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NOVA SCOTIA LANDS

Long Term Maintenance and Monitoring – 2018 Groundwater Monitoring Event

Harbourside Commercial Park – Final Report

March 2019 – 14-1360-1600

March 14, 2019

Nova Scotia Lands
P.O. Box 430, Station A
Sydney, NS B1P 6H2

ATTENTION: Mr. Frank Potter
Executive Project Director

Long Term Maintenance and Monitoring – 2018 Groundwater Monitoring Event Harbourside Commercial Park (Final Report)

Dear Mr. Potter:

Dillon Consulting Limited is pleased to submit the above referenced report for your review. Should you have any questions or comments, please contact the undersigned at (902) 562-9880 extension 5206.

Yours sincerely,

DILLON CONSULTING LIMITED

N. J. Wambolt

Nadine J. Wambolt, B.Tech., CET
Project Manager

NJW:kme

Enclosure

Our file: 14-1360-1600

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Executive Summary

Nova Scotia Lands (NS Lands) is a Crown Corporation of the Province of Nova Scotia responsible for the Long Term Maintenance and Monitoring Program (LTMM) implemented at Harbourside Commercial Park (HCP). NS Lands retained Dillon Consulting Limited (Dillon) to conduct the LTMM program, which consists of an annual groundwater sampling program. The LTMM event was completed on November 27, 2018.

In accordance with the request for proposal (RFP) NSLAND57 Groundwater Monitoring Services, previous LTMM groundwater monitoring events initially included thirty-two water level measurements, checking eight monitor/recovery wells for product and the collection of twenty-five groundwater samples. However, following the sale of a portion of the HCP lands, and following approval from Nova Scotia Environment (NSE) and NS Lands, the 2017 LTMM program for HCP was reduced to include sampling of twelve monitor wells. In 2018, NS Lands confirmed that seven of the twelve monitor wells scheduled for sampling had been either decommissioned, destroyed or buried as a result of construction activity; thereby reducing the number of sampling wells to five. The five monitor wells (i.e., SCU10-001-MW, SCU10-004-MW, SCU18-007-MW, SCU31-002-MWB and SCU31-004-MW) scheduled for sampling (i.e., for petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbon (PAHs) and metals) as part of the 2018 program were also monitored for water level measurements. In accordance with the 2014 RFP NSLAND57 Groundwater Monitoring Services, water level/product measurements were also collected at eight additional monitor/recovery wells on the HCP site.

Analytical data were assessed in comparison to the July 2013 Nova Scotia Contaminated Sites Regulations (NS CSR) Tier I Environmental Quality Standards (EQS) for groundwater. Where Tier I EQS are not available (e.g., for most PAHs and for metals in groundwater at non-potable sites), the Ontario Ministry of the Environment (MOE) Groundwater Standards for use under Ontario's Environmental Protection Act were used.

During the 2018 monitoring event, no groundwater concentrations above the Tier I EQS or the MOE standards were detected in the five monitor wells sampled (i.e., SCU10-001-MW, SCU10-004-MW, SCU18-007-MW, SCU31-002-MWB and SCU31-004-MW).

The groundwater quality trend analysis for the 2018 monitoring event was based on the available analytical results (i.e., four rounds of sampling events are required) for select parameters with concentrations above the applicable guidelines. In 2017, three monitor wells (i.e., SCU10-004-MW, SCU27-002-MW and SCU32-003-MW) contained concentration(s) of indicator parameters exhibiting an increasing or potentially increasing concentration trends (i.e., anthracene exhibited a potentially increasing concentration trend in SCU10-004-MW; barium exhibited a potentially increasing trend in SCU27-002-MW and selenium exhibited an increasing trend in SCU32-003-MW). Monitor wells SCU27-002-MW and SCU32-003-MW were decommissioned in 2018; therefore, trend analysis was not

completed as part of the 2018 LTMM program. Results of the 2018 Mann-Kendall analysis for monitor well SCU10-004-MW indicate a fluctuating trend.

This report was prepared by Dillon Consulting Limited for the sole benefit of our client, Nova Scotia Lands. The conclusions reflect Dillon's judgment in light of the information available to it 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 responsibilities for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

1.0 Introduction

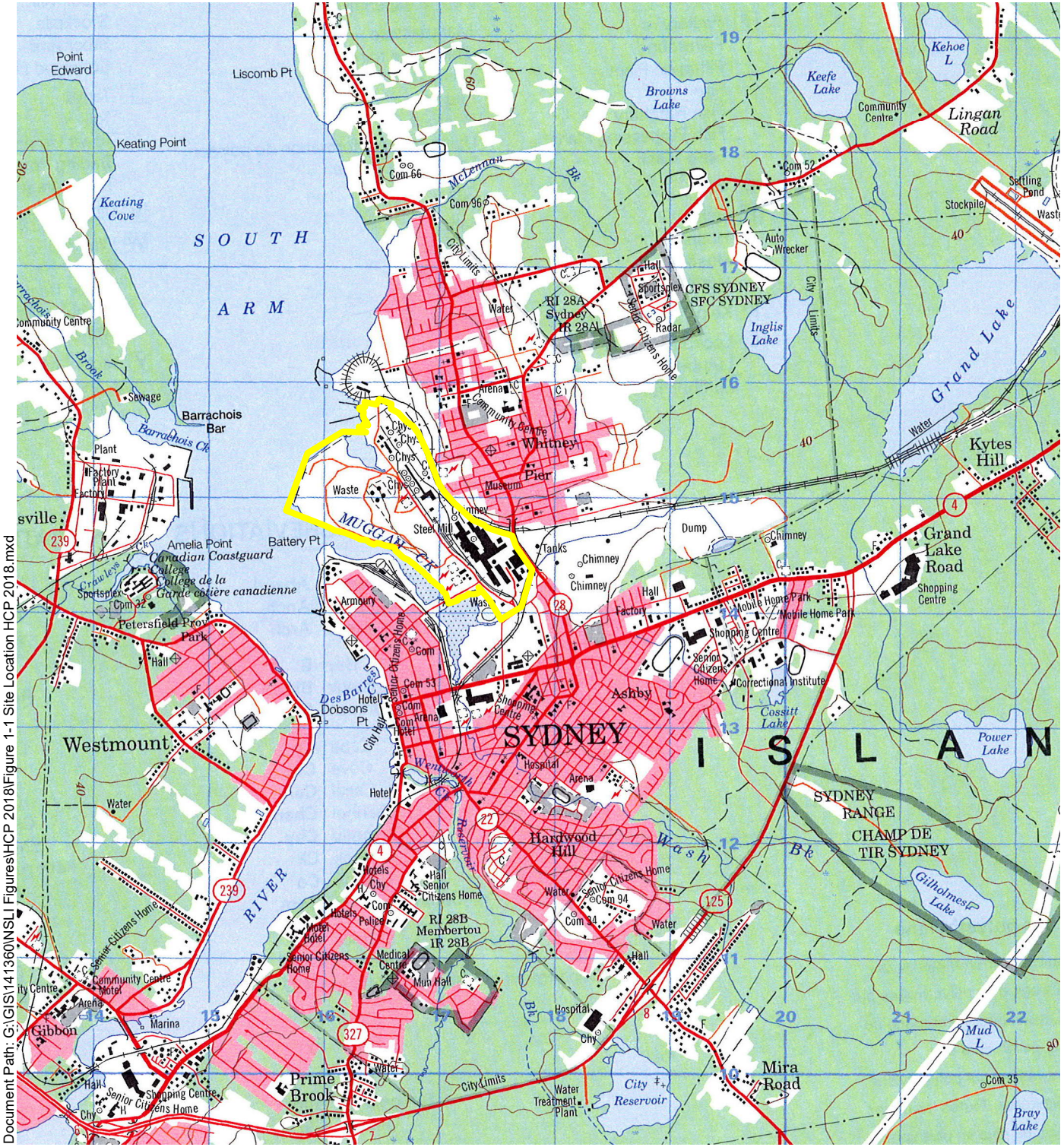
Nova Scotia Lands (NS Lands) is a Crown Corporation of the Province of Nova Scotia responsible for the Long Term Maintenance and Monitoring Program (LTMM) implemented at Harbourside Commercial Park (HCP) (Figure 1-1). NS Lands retained Dillon Consulting Limited (Dillon) to conduct the LTMM program, which consists of an annual groundwater sampling program. The groundwater sampling program has been ongoing at HCP since 2003. Environmental Site Assessments (ESAs) conducted to date throughout the HCP have identified several groundwater constituents of interest in excess of evaluation criteria (i.e., petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), mercury, various other metals and vinyl chloride).

Groundwater monitoring was completed on November 27, 2018 and included measurement of hydraulic head levels and sample collection (i.e., for PHCs, PAHs and metals analysis) from select monitor wells at HCP.

This document details the 2018 groundwater monitoring event. Section 1.0 1 describes the scope of work. Methodologies are detailed in Section 2.0. Findings are presented in Section 3.0 and summarized in Section 4.0. Recommendations are provided in Section 5.0. Data tables and supporting information are found in Appendices referenced throughout the document.

1.1 Scope of Work

The LTMM program for the HCP consists of an annual groundwater sampling program. In accordance with the request for proposal (RFP) NSLAND57 Groundwater Monitoring Services, previous LTMM groundwater monitoring events initially included thirty-two water level measurements, checking eight monitor/recovery wells for product and the collection of twenty-five groundwater samples. However, following the sale of a portion of the HCP lands, and following approval from Nova Scotia Environment (NSE) and NS Lands, the 2017 LTMM program for HCP was reduced to include sampling of twelve monitor wells (including two added monitor wells, SCU18-007-MW and SCU31-004-MW). In 2018, NS Lands confirmed that seven of the twelve monitor wells scheduled for sampling (i.e., SCU26-001-MW, SCU26-002-MW, SCU27-002-MW, SCU32-001-MWA, SCU32-002-MW, SCU32-003-MW and MCES-007-MW) had been either decommissioned, destroyed or buried as a result of construction activity; thereby reducing the number of wells to be sampled in 2018 to five (Figure 1-2). The five monitor wells (i.e., SCU10-001-MW, SCU10-004-MW, SCU18-007-MW, SCU31-002-MWB and SCU31-004-MW) scheduled for sampling (i.e., for PHCs, PAHs and metals) as part of the 2018 program were also monitored for water level measurements. In accordance with the 2014 RFP NSLAND57 Groundwater Monitoring Services, water level/product measurements were also collected at eight additional monitor/recovery wells on the HCP site.



Document Path: G:\GIS\141360\NSLI Figures\HCP 2018\Figure 1-1 Site Location HCP 2018.mxd

NS Lands
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HARBOURSIDE COMMERCIAL PARK
2018 GROUNDWATER MONITORING EVENT

SITE LOCATION
Figure 1-1

Harbourside Commercial Park

0 250 500 1,000 1,500 m

N
W E
S

MAP DRAWING INFORMATION:
Government of Canada, Natural Resources Canada,
Earth Science Sector, Center for Topographic Information.
Sydney 11 K/1, ESRI Basemap
Information current as of 1994.

Province of Nova Scotia Mapping

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

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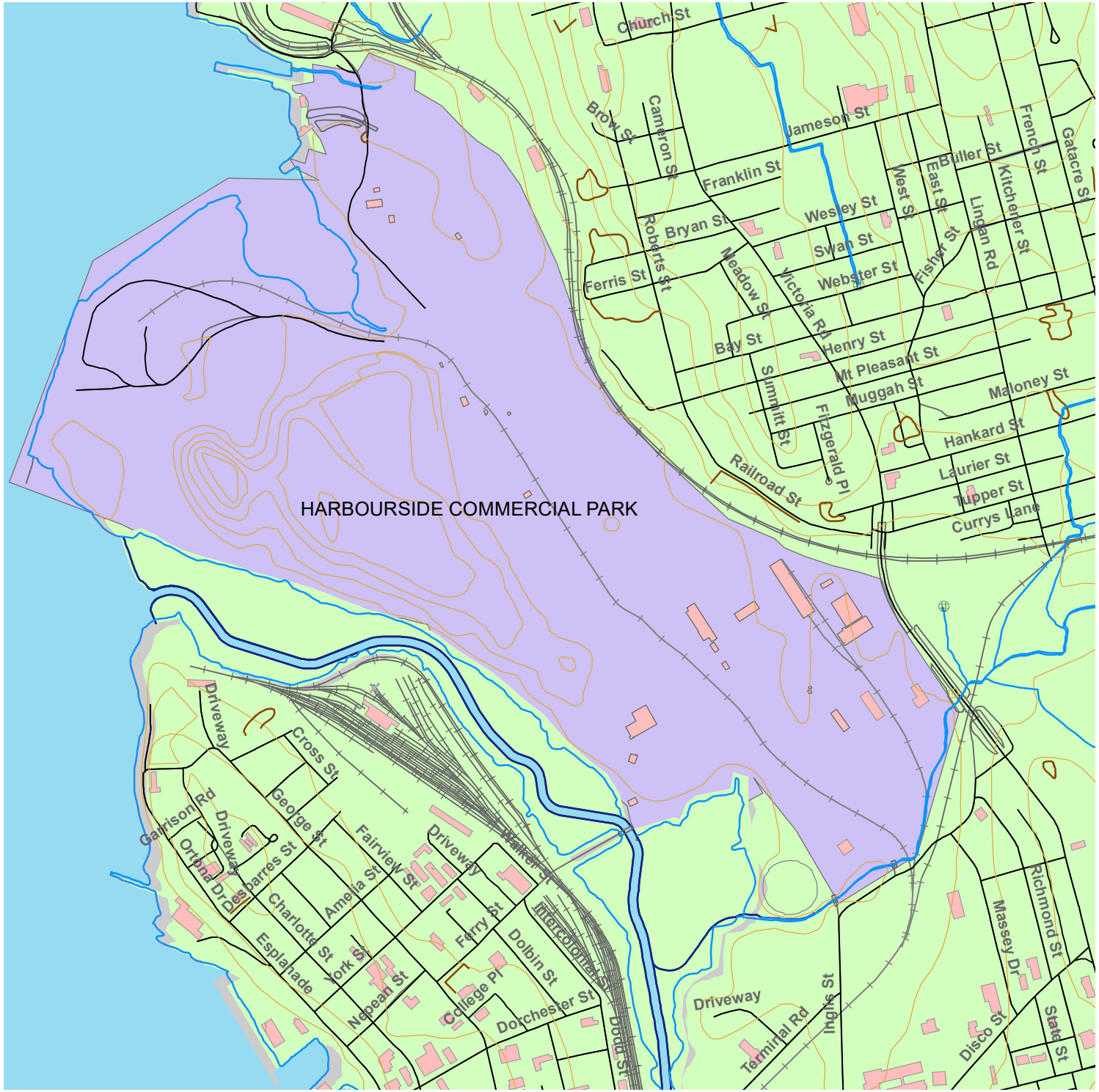
STATUS: FINAL
Date: 2019-01-21



Document Path: G:\GIS\141360\NSLI Figures\HCP 2018\Figure 1-2 Study Areas HCP 2018.mxd

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HARBOURSIDE COMMERCIAL PARK

2018 GROUNDWATER MONITORING EVENT

STUDY AREA

FIGURE 1-2

0 50 100 200 300 m

N W E S

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping
SLR Monitoring Recommendations drawing dated April 17, 2014

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

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PROJECT: 14-1360
STATUS: FINAL
Date: 2019-01-21

2.0 Project Methodologies

Methodologies are provided in the following sub-sections:

- Section 2.1 Health and Safety Processes
- Section 2.2 Quality Control (QC) Processes
- Section 2.3 Groundwater Sampling
- Section 2.4 Data Compilation/Assessment

2.1 Health and Safety Processes

Dillon developed a site-specific health and safety plan (SSHSP) for groundwater monitoring. The SSHSP includes site specific information, such as, local emergency contact information and hospital routes, as well as, but not limited to the following:

- Identification of site activities and potential hazards;
- Description of safe work practices and procedures;
- Description of PPE;
- Identification of safety training and first aid requirements; and,
- Identification of emergency response procedures.

The project manager reviewed the SSHSP with field personnel prior to their mobilizing to the site. Field personnel were responsible for following the SSHSP, including conducting a job hazard analysis upon arrival to the site.

2.2 Quality Control Process

Data Quality Objectives (DQOs) and applicable Standard Operating Procedures (SOPs) were reviewed with the team prior to embarking on field work. Other QC measures included, but were not necessarily limited to, the following:

- Assignment of a coordinator to oversee field activities;
- Use of dedicated materials and equipment to reduce/prevent the potential of sample contamination;
- For equipment requiring use at multiple stations, appropriate decontamination prior to, and after, each deployment;
- Use of laboratory supplied sample bottles/containers;
- Collection of an appropriate number of duplicates and blanks;
- Proper storage of samples on ice in coolers immediately after collection;
- Transport of samples to the laboratory (see below) on a daily basis; and,
- Daily documentation/review of notes.

Duplicate and Blank Collection

One field duplicate, one trip blank and one equipment blank were collected during the 2018 LTMM event. Relative percent differences were calculated between sample and associated field duplicate results, as discussed below in Section 3.4.

Laboratory QC

Samples were delivered to Maxxam Analytics in Sydney, Nova Scotia (Maxxam) for analysis. Maxxam is accredited through the Standard Council of Canada (SCC) and is a member of the Canadian Association for Laboratory Accreditation (CALA). Maxxam also applied internal laboratory QC measures including:

- Laboratory duplicates;
- Matrix Spikes (MS);
- Spike Blanks (Process Recovery %); and,
- Method blanks.

Laboratory DQOs, including MS recoveries, process recoveries, relative percent differences, and holding times, were reviewed to assess the quality of the data.

2.3 LTMM Groundwater Monitoring Program

The HCP groundwater monitoring program has been ongoing since 2003, with the sampling program being reduced over time. The 2018 HCP program consists of five monitor wells requiring sampling. The field component of the 2018 groundwater monitoring event involved the following activities:

- Measurement of hydraulic head levels;
- Low flow groundwater sample collection; and,
- Data compilation/assessment and reporting.

2.3.1 Measurement of Hydraulic Head Levels

The number of monitor wells measured for water levels was thirteen (i.e., five sampling and eight monitor/recovery wells that were checked for product). Depth to water and the presence of light non-aqueous phase liquid (LNAPL) and/or dense non-aqueous phase liquid (DNAPL) in wells were manually measured using an interface probe. Measurements were taken from established reference points and water level information was recorded on field sampling sheets.

2.3.2 Sample Collection

Using a peristaltic pump, groundwater was removed from the five monitor wells sampled in the HCP area until select field parameters stabilized, including water level. The rate of flow (0.1 to 0.4 liters (L)/minute) at each well was controlled by an in-line valve. The water level was measured at 3-minute intervals and maintained at a constant head; if the water level started to drop, the flow rate was reduced to maintain a constant head. The sample tube was connected to a flow-through cell containing

a Horiba U-52 multi-parameter probe. The general stabilization of the following parameters was used as indication that water representative of the groundwater in the aquifer was being collected:

- pH (+/- 0.1 unit);
- Specific conductance (+ / - 3%);
- Temperature (+ / - 3%); and,
- Turbidity (+ / -10% for values greater than 1 NTU).

The time required for sampling generally ranged from 15 to 30 minutes, and typically 6 to 12 liters of water was removed. In instances where stabilization of turbidity provided some challenges, additional parameters including dissolved oxygen (DO) and oxidation reduction potential (ORP) were referenced to confirm stabilized conditions.

2.3.3 Groundwater Analysis

Pursuant to RFP NSLAND57 Groundwater Monitoring Services, groundwater samples were analyzed for PHCs, PAHs and dissolved metals, as listed below in Table 2-1. PHC and PAH sample bottles were filled with no head space. Metal aliquots were field filtered and preserved with nitric acid in order to maintain constituents in solution. Samples were delivered to Maxxam in Sydney, Nova Scotia for analysis.

