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Long Term Maintenance and Monitoring 2017 Groundwater Monitoring Event

Open Hearth Park and Harbourside East – Draft Report

March 2018 14-1360-1500

March 29, 2018

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ATTENTION: Mr. Frank Potter
Executive Director

Long Term Maintenance and Monitoring 2017 Groundwater Monitoring Event Open Hearth Park and Harbourside East (Draft) 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.

Sincerely,

DILLON CONSULTING LIMITED

N. J. Wambolt

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

NJW:kme

Enclosure

Our file: 14-1360-1500

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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 Open Hearth Park (OHP) and Harbourside East (HE). NS Lands retained Dillon Consulting Limited (Dillon) to conduct the LTMM program, which consists of an annual groundwater sampling program. The LTMM event completed in 2017 included measurement of hydraulic head levels and sample collection from monitor wells around the shorelines of OHP (i.e., North and South Ponds) and across HE (i.e., the former Coke Ovens 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 polycyclic aromatic hydrocarbons (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 applied.

Groundwater quality trend analysis was performed for select monitor wells within the OHP and HE areas via Mann-Kendall analysis, and included PAH indicator parameters (i.e., anthracene, benzo(a)pyrene, chrysene, indeno(1,2,3-cd) pyrene and naphthalene) and additional indicator general chemistry and metal parameters (i.e., sulfate, pH, TDS and selenium). Concentrations of indicator parameters in groundwater samples collected were compared to available post-remediation data. The purpose of the comparison of groundwater data collected during the LTMM monitoring event with post-remediation monitoring events is to identify changes (if any) in groundwater over time. In most instances, the concentrations were comparable to the post-remediation data. Trend analysis completed on the above noted select parameters at select monitor well locations indicates that most concentration trends are stable or decreasing.

For OHP, concentrations of analyzed parameters at the majority of the sampling wells were below the applicable standards. Analytical results indicate no exceedances of the Tier I EQSs. One monitor well, MCES-001-MWB, located on the eastern shoreline, contained an elevated concentration of sodium above the MOE standard. Although the concentration of sodium in MCES-001-MWB is above the MOE standard of 2,300,000 ug/L, this standard was not intended for use in a marine (saltwater) environment. The concentration of sodium is natural, as marine waters have sodium concentrations of 10,000,000 ug/L or higher. Sodium was not identified as a contaminant of concern associated with the site.

For HE, concentrations of analyzed parameters at the majority of the sampling wells were below applicable standards. The anthracene concentration in one monitor well, CODT-201-MWC, located in the former Domtar site, exceeded the MOE standard. Monitor well CODT-201-MWA, located at the former Domtar site, had multiple PAH concentrations above the respective MOE standard concentrations.

Approximately 0.20 millimeters (mm) of dense non-aqueous phase liquid (DNAPL) was measured in monitor well CODT-103-MWB (located on the northwest portion of HE in the former Domtar site), which was added to the LTMM program in 2015 for water level/product check only.

