TH21 SS1	**5/18/2022**	**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	<0.02
Test Pit Sampling																												
TP1 1-2M SS2	**5/13/2022**	**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	<0.02
TP10 2-3M SS1	**5/12/2022**	**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	<0.02
TP13 2-3M SS1	**5/11/2022**	**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	<0.02
TP14 2-3M SS1	**5/11/2022**	**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	<0.02
TP15 0-1M SS3	**5/12/2022**	**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	<0.02
TP16 (2-3M) SS1	**5/11/2022**	**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	<0.02
TP23 (2-3M) SS1 (F/D)	**5/12/2022**	**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	<0.02
TP17 0-1M SS3	**5/12/2022**	**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	<0.02

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-5 Groundwater Analytical Results sVOCs and Misc

				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
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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/13/2022**	**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	**5/11/2022**	**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)	**5/12/2022**	**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	**5/12/2022**	**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	**5/11/2022**	**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	**5/11/2022**	**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	**5/12/2022**	**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	**5/12/2022**	**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-6 Soil Analytical Results PCBs

				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	**5/11/2022**	**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	**5/11/2022**	**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	**5/12/2022**	**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	**5/11/2022**	**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)	**5/12/2022**	**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	**5/12/2022**	**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-7 Soil Analytical Results PCBs

				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	**5/10/2022**	**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	**5/10/2022**	**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	**5/11/2022**	**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	**5/12/2022**	**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	**5/18/2022**	**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)	**5/18/2022**	**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	**5/19/2022**	**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-8: Surface Water Analytical 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			1.0 [1]	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)	5/18/2022	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	5/18/2022	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	5/18/2022	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	5/17/2022	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	5/17/2022	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	5/18/2022	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	5/18/2022	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	5/17/2022	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
SW-D	12/2/2022	Normal	0.19	<0.0010	<0.0010	0.43	<0.00010	<0.0020	<0.05	0.00011	39	<0.0010	<0.00040	0.00095	-	-	0.16	0.007
	7/12/2023	Normal	0.047	<0.0010	<0.0010	0.37	<0.0010	<0.0020	<0.050	0.000038	33	<0.0010	<0.00040	0.0013	-	-	0.059	0.002
SW11	7/4/2023	Normal	0.026	<0.0010	<0.0010	0.086	<0.00010	<0.0020	<0.05	0.000014	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW12	7/4/2023	Normal	0.024	<0.0010	<0.0010	0.085	<0.00010	<0.0020	<0.05	0.000011	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW14	7/4/2023	Normal	0.026	<0.0010	<0.0010	0.084	<0.00010	<0.0020	<0.05	0.000015	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW26 (FD of SW14)	7/4/2023	Normal	0.026	<0.0010	<0.0010	0.086	<0.00010	<0.0020	<0.05	0.000018	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW15	7/4/2023	Normal	0.029	<0.0010	<0.0010	0.087	<0.00010	<0.0020	<0.05	0.000014	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW16	7/4/2023	Normal	0.028	<0.0010	<0.0010	0.088	<0.00010	<0.0020	<0.05	0.000014	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW17	7/4/2023	Normal	0.029	<0.0010	<0.0010	0.087	<0.00010	<0.0020	<0.05	0.000013	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW18	7/4/2023	Normal	0.026	<0.0010	<0.0010	0.087	<0.00010	<0.0020	<0.05	0.000014	18	<0.0010	<0.00040	0.00067	-	-	<0.05	<0.00050
SW19	7/4/2023	Normal	0.026	<0.0010	<0.0010	0.083	<0.00010	<0.0020	<0.05	0.000011	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW20	7/4/2023	Normal	0.028	<0.0010	<0.0010	0.087	<0.00010	<0.0020	<0.05	0.000015	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW23	7/4/2023	Normal	0.025	<0.0010	<0.0010	0.084	<0.00010	<0.0020	<0.05	0.000017	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW24	7/4/2023	Normal	0.028	<0.0010	<0.0010	0.087	<0.00010	<0.0020	<0.05	0.000013	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
SW25	7/4/2023	Normal	0.027	<0.0010	<0.0010	0.086	<0.00010	<0.0020	<0.05	0.000012	18	<0.0010	<0.00040	<0.00050	-	-	<0.05	<0.00050
WETLAND #1-A	7/26/2023	Normal	0.0082	<0.0010	<0.0010	0.081	<0.00010	<0.0020	<0.05	0.000037	77	<0.0010	<0.00040	<0.00050	-	-	<0.05	0.00056
WETLAND #1-B	7/26/2023	Normal	0.13	<0.0010	<0.0010	0.26	<0.00010	<0.0020	<0.05	0.00012	39	<0.0010	<0.00040	0.00099	-	-	0.34	0.0048
WETLAND #2	7/26/2023	Normal	0.027	<0.0010	<0.0010	0.89	<0.00010	<0.0020	<0.05	0.000052	98	<0.0010	0.00097	0.00069	-	-	1.3	0.033
WETLAND #3	7/26/2023	Normal	0.020	<0.0010	<0.0010	0.4	<0.00010	<0.0020	<0.05	0.000020	41	<0.0010	0.00045	0.00076	-	-	5.5	0.0027
WC1	4/18/2024	Normal	0.18	<0.0010	<0.0010	0.097	<0.00010	<0.0020	<0.05	0.00011	15	<0.0010	<0.00040	0.00053	-	-	0.18	0.0012
WCDUP (Dup of WC1)	4/18/2024	Normal	0.18	<0.0010	<0.0010	0.097	<0.00010	<0.0020	<0.05	0.00011	15	<0.0010	<0.00040	0.00054	-	-	0.18	0.0013
WC2	4/18/2024	Normal	0.18	<0.0010	<0.0010	0.21	<0.00010	<0.0020	<0.05	0.000084	31	<0.0010	<0.00040	0.00075	-	-	0.15	0.0047
WC3	4/18/2024	Normal	0.12	<0.0010	<0.0010	0.22	<0.00010	<0.0020	<0.05	0.000047	30	<0.0010	<0.00040	0.00070	-	-	0.099	0.0055
24-WL3-SW1	7/4/2024	Normal	<0.0050	<0.0010	<0.0010	0.37	<0.00010	<0.0020	<0.05	0.000018	52	<0.0010	0.00046	<0.00050	-	-	0.4	<0.00050
24-WL3-DUPA (Dup of 24-WL3-S	7/4/2024	Normal	<0.0050	<0.0010	<0.0010	0.37	<0.00010	<0.0020	<0.05	0.000017	53	<0.0010	0.00051	<0.00050	-	-	0.35	0.0018
24-WL3-SW2	7/4/2024	Normal	<0.0050	<0.0010	<0.0010	0.44	<0.00010	<0.0020	<0.05	<0.000010	51	<0.0010	<0.00040	<0.00050	-	-	0.14	0.0017
24-WL3-SW3	7/4/2024	Normal	0.0098	<0.0010	<0.0010	0.63	<0.00010	<0.0020	<0.05	0.000011	52	<0.0010	<0.00040	<0.00050	-	-	1.1	0.0036
24-WL3-SW4	7/4/2024	Normal	0.054	<0.0010	<0.0010	0.4	<0.00010	<0.0020	<0.05	0.000040	50	<0.0010	<0.00040	<0.00050	-	-	0.62	0.0080
24-SW1	7/18/2024	Normal	0.028	<0.0010	<0.0010	0.33	<0.00010	<0.0020	<0.05	0.000036	35	<0.0010	<0.00040	0.0014	-	-	0.053	0.0020
24-SW2	7/18/2024	Normal	0.064	<0.0010	<0.0010	0.41	<0.00010	<0.0020	<0.05	0.000057	34	<0.0010	<0.00040	0.0011	-	-	0.11	0.0056
24-SW3	7/18/2024	Normal	0.029	<0.0010	<0.0010	0.29	<0.00010	<0.0020	<0.05	0.000029	31	<0.0010	<0.00040	0.0010	-	-	<0.05	0.0049
24-SW4	7/18/2024	Normal	0.02	<0.0010	<0.0010	0.27	<0.00010	<0.0020	<0.05	0.000025	31	<0.0010	<0.00040	0.00077	-	-	<0.05	0.0022
24-SW5	7/18/2024	Normal	0.016	<0.0010	<0.0010	0.28	<0.00010	<0.0020	<0.05	0.000024	31	0.015	<0.00040	0.0033	-	-	0.098	0.0018