Table 2-1 Water Quality Analytical Suite of Parameters

PHC	PAHs		Metals (dissolved)	
Benzene	Acenaphthene	Naphthalene	Aluminum	Mercury (Total)
Toluene	Acenaphthylene	Perylene	Antimony	Molybdenum
Ethylbenzene	Anthracene	Phenanthrene	Arsenic	Nickel
Total Xylenes	Benzo(a)anthracene	Pyrene	Barium	Phosphorus
C6-C10 (Less BTEX)	Benzo(a)pyrene	1-Methylnaphthalene	Beryllium	Selenium
>C10-C16 Hydrocarbons	Benzo(b)fluoranthene	2-Methylnaphthalene	Bismuth	Silver
>C16-C21 Hydrocarbons	Benzo(j)fluoranthene		Boron	Strontium
>C21-<C32 Hydrocarbons	Benzo(k)fluoranthene		Cadmium	Thallium
Modified TPH (Tier I)	Benzo(g,h,i)perylene		Chromium	Tin
	Chrysene		Cobalt	Titanium
	Dibenz(a,h)anthracene		Copper	Uranium
	Fluoranthene		Iron	Vanadium
	Fluorene		Lead	Zinc
	Indeno(1,2,3-cd)pyrene		Manganese	

2.4 Data Compilation/Assessment

Maxxam provided analytical results in a database compatible format, alleviating potential errors associated with manual entry. Data tables generated as part of the 2018 program also include historical groundwater monitoring data. Based on historical data, the following parameters, with concentrations consistently observed above applicable standards, are used as indicator parameters for the HCP site:

- PAHs (i.e., anthracene and indeno(1,2,3-cd)pyrene); and,

- Metals (i.e., sodium, barium and/or selenium).

Trend analysis was not completed for PHCs, as benzene, toluene, ethylbenzene and xylene concentrations have remained below the Tier I EQS throughout the LTMM program. Further, modified total petroleum hydrocarbon (TPH) exceedances of the Tier I EQS have only been reported on three occasions at two monitor well locations (the last modified TPH exceedance was reported for SCU10-004-MW in 2015).

2.4.1 Regulatory Framework

Pursuant to RFP NSLAND57 Groundwater Monitoring Services, the remedial criteria used for this assessment were the Tier I Environmental Quality Standards (EQS) for groundwater established pursuant to the July 2013 Nova Scotia Contaminated Sites Regulations (NS CSR). The subject property is classified as having commercial receptors, non-potable groundwater usage and coarse-grained soil. Where Tier I EQS are not available (e.g., for most PAHs and metals in groundwater at non-potable sites), the Ontario Ministry of the Environment (MOE) Groundwater Standards for use under Ontario's Environmental Protection Act were used.

2.4.2 Groundwater Quality Trend Analysis – Mann Kendall

Mann-Kendall analysis as a non-parametric statistic test routinely used to assess the stability of solute plume. At least four independent sampling events are required to evaluate groundwater quality trends via Mann-Kendall analysis. The Mann-Kendall test procedure starts by comparing the most recent round of water quality data with the results of earlier rounds. Non-detect data values are typically assigned a value that is half the laboratory detection limit. The Mann-Kendall test is not designed to account for seasonal variation in data, rather Mann-Kendall identified the trend of concentrations in individual wells for individual parameters (e.g., stable, fluctuating, decreasing, increasing).

Select parameters with concentrations above, or historically above, applicable guidelines were selected for Mann-Kendall analysis. These include PAH indicator parameters anthracene and indeno (1, 2, 3-cd) pyrene in monitor well SCU10-004-MW. Historically, Mann-Kendall analysis completed as part of the LTMM has included additional monitor wells and parameters; however, due to the number of sampling wells included in the program in 2018, trend analysis was only completed for SCU10-004-MW as part of the 2018 LTMM.

Groundwater analytical data collected during historical monitoring events to the 2018 monitoring event were applied for performing the trend analysis. In certain situations, Mann-Kendall analysis results may be biased due to elevated laboratory detection limits. However, non-detected data used in the Mann-Kendall analysis of indicator parameters indicated that the influence of non-detected data is minimal. At least four rounds of groundwater monitoring data is required for Mann-Kendall analysis.

3.0 Results

Results are presented in the following subsections:

- Section 3.1 Weather Conditions and General Observations
- Section 3.2 Groundwater Flow and Hydraulic Head Levels
- Section 3.3 HCP Findings
- Section 3.4 QC Summary

3.1 Weather Conditions and General Observations

The current meteorological station (i.e., Sydney A, Climate ID: 8205700/8205701) is an official in-situ station established by Environment Canada since 1941. Historical precipitation recordings for the Sydney area can be traced back as far as 1870. Comparison of the recordings at the Sydney A station indicates that precipitation of approximately 1688.7 millimeters (mm) was recorded for 2018, which is more than the normal value of yearly precipitation of 1517 mm (i.e., as recorded between 1981 and 2010) (http://climate.weather.gc.ca). The monthly precipitation recorded for November 2018 was 229.5 mm.

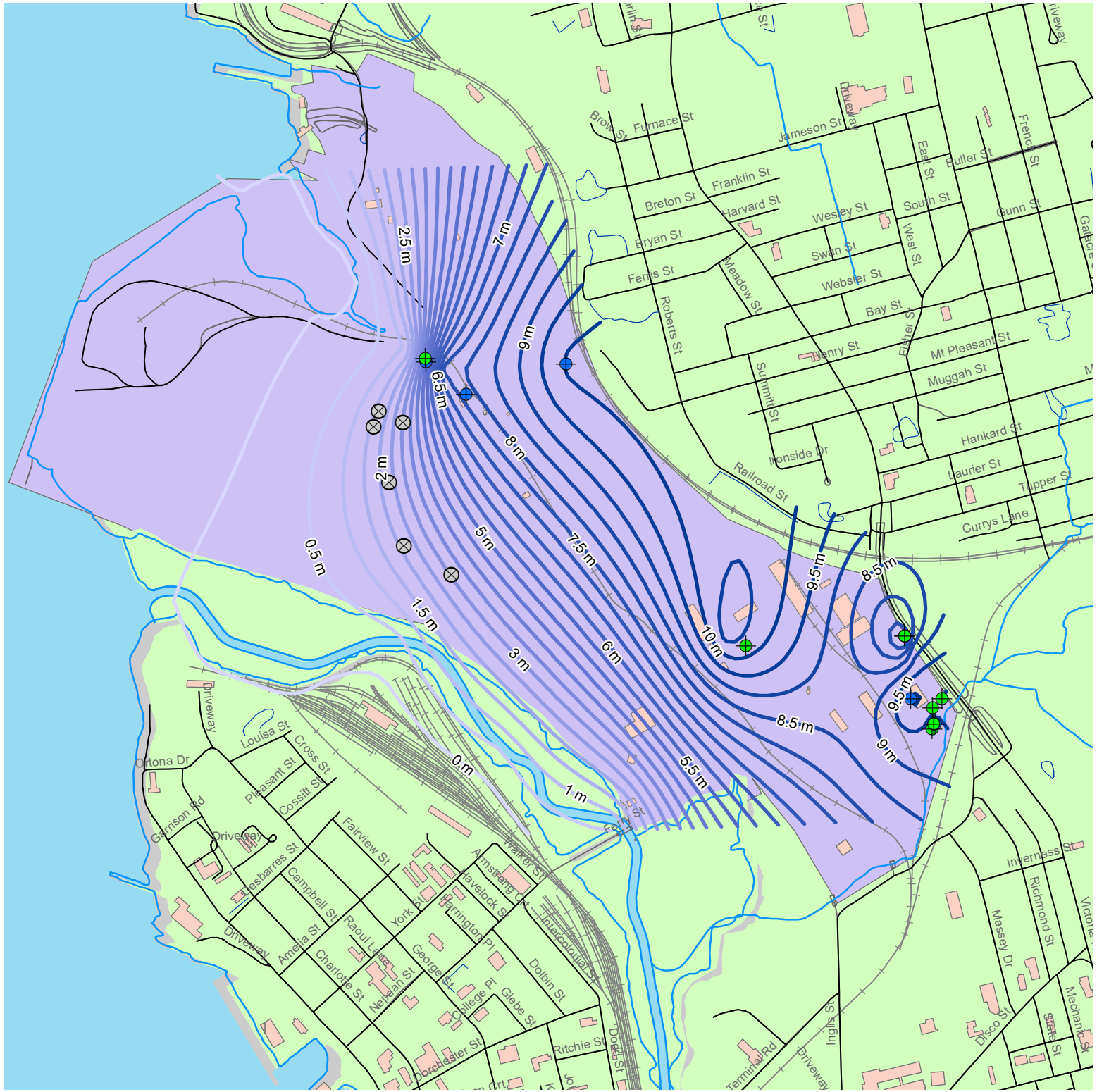
3.2 Groundwater Flow and Hydraulic Head Levels

NS Lands provided Dillon with elevation survey information for the majority of the monitor wells initially included in the LTMM program at the HCP site. Accordingly, the hydraulic heads of thirteen wells (i.e., the five sample wells and eight monitor/recovery wells that were checked for product) were calculated to plot the equipotential groundwater contours for the 2018 monitoring event. The groundwater contours were applied to evaluate the groundwater flow pattern and direction within the unconsolidated till and/or fill unit (Figure 3-1).

The available equipotential contour plot for the unconsolidated material (i.e., the fill/till) indicates that the groundwater flow direction is west toward Sydney Harbour.

3.3 HCP Findings

Historical environmental site assessments conducted to date throughout HCP (Figure 3-2) have identified elevated concentrations of organic and inorganic parameters in groundwater above the applicable guidelines (e.g., PHCs, PAHs, mercury, various other metals and vinyl chloride). As stated above, the LTMM for HCP was initially scheduled to include sampling of twenty-five monitor wells; however, following the sale of a portion of the HCP lands in 2017, the LTMM program for HCP was reduced to include sampling of twelve monitor wells (including two added monitor wells). Further, in 2018 NS Lands confirmed that seven of the twelve monitor wells had been either decommissioned,



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2018 GROUNDWATER MONITORING EVENT

Equipotential Groundwater Contours Fill TIII
FIGURE 3 -1

Equipotential Groundwater Contours

6m — Groundwater Elevations are measured in meters above sea level (mASL)

Active Water Level Only

Active Sample and Water Level

Decommissioned/Destroyed or Buried

Harbourside Commercial Park

0 50 100 200 300 m

N W E S

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping
SLR Monitoring Recommendations drawing dated April 17, 2014

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

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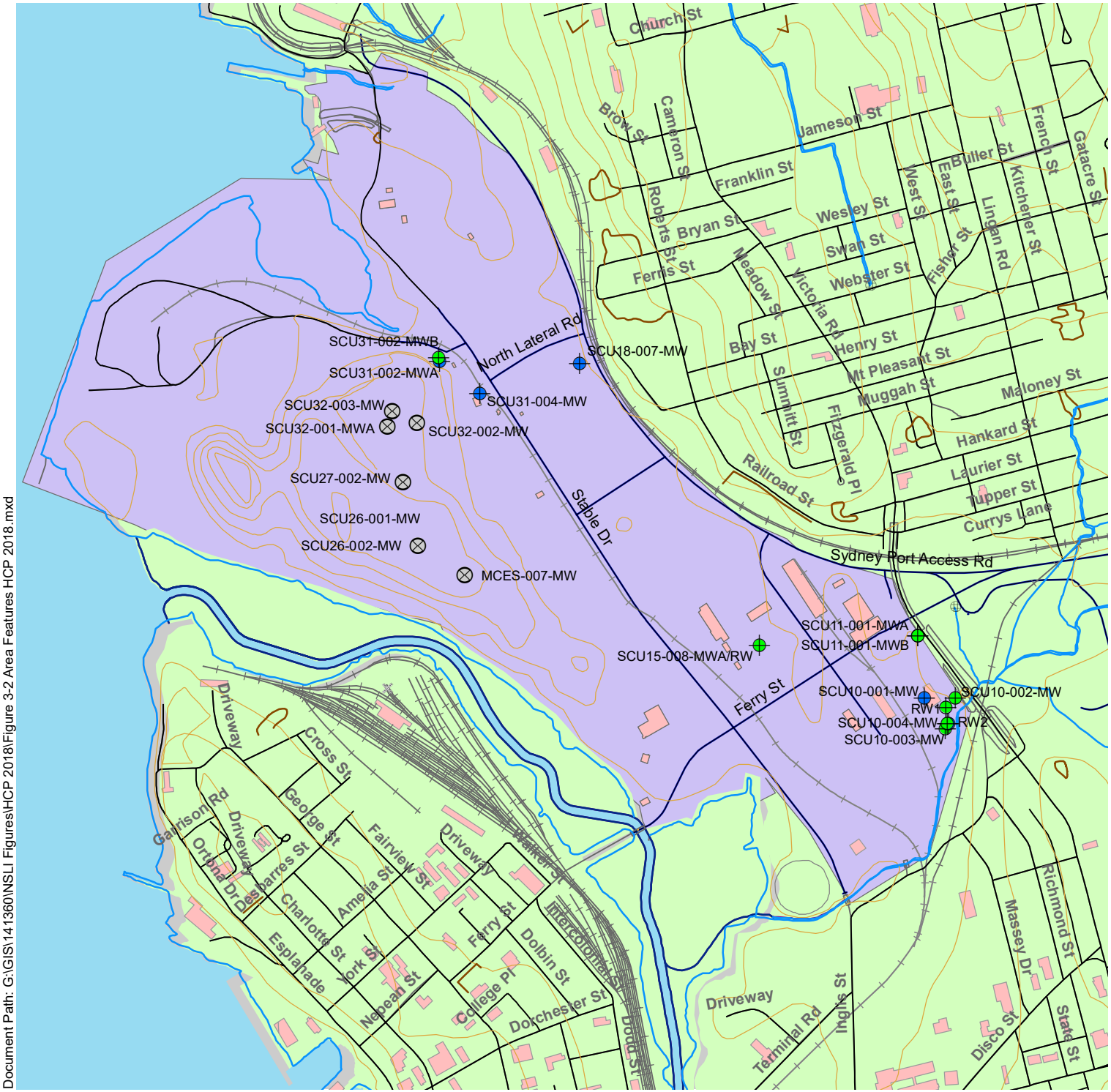
PROJECT: 14-1360
STATUS: FINAL
Date: Jan 24 2019



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HARBOURSIDE COMMERCIAL PARK

2018 GROUNDWATER MONITORING EVENT

AREA FEATURES

FIGURE 3-2

Monitoring Wells

- Active Water Level Only
- Active Sample and Water Level
- Decommissioned/Destroyed or Buried

Harbourside Commercial Park

0 50 100 200 300 m

N W E S

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping
SLR Monitoring Recommendations drawing dated April 17, 2014

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

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PROJECT: 14-1360
STATUS: FINAL
Date: 2019-01-22

Document Path: G:\GIS\141360\NSLI Figures\HCP 2018\Figure 3-2 Area Features HCP 2018.mxd

destroyed or buried as a result of construction activity; thereby reducing the number of wells to be sampled in 2018 to five. Of the five remaining sampling wells included in the 2018 LTMM sampling program, one does not have sufficient data (i.e., four independent rounds are required) to evaluate groundwater quality trends via Mann-Kendall analysis and three have not exhibited concentrations above the comparison criteria. Therefore, Mann-Kendall analysis was completed for one monitor well only (i.e., SCU10-004-MW) as part of the 2018 LTMM for HCP.

3.3.1 HCP Groundwater Quality

Analytical data, including available historical data for reference, are presented in Appendix A (i.e., Tables A-1 (PHCs), A-2 (PAHs) and A-3 (metals)). As stated previously, the 2018 LTMM groundwater program was reduced to include the collection of five groundwater samples for analysis from monitor wells located on the HCP site. Table 3-1 summarizes the select indicator parameter concentrations for the only monitor well remaining in the LTMM that has historically exhibited concentrations above applicable comparison criteria.

Table 3-1 HCP – Summary of Indicator Parameter Concentrations

Well ID	Organic Parameter (ug/L)		
	Date	Anthracene	Indeno(1,2,3-cd)pyrene
MOE Table 3[1]		2.4	0.2
SCU10-004-MW	Nov 2010	2.4	0.09
	Oct 2011	13	0.74
	Nov 2012	38	0.75
	Dec 2013	4.0	0.072
	Dec 2015	1100	67
	Nov 2016	18	*<1.0*[3]
	Dec 2017	5.6	0.12
	Nov 2018	2.3	0.099

Notes:
1. MOE, Table 3 Full Depth Generic Site Condition Standards, Non-potable Groundwater (Coarse Grained Soil) 2011.
2. Nova Scotia Environment Tier I Environmental Quality Standards for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013. Note, there are no NSE Tier I EQS for Groundwater on a site with Coarse-Grained Soil, Non-potable Groundwater and Commercial/Industrial land use (2013) for acenapthalene, anthracene and indeno(1,2,3-cd)pyrene.

BOLD Exceeds the Tier I EQS or the MOE Table 3 standards (when no Tier I EQS is available).

During the 2018 monitoring event, no groundwater concentrations above the Tier I EQS or the MOE standards (the comparison criteria which are used when no Tier I EQS is available) were detected in the five monitor wells sampled (i.e., SCU10-001-MW, SCU10-004-MW, SCU18-007-MW, SCU31-002-MWB and SCU31-004-MW). Of note, the laboratory reported interference from volatile organic compounds (VOCs) in the gasoline range for the PHC sample collected from monitor well SCU10-001-MW.

With regard to monitor well SCU10-004-MW, review of the 2015 results indicates that fifteen of the twenty PAH parameters analyzed exceeded the Tier I EQS or MOE standards. The 2016 analytical results

(i.e., which had two PAH parameters exceeding MOE standards) and 2017 analytical results (i.e., which had one PAH parameter exceeding MOE standards) are generally consistent with the results from monitoring events prior to 2015. Consequently, the 2015 results suggest that the sample was more impacted by PAHs than is typically observed. Further review of the data indicates that a number of the PAHs were detected in SCU10-004-MW during the 2015 monitoring event at concentrations near their solubility limits, the sample needed to be diluted and there was potential product interference noted in the laboratory certificates. These indications suggest that the 2015 sample may have had sediment or trace levels of emulsified product that entered the sample during sample collection. Although PAHs were detected in monitor well SCU10-004-MW during the 2018 monitoring event, results were below the Tier I EQS and the MOE Standards.

3.3.2 Product Check

Observations recorded in the field during DNAPL and LNAPL and DNAPL checks are presented in Table 3-2.

Table 3-2 HCP Summary of Product Check

Well ID	Product Type/Thickness	Field Observations
SCU10-002-MW	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.
SCU10-003-MW	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.
SCU10-004-MW*	No Product Detected	Oil/water interface probe did not detect product; however, a strong petroleum hydrocarbon odour was noted on the probe.
SCU11-001-MWA	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.
SCU11-001-MWB	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.
SCU15-008-MWA/RW	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.
SCU31-002-MWA	No Product Detected	Oil/water interface probe did not detect product, no product observed, no petroleum hydrocarbon odour detected.
RW1	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.
RW2	No Product Detected	Oil/water interface probe did not detect product, no product observed and no petroleum hydrocarbon odour detected.

Notes:
1. * Denotes sampling well
2. mm - millimeters

3.3.3 Trend Analysis

The groundwater quality trend analysis for the 2018 monitoring event was based on the available analytical results (i.e., four rounds of sampling events are required) for select parameters with concentrations above the applicable guidelines. In 2017, three monitor wells (i.e., SCU10-004-MW, SCU27-002-MW and SCU32-003-MW) contained concentration(s) of indicator parameters exhibiting an increasing or potentially increasing concentration trends (i.e., anthracene exhibited a potentially increasing concentration trend in SCU10-004-MW; barium exhibited a potentially increasing trend in SCU27-002-MW and selenium exhibited an increasing trend in SCU32-003-MW). Monitor wells SCU27-002-MW and SCU32-003-MW were decommissioned in 2018; therefore, trend analysis could not be completed as part of the 2018 LTMM program.

Results of Mann-Kendall analysis for monitor well SCU10-004-MW are presented below in Table 3-1 and on Figure 3-3. The Mann-Kendall analysis was conducted based on the available analytical data, including the 2018 analytical results.