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

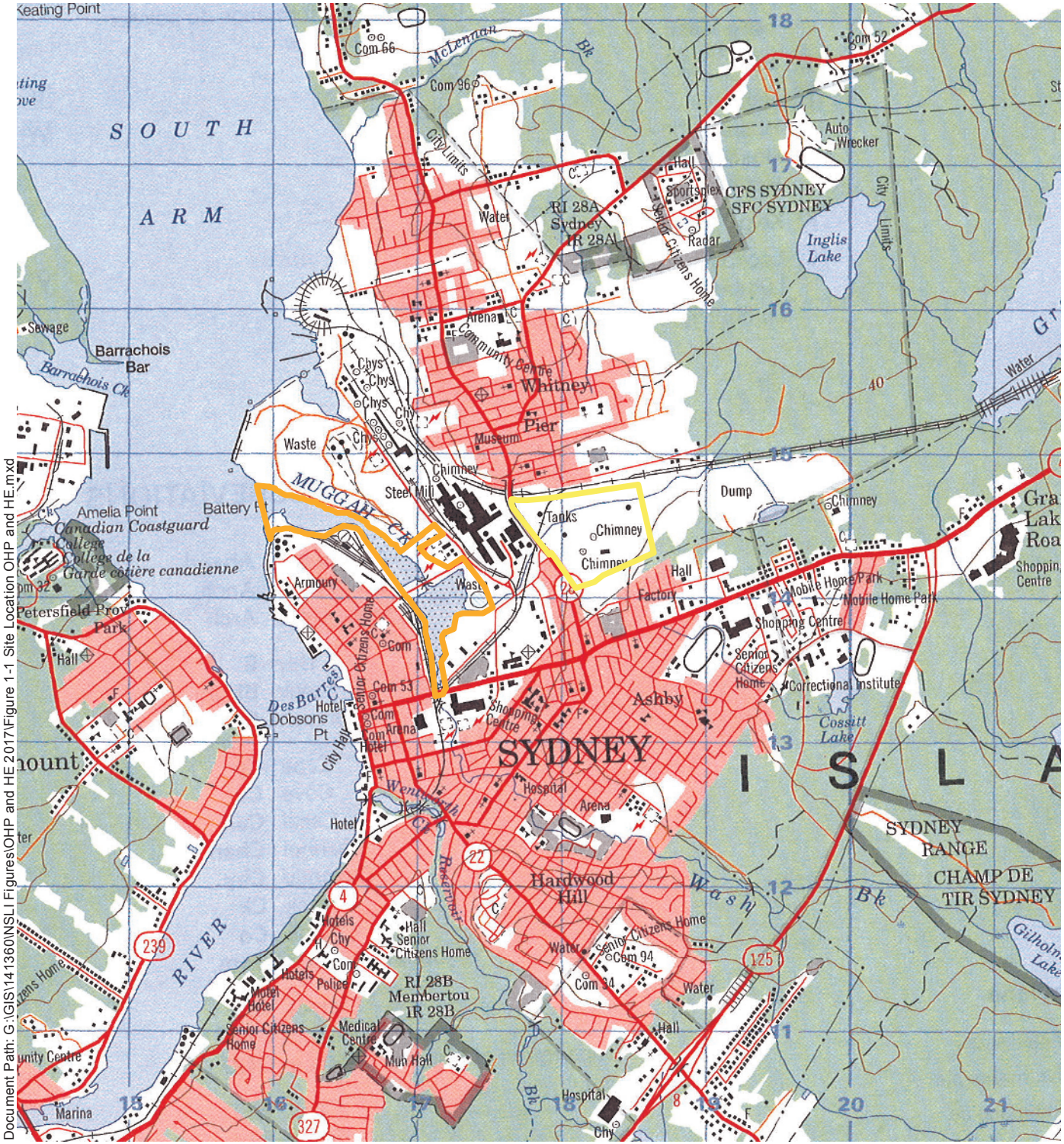
The footprint of the Sydney Tar Ponds and former Coke Ovens Site encompassed approximately 100 hectares of property within the Muggah Creek Watershed in the Cape Breton Regional Municipality of Nova Scotia. Extensive testing identified widespread contamination of soil, groundwater, surface water and sediments due to historical long term industrial use of the property. The remediation project, managed by the Sydney Tar Ponds Agency (STPA), was a complex undertaking, consisting of many design and construction elements completed over several years. An Environmental Effects Monitoring (EEM) and Surface Water Compliance Monitoring Program was established as part of the remediation program to assess performance of construction/remedial measures.

Long term maintenance and monitoring (LTMM) was one of the major components of the proposed remedial strategy designed to be carried out following the completion of the primary remediation project (2009-2014). Nova Scotia Lands (NS Lands) is a Crown Corporation of the Province of Nova Scotia with the responsibility for former lands involved in the Tar Ponds and Coke Ovens cleanup, now known as Open Hearth Park (OHP) and Harbourside East (HE) (Figure 1-1 and Figure 1-2). As such, NS Lands is responsible for the LTMM, which has been implemented at OHP and HE.