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Freshwater Surface Water
FD denotes Blind Field Duplicate Sample
1) The guidelines for aluminum is based on a pH ≥ 6.5.
2) Concentration considered analytically equilivant to the guideline value.
Highlight Indicates concentration exceeds Tier I EQS

Table E-8: Surface Water Analytical Results Metals

			Metals														
			Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc
			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			0.1	0.002	0.000013	0.002	0.002	0.1	0.0005	0.0001	0.1	0.002	0.0001	0.002	0.002	0.0001	0.002	0.005
NS Tier I EQS Freshwater Surface Water				0.43	0.000026	0.073	0.025		0.001	0.00025		21	0.0008			0.015	0.12	0.007
Field ID	Date	Sample Type																
SW1 (BACKGROUND)	5/18/2022	Normal	1.4	0.017	<0.000013	<0.0020	<0.0020	0.39	<0.00050	<0.00010	3.7	1.8	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	0.0056
SW2	5/18/2022	Normal	1.5	0.014	<0.000013	<0.0020	<0.0020	0.35	<0.00050	<0.00010	3.8	1.8	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW3	5/18/2022	Normal	1.5	0.019	<0.000013	<0.0020	<0.0020	0.36	<0.00050	<0.00010	3.8	1.8	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW4	5/17/2022	Normal	4.5	0.081	<0.000013	<0.0020	<0.0020	0.83	<0.00050	<0.00010	3.3	9.5	<0.00010	<0.0020	<0.0020	0.00085	<0.0020	0.016
SW5	5/17/2022	Normal	4.6	0.08	<0.000013	<0.0020	<0.0020	0.77	<0.00050	<0.00010	3.3	11	<0.00010	<0.0020	0.0022	0.00081	<0.0020	0.013
SW6	5/18/2022	Normal	7	0.072	<0.000013	<0.0020	<0.0020	0.79	0.00069	<0.00010	3.1	16	<0.00010	<0.0020	<0.0020	0.0015	<0.0020	0.018
SW7	5/18/2022	Normal	9.3	0.14	<0.000013	<0.0020	<0.0020	1.3	<0.00050	<0.00010	3.6	5.3	<0.00010	<0.0020	<0.0020	0.00033	<0.0020	0.0066
SW8	5/17/2022	Normal	4.3	0.036	<0.000013	<0.0020	<0.0020	0.71	0.00054	<0.00010	3	6.8	<0.00010	<0.0020	0.0040	0.00078	<0.0020	0.013
SW-D	12/2/2022	Normal	4.6	0.067	-	<0.0020	<0.0020	1.1	0.00085	<0.00010	6.4	10	<0.00010	<0.0020	0.0030	0.00085	<0.0020	0.028
	7/12/2023	Normal	4.4	0.090	-	<0.0020	<0.0020	0.450	0.00058	<0.00010	4.4	11	<0.00010	<0.0020	<0.0020	0.00072	<0.0020	0.0088
SW11	7/4/2023	Normal	1.7	0.019	<0.000013	<0.0020	<0.0020	0.45	<0.00050	<0.00010	5.6	2	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW12	7/4/2023	Normal	1.7	0.023	<0.000013	<0.0020	<0.0020	0.4	<0.00050	<0.00010	5.5	2.1	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW14	7/4/2023	Normal	1.7	0.02	<0.000013	<0.0020	<0.0020	0.44	<0.00050	<0.00010	5.5	2	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW26 (FD of SW14)	7/4/2023	Normal	1.7	0.02	<0.000013	<0.0020	<0.0020	0.43	<0.00050	<0.00010	5.5	2	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW15	7/4/2023	Normal	1.8	0.02	<0.000013	<0.0020	<0.0020	0.44	<0.00050	<0.00010	5.8	2	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW16	7/4/2023	Normal	1.8	0.023	<0.000013	<0.0020	<0.0020	0.45	<0.00050	<0.00010	5.9	2.1	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW17	7/4/2023	Normal	1.8	0.021	<0.000013	<0.0020	<0.0020	0.46	<0.00050	<0.00010	5.8	2	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	0.0091
SW18	7/4/2023	Normal	1.8	0.021	<0.000013	<0.0020	<0.0020	0.44	<0.00050	<0.00010	5.8	2	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW19	7/4/2023	Normal	1.6	0.019	<0.000013	<0.0020	<0.0020	0.4	<0.00050	<0.00010	5.3	2	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW20	7/4/2023	Normal	1.8	0.022	<0.000013	<0.0020	<0.0020	0.44	<0.00050	<0.00010	5.7	2	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW23	7/4/2023	Normal	1.7	0.02	<0.000013	<0.0020	<0.0020	0.41	<0.00050	<0.00010	5.4	2.1	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW24	7/4/2023	Normal	1.7	0.021	<0.000013	<0.0020	<0.0020	0.43	<0.00050	<0.00010	5.6	2	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
SW25	7/4/2023	Normal	1.7	0.022	<0.000013	<0.0020	<0.0020	0.45	<0.00050	<0.00010	5.6	2	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
WETLAND #1-A	7/26/2023	Normal	7.2	0.023	-	<0.0020	<0.0020	0.92	<0.00050	<0.00010	5.7	19	<0.00010	<0.0020	<0.0020	0.0011	<0.0020	0.011
WETLAND #1-B	7/26/2023	Normal	5.2	0.43	-	0.0021	<0.0020	1.4	0.0011 [2]	<0.00010	2.8	20	<0.00010	<0.0020	0.0034	0.00087	<0.0020	0.052
WETLAND #2	7/26/2023	Normal	10	7.6	-	0.0026	<0.0020	1.2	<0.00050	<0.00010	5.8	15	<0.00010	<0.0020	<0.0020	0.0014	<0.0020	0.0078
WETLAND #3	7/26/2023	Normal	6.3	0.87	-	<0.0020	<0.0020	0.9	<0.00050	<0.00010	3.3	6.1	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	0.013
WC1	4/18/2024	Normal	1.7	0.05	<0.000013	<0.0020	<0.0020	0.41	<0.00050	<0.00010	4.2	2.2	<0.00010	<0.0020	0.0048	0.00024	<0.0020	0.036
WCDUP (Dup of WC1)	4/18/2024	Normal	1.7	0.051	<0.000013	<0.0020	<0.0020	0.43	<0.00050	<0.00010	4.2	2.2	<0.00010	<0.0020	0.0043	0.00023	<0.0020	0.036
WC2	4/18/2024	Normal	3.7	0.059	<0.000013	<0.0020	<0.0020	0.79	0.00071	<0.00010	3.3	7.9	<0.00010	<0.0020	0.0049	0.00074	<0.0020	0.029
WC3	4/18/2024	Normal	3.7	0.088	<0.000013	<0.0020	<0.0020	0.73	0.00074	<0.00010	3.1	6.8	<0.00010	<0.0020	0.0025	0.00072	<0.0020	0.03
24-WL3-SW1	7/4/2024	Normal	7.2	0.76	-	<0.0020	0.0021	0.81	<0.00050	<0.00010	2.3	5.1	<0.00010	<0.0020	<0.0020	0.00017	<0.0020	0.014
24-WL3-DUPA (Dup of 24-WL3-S	7/4/2024	Normal	7.3	0.72	-	<0.0020	0.0021	0.82	<0.00050	<0.00010	2.4	5	<0.00010	<0.0020	<0.0020	0.00018	<0.0020	0.013
24-WL3-SW2	7/4/2024	Normal	7.3	0.12	-	<0.0020	<0.0020	0.37	<0.00050	<0.00010	2.5	3.6	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
24-WL3-SW3	7/4/2024	Normal	7	0.44	-	<0.0020	<0.0020	0.29	<0.00050	<0.00010	2.8	1.3	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	<0.0050
24-WL3-SW4	7/4/2024	Normal	7	1.6	-	<0.0020	<0.0020	0.59	<0.00050	<0.00010	2.4	4.3	<0.00010	<0.0020	<0.0020	<0.00010	<0.0020	0.014
24-SW1	7/18/2024	Normal	3.6	0.12	-	<0.0020	<0.0020	0.87	0.00061	<0.00010	2.8	10	<0.00010	<0.0020	<0.0020	0.00061	<0.0020	0.013
24-SW2	7/18/2024	Normal	3.6	0.24	-	<0.0020	<0.0020	0.87	0.00052	<0.00010	2.7	11	<0.00010	<0.0020	0.0024	0.00063	<0.0020	0.012
24-SW3	7/18/2024	Normal	3.4	0.031	-	<0.0020	<0.0020	0.68	0.00065	<0.00010	2.6	6.9	<0.00010	<0.0020	<0.0020	0.00075	<0.0020	0.0084
24-SW4	7/18/2024	Normal	3.5	0.029	-	<0.0020	<0.0020	0.7	0.00071	<0.00010	2.6	7	<0.00010	<0.0020	<0.0020	0.00075	<0.0020	0.0065
24-SW5	7/18/2024	Normal	3.5	0.026	-	<0.0020	<0.0020	0.67	0.00068	<0.00010	2.7	6.8	<0.00010	<0.0020	<0.0020	0.00073	<0.0020	0.0077