Table 3-1 HCP – Trend Analysis Summary

Well ID	Parameters	Trend
SCU10-004-MW	Anthracene	Fluctuating
	Indeno(1,2,3-cd)pyrene	Fluctuating

3.4 QC Summary

Supporting QC data are found in Appendix B. The results are discussed in the following five sub-sections:

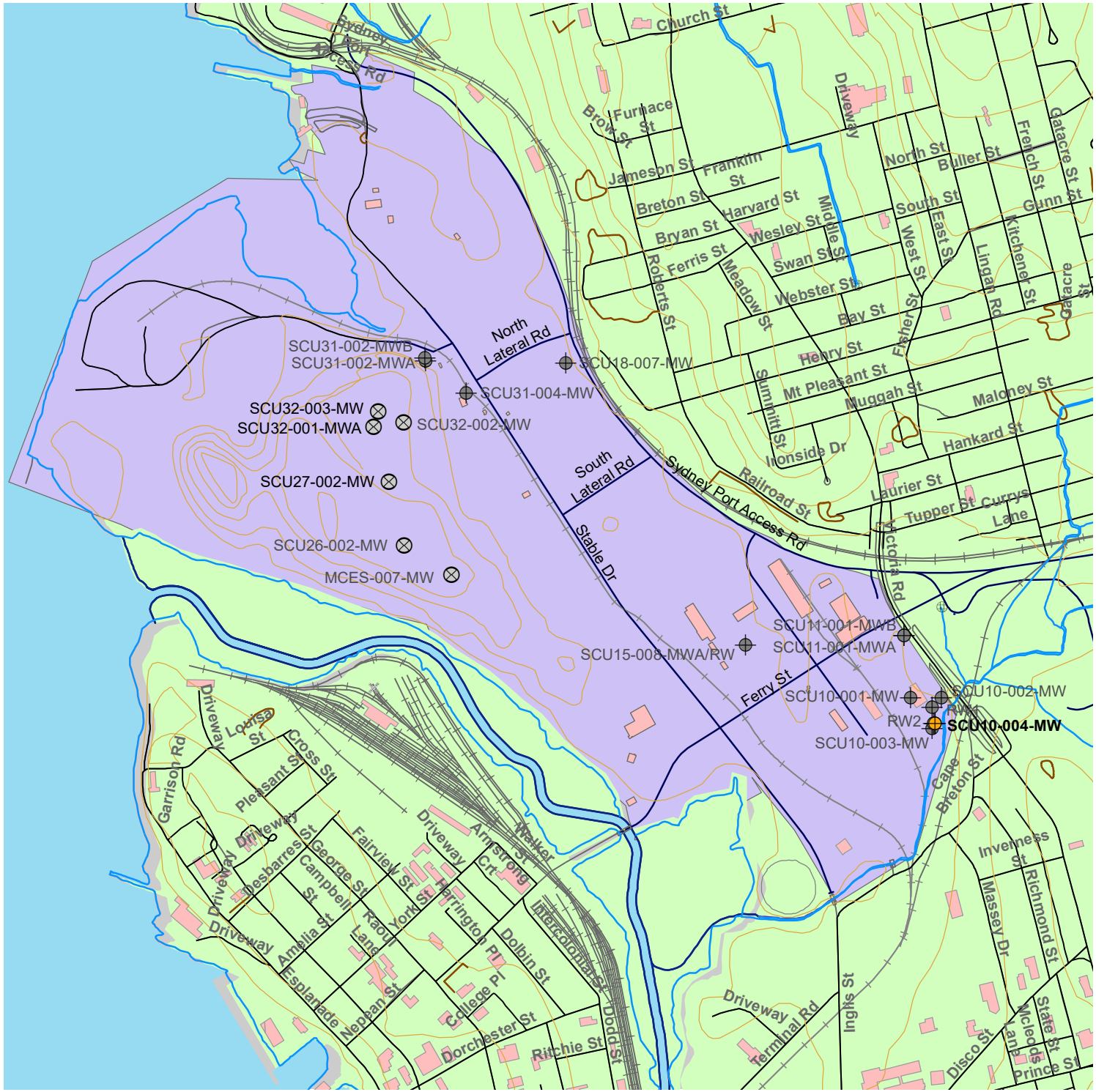
- Section 3.4.1 Relative Percent Difference (RPD)
- Section 3.4.2 Laboratory Matrix Spikes, Spikes Blank and Method Blanks
- Section 3.4.3 Trip Blanks
- Section 3.4.4 Equipment Blanks
- Section 3.5.5 Holding Times

One field duplicate, one trip blank and one equipment blank were collected during the 2018 monitoring event, as presented in Table B-1 (Appendix B).

3.4.1 Relative Percent Difference

One field duplicate sample was analyzed and had results suitable for quantitative calculation of Relative Percent Difference (RPD). The RPD was not calculated for those parameters where one or both of the results associated with the original and/or field duplicate sample exhibited concentrations less than five times the RDL.

Comparison of the field duplicate data to the original sample indicated the calculated RPDs were within established limits (i.e., less than 30% RPD), with the exception of C_6-C_{10} in SCU10-004-MW, as presented in Tables B-2 to B-4 (Appendix B). Although the groundwater sample collected from SCU10-004-MW



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2018 GROUNDWATER MONITORING EVENT

INDICATOR PARAMETER CONCENTRATION TREND

FIGURE 3-3

Trend Analysis

- Increasing/Potentially Increasing
- Fluctuating
- Stable
- Decreasing
- Monitoring Well
- Decommissioned/Destroyed or Buried
- Harbourside Commercial Park

0 50 100 200 300 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping
SLR Monitoring Recommendations drawing dated April 17, 2014

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

FILE LOCATION: \\DILLON.CA\DILLON_DFS\SYDNEY\SYDNEYCAD\GIS\141360

DILLON CONSULTING

PROJECT: 14-1360
STATUS: FINAL
Date: 2019-03-15

and the field duplicate sample exhibited one RPD value outside of the acceptable RPD percent for the parameter noted above, the variability is not expected to impact the interpretation of the data given that both the original sample and the duplicate do not exceed the applicable criteria for petroleum hydrocarbons.

3.4.2 Laboratory Matrix Spikes, Spikes Blank and Method Blanks

The laboratory analytical certificates have been reviewed for quality assurance/quality control purposes. The laboratory completes quality control analysis including duplicates, blanks, spikes, surrogate recoveries and spiked blanks to assess accuracy and precision as well as the potential for bias, contamination and degradation or matrix effects. The laboratory quality control reports have identified the following minor issues:

- Matrix spike results were outside the acceptance limit, with insufficient sample for repeat analysis, for analytes: benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene and indeno(1,2,3-cd)pyrene;
- Spike: <10% of compounds in multi-component analysis in violation: One analyte: benzo(g,h,i)perylene;
- Duplicate results for each of the analyzed samples were outside acceptance limit, with insufficient sample for repeat analysis for analytes: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene and pyrene; and,
- Elevated PAH RDLs, due to matrix/co-extractive interference, were reported for indeno (1, 2, 3-cd) pyrene in each of the analyzed samples.

Overall laboratory data quality is considered acceptable and the results representative with no identification of significant quality issues requiring further investigation or resampling. The quality assurance (QA) report is presented with the certificates of analysis in Appendix C.

3.4.3 Trip Blanks

Petroleum hydrocarbons were not detected in the trip blank.

3.4.4 Equipment Blank

During the 2017 LTMM, the equipment blank sample results reported detectable modified TPH (detected at the detection limit), PAH and metals concentrations. Therefore, prior to commencing the 2018 LTMM, Dillon reviewed and revised decontamination procedures to include the following: Initial flush with Liquinox, second flush with de-ionized water (to remove Liquinox), third flush with methanol, and final flush with de-ionized water (to remove methanol).

One equipment blank was collected during the 2018 HCP groundwater monitoring program. The equipment blank results are as follows:

- No petroleum hydrocarbons were detected in the equipment blank sample;
- PAH concentrations, including 2-methylnaphthalene (0.070 ug/L), acenaphthene (0.040 ug/L), anthracene (0.026 ug/L), fluoranthene (0.020 ug/L), fluorene (0.043 ug/L), naphthalene (0.27 ug/L), phenanthrene (0.081 ug/L) and pyrene (0.012 ug/L) were detected. The remaining analyzed PAH parameters did not have detectable concentrations; and,
- Metals concentrations including aluminum (19 ug/L), calcium (210 ug/L) and sodium (170 ug/L) were detected in the equipment blank sample. The remaining analyzed metals parameters did not have detectable concentrations.

The field equipment used for the equipment blank was a stainless steel interface probe; which is the only piece of field equipment that interacts with each of the monitor wells (i.e., as each well has a dedicated pump or dedicated low flow tubing).

The equipment blank was collected after sampling of monitor well SCU18-007-MW and prior to sampling SCU31-004-MW. Review of the laboratory data for both of these monitor wells shows the detected equipment blank concentrations to be well below the concentrations observed in both the before (i.e., SCU18-007-MW) and after (i.e., SCU31-004-MW) samples, with the exception of the naphthalene concentration. The near detection limit naphthalene concentration of 0.27 ug/L (i.e., the laboratory detection limit is <0.20 ug/L) in the equipment blank is higher than the naphthalene concentration detected monitor well SCU31-004-MW, which was sampled following collection of the equipment blank sample. Review of the 2018 naphthalene concentration in monitor well SCU31-004-MW, relative to historical results for this well, indicates that the near detection limit concentration of 0.22 ug/L in 2018 is much lower than the detected concentration of 2.3 ug/L in 2017 and is similar to the non-detect result of <0.2 ug/L in 2005. Additionally, no exceedances of applicable criteria were identified in the two monitor wells (i.e., SCU18-007-MW and SCU31-004-MW) or the equipment blank.

3.4.5 Holding Times

There were no holding time exceedances.

4.0 Summary

The LTMM for HCP was initially scheduled to include sampling of twenty-five monitor wells; however, following the sale of a portion of the HCP lands in 2017, the LTMM program for HCP was reduced to include sampling of twelve monitor wells. Further, in 2018 NS Lands confirmed that seven of the twelve monitor wells had been either decommissioned, destroyed or buried as a result of construction activity; thereby reducing the number of wells available to sample to five.

Findings were compared to July 2013 NS CSR Tier I EQS for groundwater. Where Tier I EQS were not available, MOE standards were used.

During the 2018 monitoring event there were no groundwater concentrations above the Tier I EQS or the MOE standards.

In 2017, three monitor wells (i.e., SCU10-004-MW, SCU27-002-MW and SCU32-003-MW) contained concentration(s) of indicator parameters exhibiting an increasing or potentially increasing concentration trends (i.e., anthracene exhibited a potentially increasing concentration trend in SCU10-004-MW; barium exhibited a potentially increasing trend in SCU27-002-MW and selenium exhibited an increasing trend in SCU32-003-MW). Monitor wells SCU27-002-MW and SCU32-003-MW were decommissioned in 2018; therefore, trend analysis could not be completed as part of the 2018 LTMM program. Results of the 2018 Mann-Kendall analysis for monitor well SCU10-004-MW indicate a fluctuating trend.

The available equipotential contour plot for the unconsolidated material (i.e., the fill/till) indicates that the groundwater flow direction is west toward Sydney Harbour.

5.0 Recommendations

Based on discussions with NS Lands, Dillon understands that replacement wells for the decommissioned and destroyed wells will be installed upon completion of harbour infilling work in Winter 2018/2019. Based on this, the Fall 2019 groundwater monitoring program is expected to include sampling of the five monitor wells included the 2018 program, sampling of the replacement monitor wells (planned prior to the Fall 2019 LTMM program), collection of water level measurements from each sampling well and checking eight monitor/recovery wells for product. It is recommended that the groundwater monitoring program continue to include sampling for PHCs, PAHs and metals parameters. As the laboratory reported interference from VOCs in the PHC sample collected from monitor well SCU10-001-MW, it is recommended that this well also be sampled for VOCs as part of the 2019 LTMM.

Further evaluation will be required in 2019 to confirm the potentially increasing or increasing trends observed in 2017 at monitor wells SCU27-002-MW and SCU32-003-MW (decommissioned in 2018 and expected to be replaced in 2019). Additionally, as noted in the 2017 LTMM report, review of field parameter readings indicated that a pH of 14 was recorded at monitor well SCU32-003-MW, which is located in the area of Portside Aggregates Ltd. It is likely that the increasing trend for selenium at this location is related to elevated pH conditions in groundwater, which can lead to the mobilization of some metals compounds. The elevated pH is not related to natural groundwater conditions and is likely related to operations associated with Portside Aggregates Ltd. (potential release of caustics).

6.0 Disclaimer

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

Appendix A

Analytical Tables

TABLE A-1
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2018 HCP
GROUNDWATER ANALYTICAL RESULTS - BTEX/TPH

Sample Location (Total Well Depth)	Sample Date	BTEX Concentration (mg/L)				Petroleum Hydrocarbons (mg/L)						
		Benzene	Toluene	E. Benzene	Xylenes	C6 - C10	C10 - C21	C10 - C16	C16-C21	C21 - C32	Modified TPH	Reached Baseline at C32
NS Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
SCU10-001-MW (1.83 m)	12/19/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	0.060	<0.05	<0.1	<0.1	-
	12/11/15	<0.0010	<0.0010	<0.0010	<0.0020	0.012	-	<0.050	<0.050	<0.10	<0.10	-
	11/18/16	<0.0010	<0.0010	<0.0010	<0.0020	0.022	-	<0.050	<0.050	<0.10	<0.10	-
	12/4/17	<0.0010	<0.0010	<0.0010	<0.0020	0.027	-	<0.050	<0.050	<0.10	<0.10	-
	11/27/18	<0.0010	<0.0010	<0.0010	<0.0020	0.054 [9]	-	<0.050	<0.050	<0.10	<0.10	-
SCU10-004-MW (2.42 m)	11/21/09	1.0	0.22	0.17	4.2	<0.010	54	-	-	1.5	**56**	Yes
	11/22/09	0.017	0.002	0.003	0.012	0.02	0.4	-	-	<0.50	<0.50	Yes
	11/23/09	0.077	0.005	0.006	0.027	0.03	-	0.7	<0.20	<0.50	0.7	Yes
	11/24/09	0.057	0.006	0.006	0.053	0.09	-	1.8	0.24	<0.50	2.2	Yes
	11/25/09	0.18	0.097	0.074	0.35	0.79	-	13	2.2	1.0	17	Yes
	11/26/09	0.11	0.011	0.013	0.062	0.16	-	1.9	0.14	<0.10	2.2	Yes
	12/19/14	NM	NM	NM	NM	NM	-	NM	NM	NM	NM	-
	12/11/15	0.20	0.13	0.081	0.37	0.54	-	42	12	8.0	**63**	Yes
	11/18/16	0.27	0.30	0.15	0.81	1.0	-	15	0.64	0.19	17	Yes
	12/4/17	0.10	0.028	0.021	0.11	0.16	-	4.7	0.30	0.14	5.4	Yes
	11-27-18 [FD]	0.034	0.016	0.010	0.051	0.062	-	1.6	0.17	0.12	1.9	Yes
	11/27/18	0.033	0.018	0.011	0.055	0.11	-	1.2	0.094	<0.10	1.4	Yes
SCU18-007-MW (0.99 m)	7/12/06	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	<0.20	-	-	<0.50	<0.50	-
	11/24/09	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	<0.20	-	-	<0.50	<0.50	-
	9/7/10	0.002	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	0.007	Yes
	11/19/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	10/24/11	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	10/26/11	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	12/2/13	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.50	<0.10	-
	12/4/17	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11/27/18	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
SCU26-001-MW *(Destroyed 2017)*	6/18/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	<0.20	-	-	<0.50	<0.50	-
	6/19/10	0.005	0.003	<0.0010	0.008	5.3	12	-	-	4.5	**26**	Yes
	6/20/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	6/21/10	<0.0010	<0.0010	<0.0010	<0.0020	0.015	-	0.096	0.1	0.13	0.34	Yes
	6/22/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.089	<0.050	0.12	0.21	Yes
	12/17/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	0.063	<0.05	<0.1	<0.1	-
	11/27/15	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.054	<0.050	<0.10	<0.10	Yes
	11/17/16	0.013	0.0087	<0.0010	0.0087	0.050	-	0.24	0.068	<0.10	0.36	Yes
SCU26-002-MW (*Decommissioned 2018*)	6/23/10	0.01	0.0061	<0.0010	0.0059	0.05	<0.20	-	-	<0.50	<0.50	-
	6/24/10	0.034	0.026	0.0015	0.022	0.050	-	0.29	0.070	<0.50	0.41	Yes
	6/25/10	0.018	0.015	<0.0010	0.013	0.052	-	0.37	0.18	0.13	0.72	Yes
	6/26/10[FD]	0.017	0.014	<0.0010	0.012	0.049	-	0.35	0.16	0.18	0.74	Yes
	6/27/10	0.023	0.018	0.0011	0.016	0.066	-	0.31	0.13	0.12	0.63	Yes
	12/17/14[FD]	0.014	0.010	<0.001	0.0084	0.027	-	0.15	<0.05	<0.1	0.18	Yes
	12/17/14	0.014	0.010	<0.001	0.0085	0.028	-	0.16	<0.05	<0.1	0.19	Yes
	11/27/15	0.016	0.011	<0.0010	0.0089	0.014	-	0.17	0.055	<0.10	0.24	Yes
	11/17/16	0.012	0.0091	<0.0010	0.0076	0.022	-	0.19	0.062	<0.10	0.27	Yes
	12/11/17	0.015	0.0097	<0.0010	0.0066	0.023	-	0.16	0.069	<0.10	0.26	Yes
SCU27-002-MW (*Decommissioned 2018*)	6/28/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	6/29/10[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	0.053	0.14	0.19	Yes
	6/30/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	7/1/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	0.063	0.14	0.20	Yes
	12/17/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	11/27/15	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11/16/16	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	0.22	0.22	Yes
	12/14/17	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-

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GROUNDWATER ANALYTICAL RESULTS - BTEX/TPH

Sample Location (Total Well Depth)	Sample Date	BTEX Concentration (mg/L)				Petroleum Hydrocarbons (mg/L)						
		Benzene	Toluene	E. Benzene	Xylenes	C6 - C10	C10 - C21	C10 - C16	C16-C21	C21 - C32	Modified TPH	Reached Baseline at C32
NS Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
SCU31-002-MWB (6.50 m)	7/2/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	<0.20	-	-	<0.50	<0.50	-
	7/3/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	7/4/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	7/5/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	0.061	<0.50	<0.50	-
	7/6/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	7/7/10[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12/18/14[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12/18/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12/2/15[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12/2/15	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11/17/16	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12/04/17 [FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12/4/17	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11/27/18	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
SCU31-004-MW (5.68 m)	9/16/05	<0.001	<0.001	<0.001	<0.002	<0.01	<0.2	-	-	<0.5	<0.5	-
	12/15/17	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.052	0.052	<0.10	0.10	Yes
	11/27/18	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
SCU32-001-MWA (*Decommissioned 2018*)	7/18/10	<0.0010	0.004	<0.0010	<0.0020	<0.0010	-	0.32	0.15	<0.10	0.5	Yes
	7/19/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.99	0.82	0.56	2.4	Yes
	12/17/14	0.0013	<0.001	<0.001	<0.002	<0.01	-	0.50	0.44	0.41	1.4	Yes
	11/27/15	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.51	0.53	0.43	1.5	Yes
	11/16/16	NM	NM	NM	NM	NM		NM	NM	NM	NM	-
	12/18/17	NM	NM	NM	NM	NM		NM	NM	NM	NM	-
SCU32-002-MW (*Decommissioned 2018*)	7/23/10	0.0011	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12/18/14	0.0011	<0.001	<0.001	<0.002	<0.01	-	0.055	0.064	0.13	0.25	Yes
	11/30/15	0.0011	<0.0010	<0.0010	<0.0020	<0.010	-	0.056	0.059	<0.10	0.11	Yes
	11/16/16[FD]	0.0011	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11/16/16	0.0011	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12/14/17	0.0011	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
SCU32-003-MW (*Decommissioned 2018*)	7/24/10	<0.0010	0.008	<0.0010	<0.0020	<0.010	-	0.22	0.1	<0.10	0.3	Yes
	7/25/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	2.1	2.5	1.9	6.6	Yes
	12/18/14	0.0027	0.0013	<0.001	<0.002	<0.01	-	0.58	0.27	0.27	1.1	Yes
	11/30/15	0.0023	0.0012	<0.0010	<0.0020	<0.010	-	0.61	0.46	0.38	1.5	Yes
	12/14/17	0.0022	0.0010	<0.0010	<0.0020	<0.010	-	0.35	0.17	0.17	0.68	Yes
MCES-007-MW (*Buried/Inaccessible 2018*)	8/3/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	<0.20	-	-	<0.50	<0.50	-
	8/4/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	8/5/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.20	<0.20	<0.50	<0.50	-
	8/6/10	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	12/17/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.10	-
	11/27/15[FD]	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11/27/15	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	<0.050	<0.050	<0.10	<0.10	-
	11/17/16	0.012	0.0098	<0.0010	0.0079	0.024	-	0.23	0.073	<0.10	0.32	Yes
	12/15/17	<0.0010	<0.0010	<0.0010	<0.0020	<0.010	-	0.072	<0.050	<0.10	<0.10	-

NOTES:

FD - Field Duplicate

NM - Not Measured or not analyzed.

mg/L - milograms per litre

- No applicable guideline criteria.