This document details the groundwater monitoring completed at OHP and HE in 2017. Section 1.0 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 presented 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 OHP and HE consists of an annual groundwater sampling program. The LTMM event included measurement of hydraulic head levels and sample collection from specific monitor wells around the shorelines of OHP (i.e., North and South Ponds) and at HE (i.e., the former Coke Ovens Site). In accordance with the request for proposal (RFP) NSLAND57 Groundwater Monitoring Services, the LTMM Groundwater Monitoring Events were scheduled to include 67 water level measurements and the collection of 44 groundwater samples for select analysis. However, based on the findings of the 2014 LTMM program, Dillon recommended the exclusion of one monitor well, MW-2 (Spar Road), from the program due to its location (i.e., up gradient) and consistent/stable concentrations over the previous two years of monitoring from 2012 to 2014. Following approval from Nova Scotia Environment (NSE) and NS Lands, this monitor well was removed from the program in 2015. Additionally, during the 2015 groundwater monitoring program, MCWS-009-MW was found to be damaged beyond repair and was subsequently decommissioned. Prior to commencing the 2016 groundwater monitoring program, monitor well MSES-003-MW was found to be destroyed. Further, during the 2017 monitoring program, monitor well MCES-204-MW was found to be destroyed; thereby decreasing the sampling program to 40 monitor wells.



Document Path: G:\GIS\141360\NSLI Figures\OHP and HE 2017\Figure 1-1 Site Location OHP and HE.mxd

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OPEN HEARTH PARK AND
HARBOURSIDE EAST
2017 GROUNDWATER MONITORING EVENT

SITE LOCATION
Figure 1-1

Harbourside East
Open Hearth Park

0 250 500 1,000 1,500 m

SCALE 1:68202

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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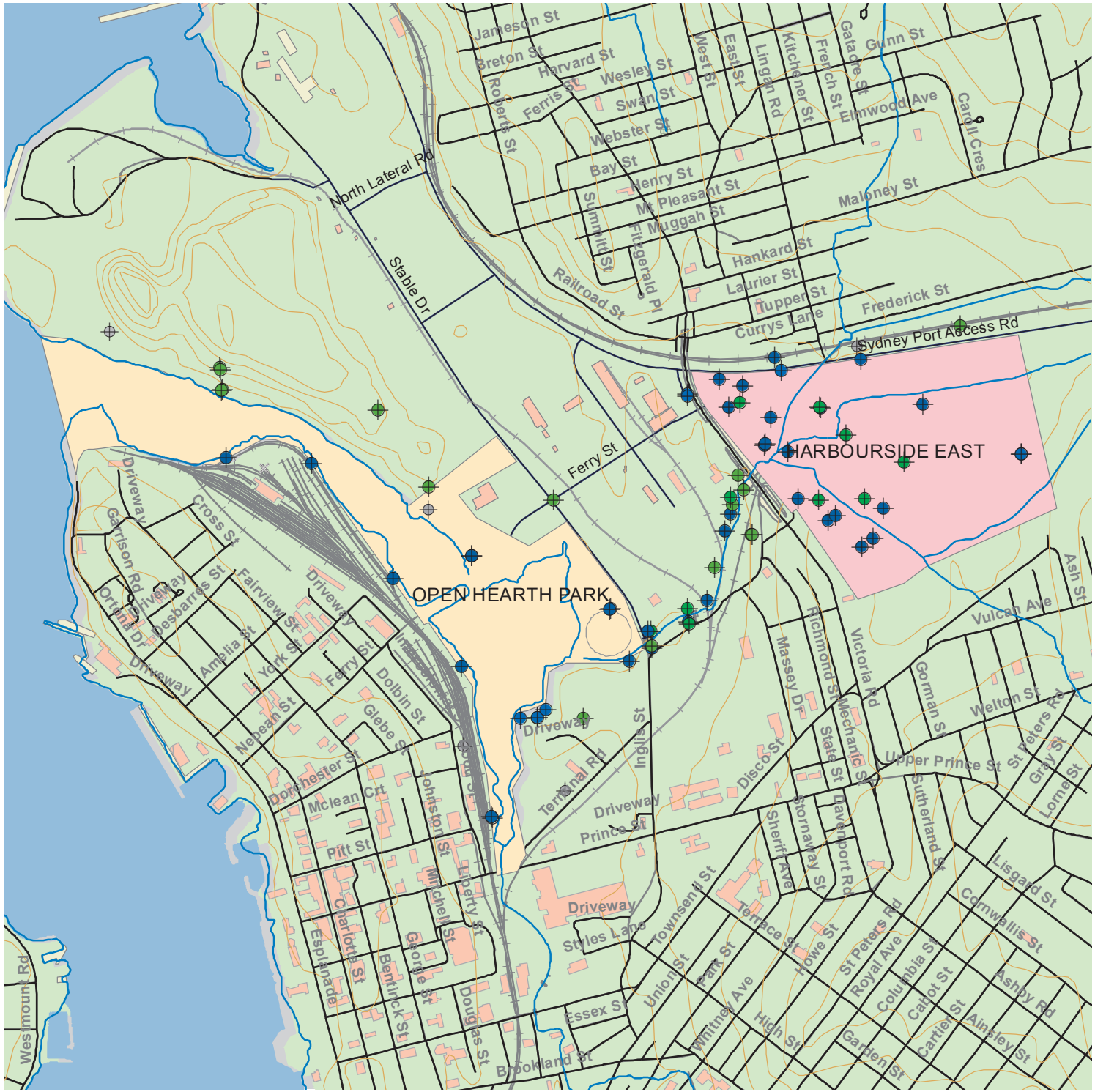