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Freshwa
FD denotes Blind Field Duplicate Sample
1) The guidelines for aluminum is based on a pH ≥ 6.5.
2) Concentration considered analytically equilivant to the guidelir

Highlight Indicates concentration exceeds

Table E-9 Surface Water Analytical Results BTEX and PHCs

	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	**5/17/2022**	**Normal**	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance
SW5	**5/17/2022**	**Normal**	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance
SW6	**5/18/2022**	**Normal**	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance
SW6 DUP	**5/18/2022**	**Field_D**	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance
SW7	**5/18/2022**	**Normal**	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance
SW8	**5/17/2022**	**Normal**	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance

Environmental Standards

Nova Scotia Environment, September 2021, NS Tier I EQS Freshwater Surface Water

Table E-10 Surface Water Analytical Results PAHs

			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	**5/17/2022**	**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	**5/17/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/17/2022**	**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

Environmental Standards

Nova Scotia Environment, September 2021, NS Tier I EQS Freshwater Surface Water

Table E-11 Surface Water Analytical Results VOCs

	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	**5/17/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/17/2022**	**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

Environmental Standards

Nova Scotia Environment, September 2021, NS Tier I EQS Freshwater Surface Water

Table E-12 Surface Water Analytical Results sVOCs and Misc.

			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	**5/17/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**Field_D**	-	<0.00050	<0.0010	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW8	**5/17/2022**	**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 Freshwater Surface Water

Table E-13: Surface Water Analytical 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.)	Total Suspended Solids	Dissolved Organic Carbon (filtered)
			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	mg/L	NTU	N/A	N/A	N/A	N/A	mg/L	%	meq/L	meq/L	mg/L	mg/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	1	
NS Tier I EQS Freshwater Surface Water																0.005																	
Field ID	Date	Sample Type																															
SW1 (BACKGROUND)	5/18/2022	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	5/18/2022	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	5/18/2022	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	5/17/2022	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	5/17/2022	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	5/18/2022	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	5/18/2022	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	5/17/2022	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	-	-
SW-D	12/2/2022	Normal	<1.0	84	<0.050	-	0.058	0.058	<0.010	<0.010	<0.1	260	14	17	-	-	4.6	8.00	2.0	31	120	2.6	-0.113	0.138	7.86	8.11	83	1.87	2.72	2.62	150	-	-
	7/12/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2.0	-
SW11	2023-07-04	Normal	<1.0	29	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	130	8.6	6.9	-	-	3.0	7.60	1.2	28	53	0.58	-1.27	-1.01	8.61	8.86	29	3.68	1.41	1.31	82	-	-
SW12	2023-07-04	Normal	<1.0	27	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	140	8.4	7.4	-	-	3.0	7.62	1.2	14	52	0.58	-1.26	-1.01	8.63	8.88	27	9.40	1.06	1.28	65	-	-
SW14	2023-07-04	Normal	<1.0	25	<0.050	-	0.058	0.058	<0.010	<0.010	<0.1	130	8.4	7.5	-	-	3.0	7.60	1.2	28	51	0.61	-1.34	-1.09	8.69	8.94	25	2.31	1.33	1.27	79	-	-
SW15	2023-07-04	Normal	<1.0	27	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	130	8.4	6.9	-	-	3.1	7.61	1.2	29	53	0.62	-1.27	-1.02	8.63	8.88	27	2.21	1.39	1.33	81	-	-
SW16	2023-07-04	Normal	<1.0	27	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	130	11	7.0	-	-	3.0	7.60	1.3	28	52	0.57	-1.30	-1.05	8.65	8.90	27	4.00	1.43	1.32	83	-	-
SW17	2023-07-04	Normal	<1.0	28	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	130	8.3	6.1	-	-	3.0	7.61	1.2	28	53	0.68	-1.25	-1.00	8.61	8.86	28	2.21	1.39	1.33	81	-	-
SW18	2023-07-04	Normal	<1.0	28	<0.050	-	0.061	0.061	<0.010	<0.010	<0.1	130	8.5	6.7	-	-	2.9	7.59	1.2	28	52	0.56	-1.30	-1.04	8.64	8.89	27	2.60	1.38	1.31	81	-	-
SW19	2023-07-04	Normal	<1.0	28	<0.050	-	<0.050	<0.050	<0.010	0.022	<0.1	130	8.4	6.2	-	-	3.0	7.62	1.2	28	51	0.73	-1.28	-1.02	8.64	8.89	28	5.30	1.39	1.25	80	-	-
SW20	2023-07-04	Normal	<1.0	27	<0.050	-	0.073	0.073	<0.010	<0.010	<0.1	130	8.4	6.8	-	-	3.2	7.60	1.2	29	53	0.67	-1.29	-1.04	8.63	8.89	27	2.58	1.39	1.32	81	-	-
SW23	2023-07-04	Normal	<1.0	31	<0.050	-	<0.050	<0.050	0.029	<0.010	<0.1	130	8.5	8.6	-	-	3.0	7.61	1.2	29	52	0.46	-1.23	-0.979	8.59	8.84	30	6.23	1.45	1.28	82	-	-
SW24	2023-07-04	Normal	<1.0	28	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	130	8.4	6.8	-	-	3.0	7.56	1.2	28	52	0.68	-1.32	-1.06	8.62	8.87	28	3.35	1.39	1.30	81	-	-
SW25	2023-07-04	Normal	<1.0	27	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	130	8.5	6.8	-	-	3.0	7.61	1.2	28	52	0.54	-1.28	-1.03	8.64	8.89	27	2.99	1.38	1.30	80	-	-
SW26	2023-07-04	Normal	<1.0	26	<0.050	-	0.070	0.070	<0.010	<0.010	<0.1	130	8.3	7.9	-	-	3.0	7.59	1.3	28	52	0.52	-1.33	-1.08	8.67	8.92	26	2.29	1.34	1.28	79	-	-
AEC6AB	4/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-
AEC7-6	4/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2.0	-
WC1	4/18/2024	Normal	<1.0	34	<0.050	-	0.070	0.070	<0.010	<0.010	<0.1	110	4.3	20	-	-	3.5	7.58	1.8	6.6	45	3.6	-1.28	-1.03	8.61	8.86	34	7.39	0.940	1.09	55	-	-
WCDUP (Dup of WC1)	4/18/2024	Field_Dup	<1.0	34	<0.050	-	0.074	0.074	<0.010	<0.010	<0.1	110	4.2	26	-	-	3.4	7.57	1.9	6.8	44	3.8	-1.29	-1.04	8.61	8.86	34	6.40	0.950	1.08	55	-	-
WC2	4/18/2024	Normal	<1.0	63	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	210	4.0	16	-	-	3.3	7.93	1.2	24	92	5.2	-0.390	-0.139	8.06	8.32	62	3.36	1.87	2.00	110	3.0	-
WC3	4/18/2024	Normal	<1.0	61	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	200	3.9	17	-	-	3.1	7.93	1.7	21	90	4.8	-0.408	-0.157	8.09	8.34	60	4.84	1.77	1.95	100	-	-
24-WL3-SW1	7/4/2024	Normal	1.1	160	0.31	-	0.074	0.074	<0.010	<0.010	<0.1	340	1.7	19	-	-	11	7.89	1.2	<2.0	160	3.3	0.179	0.430	7.71	7.46	160	2.13	3.22	3.36	160	-	4.6
24-WL3-DUPA (Dup of 24-WL3-SW	7/4/2024	Field_Dup	1.5	150	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	340	2.3	16	-	-	4.6	8.01	1.4	<2.0	160	2.3	0.295	0.546	7.72	7.47	150	3.84	3.13	3.38	160	-	4.6
24-WL3-SW2	7/4/2024	Normal	<1.0	140	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	330	2.4	46	-	-	8.3	7.64	2.3	13	160	1.3	-0.136	0.114	7.77	7.52	140	2.19	3.12	3.26	160	-	8.3
24-WL3-SW3	7/4/2024	Normal	<1.0	140	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	310	2.1	47	-	-	9.9	7.74	2.4	6.2	160	1.8	-0.0280	0.223	7.77	7.52	140	5.71	2.97	3.33	160	-	9.4
24-WL3-SW4	7/4/2024	Normal	<1.0	130	<0.050	-	0.081	0.081	<0.010	<0.010	<0.1	300	2.5	31	-	-	8.6	7.84	1.8	15	150	8.8	0.0120	0.262	7.83	7.58	120	4.59	2.91	3.19	160	-	7.0
24-SW1	7/18/2024	Normal	<1.0	81	0.25	-	<0.050	<0.050	<0.010	<0.010	<0.1	250	3.3	12	-	-	11#	7.79	0.99	26	100	1.7	-0.363	-0.113	7.90	8.15	80	0.220	2.24	2.23	120	-	-
24-SW2	7/18/2024	Normal	<1.0	85	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	260	4.1	13	-	-	4.2	7.97	0.97	27	100	2.3	-0.185	0.0660	7.90	8.15	84	5.10	2.37	2.14	120	-	-
24-SW3	7/18/2024	Normal	<1.0	74	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	210	4.7	8.7	-	-	3.5	8.04	1.1	21	91	1.3	-0.207	0.0450	7.99	8.24	74	2.74	2.06	1.95	110	-	-
24-SW4	7/18/2024	Normal	<1.0	71	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	220	5.2	11	-	-	3.2	8.13	0.92	21	93	1.1	-0.126	0.125	8.00	8.25	70	1.00	2.02	1.98	110	-	-
24-SW5	7/18/2024	Normal	<1.0	76	<0.050	-	<0.050	<0.050	<0.010	<0.010	<0.1	210	3.8	8.3	-	-	3.2	8.05	1.3	21	92	1.1	-0.185	0.0660	7.98	8.23	75	1.98	2.06	1.98	110	-	-