1 - Nova Scotia Environment Tier I Environmental Quality Standards for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013.

2 - Bold and Shaded Exceeds NSE Tier I EQS

3 - SCU10-004-MW was not sampled during the 2014 monitoring event due to product in the well.

4 - The DNAPL in SCU32-003-MW was sampled during the 2015 LTMM monitoring event. The groundwater column in the monitor well was sampled above the DNAPL in the well.

5 - Historical data (i.e., pre-2014) tabulated by SLR Consulting (Canada) Ltd. during historic assessment work, with the exception of SCU31-004-MW, for which data was derived from the Phase II ESA, Sydney Steel Corporation Sysco Blast Furnace Area, Site Classification Units SCU17, SCU19 & SCU31, Sydney, Nova Scotia (AMEC, 2006).

6 - This summary is to be used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information.

7 - SCU32-001-MWA was not sampled during the 2016 or 2017 monitoring events due to product in the well.

8 - SCU18-007-MW and SCU31-004-MW added to the LTMM program in 2017.

9 - Interference from Volatile Organic Compounds (VOCs) in the gasoline range.

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2018 HCP
GROUNDWATER ANALYTICAL RESULTS - PAH

Sample Location (Total Well Depth)	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene [5]	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Perylene	Phenanthrene	Pyrene
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
NS Tier 1 EQS [1]		600 [2]	750	2.4 [2]	4.7 [2]	0.81 [2]	0.75 [2]	0.2 [2]	-	0.4 [2]	1 [2]	0.52 [2]	130 [2]	400 [2]	0.2 [2]	38000	38000	7000	-	580 [2]	68 [2]
SCU10-001-MW (1.83 m)	12/19/14	3.9	0.63	1.5	0.30	0.18	0.14	0.057	0.084	0.081	0.30	0.020	1.7	4.4	0.056	5.3	9.9	16	0.038	6.9	1.0
	12/11/15	0.024	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	0.040	<0.010	0.053	0.15	<0.20	<0.010	0.011	0.018
	11/18/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	12/4/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	11/27/18	0.64	0.10	0.18	0.062	0.020	0.014	<0.020*	<0.010	<0.020*	0.058	<0.010	0.26	0.58	<0.010	0.73	1.1	2.1	<0.010	0.96	0.17
SCU10-004-MW (2.42 m)	9/17/04	**1580**	194	**590**	**205**	**111**	**128**	*<1*	NM	**52**	**173**	**11.2**	**882**	**1420**	**41**	2400	4150	**11900**	NM	**2510**	**553**
	11/19/08	18	2.2	1.7	0.37	0.12	0.08	0.01	NM	0.11	0.32	<0.01	2.4	10	0.01	19	14	21	0.02	5.1	1.7
	11/10/10	37	7.5	2.4	0.28	0.23	0.15	0.09	NM	0.12	0.26	0.03	2.4	18	0.09	38*	37*	180 *	0.04	15	1.6
	10/31/11	51**	10	**13**	3.1	**1.7**	**1.1**	**0.61**	NM	**0.73**	**2.5**	0.27	13	39**	**0.74**	74**	71**	68 **	0.28	47	8.7
	11/23/12	230**	34**	**38****	**5.3**	**1.9**	**1.4**	**0.58**	NM	**1.5**	**4.0**	0.15	38**	140**	**0.75**	380**	590**	2400 **	0.32	170 **	18
	12/2/13	53**	20	**4.0**	0.34	0.20	0.14	0.077	0.090	0.089	0.29	0.027	3.5	31	0.072	85**	80**	680 **	0.043	24	2.3
	12/19/14	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	12/11/15	**2800**	410	**1100**	**360**	**190**	**130**	**67**	110	**87**	**310**	**29**	**1500**	**2700**	**67**	3300	6400	**11000**	41	**5300**	**980**
	11/18/16	150	28	**18**	2.8	*<1.0***	*<1.0***	*<1.0***	*<1.0***	*<1.0***	**2.1**	*<1.0***	16	95	*<1.0***	320	540	3800	<1.0**	76	10
	12/4/17	62	17	**5.6**	0.66	0.36	0.3	0.13	0.17	0.17	0.54	0.046	6.1	40	0.12	110	140	840	0.07	36	3.6
	11-27-18 [FD]	25	6.7	1.7	0.40	0.22	0.18	0.093	0.12	0.12	0.39	<0.040*	1.9	14	0.099	46**	59**	320**	<0.050*	8.0	1.2
	11/27/18	25	6.5	2.3	0.37	0.20	0.16	0.083	0.098	0.11	0.38	0.031	2.0	14	0.086	43**	51**	250**	0.041	8.7	1.2
SCU18-007-MW (0.99 m)	7/12/06	<0.010	<0.010	<0.010	<0.010	0.02	<0.010	<0.010	NM	<0.010	0.02	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	11/24/09	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	9/7/10	1.6	1.9	0.92	0.12	0.02	0.04	0.01	NM	0.01	0.12	<0.010	1.8	3.4	<0.010	6.1	7.1	45	<0.010	2.4	1.2
	11/19/10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	10/24/11	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	10/26/11	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	12/2/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	12/4/17	<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	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010
	11/27/18	0.39	0.090	0.47	0.19	0.096	0.082	0.055	0.041	0.047	0.21	<0.030*	0.81	0.77	0.042	0.18	0.24	0.66	<0.030*	2.2	0.56
SCU26-001-MW *(Destroyed 2017)*	7/26/03	0.19	0.36	<0.01	<0.01	0.06	<0.01	<0.01	NM	<0.01	0.09	<0.01	0.6	<0.01	<0.01	<0.05	<0.05	2.1	<0.01	1.1	0.32
	7/11/12	0.13	0.26	0.24	0.53	0.51	0.37	**0.28**	NM	**0.51**	0.56	0.070	1.3	0.42	**0.26**	0.94	0.68	1.4	0.13	1.1 ***	0.98
	11/26/12	0.25	0.44	0.74	0.67	0.44	0.28	0.18	NM	0.39	0.58	0.051	1.7	0.76	**0.24**	1.7	1.3	3.3	0.11	1.7	1.2
	12/5/13	0.33	0.60	0.47	0.25	0.18	0.15	0.093	0.091	0.086	0.23	0.025	1.4	1.0	0.078	1.7	1.5	4.4	0.046	2.0	0.91
	12/17/14	0.16	0.34	0.14	0.03	0.021	0.011	0.014	<0.01	<0.01	0.029	<0.01	0.48	0.51	0.011	0.99	0.74	1.8	<0.01	0.9	0.27
	11/27/15	0.24	0.36	0.29	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	0.73	0.73	<0.010	1.1	0.78	1.7	<0.010	1.5	0.40
	11/17/16	0.37	0.63	0.42	0.062	<0.010	<0.010	<0.010	<0.010	<0.010	0.052	<0.010	0.69	1.2	<0.010	6.9	10	6.2	<0.010	2.2	0.39
SCU26-002-MW *(Decommissioned 2018)*	7/26/03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	1	<0.01	---	---	7.2	---	1.7	<0.01
	7/11/12	0.30	0.63	0.26	0.030	<0.01	<0.01	<0.01	NM	<0.01	0.020	<0.01	0.38	1.0	<0.01	8.5	12	7.4	<0.01	1.6 ***	0.22
	11/26/12	0.47	0.75	0.41	0.13	0.074	0.072	0.038	NM	0.076	0.10	0.012	0.73	1.3	0.047	9.8	13	8.4	0.020	2.3	0.46
	11/26/12 [FD]	0.51	0.82	0.42	0.099	0.046	0.047	0.024	NM	0.049	0.075	<0.01	0.70	1.4	0.032	11	14	10	0.011	2.4	0.43
	12/5/13	0.33	0.63	0.24	0.11	0.10	0.086	0.051	0.056	0.050	0.11	0.015	0.60	1.0	0.044	7.9	9.0	6.6	0.032	1.8	0.44
	12/17/14 [FD]	0.33	0.83	0.31	0.051	<0.01	<0.01	<0.01	<0.01	<0.01	0.043	<0.01	0.64	1.2	<0.01	6.7	9.6	6.3	<0.01	2.0	0.38
	12/17/14	0.29	0.85	0.34	0.049	<0.01	<0.01	<0.01	<0.01	<0.01	0.043	<0.01	0.60	1.1	<0.01	6.6	9.7	6.4	<0.01	2.0	0.35
	11/27/15	0.33	0.75	0.43	0.047	<0.010	<0.010	<0.010	<0.010	<0.010	0.038	<0.010	0.69	1.2	<0.010	7.4	11	7.7	<0.010	2.2	0.41
	11/17/16	0.3	0.66	0.39	0.13	0.065	0.047	0.038	0.031	0.031	0.11	<0.010	0.73	1	0.036	5.3	7.7	5.3	0.018	1.7	0.46
	12/11/17	0.22	0.47	0.25	0.055	0.018	0.017	<0.010	0.012	0.010	0.053	<0.010	0.52	0.73	<0.010	3.8	5.6	4.5	<0.010	1.5	0.30
SCU27-002-MW (*Decommissioned 2018*)	7/26/03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.02	<0.01	<0.01	<0.01
	7/4/12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.020	0.010	<0.01	<0.05	<0.05	<0.02	<0.01	0.030	0.020
	7/4/12 [FD]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.020	0.010	<0.01	<0.05	<0.05	<0.02	<0.01	0.030	0.020
	11/26/12	0.016	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.017	0.017	<0.01	<0.05	<0.05	<0.02	<0.01	0.050	0.013
	12/5/13	0.058	0.017	0.13	0.18	0.18	0.14	0.089	0.087	0.082	0.18	0.024	0.45	0.096	0.076	<0.050	<0.050	<0.20	0.046	0.47	0.40
	12/17/14	0.025	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.017	0.023	<0.01	0.082	0.081	0.47	<0.01	0.031	0.015
	11/27/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	11/16/16	<0.010	<0.010	<0.010	0.022	0.014	0.011	<0.010	<0.010	0.028	0.022	<0.010	0.045	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.031	0.04
	12/14/17	0.025	<0.010	0.031	0.052	0.033	0.030	0.018	0.020	0.019	0.051	<0.010	0.12	0.033	0.016	<0.050	<0.050	<0.20	<0.010	0.13	0.091

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2018 HCP
GROUNDWATER ANALYTICAL RESULTS - PAH

Sample Location (Total Well Depth)	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene [5]	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Perylene	Phenanthrene	Pyrene
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
NS Tier 1 EQS [1]		600 [2]	750	2.4 [2]	4.7 [2]	0.81 [2]	0.75 [2]	0.2 [2]	-	0.4 [2]	1 [2]	0.52 [2]	130 [2]	400 [2]	0.2 [2]	38000	38000	7000	-	580 [2]	68 [2]
SCU31-002-MWB (6.50 m)	9/22/05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.02	<0.01	<0.01	<0.01
	11/16/10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.05	<0.05	<0.02	<0.01	0.02	0.01
	10/25/11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.05	<0.05	<0.02	<0.01	0.03	0.02
	11/21/12	0.019	<0.01	0.014	0.032	0.033	0.027	0.024	NM	0.029	0.031	<0.01	0.067	0.010	0.018	<0.05	<0.05	<0.02	<0.01	0.068	0.063
	12/7/13 [FD]	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.020	0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.031	0.019
	12/7/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.029	0.016
	12/18/14 [FD]	0.061	0.032	0.036	0.072	0.080	0.061	0.053	0.032	0.036	0.085	0.012	0.20	0.074	0.039	0.14	0.12	0.76	0.020	0.20	0.17
	12/18/14	0.046	0.028	0.028	0.051	0.050	0.038	0.026	0.020	0.021	0.064	<0.01	0.13	0.058	0.020	0.11	0.11	0.61	0.011	0.14	0.11
	12/2/15 [FD]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.017	0.01
	12/02/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.015	<0.010
	11/17/16	<0.010	<0.010	<0.010	0.017	0.014	0.012	<0.010	<0.010	<0.010	0.017	<0.010	0.035	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.033	0.029
	12/4/17 [FD]	<0.010	<0.010	<0.010	0.019	0.016	0.013	0.011	<0.010	<0.010	0.021	<0.010	0.041	<0.010	0.011	<0.050	<0.050	<0.20	<0.010	0.034	0.033
	12/4/17	0.013	<0.010	0.025	0.056	0.052	0.041	0.031	0.024	0.025	0.059	<0.010	0.12	0.017	0.027	<0.050	<0.050	<0.20	0.013	0.1	0.097
	11/27/18	0.11	0.020	0.058	<0.040*	<0.020*	<0.020*	<0.020*	<0.010	<0.010	<0.040*	<0.010	0.096	0.15	<0.010	0.13	0.19	0.29	<0.010	0.34	0.073
SCU31-004-MW (5.68 m)	9/6/05	0.02	<0.01	0.02	0.02	<0.01	<0.01	<0.01	NM	<0.01	0.03	<0.01	0.1	0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.02	0.17
	12/15/17	0.20	0.51	0.19	0.036	0.022	0.022	0.013	0.013	0.012	0.041	<0.010	0.32	0.73	0.011	0.81	1.0	2.3	<0.010	0.98	0.23
	11/27/18	0.12	0.14	0.18	0.064	<0.020*	0.023	<0.020*	<0.020*	<0.020*	0.072	<0.010	0.27	0.26	<0.010	0.16	0.17	0.22	<0.020*	0.60	0.27
SCU32-001-MWA (*Decommissioned 2018*)	11/24/11	1.1	0.81	0.84	0.11	0.06	0.04	0.03	NM	0.02	0.12	<0.01	1.1	2.8	0.03	8.1	2.7	2.8	0.02	5.2	0.7
	12/5/13	5.3	1.8	**7.4**	**13**	**8.0**	**6.1**	**3.1**	4.0	**3.8**	**12**	**0.91**	23	8.8	**3.0**	15	4.1	3.3	1.9	39**	20
	12/17/14	1.1	0.91	1.4	1.4	**1.1**	**0.87**	**0.54**	0.55	**0.55**	**1.6**	0.15	5	2.4	**0.5**	2.5	2	6.6	0.26	7.2	3.6
	11/27/15	1.4	0.7	1.8	0.83	0.39	0.28	0.17	0.18	0.18	0.88	0.06	4.2	2.7	0.15	3.6	2.4	8.4	0.1	8.7	2.9
	11/16/16	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	12/18/17	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
SCU32-002-MW (*Decommissioned 2018*)	11/25/11	0.23	0.34	0.41	0.14	0.09	0.04	0.04	NM	0.03	0.14	0.01	0.65	0.44	0.04	0.74	0.54	7.7	0.03	1.2	0.46
	12/5/13	0.65	0.62	1.5	2.7	**2.8**	2.1	1.4	1.3	**1.3**	**2.6**	0.38	6.9	1.2	**1.2**	0.91	0.8	6.7	0.68	6.7	5.80
	12/18/14	0.21	0.31	0.31	0.35	0.31	0.25	0.14	0.15	0.14	0.41	0.044	1.0	0.48	0.13	0.50	0.50	4.3	0.063	1.5	0.75
	11/30/15	0.23	0.38	0.21	0.023	<0.010	<0.010	<0.010	<0.010	<0.010	0.022	<0.010	0.3	0.48	<0.010	0.71	0.69	7.6	<0.010	1.1	0.21
	11/16/16 [FD]	0.21	0.37	0.25	0.021	<0.010	<0.010	<0.010	<0.010	<0.010	0.019	<0.010	0.38	0.42	<0.010	0.66	0.61	7.1	<0.010	1.1	0.23
	11/16/16	0.21	0.38	0.21	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	0.31	0.43	<0.010	0.69	0.63	7.4	<0.010	0.97	0.19
	12/14/17	0.25	0.35	0.21	0.039	0.021	0.019	0.014	0.013	0.013	0.039	<0.010	0.39	0.49	0.011	0.65	0.65	6.3	<0.010	1.2	0.24
SCU32-003-MW (*Decommissioned 2018*)	11/25/11	0.89	0.56	0.76	0.07	0.01	<0.01	<0.01	NM	<0.01	0.07	<0.01	1.1	1.9	<0.01	3.5	1.50	2.4	<0.01	3.3	0.72
	12/5/13	4.4	1.3	**8.7**	**19**	**11**	**8.4**	**4.3**	5.6	**5.3**	**17**	**1.3**	33	6.7	**4.2**	5.2	2.9	4.0	2.6	35	27
	12/18/14	1.6	1.9	0.89	0.20	0.17	0.12	0.080	0.078	0.073	0.25	0.021	1.6	3.5	0.065	3.1	2.6	8.5	0.039	5.2	0.97
	11/30/15	1.5	1.8	1.2	0.12	0.11	0.076	0.057	0.05	0.045	0.13	0.02	1.4	3.2	0.046	2.4	2.2	7.6	0.028	5.9	0.86
	12/14/17	1.5	1.4	0.70	0.050	0.031	0.030	0.019	0.019	0.018	0.055	<0.010	1.2	2.5	0.016	2.4	2.2	7.5	0.013	4.4	0.59
MCES-007-MW (*Buried/Inaccessible 2018*)	7/26/03	0.27	0.7	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.74	0.97	<0.01	1.4	1.2	3.9	0.34	<0.01	0.34
	7/11/12	0.020	<0.01	0.050	0.15	0.13	0.10	0.080	NM	0.12	0.16	0.020	0.29	0.030	0.080	<0.05	<0.05	<0.02	0.040	0.2 ***	0.25
	11/27/12	0.052	0.024	0.18	0.45	0.35	0.34	0.17	NM	0.30	0.39	0.048	0.72	0.077	**0.23**	0.050	0.063	<0.02	0.077	0.44	0.60
	12/5/13	<0.010	<0.010	0.015	0.015	0.019	0.014	0.014	<0.010	<0.010	0.018	<0.010	0.039	0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.015	0.042
	12/17/14	0.21	0.59	0.26	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	0.016	<0.01	0.49	0.76	<0.01	0.93	0.97	3.0	<0.01	1.5	0.27
	11/27/15 [FD]	0.22	0.51	0.37	0.027	<0.010	<0.010	<0.010	<0.010	<0.010	0.021	<0.010	0.61	0.700	<0.010	0.76	0.85	2.5	<0.010	1.8	0.36
	11/27/15	0.2	0.45	0.33	0.03	0.01	<0.010	<0.010	<0.010	<0.010	0.021	<0.010	0.58	0.76	<0.010	0.75	0.81	2.1	<0.010	1.7	0.33
	11/17/16	0.32	0.66	0.32	0.061	<0.010	<0.010	<0.010	<0.010	<0.010	0.048	<0.010	0.62	1.1	<0.010	6.7	9.7	6.3	<0.010	1.9	0.36
	12/15/17	0.30	0.53	0.34	0.028	0.011	0.011	<0.010	<0.010	<0.010	0.026	<0.010	0.64	0.77	<0.010	0.84	0.97	3.0	<0.010	1.8	0.35

NOTES:

FD - Field Duplicate

NM - Not Measured or not analyzed

µg/L - micrograms per litre

- No applicable guideline criteria.

1 - Nova Scotia Environment Evironmental Quality Standards for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013

2 - Ontario Ministry of Environment, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011

3 - Bold and Shaded Exceeds NSE Tier I EQS or the MOE standards which are used when no Tier I EQS is available.