Environmental Standards
Nova Scotia Environment, September 2021, NS Tier I EQS Freshwater Surface Water
Highlight Indicates concentration exceeds Tier I EQS
# denotes elevated reporting limit due to sample matrix

Table E-14: Sediment Data Analytical Results Metals

			Physical Properties																	General Chemistry	Metals											
			Moisture Content	Sieve - #200 (>0.075mm)	Clay in soils	Particle Size Distribution (Gravel)	Particle Size Distribution (<1/128mm, 7 PHI)	Particle Size Distribution (<1/16mm, 4 PHI)	Particle Size Distribution (<1/256mm, 8 PHI)	Particle Size Distribution (<1/2mm, 1 PHI)	Particle Size Distribution (<1/32mm, 5 PHI)	Particle Size Distribution (<1/4mm, 2 PHI)	Particle Size Distribution (<1/512mm, 9 PHI)	Particle Size Distribution (<1/64mm, 6 PHI)	Particle Size Distribution (<1/8mm, 3 PHI)	Particle Size Distribution (<1mm, 0 PHI)	Particle Size Distribution (<2mm, -1 PHI)	% sand by hydrometer	% silt by hydrometer	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	mg/kg
NS Tier I EQS Freshwater Sediment			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	17	-	-	-	-	3.5	90	-	197	-	-
Monitoring Zone	Date	Sample Type																															
SED1 (BACKGROUND)	5/18/2022	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	5/18/2022	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,000	<2.0	5.9	1,100	<1.0	<2.0	<50	3.9	17	11	17	<1.0	<1.0
SED3	5/18/2022	Normal	68	12 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,000	<2.0	5.9	740	<1.0	<2.0	<50	6.0	21	11	29	<1.0	<1.0
SED4	5/17/2022	Normal	79	4 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33,000	18,000	<2.0	7.5	180	1.3	<2.0	<50	16	24	19	120	<1.0	<1.0
SED5	5/17/2022	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	5/18/2022	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 (Dup of SED6)	5/18/2022	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	5/18/2022	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	5/17/2022	Normal	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,900	12,000	<2.0	11	400	1.3	<2.0	<50	12	22	35	150	<0.50	<0.50
SED9	5/17/2022	Normal	62	2 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,800	15,000	<2.0	7.7	440	1.3	<2.0	<50	23	22	79	350	<1.0	<1.0
SED11	7/4/2023	Normal	71	31 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39,000	14,000	<2.0	5.0	1,600	<1.0	<2.0	<50	5.6	17	9.5	28	-	-
SED12	7/4/2023	Normal	29	96 (COARSE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,500	2,400	<2.0	<2.0	70	<1.0	<2.0	<50	<0.30	3.1	2.0	<2.0	-	-
SED13	7/4/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,000	<2.0	4.3	700	<1.0	<2.0	<50	1.4	12	7.0	4.4	-	-
SED14	7/4/2023	Normal	37	88 (COARSE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,800	9,500	<2.0	4.3	600	<1.0	<2.0	<50	2.2	14	8.4	6.8	-	-
SED26 (Dup of SED14)	7/4/2023	Field_D	36	91 (COARSE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,700	11,000	<2.0	4.9	650	<1.0	<2.0	<50	2.4	14	8.9	6.8	-	-
SED15	7/4/2023	Normal	70	11 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36,000	19,000	<2.0	13	130	1.0	<2.0	<50	<0.30	29	17	37	-	-
SED16	7/4/2023	Normal	57	40 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,000	13,000	<2.0	6.3	1,200	<1.0	<2.0	<50	6.1	16	10	25	-	-
SED17	7/4/2023	Normal	83	26 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56,000	22,000	<2.0	7.3	410	1.1	<2.0	<50	5.3	22	11	23	-	-
SED18	7/4/2023	Normal	80	14 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40,000	23,000	<2.0	7.5	630	1.3	<2.0	<50	4.3	24	12	27	-	-
SED19	7/4/2023	Normal	77	8 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44,000	23,000	<2.0	6.4	720	1.3	<2.0	<50	5.5	22	10	25	-	-
SED20	7/4/2023	Normal	73	28 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,000	15,000	<2.0	6.2	1,200	<1.0	<2.0	<50	5.6	15	9.7	14	-	-
SED21	7/4/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,000	<2.0	5.0	440	1.1	<2.0	<50	4.2	18	9.4	20	-	-
SED22	7/4/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,000	<2.0	7.2	450	1.3	<2.0	<50	5.3	25	11	25	-	-
SED23	7/4/2023	Normal	48	72 (COARSE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13,000	10,000	<2.0	3.1	440	<1.0	<2.0	<50	2.4	11	6.1	8.9	-	-
SED24	7/4/2023	Normal	84	23 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54,000	26,000	<2.0	7.8	470	1.3	<2.0	<50	4.4	22	11	25	-	-
SED25	7/4/2023	Normal	45	77 (COARSE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13,000	8,200	<2.0	3.4	280	<1.0	<2.0	<50	2.2	9.1	5.2	6.9	-	-
WETLAND #1-A	7/26/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13,000	<2.0	7.8	74	<1.0	<2.0	<50	0.58	17	6.6	11	-	-
WETLAND #1-B	7/26/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,300	<2.0	4.6	630	<1.0	<2.0	<50	3.8	12	8.5	34	-	-
WETLAND #2	7/26/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,000	<2.0	5.8	360	<1.0	<2.0	<50	1.8	16	9.4	17	-	-
WETLAND #3	7/26/2023	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,200	<2.0	12	900	<1.0	<2.0	<50	1.8	17	8.4	7.3	-	-
SED26/WC2	4/18/2024	Normal	-	-	5.8	50	6.4	12	5.8	26[#1]	10	17	4.7	8.7	14	38[#1]	50	38	6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED27	4/18/2024	Normal	-	-	18	13	20	57	18	75[#1]	44	69	13	32	64	81[#1]	87	30	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED 27	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38,000,000	22,000	<2.0	8.7	700	1.1	<2.0	<50	5.7	20	12	20	-	-
SED28	4/18/2024	Normal	-	-	18	12	21	59	18	76[#1]	47	71	13	35	66	82[#1]	88	29	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED 28	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42,000,000	25,000	<2.0	8.7	950	1.2	<2.0	<50	8.4	21	12	24	-	-
SED29	4/18/2024	Normal	-	-	43	1.5	47	74	43	95[#1]	63	92[#1]	38	55	84	97[#1]	99[#1]	25	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED 29	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64,000,000	30,000	<2.0	8.5	540	1.5	<2.0	<50	5.2	25	12	28	-	-
SED30	5/30/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,500,000	10,000	<2.0	3.5	250	<1.0	<2.0	<50	1.8	11	6.6	6.5	-	-
SED31	5/30/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97,000,000	28,000	<2.0	8.0	400	1.4	<2.0	<50	7.9	21	9.6	26	-	-
SED32	5/30/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34,000,000	18,000	<2.0	7.4	720	<1.0	<2.0	<50	6.3	20	11	30	-	-
SED35	5/30/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,000,000	8,200	<2.0	2.7	250	<1.0	<2.0	<50	1.3	9.7	5.3	5.9	-	-
SED 36	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66,000,000	22,000	<2.0	7.2	370	1.1	<2.0	<50	6.7	19	12	18	-	-
SED 37	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,000,000	16,000	<2.0	5.8	780	<1.0	<2.0	<50	6.7	16	11	15	-	-
SED 38	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,000,000	12,000	<2.0	3.8	270	<1.0	<2.0	<50	3.2	12	8.5	9.4	-	-
SED 39	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,000,000	18,000	<2.0	8.3	2,100	<1.0	<2.0	<50	2.8	22	18	34	-	-
SED 40	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31,000,000	16,000	<2.0	7.1	900	<1.0	<2.0	<50	7.2	20	12	33	-	-
SED 41	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28,000,000	18,000	<2.0	7.0	1,800	<1.0	<2.0	<50	5.7	18	11	24	-	-
SED 42	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24,000,000	23,000	<2.0	8.9	910	1.1	<2.0	<50	7.0	27	15	42	-	-
SED 43	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33,000,000	20,000	<2.0	6.5	730	1.1	<2.0	<50	4.3	18	8.6	18	-	-
SED 44	5/28/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55,000,000	27,000	<2.0	8.5	540	1.3	<2.0	<50	6.2	26	12	27	-	-
SED46	5/30/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,000,000	16,000	<2.0	7.2	1,300	<1.0	<2.0	<50	6.7	18	11	25	-	-
SED47	5/30/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,000,000	13,000	<2.0	3.8	290	<1.0	<2.0	<50	4.3	11	8.0	7.0	-	-
WC1	4/18/2024	Normal	21	91 (COARSE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22,000,000	8,500	<2.0	6.7	250	<1.0	<2.0	<50	2.4	9.7	7.3	21	-	-
WC2	4/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,000,000	8,500	<2.0	21	360	<1.0	<2.0	<50	2.0	13	8.2	18	-	-
WC3	4/18/2024	Normal	38	80 (COARSE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,000,000	9,600	<2.0	7.2	620	<1.0	<2.0	<50	4.4	14	11	38	-	-
WETLAND #3A-0.75M	4/18/2024	Normal	23	14 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,000,000	7,300	<2.0	14	680	<1.0	<2.0	<50	2.6	21	8.6	9.8	-	-
WETLAND #3B-0.75M	4/18/2024	Normal	25	40 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,000,000	6,100	<2.0	9.4	1,200	<1.0	<2.0	<50	1.1	17	7.8	5.9	-	-
WETLAND #3C-0.55M	4/18/2024	Normal	24	11 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,000,000	11,000	<2.0	15	820	1.4	<2.0	<50	2.4	29	11	12	-	-
WETLAND #3-DUPA (Dup of WET	4/18/2024	Field_D	39	50 (COARSE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14,000,000	7,600	<2.0	12	1,100	<1.0	<2.0	<50	1.8	20	9.1	8.7	-	-
WETLAND #3D-0.65M	4/18/2024	Normal	25	7 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,000,000	8,800	<2.0	14	910	1.1	<2.0	<50	2.3	23	9.7	9.3	-	-
WETLAND #3E-0.65M	4/18/2024	Normal	25	49 (FINE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,000,000	5,100	<2.0	9.2	1,100	<1.0	<2.0	<50	1.3	13	6.8	6.1	-	-
SED48	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30,000,000	18,000	<2.0	6.3	520	<1.0	<2.0	<50	3.2	20	12	31	-	-
SED49	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,000,000	18,000	<2.0	7.2	460	1.1	<2.0	<50	5.7	24	13	49	-	-
SED DUP-B (Dup of SED49)	7/18/2024	Field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29,000,000	21,000	<2.0	8.1	390	1.5	<2.0	<50	7.3	27	15	61	-	-
SED50	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,000,000	16,000	<2.0	6.7	710	1.0	<2.0	<50	5.2	23	11	42	-	-
SED51	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22,000,000	14,000	<2.0	5.1	820	<1.0	<2.0	<50	4.3	21	9.1	38	-	-
SED52	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40,000,000	14,000	<2.0	8.0	380	1.2	<2.0	<50	21	21	22	180	-	-
SED53	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33,000,000	14,000	<2.0	5.8	600	<1.0	<2.0	<50	8.1	21	13	64	-	-
SED54	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29,000,000	8,500	<2.0	5.2	890	<1.0	<2.0	<50	4.8	13	8.6	38	-	-
SED55	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92,000,000	4,300	<2.0	3.5	940	<1.0	<2.0	<50	5.5	7.5	18	46	-	-
SED56	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,000,000	11,000	<2.0	4.5	730	<1.0	<2.0	<50	3.7	16	9.5	20	-	-
SED57	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100,000,000	6,400	<2.0	3.5	1,100	<1.0	<2.0	<50	7.3	10	24	50	-	-
SED58	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81,000,000	8,100	<2.0	5.1	800	<1.0	<2.0	<50	9.0	12	29	70	-	-
SED59	7/19/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24,000,000	8,800	<2.0	4.6	600	<1.0	<2.0	<50	3.3	10	7.9	20	-	-
SED DUP-D (Dup of SED59)	7/19/2024	Field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20,000,000	9,300	<2.0	5.1	630	<1.0	<2.0	<50	2.7	12	8.8	22	-	-
SED60	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48,000,000	10,000	<2.0	6.4	350	<1.0	<2.0	<50	16	17	34	200	-	-
SED61	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31,000,000	4,900	<2.0	6.7	180	<1.0	<2.0	<50	6.0	11	310	120	-	-
SED DUP-C (Dup of SED61)	7/18/2024	Field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40,000,000	6,600	<2.0	6.2	200	<1.0	<2.0	<50	7.3	12	190	110	-	-
SED62	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,000,000	12,000	<2.0	9.5	240	<1.0	<2.0	<50	19	20	99	240	-	-
SED63	7/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24,000,000	20,000	<2.0	11	240	<1.0	<2.0	<50	7.2	26	380	69	-	-