4 - *Italicized RDL above applicable guideline*

5 - Benzo(j)fluoranthene was historically not included in PAH analysis.

6 - * Elevated PAH RDL(s) due to matrix / co-extractive interference.

7 - **Elevated PAH RDL(s) due to sample dilution.

8 - *** PAH RDL(s) elevated due to detection of compound in blank.

9 - SCU10-004-MW was not sampled during the 2014 monitoring event due to product in the well

10 - The DNAPL in SCU32-003-MW was sampled during the 2015 LTMM monitoring event. The groundwater column in the monitor well was sampled above the DNAPL in the well.

11 - Historical data (i.e., pre-2014) tabulated by SLR Consulting (Canada) Ltd. During historic assessment work, with the exception of SCU31-004-MW, for which data was derived from the Phase II ESA, Sydney Steel Corporation Sysco Blast Furnace Area, Site Classification Units SCU17, SCU19 & SCU31, Sydney, Nova Scotia (AMEC, 2006).

12 - This summary is to be used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information

13 - SCU32-001-MWA was not sampled during the 2016 or 2017 monitoring events due to product in the well.

TABLE A-3
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2018 HCP
GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Total Well Depth)	Sample Date	Dissolved Aluminum (Al)	Dissolved Antimony (Sb)	Dissolved Arsenic (As)	Dissolved Barium (Ba)	Dissolved Beryllium (Be)	Dissolved Bismuth (Bi)	Dissolved Boron (B)	Dissolved Cadmium (Cd)	Dissolved Calcium (Ca)	Dissolved Chromium (Cr)	Dissolved Cobalt (Co)	Dissolved Copper (Cu)	Dissolved Iron (Fe)	Dissolved Lead (Pb)	Dissolved Magnesium (Mg)	Dissolved Manganese (Mn)	Mercury total (Hg)	Dissolved Molybdenum (Mo)	Dissolved Nickel (Ni)	Dissolved Phosphorus (P)	Dissolved Potassium (K)	Dissolved Selenium (Se)	Dissolved Silver (Ag)	Dissolved Sodium (Na)	Dissolved Strontium (Sr)	Dissolved Thallium (Tl)	Dissolved Tin (Sn)	Dissolved Titanium (Ti)	Dissolved Uranium (U)	Dissolved Vanadium (V)	Dissolved Zinc (Zn)
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Standard MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	-	810	66	87	-	25	-	-	0.29	9200	490	-	-	63	1.5	2300000	-	510	-	-	420	250	1100
SCU10-001-MW (1.83 m)	12/19/14	120	<1	<1	37	<1	<2	86	0.34	120000	<1	0.79	<2	110	0.78	12000	11000	<0.013	<2	2.1	<100	7800	<1	<0.1	37000	420	<0.1	<2	<2	0.23	<2	35
	12/11/15	15	<1.0	<1.0	69	<1.0	<2.0	80	0.13	97000	<1.0	1.4	<2.0	190	<0.50	11000	16000	<0.013	<2.0	3.7	140	6500	<1.0	<0.10	43000	380	<0.10	<2.0	<2.0	0.33	<2.0	8.3
	11/18/16	6.8	<1.0	<1.0	4.7	<1.0	<2.0	99	0.031	72000	<1.0	<0.40	<2.0	<50	<0.50	8000	370	<0.013	<2.0	<2.0	<100	4600	<1.0	<0.10	44000	360	<0.10	<2.0	<2.0	1.2	<2.0	<5.0
	12/4/17	<5.0	<1.0	1.2	14	<1.0	<2.0	94	0.11	72000	<1.0	<0.40	<2.0	50	<0.50	7900	910	<0.013	<2.0	<2.0	<100	3900	2.1	<0.10	32000	370	<0.10	<2.0	<2.0	1.5	<2.0	<5.0
	11/27/18	<5.0	1.1	1.5	23	<1.0	<2.0	94	0.013	99000	<1.0	<0.40	<2.0	<50	<0.50	9300	17	<0.013	<2.0	<2.0	<100	3800	2.3	<0.10	32000	450	<0.10	<2.0	<2.0	1.9	<2.0	<5.0
SCU10-004-MW (2.42 m)	9/17/04	101	<0.40	15.7	87.2	<0.50	NM	<100	<0.017	244000	<1.0	<1.0	<2.0	<100	NM	1330	10	<0.013	<4.0	<3.0	<100	10000	3	<0.10	151000	1160	<0.80	<20	NM	<0.15	10	2
	11/19/08	<5.0	1.2	4.3	56	<0.50	<2.0	<100	<0.017	130000	<1.0	<1.0	<2.0	<100	<1.0	6000	14	<0.013	6.9	<3.0	<100	13000	3.1	<0.10	140000	550	<0.80	<20	<3.0	2.4	8.0	<5.0
	11/10/10	13	<0.40	8.1	49	<0.50	<2.0	<100	<0.017	100000	<1.0	<1.0	<2.0	<100	<1.0	5000	83	<0.013	6.6	<3.0	<100	9000	1.9	<0.10	92000	470	<0.80	<20	<3.0	1.6	7.5	<5.0
	11/23/12	<5.0	<0.40	0.96	78	<0.50	<2.0	110	<0.017	99000	<1.0	<1.0	<2.0	<100	<1.0	10000	21	0.023	<4.0	<3.0	<100	<600	<1.0	<0.10	13000	6200	<0.80	<20	<3.0	2	<2.0	<5.0
	12/2/13	39	<1.0	11	57	<1.0	<2.0	69	<0.010	100000	<1.0	<0.40	<2.0	110	<0.50	3600	73	<0.013	5.4	<2.0	<100	10000	1.2	<0.10	100000	540	<0.10	<2.0	2.9	1.2	7.3	6.2
	12/19/14	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	12/11/15	35	<1.0	11	41	<1.0	<2.0	62	0.044	83000	<1.0	<0.40	<2.0	110	<0.50	2800	51	<0.013	6.1	<2.0	170	11000	1.2	<0.10	150000	440	<0.10	<2.0	<2.0	0.8	4.9	<5.0
	11/18/16	17	<1.0	9.8	55	<1.0	<2.0	66	<0.010	95000	<1.0	<0.40	<2.0	160	<0.50	3600	93	0.013	3.2	<2.0	190	11000	1.7	<0.10	110000	460	<0.10	<2.0	<2.0	0.6	7.7	<5.0
	12/4/17	12	<1.0	11	51	<1.0	<2.0	57	<0.010	70000	<1.0	<0.40	<2.0	86	<0.50	2300	35	<0.013	3.9	<2.0	170	8800	3.8	<.010	100000	330	<0.10	<2.0	<2.0	0.56	5.0	<5.0
	11-27-18 [FD]	10	1.3	9.4	42	<1.0	<2.0	55	<0.010	81000	<1.0	<0.40	<2.0	<50	<0.50	3600	23	<0.013	5.2	<2.0	<100	6800	1.7	<0.10	70000	330	<0.10	<2.0	<2.0	0.68	12	<5.0
	11/27/18	21	1.3	9.4	43	<1.0	<2.0	56	<0.010	80000	<1.0	<0.40	<2.0	<50	<0.50	3500	22	<0.013	5.4	<2.0	<100	6800	1.7	<0.10	70000	320	<0.10	<2.0	<2.0	0.69	13	<5.0
SCU18-007-MW (0.99 m)	7/12/06	23	<0.40	3.1	69	<0.50	<2.0	<100	0.043	85000	<1.0	3.3	<2.0	<100	<1.0	10000	15	<0.013	10	<3.0	<100	8000	6.7	<0.10	80000	290	<0.80	<20	<3.0	0.99	17	<5.0
	11/24/09	7.9	<0.40	1.8	42	<0.50	<2.0	200	<0.017	67000	7.7	<1.0	<2.0	<100	<1.0	17000	<4.0	0.025	4.3	<3.0	<100	3900	2.2	<0.10	19000	200	<0.80	<20	<3.0	2	10	NM
	9/7/10	40	1.1	7.58	26	<0.50	<2.0	<100	<0.017	170000	<1.0	<1.0	<2.0	<100	<1.0	240	<4.0	<0.013	29	<3.0	<100	12000	3.6	<0.10	38000	740	<0.80	<20	<3.0	<0.15	98	<5.0
	11/19/10	30	3.4	1.9	48	<0.50	<2.0	200	<0.017	71000	8.6	<1.0	<2.0	<100	<1.0	16000	<4.0	<0.013	5.4	<3.0	<100	5200	1.5	<0.10	31000	250	<0.80	<20	<3.0	3.4	12	<5.0
	10/24/11	27	0.79	2.4	58	<0.50	<2.0	230	<0.017	82000	11	<1.0	<2.0	<100	<1.0	17000	<4.0	<0.013	4.9	<3.0	<100	6000	<1.0	<0.10	34000	250	<0.80	<20	<3.0	5.3	16	<5.0
	10/26/11	13	1.3	2.6	64	<0.50	<2.0	290	<0.017	84000	21	<1.0	<2.0	<100	<1.0	19000	<4.0	<0.013	4.8	<3.0	<100	5400	1.9	<0.10	26000	360	<0.80	<20	<3.0	6.4	17	6
	12/2/13	12	<1.0	1.5	62	<1.0	<2.0	190	0.010	82000	9.4	<1.0	<2.0	<50	<0.5	27000	<2.0	<0.013	2.8	<3.0	100	4000	1.2	<0.10	14000	230	<0.10	<2.0	<2.0	3.6	7.6	<5.0
	12/4/17	7.3	<1.0	1.5	85	<1.0	<2.0	190	<0.010	78000	16	<0.40	<2.0	<50	<0.50	32000	<2.0	<0.013	3.0	<2.0	<100	3700	2.2	<0.10	13000	230	<0.10	<2.0	<2.0	4.9	7.5	<5.0
	11/27/18	18	1.1	1.9	51	<1.0	<2.0	160	0.023	55000	9.3	<0.40	<2.0	<50	1.1	29000	4.9	<0.013	2.4	<2.0	<100	2700	<1.0	<0.10	13000	160	<0.10	<2.0	<2.0	3.4	10	<5.0
SCU26-001-MW *(Destroyed 2017)*	7/26/03	42	<0.40	<0.60	520	<0.50	<2.0	<100	<0.017	320000	<1.0	<1.0	<2.0	720	<1.0	<60	<4.0	<0.013	6.4	<3.0	<100	20000	1.5	<0.10	23000	2200	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	7/11/12	42	<0.40	<0.60	450	<0.50	<2.0	<100	<0.017	420000	<1.0	<1.0	<2.0	150	<1.0	<60	<4.0	0.059	4.5	3.2	<100	28000	3.5	<0.10	28000	2700	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	11/26/12	29	<0.40	1.7	440	<0.50	<2.0	<100	<0.017	380000	3.1	<1.0	<2.0	310	<1.0	110	<4.0	NM	4.2	<3.0	<100	26000	7.7	<0.10	31000	2900	<0.80	<20	<3.0	<0.15	7.5	<5.0
	12/5/13	25	<1.0	<1.0	440	<1.0	<2.0	<50	<0.010	370000	3.6	<0.40	<2.0	<50	0.53	<100	<2.0	0.027	3.8	<2.0	<100	27000	5.1	<0.10	29000	2700	<0.10	7.5	<2.0	<0.10	<2.0	<5.0
	12/17/14	19	<1	<1	480	<1	<2	<50	0.013	380000	<1	<0.4	<2	<50	<0.5	<100	<2	<0.013	4.2	<2	<100	27000	8.0	<0.1	26000	2800	<0.1	<2	<2.0	<0.1	<2	<5
	11/27/15	14	<1.0	<1.0	460	<1.0	<2.0	<50	<0.010	390000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	4.4	<2.0	<100	26000	4.1	<0.10	26000	2800	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
SCU26-002-MW (25.32 m) *(Decommissioned 2018)*	7/11/12	22	<0.40	<0.60	420	<0.50	<2.0	<100	<0.017	450000	<1.0	<1.0	<2.0	100	<1.0	<60	<4.0	<0.013	4.3	4.1	<100	37000	4.7	<0.10	30000	3200	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	11/26/12	80	<0.40	<0.60	420	<0.50	<2.0	<100	<0.017	400000	<1.0	<1.0	<2.0	<100	<1.0	<60	<4.0	NM	<4.0	<3.0	<100	35000	<1.0	<0.10	32000	3100	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	11/26/12[FD]	94	<0.40	1	420	<0.50	<2.0	<100	<0.017	400000	2.5	<1.0	<2.0	<100	<1.0	<60	<4.0	NM	4.4	<3.0	<100	37000	5.4	<0.10	35000	3300	<0.80	<20	<3.0	<0.15	3.9	5.9
	12/5/13	49	<1.0	<1.0	420	<1.0	<2.0	<50	<0.010	390000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	0.045	5.1	<2.0	<100	35000	4.3	<0.10	33000	3100	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/17/14[FD]	27	<1	<1.0	490	<1	<2	<50	<0.01	410000	<1	<0.4	<2	<50	<0.5	<100	<2	<0.013	3.8	<2	<100	36000	9.7	<0.1	28000	3400	<0.1	<2	<2	<0.1	<2	<5
	12/17/14	28	<1	<1.0	510	<1	<2	<50	0.017	410000	<1	<0.4	<2	<50	0.53	<100	3	<0.013	3.4	<2	<100	37000	11	<0.1	28000	3300	<0.1	<2	<2	<0.1	<2	<5
	11/27/15	20	<1.0	<1.0	460	<1.0	<2.0	<50	<0.010	430000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	4.4	<2.0	<100	36000	4.3	<0.10	28000	3300	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/4/17	37	<1.0	<1.0	500	<1.0	<2.0	<50	<0.010	430000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	0.025	3.8	<2.0	<0.10	40000	10	<0.10	32000	3300	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
SCU27-002-MW (22.66 m) *(Decommissioned 2018)*	7/26/03	<5.0	<0.40	30	15000	<0.50	<2.0	3100	<0.017	1200000	<1.0	<1.0	<2.0	49000	<1.0	630000	8600	<0.013	4.5	**1000**	<100	91000	<1.0	<0.10	**5100000**	70000	<0.80	<20	9	14	<2.0	<5.0
	7/4/12	<5.0	<0.40	<0.60	8700	<0.50	<2.0	<100	<0.017	1400000	<1.0	<1.0	<2.0	63000	<1.0	770000	7300	<0.013	<4.0	<3.0	<100	110000	<1.0	<0.10	**5700000**	84000	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	7/4/12[FD]	<5.0	<0.40	21	9300	<0.50	<2.0	3100	<0.017	1400000	<1.0	<1.0	<2.0	61000	<1.0	730000	7200	<0.013	<4.0	<3.0	<100	110000	28	<0.10	**4800000**	83000	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	11/26/12	<5.0	<0.40	23	7300	<0.50	<2.0	2900	<0.017	1200000	<1.0	<1.0	<2.0	65000	<1.0	660000	7900	<0.013	<4.0	<3.0	<100	100000	21	<0.10	**4900000**	76000	<0.80	<20	<3.0	3.5	<2.0	<5.0
	12/5/13	<50	<10	<10	23000	<10	<20	2700	<0.10	1200000	<10	<4.0	<20	44000	<5.0	700000	4900	<0.013	<20	<20	<1000	96000	<10	<1.0	**5200000**	78000	<1.0	<20	<20	3.8	<20	<50
	12/17/14	18	<1	5.5	**30000**	<1	<2	2500	<0.1	1300000	<1	<0.4	<2	56000	<0.5	660000	5600	0.013	<2	<2	<100	90000	<1	<0.1	**4900000**	92000	<0.1	<2	<2	3.2	<2	31
	11/27/15	<50	<10	<10	**30000**	<10	<20	2600	<0.10	1300000	<10	<4.0	<20	53000	<5.0	680000	5000	<0.013	<20	<20	<1000	87000	<10	<1.0	**4900000**	96000	<1.0	<20	<20	4.1	<20	<50
	11/16/16	<50	<10	<10	**31000**	<10	<20	2600	<0.10	1300000	<10	<4.0	<20	57000	<5.0	700000	5000	<0.013	<20	<20	<1000	93000	<10	<1.0	**5100000**	93000	<1.0	<20	<20	5.1	<20	66
	12/11/17	<50	<10	<10	19000	<10	<20	2000	<0.10	1100000	<10	<4.0	<20	44000	<5.0	550000	4000	0.015	<20	<20	<1000	70000	<10	<1.0	**4100000**	72000	<1.0	<20	<20	3.7	<20	<50