Environmental Standards
Nova Scotia Environment, October 2022, NS Tier I EQS Freshwater Sediment
Hightlight Indicates an exceedance of the Tier I EQS

Table E-14: Sediment Data Analytical Results Metals

				Metals															
			Moisture Content	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
NS Tier I EQS Freshwater Sediment			-	43,766	91.3	-	1,100	0.486	-	75	-	2	0.5	-	-	-	-	-	315
Monitoring Zone	Date	Sample Type																	
SED1 (BACKGROUND)	5/18/2022	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	5/18/2022	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	5/18/2022	Normal	68	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	5/17/2022	Normal	79	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	5/17/2022	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	5/18/2022	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 (Dup of SED6)	5/18/2022	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	5/18/2022	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	5/17/2022	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	5/17/2022	Normal	62	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
SED11	7/4/2023	Normal	71	22,000	430	23	4,300	0.11	2.1	19	12	1.6	1.0	390	0.25	<1.0	3.8	28	970
SED12	7/4/2023	Normal	29	3,500	18	4.3	410	<0.10	<2.0	3.1	<2.0	<0.50	<0.50	32	<0.10	<1.0	0.27	5.1	49
SED13	7/4/2023	Normal	-	15,000	60	13	5,500	<0.10	<2.0	8.6	4.1	<0.50	<0.50	120	0.13	<1.0	0.61	22	210
SED14	7/4/2023	Normal	37	21,000	73	16	7,000	<0.10	<2.0	11	5.0	<0.50	<0.50	160	0.13	<1.0	0.97	28	330
SED26 (Dup of SED14)	7/4/2023	Field_D	36	23,000	79	18	7,200	<0.10	<2.0	12	5.3	<0.50	<0.50	170	0.17	<1.0	1.0	30	360
SED15	7/4/2023	Normal	70	34,000	35	37	600	0.12	<2.0	36	17	<0.50	<0.50	18	0.16	<1.0	1.2	33	110
SED16	7/4/2023	Normal	57	24,000	260	23	7,200	<0.10	2.5	18	10	0.67	0.90	230	0.27	<1.0	1.9	28	800
SED17	7/4/2023	Normal	83	25,000	280	32	1,400	0.19	2.4	24	17	1.8	0.94	470	0.37	1.4	4.1	37	660
SED18	7/4/2023	Normal	80	27,000	320	36	1,100	0.14	2.2	26	17	1.7	0.99	450	0.43	1.7	4.3	41	770
SED19	7/4/2023	Normal	77	27,000	410	35	2,100	0.14	<2.0	21	14	1.5	0.96	670	0.36	1.2	4.6	41	730
SED20	7/4/2023	Normal	73	25,000	170	21	18,000	<0.10	3.6	16	11	0.67	0.74	400	0.27	<1.0	2.5	29	470
SED21	7/4/2023	Normal	-	20,000	250	28	1,100	0.18	<2.0	20	14	1.3	0.79	400	0.32	1.4	3.6	32	570
SED22	7/4/2023	Normal	-	26,000	290	37	1,400	0.19	2.4	24	17	1.6	1.0	520	0.38	1.6	3.9	40	690
SED23	7/4/2023	Normal	48	17,000	120	15	3,500	<0.10	<2.0	9.5	7.5	0.56	<0.50	150	0.16	<1.0	1.6	21	310
SED24	7/4/2023	Normal	84	27,000	200	34	1,400	0.16	3.6	23	18	1.7	1.0	490	0.38	1.6	4.1	39	600
SED25	7/4/2023	Normal	45	15,000	91	13	3,500	<0.10	<2.0	7.3	6.5	<0.50	<0.50	150	0.11	<1.0	1.3	21	230
WETLAND #1-A	7/26/2023	Normal	-	23,000	100	23	1,700	<0.10	2.1	13	8.7	0.88	<0.50	420	0.23	<1.0	1.5	30	230
WETLAND #1-B	7/26/2023	Normal	-	17,000	280	19	3,200	<0.10	<2.0	17	8.5	0.95	1.2	5,400	0.32	<1.0	3.1	20	770
WETLAND #2	7/26/2023	Normal	-	21,000	120	22	1,900	0.11	<2.0	18	10	<0.50	<0.50	140	0.24	<1.0	0.88	26	290
WETLAND #3	7/26/2023	Normal	-	12,000	10,000	13	2,600	<0.10	<2.0	30	6.3	<0.50	1.4	260	0.44	<1.0	0.64	11	300
SED26/WC2	4/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED27	4/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED 27	5/28/2024	Normal	-	29,000	220	29	6,900	0.15	3.1	21	17	1.4	0.85	400	0.38	1.5	4.0	38	580
SED28	4/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED 28	5/28/2024	Normal	-	30,000	210	29	23,000	0.17	9.5	24	18	1.6	0.97	720	0.42	1.6	4.9	42	640
SED29	4/18/2024	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED 29	5/28/2024	Normal	-	29,000	220	40	1,500	0.17	4.4	25	21	2.2	1.3	600	0.40	1.9	5.0	43	660
SED30	5/30/2024	Normal	-	15,000	71	13	2,200	<0.10	<2.0	9.8	7.2	<0.50	0.71	150	0.14	<1.0	1.5	18	240
SED31	5/30/2024	Normal	-	20,000	110	31	1,200	0.19	2.9	21	16	2.9	1.4	640	0.36	<1.0	4.9	34	520
SED32	5/30/2024	Normal	-	26,000	450	30	2,200	0.12	2.5	24	15	1.2	1.2	7,200	0.35	<1.0	2.8	34	870
SED35	5/30/2024	Normal	-	13,000	69	12	1,800	<0.10	<2.0	9.4	6.2	<0.50	0.51	110	0.12	<1.0	1.0	16	240
SED 36	5/28/2024	Normal	-	32,000	180	28	1,300	0.11	3.0	20	15	1.6	0.96	460	0.33	1.1	3.4	35	580
SED 37	5/28/2024	Normal	-	21,000	210	23	6,400	<0.10	3.8	20	14	0.82	0.69	320	0.26	1.0	3.0	30	470
SED 38	5/28/2024	Normal	-	17,000	130	17	620	<0.10	<2.0	12	8.2	0.59	0.64	170	0.18	<1.0	1.8	24	370
SED 39	5/28/2024	Normal	-	31,000	770	29	4,400	<0.10	4.0	22	16	1.6	1.4	370	0.39	<1.0	4.4	35	590
SED 40	5/28/2024	Normal	-	26,000	790	26	1,300	0.12	2.4	22	13	1.2	1.3	370	0.33	<1.0	3.4	33	1,000
SED 41	5/28/2024	Normal	-	31,000	490	28	14,000	0.12	4.1	20	14	1.3	1.1	440	0.29	<1.0	3.9	33	760
SED 42	5/28/2024	Normal	-	32,000	540	38	2,000	0.11	2.5	32	20	1.3	1.6	440	0.46	1.3	4.0	41	1,300
SED 43	5/28/2024	Normal	-	28,000	270	28	7,900	0.11	3.0	16	15	1.1	0.76	350	0.28	<1.0	3.9	38	540
SED 44	5/28/2024	Normal	-	28,000	290	39	1,200	0.18	3.2	26	20	2.0	1.2	510	0.42	1.8	4.5	43	730
SED46	5/30/2024	Normal	-	28,000	370	26	4,200	<0.10	2.6	22	14	0.84	1.0	290	0.33	<1.0	2.5	34	780
SED47	5/30/2024	Normal	-	16,000	59	16	2,800	<0.10	<2.0	12	7.5	<0.50	1.1	180	0.20	<1.0	1.8	22	350
WC1	4/18/2024	Normal	21	18,000	170	13	2,300	<0.10	<2.0	11	4.6	<0.50	0.71	2,500	0.36	<1.0	1.5	22	480
WC2	4/18/2024	Normal	-	20,000	150	14	3,000	<0.10	<2.0	13	4.6	0.69	<0.50	2,100	0.17	<1.0	1.3	28	560
WC3	4/18/2024	Normal	38	18,000	270	18	1,700	<0.10	2.0	21	7.8	1.1	1.6	3,000	0.38	<1.0	2.1	18	840
WETLAND #3A-0.75M	4/18/2024	Normal	23	15,000	14,000	14	2,800	<0.10	<2.0	27	6.8	<0.50	2.0	360	0.27	<1.0	0.80	12	420
WETLAND #3B-0.75M	4/18/2024	Normal	25	13,000	6,100	11	2,400	<0.10	<2.0	24	4.5	<0.50	0.92	240	0.18	<1.0	0.50	9.9	230
WETLAND #3C-0.55M	4/18/2024	Normal	24	20,000	13,000	20	3,100	<0.10	<2.0	49	13	<0.50	2.2	380	0.39	<1.0	1.4	18	450
WETLAND #3-DUPA (Dup of WET	4/18/2024	Field_D	39	15,000	9,700	14	2,600	<0.10	<2.0	32	7.5	<0.50	1.5	280	0.25	<1.0	0.89	12	330
WETLAND #3D-0.65M	4/18/2024	Normal	25	17,000	13,000	16	3,000	<0.10	<2.0	45	8.9	<0.50	1.9	300	0.30	<1.0	1.0	14	400
WETLAND #3E-0.65M	4/18/2024	Normal	25	11,000	7,100	9.5	2,200	<0.10	<2.0	21	4.3	<0.50	1.0	220	0.17	<1.0	0.49	8.3	230
SED48	7/18/2024	Normal	-	27,000	880	34	600	<0.10	8.0	28	16	2.8	0.58	5,500	0.33	<1.0	4.5	37	890
SED49	7/18/2024	Normal	-	28,000	2,000	35	2,200	<0.10	4.0	30	18	2.4	1.5	14,000	0.46	1.1	4.1	29	1,400
SED DUP-B (Dup of SED49)	7/18/2024	Field_D	-	31,000	4,500	40	2,100	0.10	6.8	39	22	3.4	1.8	15,000	0.56	1.1	4.6	34	1,700
SED50	7/18/2024	Normal	-	26,000	1,300	34	1,600	<0.10	11	30	18	2.9	1.2	17,000	0.40	<1.0	5.0	29	1,200
SED51	7/18/2024	Normal	-	23,000	590	29	2,000	<0.10	4.8	24	16	1.5	1.1	23,000	0.33	<1.0	2.8	24	930
SED52	7/18/2024	Normal	-	23,000	6,900	27	1,900	0.61	6.2	36	15	4.8	2.5	11,000	0.76	<1.0	3.8	24	2,800
SED53	7/18/2024	Normal	-	23,000	1,700	28	2,600	0.14	3.2	26	14	3.6	1.5	19,000	0.43	<1.0	2.9	25	1,700
SED54	7/18/2024	Normal	-	19,000	460	16	2,900	<0.10	2.0	13	7.6	1.1	1.3	9,200	0.37	<1.0	2.4	21	870
SED55	7/18/2024	Normal	-	9,300	3,900	8.2	680	0.10	4.3	16	4.9	7.0	0.94	14,000	0.37	<1.0	4.3	9.1	1,400
SED56	7/18/2024	Normal	-	20,000	320	23	1,700	<0.10	<2.0	22	12	0.85	0.98	1,900	0.41	<1.0	1.3	19	880
SED57	7/18/2024	Normal	-	13,000	2,000	12	920	<0.10	3.8	21	6.8	8.5	0.86	12,000	0.34	<1.0	4.6	12	2,000
SED58	7/18/2024	Normal	-	15,000	2,100	16	1,100	<0.10	3.7	28	9.5	7.1	0.99	9,600	0.45	<1.0	4.2	16	1,900
SED59	7/19/2024	Normal	-	16,000	460	15	2,400	<0.10	<2.0	13	6.9	<0.50	0.63	3,100	0.20	<1.0	1.5	19	470
SED DUP-D (Dup of SED59)	7/19/2024	Field_D	-	17,000	530	17	2,300	<0.10	<2.0	15	7.9	<0.50	0.74	3,100	0.21	<1.0	1.7	20	460
SED60	7/18/2024	Normal	-	21,000	3,100	18	1,900	1.9	2.0	31	12	4.9	2.9	4,900	0.52	<1.0	2.9	20	2,300
SED61	7/18/2024	Normal	-	69,000	3,900	9.3	1,400	0.92	7.7	28	6.1	2.9	1.9	7,600	0.22	<1.0	5.9	36	1,200
SED DUP-C (Dup of SED61)	7/18/2024	Field_D	-	51,000	3,700	12	1,900	0.85	5.9	26	7.4	4.2	2.0	9,800	0.28	<1.0	7.1	29	1,600
SED62	7/18/2024	Normal	-	34,000	5,900	22	1,600	0.64	3.3	37	15	3.0	2.9	5,700	0.52	<1.0	2.4	28	2,500
SED63	7/18/2024	Normal	-	55,000	3,000	34	2,200	0.19	8.3	55	30	3.8	1.5	7,300	0.44	1.3	2.9	45	1,800

Environmental Standards
Nova Scotia Environment, October 2022, NS Tier I EQS Freshwater Sediment
Hightlight Indicates an exceedance of the Tier I EQS

Table E-15 Sediment Data Analytical Results BTEX and PHCs

	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***	-	-

Monitoring Zone	Date	Sample Type										
SED4	**5/17/2022**	**Normal**	<0.0050	<0.050	<0.010	<0.050	<2.5	86	330	490	910**	1[#1]	1[#6]
SED5	**5/17/2022**	**Normal**	<0.0050	<0.050	<0.010	<0.050	<2.5	54	200	370	620**	1[#2]	1[#6]
SED6	**5/18/2022**	**Normal**	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	66	57	120**	1[#3]	1[#6]
SED10	**5/18/2022**	**Field_D**	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	79	93	170***	1[#4]	1[#6]
SED7	**5/18/2022**	**Normal**	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	<10	36	36**	1[#5]	1[#6]
SED8	**5/17/2022**	**Normal**	<0.0050	<0.050	<0.010	<0.050	<2.5	<10	34	74	110***	1[#4]	1[#6]
SED9	**5/17/2022**	**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-16 Sediment Data Analytical Results PAHs

			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
Monitoring Zone	**Date**	**Sample Type**																						
SED4	**5/17/2022**	**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	**5/17/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/17/2022**	**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	**5/17/2022**	**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

Environmental Standards

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

Table E-17 Sediment Data Analytical Results VOCs

			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 Freshwater Sediment			0.03	1.4	-	-	-	-	-	-	-	0.65	-	1.2	0.41	-	-	-	-	-	-	-	-	0.22	0.41	-	-	-	-	-
Monitoring Zone	**Date**	**Sample Type**																												
SED4	**5/17/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/17/2022**	**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

Environmental Standards

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

Table E-18 Sediment Data Analytical Results sVOCs and Misc.