TABLE A-3
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2018 HCP
GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Total Well Depth)	Sample Date	Dissolved Aluminum (Al)	Dissolved Antimony (Sb)	Dissolved Arsenic (As)	Dissolved Barium (Ba)	Dissolved Beryllium (Be)	Dissolved Bismuth (Bi)	Dissolved Boron (B)	Dissolved Cadmium (Cd)	Dissolved Calcium (Ca)	Dissolved Chromium (Cr)	Dissolved Cobalt (Co)	Dissolved Copper (Cu)	Dissolved Iron (Fe)	Dissolved Lead (Pb)	Dissolved Magnesium (Mg)	Dissolved Manganese (Mn)	Mercury total (Hg)	Dissolved Molybdenum (Mo)	Dissolved Nickel (Ni)	Dissolved Phosphorus (P)	Dissolved Potassium (K)	Dissolved Selenium (Se)	Dissolved Silver (Ag)	Dissolved Sodium (Na)	Dissolved Strontium (Sr)	Dissolved Thallium (Tl)	Dissolved Tin (Sn)	Dissolved Titanium (Ti)	Dissolved Uranium (U)	Dissolved Vanadium (V)	Dissolved Zinc (Zn)
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Standard MOE Table 3[2]		-	20000	1900	29000	67	-	45000	2.7	-	810	66	87	-	25	-	-	0.29	9200	490	-	-	63	1.5	2300000	-	510	-	-	420	250	1100
SCU31-002-MWB (6.50 m)	8/17/05	<5.0	<0.40	<0.60	3200	<0.50	<2.0	<100	<0.017	1200000	<1.0	<1.0	<2.0	<100	<1.0	11000	<4.0	<0.013	<4.0	<3.0	<100	<600	<1.0	<0.10	<300	850	<0.80	<20	<3.0	3	**650**	-
	11/16/10	15	<0.40	<0.60	29	<0.50	<2.0	520	0.025	510000	<1.0	1.3	<2.0	<100	<1.0	110000	520	<0.013	<4.0	<3.0	<100	21000	<1.0	0.28	1500000	19000	<0.80	<20	<3.0	8.4	<2.0	<5.0
	10/25/11	440	9.1	<0.60	28	<0.50	<2.0	<100	<0.017	380000	<1.0	<1.0	<2.0	<100	<1.0	96000	440	<0.013	<4.0	47	<100	17000	13	<0.10	1300000	13000	<0.80	<20	<3.0	7.1	<2.0	32
	11/21/12	8.7	<0.40	6.4	47	<0.50	<2.0	560	<0.017	500000	<1.0	1.1	<2.0	<100	<1.0	100000	560	<0.013	4	<3	<100	23000	15	<0.10	1600000	18000	<0.80	<20	<3.0	6.5	4.4	<5.0
	12/7/13	14	<1.0	1.5	29	<1.0	<2.0	540	<0.010	480000	<1.0	<0.40	<2.0	100	<0.50	99000	530	<0.013	3.0	<2.0	<100	21000	<1.0	<0.10	1500000	17000	<0.10	<2.0	<2.0	7.0	<2.0	<5.0
	12/7/13[FD]	23	<1.0	1.5	29	<1.0	<2.0	540	0.012	490000	<1.0	<0.40	<2.0	100	<0.50	98000	530	<0.013	3.0	<2.0	100	21000	<1.0	<0.10	1500000	17000	<0.10	<2.0	<2.0	7.1	<2.0	<5.0
	12/18/14[FD]	140	1.1	1.3	86	<1	<2	550	0.025	450000	<1	<0.4	<2	240	<0.5	99000	560	<0.013	3.0	<2	<100	22000	<1	<0.1	1500000	17000	<0.1	<2	3.5	6.6	<2	7.5
	12/18/14	30	1.3	1.4	81	<1	<2	570	0.024	450000	<1	<0.4	<2	220	<0.5	100000	560	<0.013	3.1	<2	<100	21000	<1	<0.1	1500000	17000	<0.1	<2	<2	6.4	<2	7.2
	12/2/15[FD]	<50	<10	<10	33	<10	<20	570	<0.10	440000	<10	<4.0	<20	<500	<5.0	100000	540	<0.013	<20	<20	<1000	20000	<10	<1.0	1500000	17000	<1.0	<20	<20	6.5	<20	<50
	12/2/15	<50	<10	<10	32	<10	<20	570	<0.10	440000	<10	<4.0	<20	<500	<5.0	99000	520	<0.013	<20	<20	<1000	20000	<10	<1.0	1500000	17000	<1.0	<20	<20	6.8	<20	<50
	11/17/16	9.8	<1.0	1.3	26	<1.0	<2.0	580	0.011	440000	<1.0	<0.40	<2.0	120	<0.50	97000	530	<0.013	3.0	<2.0	<100	20000	<1.0	<0.10	1400000	17000	<0.10	<2.0	<2.0	6.7	<2.0	<5.0
	12-4-17[FD]	42	<1.0	1.4	27	<1.0	<2.0	580	0.021	450000	<0.10	<0.40	<2.0	110	<0.50	97000	520	<0.013	3.0	<2.0	<100	20000	<1.0	<0.10	1400000	16000	<0.10	<2.0	<2.0	6.6	<2.0	<5.0
	12/4/17	18	<1.0	1.5	27	<1.0	<2.0	570	0.022	450000	<1.0	<0.40	<2.0	110	<0.50	97000	510	<0.013	3.2	<2.0	<100	20000	<1.0	<0.10	1400000	16000	<0.10	<2.0	<2.0	6.6	<2.0	<5.0
	11/27/18	22	<1.0	1.3	27	<1.0	<2.0	570	<0.010	450000	<1.0	<0.40	<2.0	120	1.8	110000	560	<0.013	2.9	<2.0	<100	20000	<1.0	<0.10	1400000	16000	<0.10	<2.0	<2.0	6.4	<2.0	<5.0
SCU31-004-MW (5.68 m)	9/15/05	11	1	<0.6	35	<0.5	<2	<100	<0.017	NM	1.1	<1	<2	<100	<1	NM	<4	<0.01	6.5	<3	<100	NM	3.1	<0.1	NM	290	<0.8	<20	<3	<0.15	2.1	2.9
	12/15/17	12	<1.0	<1.0	55	<1.0	<2.0	84	<0.010	130000	2.6	<0.40	<2.0	<50	<0.50	9800	<2.0	<0.013	6	<2.0	<100	12000	2.1	<0.10	20000	730	<0.10	<2.0	<2.0	0.74	<2.0	<5.0
	11/27/18	23	<1.0	<1.0	48	<1.0	<2.0	69	<0.010	200000	4.6	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	7.4	<2.0	<100	11000	4.3	<0.10	22000	950	<0.10	<2.0	<2.0	<0.10	10	<5.0
SCU32-001-MWA (16.28 m) (*Decommissioned 2018*)	11/24/11	25	<0.40	1	98	<0.50	<2.0	<100	<0.017	270000	<1.0	<1.0	<2.0	<100	<1.0	<60	<4.0	<0.013	71	<3.0	<100	68000	17	<0.10	97000	1900	<0.80	20	<3.0	<0.15	3.7	<5.0
	12/5/13	360	<1.0	1.6	94	<1.0	<2.0	<50	0.011	220000	<1.0	<0.40	5.8	<50	<0.50	180	2.0	<0.013	58	<2.0	<100	45000	4.7	<0.10	64000	2300	<0.10	8.6	<2.0	<0.10	9.4	5.2
	12/17/14	130	<1	1.0	120	<1.0	<2	<50	<0.1	250000	<1	<0.4	<2	180	0.78	200	10	0.018	620	<2	<100	340000	40	<0.1	400000	2100	<0.1	<2	4.5	<0.1	2.0	5.7
	11/27/15	16	<1.0	<1.0	99	<1.0	<2.0	<50	<0.10	280000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	190	<2.0	<100	150000	8.5	<0.10	190000	2000	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
SCU32-002-MW (16.33 m) (*Decommissioned 2018*)	11/25/11	680	<0.40	4.7	46	<0.50	<2.0	<100	<0.017	210000	<1.0	<1.0	<2.0	<100	<1.0	<60	<4.0	<0.013	48	<3.0	<100	24000	7.3	<0.10	84000	960	<0.80	<20	<3.0	<0.15	<2.0	<5.0
	12/5/13	670	<1.0	5.0	47	<1.0	<2.0	<50	<0.010	200000	<1.0	<0.40	<2.0	180	<0.50	<100	2.1	<0.013	42	<2.0	<100	29000	3.9	<0.10	76000	920	<0.10	7.8	<2.0	<0.10	<2.0	<5.0
	12/18/14	700	<1.0	2.8	61	<1.0	<2	<50	0.054	230000	<1	<0.4	<2	<50	<0.5	<100	<2	<0.013	21	<2	<100	29000	9.5	<0.1	72000	1100	<0.1	<2	<2	<0.1	<2	<5
	11/30/15	510	<1.0	4.6	42	<1.0	<2.0	<50	<0.010	200000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	41	<2.0	<100	27000	2.6	<0.10	59000	890	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11/16/16[FD]	450	<1.0	4.7	42	<1.0	<2.0	<50	<0.010	200000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	78	<2.0	<100	30000	3.7	<0.10	65000	890	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11/16/16	440	<1.0	4.7	40	<1.0	<2.0	<50	0.013	190000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	76	<2.0	<100	29000	4.4	<0.10	67000	910	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/14/17	470	<1.0	4.1	47	<1.0	<2.0	<50	<0.010	210000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	55	<2.0	<100	34000	3.0	<0.10	67000	980	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
SCU32-003-MW (16.90 m) (*Decommissioned 2018*)	11/25/11	<50	<4.0	<6.0	150	<5.0	<20	<100	<0.17	250000	<10	<10	<20	<1000	<10	<600	<40	<0.013	130	<30	<1000	80000	28	<1.0	98000	2200	<8.0	<200	<30	<1.5	<20	<50
	12/5/13	79	<1.0	<1.0	130	<1.0	<2.0	<50	0.014	250000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	58	<2.0	<100	67000	7.1	<0.10	90000	2700	<0.10	6.9	<2.0	<0.10	3.9	<5.0
	12/18/14	40	<1	<1.0	140	<1.0	<2	<50	<0.1	240000	<1	<0.4	<2	<50	<0.5	<100	<2	<0.013	83	<2	<1000	630000	**68**	<0.1	780000	2100	<0.1	<2	<2	<0.1	2.9	<5
	11/30/15	<50	<10	<10	130	<10	<20	<500	<0.10	240000	<10	<4.0	31	<500	<5.0	<1000	<20	<0.013	580	<20	<1000	530000	**77**	<1.0	680000	1900	<1.0	<20	<20	<1.0	<20	<50
	12/14/17	<50	<10	<10	120	<10	<20	<500	<0.10	220000	<10	<4.0	<20	<500	<5.0	<1000	<20	0.022	470	<20	<1000	420000	**89**	<1.0	560000	1800	<1.0	<20	<20	<1.0	<20	<50
MCES-007-MW (21.80 m) (*Buried/Inaccessible 2018*)	7/26/03	<5.0	<0.40	<0.60	490	<0.50	<2.0	<100	<0.017	380000	<1.0	<1.0	<2.0	690	<1.0	<60	<4.0	<0.013	1.8	<3.0	<100	31000	<1.0	<0.10	35000	2500	<0.80	<20	<3.0	<0.15	<2.0	NM
	7/11/12	10	1.2	2.3	23	<0.50	<2.0	<100	<0.017	22000	3.8	<1.0	<2.0	<100	<1.0	600	<4.0	0.013	<4.0	<3.0	<100	4100	1.2	<0.10	21000	160	<0.80	<20	<3.0	0.24	32	<5.0
	11/27/12	38	1.1	2.2	63	<0.50	<2.0	<100	<0.017	56000	9.6	<1.0	<2.0	<100	<1.0	<60	<4.0	NM	6.2	<3.0	<100	8200	1.1	<0.10	54000	510	<0.80	<20	<3.0	<0.15	34	<5.0
	12/5/13	5.0	1.0	1.0	1.0	1.0	2.0	50	0.010	100	1.0	0.40	2.0	50	0.50	100	2.0	<0.013	2.0	2.0	100	100	1.0	0.10	100	2.0	0.10	2.0	2.0	0.10	2.0	5.0
	12/17/14	24	<1.0	<1.0	580	<1.0	<2	<50	0.022	410000	<1	<0.4	<2	<50	<0.5	<100	<2	<0.013	2.1	<2	<100	35000	12	<0.1	33000	3400	<0.1	<2	<2	<0.1	<2	<5
	11/27/15[FD]	52	<1.0	<1.0	580	<1.0	<2.0	<50	<0.010	430000	<1.0	<0.40	<2.0	<50	<0.50	<100	2.8	<0.013	2.7	<2.0	<100	34000	4.5	<0.10	30000	3200	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11/27/15	57	<1.0	<1.0	580	<1.0	<2.0	<50	<0.010	430000	<1.0	<0.40	<2.0	<50	<0.50	<100	5.5	0.020	2.3	<2.0	<100	34000	5.5	<0.10	30000	3200	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/15/17	41	<1.0	<1.0	560	<1.0	<2.0	<50	<0.010	410000	<1.0	<0.40	<2.0	<50	<0.50	<100	<2.0	<0.013	2.2	<2.0	<100	35000	3.4	<0.10	46000	3200	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0

NOTES:

FD - Field Duplicate
NM - Not Measured or not analyzed
µg/L - micrograms per litre
- No applicable guideline criteria.
1 - There are no Nova Scotia Environment Environmental Quality Standards for inorganic parameters in groundwater on a site with Coarse-Grained Soil, Non-potable Groundwater Commercial/Industrial land use) 2013.
2 - Ontario Ministry of Environment, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011.
3 - **Bold and Shaded Exceeds MOE Table 3 Standards**
4 - *Italicized RDL above applicable guideline*
5 - SCU10-004-MW was not sampled during the 2014 monitoring event due to product in the well.
6 - The DNAPL in SCU32-003-MW was sampled during the 2015 LTMM monitoring event. The groundwater column in the monitor well was sampled above the DNAPL in the well.
7 - Historical data (i.e., pre-2014) tabulated by SLR Consulting (Canada) Ltd. During historic assessment work, , with the exception of SCU31-004-MW, for which data was derived from the Phase II ESA, Sydney Steel Corporation Sysco Blast Furnace Area, Site Classification Units SCU17, SCU19 & SCU31, Sydney, Nova Scotia (AMEC, 2006).
9 - This summary is to be used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information.

Appendix B

QC Tables

TABLE B-1
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2018 HCP
SUMMARY OF FIELD DUPLICATES AND TRIP BLANKS

Field Duplicate Sample - Laboratory Certificate Number	Date Sampled	Trip Blank Sample - Laboratory Certicficate Number	Date Sampled	Equipment Blank Sample - Laboratory Certificat Number	Date Sampled
FD-10 - B8V7250	11/27/2018	TB-06 - B8V7250	11/27/2018	EB-02 - B8V7250	11/27/2018

Notes:
FD - Field Duplicate
TB - Trip Blank
EB - Equipment Blank

TABLE B-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2018 HCP
RPD FOR FIELD DUPLICATES (GROUNDWATER) - BTEX/TPH

Sample Location	Sample ID	Type	Sample Date	Benzene	Toluene	E. Benzene	Xylenes	C6-C10	C10-C16	C16-C21	C21-C32	Modified TPH
				mg/L								
SCU10-004-MW	FD-010	Field Duplicate	11/27/2018	0.034	0.016	0.010	0.051	0.062	1.6	0.17	0.12	1.9
	SCU10-004-MW	Regular	11/27/2018	0.033	0.018	0.011	0.055	0.11	1.2	0.094	<0.10	1.4
	--	RPD (%)	11/27/2018	3%	12%	10%	8%	**56%**	29%	NA	NA	30%

Notes:
NA - Not applicable (Either 1) Parameter not analyzed or 2) One or both sample results exhibit concentrations less than 5 times the RDL)
Bold - Calculation is outside of the acceptable RPD range.
FD - Field Duplicate
RPD - Relative Percent Difference

TABLE B-3
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2018 HCP
RPD FOR FIELD DUPLICATES (GROUNDWATER) - PAHs

Sample Location	Sample ID	Type	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Perylene	Phenanthrene	Pyrene
				µg/L																			
SCU10-004-MW	FD-10	Field Duplicate	11/27/2018	25	6.7	1.7	0.40	0.22	0.18	0.093	0.12	0.12	0.39	<0.040	1.9	14	0.099	46	59	320	<0.050	8.0	1.2
	SCU10-004-MW	Regular	11/27/2018	25	6.5	2.3	0.37	0.20	0.16	0.083	0.098	0.11	0.38	0.031	2.0	14	0.086	43	51	250	0.041	8.7	1.2
	--	RPD (%)	11/27/2018	0%	3%	30%	8%	10%	12%	11%	20%	9%	3%	NA	5%	0%	14%	7%	15%	25%	NA	8%	0%

Notes:
NA - Not applicable (Either 1) Parameter not analyzed or 2) One or both sample results exhibit concentrations less than 5 times the RDL)
Bold - Calculation is outside of the acceptable RPD range.
FD - Field Duplicate
RPD - Relative Percent Difference

TABLE B-4
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2018 HCP
RPD FOR FIELD DUPLICATES (GROUNDWATER) - INORGANIC CHEMISTRY

Sample Location	Sample ID	Type	Sample Date	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn
				ug/L															
SCU10-004-MW	FD-10	Field Duplicate	11/27/2018	10	1.3	9.4	42	<1.0	<2.0	55	<0.010	81000	<1.0	<0.40	<2.0	<50	<0.50	3600	23
	SCU10-004-MW	Regular	11/27/2018	21	1.3	9.4	43	<1.0	<2.0	56	<0.010	80000	<1.0	<0.40	<2.0	<50	<0.50	3500	22
	--	RPD (%)	11/27/2018	NA	NA	0%	2%	NA	NA	NA	NA	1%	NA	NA	NA	NA	NA	3%	4%

Sample Location	Sample ID	Type	Sample Date	Hg	Mo	Ni	P	K	Se	Ag	Na	Sr	Tl	Sn	Ti	U	V	Zn
				ug/L														
SCU10-004-MW	FD-10	Field Duplicate	11/27/2018	<0.013	5.2	<2.0	<100	6800	1.7	<0.10	70000	330	<0.10	<2.0	<2.0	0.68	12	<5.0
	SCU10-004-MW	Regular	11/27/2018	<0.013	5.4	<2.0	<100	6800	1.7	<0.10	70000	320	<0.10	<2.0	<2.0	0.69	13	<5.0
	--	RPD (%)	11/27/2018	NA	NA	NA	NA	0%	NA	NA	0%	3%	NA	NA	NA	1%	8%	NA

Notes:

NA - Not applicable (Either 1) Parameter not analyzed or 2) One or both sample results exhibit concentrations less than 5 times the RDL)

Bold - Calculation is outside of the acceptable RPD range.

FD - Field Duplicate

RPD - Relative Percent Difference

Appendix C

Laboratory Certificate

Maxxam
A Bureau Veritas Group Company

Your Project #: 14-1360
Site Location: HARBOURSIDE COMMERCIAL PARK

Attention: Nadine Wambolt

Dillon Consulting Limited
275 Charlotte St
Sydney, NS
CANADA B1P 1C6

Report Date: 2018/12/07
Report #: R5515777
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8V7250
Received: 2018/11/27, 16:25

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Benzo(b/j)fluoranthene Sum (water) (1)	6	N/A	2018/12/04	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (water) (1)	1	N/A	2018/12/05	N/A	Auto Calc.
TEH in Water (PIRI) (1)	8	2018/12/03	2018/12/04	ATL SOP 00113	Atl. RBCA v3.1 m
Mercury - Total (CVAA,LL) (1)	7	2018/11/30	2018/12/03	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	5	N/A	2018/12/03	ATL SOP 00058	EPA 6020A R1 m
Metals Water Diss. MS (as rec'd) (1)	2	N/A	2018/12/04	ATL SOP 00058	EPA 6020A R1 m
PAH in Water by GC/MS (SIM) (1)	1	2018/12/03	2018/12/03	ATL SOP 00103	EPA 8270D 2014 m
PAH in Water by GC/MS (SIM) (1)	5	2018/12/03	2018/12/04	ATL SOP 00103	EPA 8270D 2014 m
PAH in Water by GC/MS (SIM) (1)	1	2018/12/03	2018/12/05	ATL SOP 00103	EPA 8270D 2014 m
VPH in Water (PIRI) (1)	7	N/A	2018/12/06	ATL SOP 00118	Atl. RBCA v3.1 m
VPH in Water (PIRI) (1)	1	N/A	2018/12/07	ATL SOP 00118	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Water (1)	8	N/A	2018/12/07	N/A	Atl. RBCA v3 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 465 George St., Unit G, Sydney, NS, B1P 1K5 Tel:902 567 1255 Toll Free: 888 535 7770 Fax: 902 539 6504 www.maxxam.ca

Your Project #: 14-1360
Site Location: HARBOURSIDE COMMERCIAL PARK

Attention: Nadine Wambolt

Dillon Consulting Limited
275 Charlotte St
Sydney, NS
CANADA B1P 1C6

Report Date: 2018/12/07
Report #: R5515777
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8V7250
Received: 2018/11/27, 16:25

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Maxxam Bedford

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Key Account Specialist
Email: NMacAskill@maxxam.ca
Phone# (902)567-1255 Ext:17
==========
This report has been generated and distributed using a secure automated process.
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Job #: B8V7250
Report Date: 2018/12/07

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: HARBOURSIDE COMMERCIAL PARK

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		IKE748	IKE749	IKE750	IKE751	IKE752		
Sampling Date		2018/11/27	2018/11/27	2018/11/27	2018/11/27	2018/11/27		
	UNITS	SCU10-001-MW	SCU10-004-MW	SCU31-002-MWB	SCU18-007-MW	SCU31-004-MW	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	5865209

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		IKE753	IKE754		
Sampling Date		2018/11/27	2018/11/27		
	UNITS	FD-10	EB-02	RDL	QC Batch
Metals					
Total Mercury (Hg)	ug/L	<0.013	<0.013	0.013	5865209

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B8V7250
Report Date: 2018/12/07

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: HARBOURSIDE COMMERCIAL PARK

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		IKE748	IKE749		IKE750		IKE751		
Sampling Date		2018/11/27	2018/11/27		2018/11/27		2018/11/27		
	UNITS	SCU10-001-MW	SCU10-004-MW	RDL	SCU31-002-MWB	RDL	SCU18-007-MW	RDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	<5.0	21	5.0	22	5.0	18	5.0	5867499
Dissolved Antimony (Sb)	ug/L	1.1	1.3	1.0	<1.0	1.0	1.1	1.0	5867499
Dissolved Arsenic (As)	ug/L	1.5	9.4	1.0	1.3	1.0	1.9	1.0	5867499
Dissolved Barium (Ba)	ug/L	23	43	1.0	27	1.0	51	1.0	5867499
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	5867499
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	5867499
Dissolved Boron (B)	ug/L	94	56	50	570	50	160	50	5867499
Dissolved Cadmium (Cd)	ug/L	0.013	<0.010	0.010	<0.010	0.010	0.023	0.010	5867499
Dissolved Calcium (Ca)	ug/L	99000	80000	100	450000	100	55000	100	5867499
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	1.0	<1.0	1.0	9.3	1.0	5867499
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	0.40	<0.40	0.40	<0.40	0.40	5867499
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	5867499
Dissolved Iron (Fe)	ug/L	<50	<50	50	120	50	<50	50	5867499
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	1.8	0.50	1.1	0.50	5867499
Dissolved Magnesium (Mg)	ug/L	9300	3500	100	110000	100	29000	100	5867499
Dissolved Manganese (Mn)	ug/L	17	22	2.0	560	2.0	4.9	2.0	5867499
Dissolved Molybdenum (Mo)	ug/L	<2.0	5.4	2.0	2.9	2.0	2.4	2.0	5867499
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	5867499
Dissolved Phosphorus (P)	ug/L	<100	<100	100	<100	100	<100	100	5867499
Dissolved Potassium (K)	ug/L	3800	6800	100	20000	100	2700	100	5867499
Dissolved Selenium (Se)	ug/L	2.3	1.7	1.0	<1.0	1.0	<1.0	1.0	5867499
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	0.10	<0.10	0.10	<0.10	0.10	5867499
Dissolved Sodium (Na)	ug/L	32000	70000	100	1400000	1000	13000	100	5867499
Dissolved Strontium (Sr)	ug/L	450	320	2.0	16000	20	160	2.0	5867499
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	0.10	<0.10	0.10	<0.10	0.10	5867499
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	5867499
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	5867499
Dissolved Uranium (U)	ug/L	1.9	0.69	0.10	6.4	0.10	3.4	0.10	5867499
Dissolved Vanadium (V)	ug/L	<2.0	13	2.0	<2.0	2.0	10	2.0	5867499
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	5867499