			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	-	-	-	-
Monitoring Zone	**Date**	**Sample Type**																							
SED4	**5/17/2022**	**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	**5/18/2022**	**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	**5/18/2022**	**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	**5/17/2022**	**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

Environmental Standards

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

Table E-19 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			0.1	0.006	0.01	1	0.004	-	5	0.005	-	0.05	0.0038	2	-	0.2	0.3	0.005	-
NS Tier I EQS Com/Ind Potable Fine			0.1	0.006	0.01	1	0.004	-	5	0.005	-	0.05	0.0038	2	-	0.2	0.3	0.005	-
Field ID	**Date**	**Sample Type**																	
MW1	**5/17/2022**	**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	**5/17/2022**	**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	**5/17/2022**	**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)	**5/17/2022**	**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	**5/17/2022**	**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	**5/18/2022**	**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
	10/21/2022	**Normal**	0.0055	<0.0010	<0.0010	0.1	<0.00010	<0.0020	<0.05	0.00017	94	<0.0010	<0.00040	0.0057	-	-	<0.05	0.00082	11
MW5-D	**12/20/2022**	**Normal**	0.031	<0.0010	<0.0010	0.17	<0.00010	<0.0020	0.081	0.000055	79	<0.0010	<0.00040	0.00092	-	-	<0.05	0.0011	16
MW7	**5/17/2022**	**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
	5/18/2022	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/18/2022	**Normal**	0.015	<0.0010	<0.0010	0.19	<0.00010	<0.0020	<0.05	0.000097	75	<0.0010	<0.00040	0.00061	-	-	0.15	<0.00050	8.5
	10/18/2022	**Field_D**	0.024	<0.0010	<0.0010	0.17	<0.00010	<0.0020	<0.05	0.000083	79	<0.0010	<0.00040	0.0005	-	-	0.21	0.00065	8.8
MW8	**5/17/2022**	**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

shading Denotes exceedances of the NS CSR Tier I EQS

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-19 Groundwater Analytical Results Metals

	Metals															
	Manganese (filtered)	Mercury	Mercury (filtered)	Molybdenum (filtered)	Nickel (filtered)	Potassium (filtered)	Selenium (filtered)	Silver (filtered)	Sodium (filtered)	Strontium (filtered)	Thallium (filtered)	Tin (filtered)	Titanium (filtered)	Uranium (filtered)	Vanadium (filtered)	Zinc (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
EQL	0.002	0.000013	0.000013	0.002	0.002	0.1	0.0005	0.0001	0.1	0.002	0.0001	0.002	0.002	0.0001	0.002	0.005
NS Tier I EQS Com/Ind Potable Coarse	0.12	0.001	0.001	0.07	0.1	-	0.05	-	200	2.4	0.002	2.4	-	0.02	0.0062	5
NS Tier I EQS Com/Ind Potable Fine	0.12	0.001	0.001	0.07	0.1	-	0.05	-	200	2.4	0.002	2.4	-	0.02	0.0062	5
Field ID	**Date**	**Sample Type**														
MW1	**5/17/2022**	**Normal**	0.4	<0.000013	-	0.0070	<0.0020	3	<0.00050	<0.00010	14	0.31	<0.00010	<0.0020	<0.0020	0.00069	<0.0020	<0.0050
MW2	**5/17/2022**	**Normal**	2	-	<0.000013	<0.0020	0.0028	0.67	<0.00050	<0.00010	4.3	11	<0.00010	<0.0020	<0.0020	0.0013	<0.0020	0.12
MW3	**5/17/2022**	**Normal**	3.2	-	<0.000013	<0.0020	0.045	14	<0.00050	<0.00010	5.6	26	<0.00010	<0.0020	<0.0020	0.0029	<0.0020	0.013
MW9 (F/D)	**5/17/2022**	**Field_D**	3.1	-	<0.000013	<0.0020	0.046	13	<0.00050	<0.00010	5.5	25	<0.00010	<0.0020	<0.0020	0.0029	<0.0020	0.013
MW4	**5/17/2022**	**Normal**	2.9	-	<0.000013	0.0025	0.0036	2.9	<0.00050	<0.00010	4.8	37	<0.00010	<0.0020	<0.0020	0.0083	<0.0020	0.19
MW5	**5/18/2022**	**Normal**	0.029	-	-	0.018	0.015	4.9	0.0057	<0.00010	9.1	38	<0.00010	<0.0020	<0.0020	0.012	<0.0020	0.2
	10/21/2022	**Normal**	<0.002	-	-	0.0048	0.002	3.4	0.01	<0.00010	5	39	<0.00010	<0.0020	<0.0020	0.0071	<0.0020	0.18
MW5-D	**12/20/2022**	**Normal**	0.47	-	-	0.026	<0.0020	8.0	0.00092	<0.00010	14	13	<0.00010	<0.0020	<0.0020	0.0032	<0.0020	0.0052
MW7	**5/17/2022**	**Normal**	0.28	-	<0.000013	0.0045	<0.0020	1.8	0.00079	<0.00010	3.7	21	<0.00010	<0.0020	<0.0020	0.0030	<0.0020	0.032
	5/18/2022	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/18/2022	**Normal**	0.48	-	-	0.0031	<0.0020	2.2	<0.00050	<0.00010	3.7	27	<0.00010	<0.0020	<0.0020	0.0022	<0.0020	0.016
	10/18/2022	**Field_D**	0.6	-	-	0.0033	<0.0020	2.3	<0.00050	<0.00010	3.5	28	<0.00010	<0.0020	<0.0020	0.0023	<0.0020	0.015
MW8	**5/17/2022**	**Normal**	0.08	-	<0.000013	<0.0020	<0.0020	1.4	0.0011	<0.00010	6.3	1.2	<0.00010	<0.0020	<0.0020	0.00076	<0.0020	0.019

shading Denotes exceedances of the NS CSF

Environmental Standards

Nova Scotia Environment, September 2021, NS Tier I EQS

Table E-20 Groundwater Analytical Results BTEX and PHCs

	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	**5/17/2022**	**Normal**	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance	NA
MW3	**5/17/2022**	**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)	**5/17/2022**	**Field_D**	<0.0010	<0.0010	<0.0010	<0.0010	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance	NA
MW4	**5/17/2022**	**Normal**	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance	NA
MW7	**5/18/2022**	**Normal**	<0.0010	<0.0010	<0.0010	<0.0020	<0.090	<0.050	<0.050	<0.090	<0.090	No Resemblance	NA
MW8	**5/17/2022**	**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-21 Groundwater Analytical Results PAHs

			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	**5/17/2022**	**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	**5/17/2022**	**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)	**5/17/2022**	**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	**5/17/2022**	**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	**5/17/2022**	**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	**5/17/2022**	**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-22 Groundwater Analytical Results VOCs

			Volatile Organic Compounds (VOCs)																													
			1,1,1,1-Trichloroethane	1,1,1,2,2-Tetrachloroethane	1,1,1,2-Trichloroethane	1,1,1-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
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 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	**5/17/2022**	**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)	**5/17/2022**	**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	**5/17/2022**	**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	**5/17/2022**	**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-23 Groundwater Analytical Results sVOCs and Misc.

	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 **5/17/2022** **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) **5/17/2022** **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 **5/17/2022** **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 **5/17/2022** **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-24 Groundwater Analytical 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 (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	**5/17/2022**	**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	**5/17/2022**	**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	**5/17/2022**	**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)	**5/17/2022**	**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	**5/17/2022**	**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
MW5	**10/21/2022**	**Normal**									<0.1																		
MW7	**5/17/2022**	**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
	10/18/2022	**Normal**									<0.1																		
	10/18/2022	**Field_D**									<0.1																		
MW8	**5/17/2022**	**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