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

Maxxam ID		IKE752	IKE753	IKE754		
Sampling Date		2018/11/27	2018/11/27	2018/11/27		
	UNITS	SCU31-004-MW	FD-10	EB-02	RDL	QC Batch
Metals						
Dissolved Aluminum (Al)	ug/L	23	10	19	5.0	5867499
Dissolved Antimony (Sb)	ug/L	<1.0	1.3	<1.0	1.0	5867499
Dissolved Arsenic (As)	ug/L	<1.0	9.4	<1.0	1.0	5867499
Dissolved Barium (Ba)	ug/L	48	42	<1.0	1.0	5867499
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	1.0	5867499
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	2.0	5867499
Dissolved Boron (B)	ug/L	69	55	<50	50	5867499
Dissolved Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	0.010	5867499
Dissolved Calcium (Ca)	ug/L	200000	81000	210	100	5867499
Dissolved Chromium (Cr)	ug/L	4.6	<1.0	<1.0	1.0	5867499
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	0.40	5867499
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	<2.0	2.0	5867499
Dissolved Iron (Fe)	ug/L	<50	<50	<50	50	5867499
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	0.50	5867499
Dissolved Magnesium (Mg)	ug/L	<100	3600	<100	100	5867499
Dissolved Manganese (Mn)	ug/L	<2.0	23	<2.0	2.0	5867499
Dissolved Molybdenum (Mo)	ug/L	7.4	5.2	<2.0	2.0	5867499
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	2.0	5867499
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	100	5867499
Dissolved Potassium (K)	ug/L	11000	6800	<100	100	5867499
Dissolved Selenium (Se)	ug/L	4.3	1.7	<1.0	1.0	5867499
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	0.10	5867499
Dissolved Sodium (Na)	ug/L	22000	70000	170	100	5867499
Dissolved Strontium (Sr)	ug/L	950	330	<2.0	2.0	5867499
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	0.10	5867499
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	2.0	5867499
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	2.0	5867499
Dissolved Uranium (U)	ug/L	<0.10	0.68	<0.10	0.10	5867499
Dissolved Vanadium (V)	ug/L	10	12	<2.0	2.0	5867499
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0	5867499

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		IKE748		IKE749		IKE750		IKE751		
Sampling Date		2018/11/27		2018/11/27		2018/11/27		2018/11/27		
	UNITS	SCU10-001-MW	RDL	SCU10-004-MW	RDL	SCU31-002-MWB	RDL	SCU18-007-MW	RDL	QC Batch
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	ug/L	0.73	0.050	43 (1)	0.50	0.13	0.050	0.18	0.050	5867524
2-Methylnaphthalene	ug/L	1.1	0.050	51 (1)	0.50	0.19	0.050	0.24	0.050	5867524
Acenaphthene	ug/L	0.64	0.010	25	0.010	0.11	0.010	0.39	0.010	5867524
Acenaphthylene	ug/L	0.10	0.010	6.5	0.010	0.020	0.010	0.090	0.010	5867524
Anthracene	ug/L	0.18	0.010	2.3	0.010	0.058	0.010	0.47	0.010	5867524
Benzo(a)anthracene	ug/L	0.062	0.010	0.37	0.010	<0.040 (2)	0.040	0.19	0.010	5867524
Benzo(a)pyrene	ug/L	0.020	0.010	0.20	0.010	<0.020 (2)	0.020	0.096	0.010	5867524
Benzo(b)fluoranthene	ug/L	0.014	0.010	0.16	0.010	<0.020 (2)	0.020	0.082	0.010	5867524
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	0.26	0.020	<0.030	0.030	0.12	0.020	5860385
Benzo(g,h,i)perylene	ug/L	<0.020 (2)	0.020	0.083	0.010	<0.020 (2)	0.020	0.055	0.010	5867524
Benzo(j)fluoranthene	ug/L	<0.010	0.010	0.098	0.010	<0.010	0.010	0.041	0.010	5867524
Benzo(k)fluoranthene	ug/L	<0.020 (2)	0.020	0.11	0.010	<0.010	0.010	0.047	0.010	5867524
Chrysene	ug/L	0.058	0.010	0.38	0.010	<0.040 (2)	0.040	0.21	0.010	5867524
Dibenz(a,h)anthracene	ug/L	<0.010	0.010	0.031	0.010	<0.010	0.010	<0.030 (2)	0.030	5867524
Fluoranthene	ug/L	0.26	0.010	2.0	0.010	0.096	0.010	0.81	0.010	5867524
Fluorene	ug/L	0.58	0.010	14	0.010	0.15	0.010	0.77	0.010	5867524
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	0.086	0.010	<0.010	0.010	0.042	0.010	5867524
Naphthalene	ug/L	2.1	0.20	250 (1)	2.0	0.29	0.20	0.66	0.20	5867524
Perylene	ug/L	<0.010	0.010	0.041	0.010	<0.010	0.010	<0.030 (2)	0.030	5867524
Phenanthrene	ug/L	0.96	0.010	8.7	0.010	0.34	0.010	2.2	0.010	5867524
Pyrene	ug/L	0.17	0.010	1.2	0.010	0.073	0.010	0.56	0.010	5867524
Surrogate Recovery (%)										
D10-Anthracene	%	115		118		118		99		5867524
D14-Terphenyl	%	121		112		104		106 (3)		5867524
D8-Acenaphthylene	%	92		92		100		96		5867524

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to sample dilution.
(2) Elevated PAH RDL(s) due to matrix / co-extractive interference.
(3) PAH sample contained sediment.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		IKE752		IKE753		IKE754		
Sampling Date		2018/11/27		2018/11/27		2018/11/27		
	UNITS	SCU31-004-MW	RDL	FD-10	RDL	EB-02	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	0.16	0.050	46 (1)	0.50	<0.050	0.050	5867524
2-Methylnaphthalene	ug/L	0.17	0.050	59 (1)	0.50	0.070	0.050	5867524
Acenaphthene	ug/L	0.12	0.010	25	0.010	0.040	0.010	5867524
Acenaphthylene	ug/L	0.14	0.010	6.7	0.010	<0.010	0.010	5867524
Anthracene	ug/L	0.18	0.010	1.7	0.010	0.026	0.010	5867524
Benzo(a)anthracene	ug/L	0.064	0.010	0.40	0.010	<0.010	0.010	5867524
Benzo(a)pyrene	ug/L	<0.020 (2)	0.020	0.22	0.010	<0.010	0.010	5867524
Benzo(b)fluoranthene	ug/L	0.023	0.010	0.18	0.010	<0.010	0.010	5867524
Benzo(b/j)fluoranthene	ug/L	<0.030	0.030	0.30	0.020	<0.020	0.020	5860385
Benzo(g,h,i)perylene	ug/L	<0.020 (2)	0.020	0.093	0.010	<0.010	0.010	5867524
Benzo(j)fluoranthene	ug/L	<0.020 (2)	0.020	0.12	0.010	<0.010	0.010	5867524
Benzo(k)fluoranthene	ug/L	<0.020 (2)	0.020	0.12	0.010	<0.010	0.010	5867524
Chrysene	ug/L	0.072	0.010	0.39	0.010	<0.010	0.010	5867524
Dibenz(a,h)anthracene	ug/L	<0.010	0.010	<0.040 (2)	0.040	<0.010	0.010	5867524
Fluoranthene	ug/L	0.27	0.010	1.9	0.010	0.020	0.010	5867524
Fluorene	ug/L	0.26	0.010	14	0.010	0.043	0.010	5867524
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	0.099	0.010	<0.010	0.010	5867524
Naphthalene	ug/L	0.22	0.20	320 (1)	2.0	0.27	0.20	5867524
Perylene	ug/L	<0.020 (2)	0.020	<0.050 (2)	0.050	<0.010	0.010	5867524
Phenanthrene	ug/L	0.60	0.010	8.0	0.010	0.081	0.010	5867524
Pyrene	ug/L	0.27	0.010	1.2	0.010	0.012	0.010	5867524
Surrogate Recovery (%)								
D10-Anthracene	%	118		117		123		5867524
D14-Terphenyl	%	116		110		116		5867524
D8-Acenaphthylene	%	104		97		105		5867524

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to sample dilution.
(2) Elevated PAH RDL(s) due to matrix / co-extractive interference.

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Maxxam Job #: B8V7250
Report Date: 2018/12/07

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: HARBOURSIDE COMMERCIAL PARK

ATLANTIC RBCA HYDROCARBONS (WATER)

Maxxam ID		IKE748	IKE749	IKE750	IKE751		
Sampling Date		2018/11/27	2018/11/27	2018/11/27	2018/11/27		
	UNITS	SCU10-001-MW	SCU10-004-MW	SCU31-002-MWB	SCU18-007-MW	RDL	QC Batch
Petroleum Hydrocarbons							
Benzene	mg/L	<0.0010	0.033	<0.0010	<0.0010	0.0010	5871925
Toluene	mg/L	<0.0010	0.018	<0.0010	<0.0010	0.0010	5871925
Ethylbenzene	mg/L	<0.0010	0.011	<0.0010	<0.0010	0.0010	5871925
Total Xylenes	mg/L	<0.0020	0.055	<0.0020	<0.0020	0.0020	5871925
C6 - C10 (less BTEX)	mg/L	0.054 (1)	0.11	<0.010	<0.010	0.010	5871925
>C10-C16 Hydrocarbons	mg/L	<0.050	1.2	<0.050	<0.050	0.050	5867501
>C16-C21 Hydrocarbons	mg/L	<0.050	0.094	<0.050	<0.050	0.050	5867501
>C21-<C32 Hydrocarbons	mg/L	<0.10	<0.10	<0.10	<0.10	0.10	5867501
Modified TPH (Tier1)	mg/L	<0.10	1.4	<0.10	<0.10	0.10	5860442
Reached Baseline at C32	mg/L	NA	Yes	NA	NA	N/A	5867501
Hydrocarbon Resemblance	mg/L	NA	COMMENT (2)	NA	NA	N/A	5867501
Surrogate Recovery (%)							
Isobutylbenzene - Extractable	%	103	102	104	89		5867501
n-Dotriacontane - Extractable	%	106	107	108	93		5867501
Isobutylbenzene - Volatile	%	102	100	101	103		5871925

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Interference from Volatile Organic Compounds (VOCs) in the gasoline range.
(2) Unidentified compound(s) in fuel oil range.

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Maxxam Job #: B8V7250
Report Date: 2018/12/07

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: HARBOURSIDE COMMERCIAL PARK

ATLANTIC RBCA HYDROCARBONS (WATER)

Maxxam ID		IKE752	IKE753		IKE754	IKE755		
Sampling Date		2018/11/27	2018/11/27		2018/11/27	2018/11/27		
	UNITS	SCU31-004-MW	FD-10	QC Batch	EB-02	TB-06	RDL	QC Batch
Petroleum Hydrocarbons								
Benzene	mg/L	<0.0010	0.034	5873795	<0.0010	<0.0010	0.0010	5873795
Toluene	mg/L	<0.0010	0.016	5873795	<0.0010	<0.0010	0.0010	5873795
Ethylbenzene	mg/L	<0.0010	0.010	5873795	<0.0010	<0.0010	0.0010	5873795
Total Xylenes	mg/L	<0.0020	0.051	5873795	<0.0020	<0.0020	0.0020	5873795
C6 - C10 (less BTEX)	mg/L	<0.010	0.062	5873795	<0.010	<0.010	0.010	5873795
>C10-C16 Hydrocarbons	mg/L	<0.050	1.6	5867501	<0.050	<0.050	0.050	5867793
>C16-C21 Hydrocarbons	mg/L	<0.050	0.17	5867501	<0.050	<0.050	0.050	5867793
>C21-<C32 Hydrocarbons	mg/L	<0.10	0.12	5867501	<0.10	<0.10	0.10	5867793
Modified TPH (Tier1)	mg/L	<0.10	1.9	5860220	<0.10	<0.10	0.10	5860220
Reached Baseline at C32	mg/L	NA	Yes	5867501	NA	NA	N/A	5867793
Hydrocarbon Resemblance	mg/L	NA	COMMENT (1)	5867501	NA	NA	N/A	5867793
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	101	96	5867501	114	99		5867793
n-Dotriacontane - Extractable	%	108	103	5867501	122	89		5867793
Isobutylbenzene - Volatile	%	103	102	5873795	103	103		5873795

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in fuel oil range.

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GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Job #: B8V7250
Report Date: 2018/12/07

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: HARBOURSIDE COMMERCIAL PARK

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5865209	CCR	Matrix Spike	Total Mercury (Hg)	2018/12/03		103	%	80 - 120
5865209	CCR	Spiked Blank	Total Mercury (Hg)	2018/12/03		100	%	80 - 120
5865209	CCR	Method Blank	Total Mercury (Hg)	2018/12/03	<0.013		ug/L	
5865209	CCR	RPD	Total Mercury (Hg)	2018/12/03	14		%	20
5867499	AWL	Matrix Spike	Dissolved Aluminum (Al)	2018/12/03		100	%	80 - 120
			Dissolved Antimony (Sb)	2018/12/03		100	%	80 - 120
			Dissolved Arsenic (As)	2018/12/03		101	%	80 - 120
			Dissolved Barium (Ba)	2018/12/03		100	%	80 - 120
			Dissolved Beryllium (Be)	2018/12/03		105	%	80 - 120
			Dissolved Bismuth (Bi)	2018/12/03		102	%	80 - 120
			Dissolved Boron (B)	2018/12/03		102	%	80 - 120
			Dissolved Cadmium (Cd)	2018/12/03		103	%	80 - 120
			Dissolved Calcium (Ca)	2018/12/03		102	%	80 - 120
			Dissolved Chromium (Cr)	2018/12/03		98	%	80 - 120
			Dissolved Cobalt (Co)	2018/12/03		99	%	80 - 120
			Dissolved Copper (Cu)	2018/12/03		98	%	80 - 120
			Dissolved Iron (Fe)	2018/12/03		101	%	80 - 120
			Dissolved Lead (Pb)	2018/12/03		100	%	80 - 120
			Dissolved Magnesium (Mg)	2018/12/03		106	%	80 - 120
			Dissolved Manganese (Mn)	2018/12/03		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2018/12/03		102	%	80 - 120
			Dissolved Nickel (Ni)	2018/12/03		100	%	80 - 120
			Dissolved Phosphorus (P)	2018/12/03		109	%	80 - 120
			Dissolved Potassium (K)	2018/12/03		102	%	80 - 120
			Dissolved Selenium (Se)	2018/12/03		100	%	80 - 120
			Dissolved Silver (Ag)	2018/12/03		98	%	80 - 120
			Dissolved Sodium (Na)	2018/12/03		102	%	80 - 120
			Dissolved Strontium (Sr)	2018/12/03		101	%	80 - 120
			Dissolved Thallium (Tl)	2018/12/03		101	%	80 - 120
			Dissolved Tin (Sn)	2018/12/03		102	%	80 - 120
			Dissolved Titanium (Ti)	2018/12/03		102	%	80 - 120
			Dissolved Uranium (U)	2018/12/03		105	%	80 - 120
			Dissolved Vanadium (V)	2018/12/03		101	%	80 - 120
			Dissolved Zinc (Zn)	2018/12/03		102	%	80 - 120
5867499	AWL	Spiked Blank	Dissolved Aluminum (Al)	2018/12/03		102	%	80 - 120
			Dissolved Antimony (Sb)	2018/12/03		102	%	80 - 120
			Dissolved Arsenic (As)	2018/12/03		100	%	80 - 120
			Dissolved Barium (Ba)	2018/12/03		99	%	80 - 120
			Dissolved Beryllium (Be)	2018/12/03		103	%	80 - 120
			Dissolved Bismuth (Bi)	2018/12/03		103	%	80 - 120
			Dissolved Boron (B)	2018/12/03		102	%	80 - 120
			Dissolved Cadmium (Cd)	2018/12/03		99	%	80 - 120
			Dissolved Calcium (Ca)	2018/12/03		102	%	80 - 120
			Dissolved Chromium (Cr)	2018/12/03		99	%	80 - 120
			Dissolved Cobalt (Co)	2018/12/03		99	%	80 - 120
			Dissolved Copper (Cu)	2018/12/03		99	%	80 - 120
			Dissolved Iron (Fe)	2018/12/03		103	%	80 - 120
			Dissolved Lead (Pb)	2018/12/03		99	%	80 - 120
			Dissolved Magnesium (Mg)	2018/12/03		106	%	80 - 120
			Dissolved Manganese (Mn)	2018/12/03		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2018/12/03		104	%	80 - 120
			Dissolved Nickel (Ni)	2018/12/03		101	%	80 - 120
			Dissolved Phosphorus (P)	2018/12/03		107	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Potassium (K)	2018/12/03		101	%	80 - 120
			Dissolved Selenium (Se)	2018/12/03		99	%	80 - 120
			Dissolved Silver (Ag)	2018/12/03		100	%	80 - 120
			Dissolved Sodium (Na)	2018/12/03		103	%	80 - 120
			Dissolved Strontium (Sr)	2018/12/03		101	%	80 - 120
			Dissolved Thallium (Tl)	2018/12/03		102	%	80 - 120
			Dissolved Tin (Sn)	2018/12/03		100	%	80 - 120
			Dissolved Titanium (Ti)	2018/12/03		100	%	80 - 120
			Dissolved Uranium (U)	2018/12/03		103	%	80 - 120
			Dissolved Vanadium (V)	2018/12/03		102	%	80 - 120
			Dissolved Zinc (Zn)	2018/12/03		101	%	80 - 120
5867499	AWL	Method Blank	Dissolved Aluminum (Al)	2018/12/03	<5.0		ug/L	
			Dissolved Antimony (Sb)	2018/12/03	<1.0		ug/L	
			Dissolved Arsenic (As)	2018/12/03	<1.0		ug/L	
			Dissolved Barium (Ba)	2018/12/03	<1.0		ug/L	
			Dissolved Beryllium (Be)	2018/12/03	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2018/12/03	<2.0		ug/L	
			Dissolved Boron (B)	2018/12/03	<50		ug/L	
			Dissolved Cadmium (Cd)	2018/12/03	<0.010		ug/L	
			Dissolved Calcium (Ca)	2018/12/03	<100		ug/L	
			Dissolved Chromium (Cr)	2018/12/03	<1.0		ug/L	
			Dissolved Cobalt (Co)	2018/12/03	<0.40		ug/L	
			Dissolved Copper (Cu)	2018/12/03	<2.0		ug/L	
			Dissolved Iron (Fe)	2018/12/03	<50		ug/L	
			Dissolved Lead (Pb)	2018/12/03	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2018/12/03	<100		ug/L	
			Dissolved Manganese (Mn)	2018/12/03	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2018/12/03	<2.0		ug/L	
			Dissolved Nickel (Ni)	2018/12/03	<2.0		ug/L	
			Dissolved Phosphorus (P)	2018/12/03	<100		ug/L	
			Dissolved Potassium (K)	2018/12/03	<100		ug/L	
			Dissolved Selenium (Se)	2018/12/03	<1.0		ug/L	
			Dissolved Silver (Ag)	2018/12/03	<0.10		ug/L	
			Dissolved Sodium (Na)	2018/12/03	<100		ug/L	
			Dissolved Strontium (Sr)	2018/12/03	<2.0		ug/L	
			Dissolved Thallium (Tl)	2018/12/03	<0.10		ug/L	
			Dissolved Tin (Sn)	2018/12/03	<2.0		ug/L	
			Dissolved Titanium (Ti)	2018/12/03	<2.0		ug/L	
			Dissolved Uranium (U)	2018/12/03	<0.10		ug/L	
			Dissolved Vanadium (V)	2018/12/03	<2.0		ug/L	
			Dissolved Zinc (Zn)	2018/12/03	<5.0		ug/L	
5867499	AWL	RPD	Dissolved Aluminum (Al)	2018/12/03	NC		%	20
			Dissolved Antimony (Sb)	2018/12/03	NC		%	20
			Dissolved Arsenic (As)	2018/12/03	NC		%	20
			Dissolved Barium (Ba)	2018/12/03	2.9		%	20
			Dissolved Beryllium (Be)	2018/12/03	NC		%	20
			Dissolved Bismuth (Bi)	2018/12/03	NC		%	20
			Dissolved Boron (B)	2018/12/03	NC		%	20
			Dissolved Cadmium (Cd)	2018/12/03	NC		%	20
			Dissolved Calcium (Ca)	2018/12/03	1.1		%	20
			Dissolved Chromium (Cr)	2018/12/03	NC		%	20
			Dissolved Cobalt (Co)	2018/12/03	NC		%	20
			Dissolved Copper (Cu)	2018/12/03	NC		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Iron (Fe)	2018/12/03	NC		%	20
			Dissolved Lead (Pb)	2018/12/03	NC		%	20
			Dissolved Magnesium (Mg)	2018/12/03	1.5		%	20
			Dissolved Manganese (Mn)	2018/12/03	NC		%	20
			Dissolved Molybdenum (Mo)	2018/12/03	NC		%	20
			Dissolved Nickel (Ni)	2018/12/03	NC		%	20
			Dissolved Phosphorus (P)	2018/12/03	NC		%	20
			Dissolved Potassium (K)	2018/12/03	2.2		%	20
			Dissolved Selenium (Se)	2018/12/03	NC		%	20
			Dissolved Silver (Ag)	2018/12/03	NC		%	20
			Dissolved Sodium (Na)	2018/12/03	1.0		%	20
			Dissolved Strontium (Sr)	2018/12/03	1.3		%	20
			Dissolved Thallium (Tl)	2018/12/03	NC		%	20
			Dissolved Tin (Sn)	2018/12/03	NC		%	20
			Dissolved Titanium (Ti)	2018/12/03	NC		%	20
			Dissolved Uranium (U)	2018/12/03	NC		%	20
			Dissolved Vanadium (V)	2018/12/03	NC		%	20
			Dissolved Zinc (Zn)	2018/12/03	NC		%	20
5867501	MGN	Matrix Spike	Isobutylbenzene - Extractable	2018/12/04		103	%	70 - 130
			n-Dotriacontane - Extractable	2018/12/04		116	%	70 - 130
			>C10-C16 Hydrocarbons	2018/12/04		124	%	70 - 130
			>C16-C21 Hydrocarbons	2018/12/04		94	%	70 - 130
			>C21-<C32 Hydrocarbons	2018/12/04		103	%	70 - 130
5867501	MGN	Spiked Blank	Isobutylbenzene - Extractable	2018/12/04		104	%	70 - 130
			n-Dotriacontane - Extractable	2018/12/04		113	%	70 - 130
			>C10-C16 Hydrocarbons	2018/12/04		116	%	70 - 130
			>C16-C21 Hydrocarbons	2018/12/04		87	%	70 - 130
			>C21-<C32 Hydrocarbons	2018/12/04		95	%	70 - 130
5867501	MGN	Method Blank	Isobutylbenzene - Extractable	2018/12/04		97	%	70 - 130
			n-Dotriacontane - Extractable	2018/12/04		101	%	70 - 130
			>C10-C16 Hydrocarbons	2018/12/04	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2018/12/04	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2018/12/04	<0.10		mg/L	
5867501	MGN	RPD	>C10-C16 Hydrocarbons	2018/12/04	NC		%	40
			>C16-C21 Hydrocarbons	2018/12/04	NC		%	40
			>C21-<C32 Hydrocarbons	2018/12/04	NC		%	40
5867524	KKE	Matrix Spike [IKE749-03]	D10-Anthracene	2018/12/03		107	%	50 - 130
			D14-Terphenyl	2018/12/03		105	%	50 - 130
			D8-Acenaphthylene	2018/12/03		92	%	50 - 130
			1-Methylnaphthalene	2018/12/03		NC	%	50 - 130
			2-Methylnaphthalene	2018/12/03		NC	%	50 - 130
			Acenaphthene	2018/12/03		NC	%	50 - 130
			Acenaphthylene	2018/12/03		NC	%	50 - 130
			Anthracene	2018/12/03		NC	%	50 - 130
			Benzo(a)anthracene	2018/12/03		181 (1)	%	50 - 130
			Benzo(a)pyrene	2018/12/03		140 (1)	%	50 - 130
			Benzo(b)fluoranthene	2018/12/03		134 (1)	%	50 - 130
			Benzo(g,h,i)perylene	2018/12/03		134 (1)	%	50 - 130
			Benzo(j)fluoranthene	2018/12/03		118	%	50 - 130
			Benzo(k)fluoranthene	2018/12/03		124	%	50 - 130
			Chrysene	2018/12/03		180 (1)	%	50 - 130
			Dibenz(a,h)anthracene	2018/12/03		114	%	50 - 130
			Fluoranthene	2018/12/03		NC	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Fluorene	2018/12/03		NC	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/12/03		134 (1)	%	50 - 130
			Naphthalene	2018/12/03		NC	%	50 - 130
			Perylene	2018/12/03		110	%	50 - 130
			Phenanthrene	2018/12/03		NC	%	50 - 130
			Pyrene	2018/12/03		NC	%	50 - 130
5867524	KKE	Spiked Blank	D10-Anthracene	2018/12/03		112	%	50 - 130
			D14-Terphenyl	2018/12/03		101	%	50 - 130
			D8-Acenaphthylene	2018/12/03		99	%	50 - 130
			1-Methylnaphthalene	2018/12/03		85	%	50 - 130
			2-Methylnaphthalene	2018/12/03		84	%	50 - 130
			Acenaphthene	2018/12/03		101	%	50 - 130
			Acenaphthylene	2018/12/03		121	%	50 - 130
			Anthracene	2018/12/03		101	%	50 - 130
			Benzo(a)anthracene	2018/12/03		109	%	50 - 130
			Benzo(a)pyrene	2018/12/03		106	%	50 - 130
			Benzo(b)fluoranthene	2018/12/03		114	%	50 - 130
			Benzo(g,h,i)perylene	2018/12/03		140 (2)	%	50 - 130
			Benzo(j)fluoranthene	2018/12/03		107	%	50 - 130
			Benzo(k)fluoranthene	2018/12/03		124	%	50 - 130
			Chrysene	2018/12/03		115	%	50 - 130
			Dibenz(a,h)anthracene	2018/12/03		108	%	50 - 130
			Fluoranthene	2018/12/03		107	%	50 - 130
			Fluorene	2018/12/03		102	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2018/12/03		120	%	50 - 130
			Naphthalene	2018/12/03		78	%	50 - 130
			Perylene	2018/12/03		112	%	50 - 130
			Phenanthrene	2018/12/03		104	%	50 - 130
			Pyrene	2018/12/03		105	%	50 - 130
5867524	KKE	Method Blank	D10-Anthracene	2018/12/03		107	%	50 - 130
			D14-Terphenyl	2018/12/03		116	%	50 - 130
			D8-Acenaphthylene	2018/12/03		102	%	50 - 130
			1-Methylnaphthalene	2018/12/03	<0.050		ug/L	
			2-Methylnaphthalene	2018/12/03	<0.050		ug/L	
			Acenaphthene	2018/12/03	<0.010		ug/L	
			Acenaphthylene	2018/12/03	<0.010		ug/L	
			Anthracene	2018/12/03	<0.010		ug/L	
			Benzo(a)anthracene	2018/12/03	<0.010		ug/L	
			Benzo(a)pyrene	2018/12/03	<0.010		ug/L	
			Benzo(b)fluoranthene	2018/12/03	<0.010		ug/L	
			Benzo(g,h,i)perylene	2018/12/03	<0.010		ug/L	
			Benzo(j)fluoranthene	2018/12/03	<0.010		ug/L	
			Benzo(k)fluoranthene	2018/12/03	<0.010		ug/L	
			Chrysene	2018/12/03	<0.010		ug/L	
			Dibenz(a,h)anthracene	2018/12/03	<0.010		ug/L	
			Fluoranthene	2018/12/03	<0.010		ug/L	
			Fluorene	2018/12/03	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2018/12/03	<0.010		ug/L	
			Naphthalene	2018/12/03	<0.20		ug/L	
			Perylene	2018/12/03	<0.010		ug/L	
			Phenanthrene	2018/12/03	<0.010		ug/L	
			Pyrene	2018/12/03	<0.010		ug/L	
5867524	KKE	RPD [IKE748-03]	1-Methylnaphthalene	2018/12/03	40 (3)		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			2-Methylnaphthalene	2018/12/03	51 (3)		%	40
			Acenaphthene	2018/12/03	60 (3)		%	40
			Acenaphthylene	2018/12/03	65 (3)		%	40
			Anthracene	2018/12/03	88 (3)		%	40
			Benzo(a)anthracene	2018/12/03	82 (3)		%	40
			Benzo(a)pyrene	2018/12/03	103 (3)		%	40
			Benzo(b)fluoranthene	2018/12/03	108 (3)		%	40
			Benzo(g,h,i)perylene	2018/12/03	NC		%	40
			Benzo(j)fluoranthene	2018/12/03	NC		%	40
			Benzo(k)fluoranthene	2018/12/03	15		%	40
			Chrysene	2018/12/03	77 (3)		%	40
			Dibenz(a,h)anthracene	2018/12/03	NC		%	40
			Fluoranthene	2018/12/03	89 (3)		%	40
			Fluorene	2018/12/03	71 (3)		%	40
			Indeno(1,2,3-cd)pyrene	2018/12/03	NC (4)		%	40
			Naphthalene	2018/12/03	44 (3)		%	40
			Perylene	2018/12/03	NC		%	40
			Phenanthrene	2018/12/03	82 (3)		%	40
			Pyrene	2018/12/03	82 (3)		%	40
5867793	MGN	Matrix Spike [IKE755-01]	Isobutylbenzene - Extractable	2018/12/04		117	%	70 - 130
			n-Dotriacontane - Extractable	2018/12/04		118	%	70 - 130
			>C10-C16 Hydrocarbons	2018/12/04		109	%	70 - 130
			>C16-C21 Hydrocarbons	2018/12/04		96	%	70 - 130
			>C21-<C32 Hydrocarbons	2018/12/04		112	%	70 - 130
5867793	MGN	Spiked Blank	Isobutylbenzene - Extractable	2018/12/04		107	%	70 - 130
			n-Dotriacontane - Extractable	2018/12/04		119	%	70 - 130
			>C10-C16 Hydrocarbons	2018/12/04		104	%	70 - 130
			>C16-C21 Hydrocarbons	2018/12/04		93	%	70 - 130
			>C21-<C32 Hydrocarbons	2018/12/04		112	%	70 - 130
5867793	MGN	Method Blank	Isobutylbenzene - Extractable	2018/12/04		108	%	70 - 130
			n-Dotriacontane - Extractable	2018/12/04		116	%	70 - 130
			>C10-C16 Hydrocarbons	2018/12/04	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2018/12/04	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2018/12/04	<0.10		mg/L	
5867793	MGN	RPD [IKE754-01]	>C10-C16 Hydrocarbons	2018/12/04	NC		%	40
			>C16-C21 Hydrocarbons	2018/12/04	NC		%	40
			>C21-<C32 Hydrocarbons	2018/12/04	NC		%	40
5871925	THL	Matrix Spike [IKE751-02]	Isobutylbenzene - Volatile	2018/12/06		103	%	70 - 130
			Benzene	2018/12/06		112	%	70 - 130
			Toluene	2018/12/06		112	%	70 - 130
			Ethylbenzene	2018/12/06		115	%	70 - 130
			Total Xylenes	2018/12/06		114	%	70 - 130
5871925	THL	Spiked Blank	Isobutylbenzene - Volatile	2018/12/06		105	%	70 - 130
			Benzene	2018/12/06		114	%	70 - 130
			Toluene	2018/12/06		114	%	70 - 130
			Ethylbenzene	2018/12/06		116	%	70 - 130
			Total Xylenes	2018/12/06		114	%	70 - 130
5871925	THL	Method Blank	Isobutylbenzene - Volatile	2018/12/06		101	%	70 - 130
			Benzene	2018/12/06	<0.0010		mg/L	
			Toluene	2018/12/06	<0.0010		mg/L	
			Ethylbenzene	2018/12/06	<0.0010		mg/L	
			Total Xylenes	2018/12/06	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2018/12/06	<0.010		mg/L	

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Maxxam Job #: B8V7250
Report Date: 2018/12/07

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: HARBOURSIDE COMMERCIAL PARK

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5871925	THL	RPD [IKE750-02]	Benzene	2018/12/06	NC		%	40
			Toluene	2018/12/06	NC		%	40
			Ethylbenzene	2018/12/06	NC		%	40
			Total Xylenes	2018/12/06	NC		%	40
			C6 - C10 (less BTEX)	2018/12/06	NC		%	40
5873795	JHY	Matrix Spike [IKE753-02]	Isobutylbenzene - Volatile	2018/12/06		101	%	70 - 130
			Benzene	2018/12/06		NC	%	70 - 130
			Toluene	2018/12/06		119	%	70 - 130
			Ethylbenzene	2018/12/06		119	%	70 - 130
			Total Xylenes	2018/12/06		119	%	70 - 130
5873795	JHY	Spiked Blank	Isobutylbenzene - Volatile	2018/12/06		103	%	70 - 130
			Benzene	2018/12/06		114	%	70 - 130
			Toluene	2018/12/06		114	%	70 - 130
			Ethylbenzene	2018/12/06		116	%	70 - 130
			Total Xylenes	2018/12/06		115	%	70 - 130
5873795	JHY	Method Blank	Isobutylbenzene - Volatile	2018/12/06		104	%	70 - 130
			Benzene	2018/12/06	<0.0010		mg/L	
			Toluene	2018/12/06	<0.0010		mg/L	
			Ethylbenzene	2018/12/06	<0.0010		mg/L	
			Total Xylenes	2018/12/06	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2018/12/06	<0.010		mg/L	
5873795	JHY	RPD [IKE752-02]	Benzene	2018/12/06	NC		%	40
			Toluene	2018/12/06	NC		%	40
			Ethylbenzene	2018/12/06	NC		%	40
			Total Xylenes	2018/12/06	NC		%	40
			C6 - C10 (less BTEX)	2018/12/06	NC		%	40

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike: results are outside acceptance limit. Insufficient sample for repeat analysis.

(2) Spike: < 10 % of compounds in multi-component analysis in violation.

(3) Duplicate: results are outside acceptance limit. Insufficient sample for repeat analysis.

(4) Elevated PAH RDL(s) due to matrix / co-extractive interference.

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Site Location: HARBOURSIDE COMMERCIAL PARK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Eric Dearman, Scientific Specialist

Rosemarie MacDonald, Scientific Specialist (Organics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Appendix D

Mann-Kendall Tables

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney HCP
Nova Scotia Lands Incorporated
14-1360 - 2018 LTMM GROUNDWATER MONITORING EVENT

MANN-KENDALL ANALYSIS OF PLUME **MONITORING WELL NO: SCU10-004-MW**

	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.0017	0.0024	0.013	0.038	0.004	1.1	0.018	0.0056	0.0023		
	19-Nov-08	10-Nov-10	31-Oct-11	13-Nov-12	2-Dec-13	11-Dec-15	18-Nov-16	4-Dec-17	27-Nov-18		
Row 1: Compare to Event 1:		1	1	1	1	1	1	1	1	0	8
Row 2: Compare to Event 2:			1	1	1	1	1	1	-1	0	5
Row 3: Compare to Event 3:				1	-1	1	1	-1	-1	0	0
Row 4: Compare to Event 4:					-1	1	-1	-1	-1	0	-3
Row 5: Compare to Event 5:						1	1	1	-1	0	2
Row 6: Compare to Event 6:							-1	-1	-1	0	-3
Row 7: Compare to Event 7:								-1	-1	0	-2
Row 8: Compare to Event 8:									-1	0	-1
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.01 mg/L

Mann-Kendall (S) Statistic = **6**

Confidence Level Chart

S Value	Total No. of Sampling Events						
	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6						X	
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
± 28							
± 29							
± 30							
± 31							
± 32							
± 33							
± 34							
± 35							
± 36							
± 37							
± 38							
± 39							
± 40							
± 41							
± 42							
± 43							
± 44							
± 45							

Unshaded area indicates generally stable trend (if CV<1)

Shaded area indicates
Expanding trend if S>0
Declining trend if S<0

Stability Evaulation Results

X	No Trend Indicated, Plume Not Dimishing or Expanding (Plume is Stable if CV<1)
	Trend Is Present (≥90% Confidence)
	S < 0 Diminishing Plume
	S > 0 Expanding Plume

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney HCP
Nova Scotia Lands Incorporated
14-1360 - 2018 LTMM GROUNDWATER MONITORING EVENT

MANN-KENDALL ANALYSIS OF PLUME **MONITORING WELL NO: SCU10-004-MW**

	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Indeno(1,2,3-cd)pyrene	0.00001	0.00009	0.00074	0.00075	0.000072	0.067	0.0005	0.00012	0.000099		
	19-Nov-08	10-Nov-10	31-Oct-11	2012-23-11	2-Dec-13	11-Dec-15	18-Nov-16	4-Dec-17	27-Nov-18		
Row 1: Compare to Event 1:		1	1	1	1	1	1	1	1	0	8
Row 2: Compare to Event 2:			1	1	-1	1	1	1	1	0	5
Row 3: Compare to Event 3:				1	-1	1	-1	-1	-1	0	-2
Row 4: Compare to Event 4:					-1	1	-1	-1	-1	0	-3
Row 5: Compare to Event 5:						1	1	1	1	0	4
Row 6: Compare to Event 6:							-1	-1	-1	0	-3
Row 7: Compare to Event 7:								-1	-1	0	-2
Row 8: Compare to Event 8:									-1	0	-1
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.01 mg/L

Mann-Kendall (S) Statistic = **6**

Confidence Level Chart

S Value	Total No. of Sampling Events						
	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6						X	
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
± 28							
± 29							
± 30							
± 31							
± 32							
± 33							
± 34							
± 35							
± 36							
± 37							
± 38							
± 39							
± 40							
± 41							
± 42							
± 43							
± 44							
± 45							

Unshaded area indicates generally stable trend (if CV<1)

Shaded area indicates
Expanding trend if S>0
Declining trend if S<0

Stability Evaulation Results

X	No Trend Indicated, Plume Not Dimishing or Expanding (Plume is Stable if CV<1)
	Trend Is Present (≥90% Confidence)
	S < 0 Diminishing Plume
	S > 0 Expanding Plume

References

- Nova Scotia Environment Tier I Environmental Quality Standards for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013.
- Ontario Ministry of Environment, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011.
- Harbourside Commercial Park, Sydney, NS, 2013 Groundwater Monitoring Program, SLR Consulting (Canada) Ltd., dated November 2014.
- Long Term Maintenance and Monitoring 2014 Groundwater Monitoring Event Harbourside Commercial Park Final Report, Dillon Consulting Limited, dated March 2015.
- Long Term Maintenance and Monitoring 2015 Groundwater Monitoring Event Harbourside Commercial Park Final Report, Dillon Consulting Limited, dated June 2016.
- Long Term Maintenance and Monitoring 2016 Groundwater Monitoring Event Harbourside Commercial Park Final Report, Dillon Consulting Limited, dated May 2017.
- Long Term Maintenance and Monitoring 2018 Groundwater Monitoring Event Harbourside Commercial Park Final Report, Dillon Consulting Limited, dated March 2018.