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OPEN HEARTH PARK AND
HARBOURSIDE EAST

2017 GROUNDWATER MONITORING EVENT

STUDY AREAS

FIGURE 1-2

LEGEND

Monitoring Wells

- Active Water Level Only
- Active Sample and Water Level
- Removed From Program, Destroyed and/or Decommissioned

0 50 100 200 300 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

MAP CREATED BY: SCM
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Document Path: G:\GIS\141360\NSLI Figures\OHP and HE 2017\Figure 1-2 Study Areas OHP and HE.mxd

As no monitor wells on the HE site initially included in the LTMM program were installed in shallow or deep bedrock, no groundwater contours were available for bedrock in this area during the 2014 LTMM program. Therefore, water level measurements at five monitor wells installed within bedrock (i.e., COBP-001-MWC, COCB-001-MW, COBP-004-MWC, NOCO-014-MWB and COBT-001-MWB) on the HE site were added to the LTMM in 2015 to allow for inclusion of bedrock groundwater contours for this area. A water level measurement could not be obtained from SCU26-209-MW, which could not be located during the 2014 program and is assumed to be destroyed. During the 2016 program, SCU24-007-MWB could not be located. Therefore, the number of water level measurements included in the 2016 LTMM program was 66 (i.e., 40 sampling and 26 water level wells).

As concentrations of petroleum hydrocarbons (PHC) have remained below laboratory detection limits or at concentrations below applicable criteria for the majority of the sampling wells, following approval from NSE and NS Lands, the 2015 LTMM program was reduced to include sampling for PHC at one monitor well location only (i.e., CODT-201-MWC located on the northwest portion of HE at the former Domtar site). Each of the 40 monitor wells scheduled for sampling were analyzed for polycyclic aromatic hydrocarbons (PAHs), metals. and general inorganic chemistry parameters.

2.0 Project Methodologies

Methodologies are provided in the following sub-sections:

- Section 2.1 Health and Safety Processes
- Section 2.2 Quality Control 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. Site specific information, such as, local emergency contact information and hospital routes are included in the plan, 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 at the site (i.e., OHP and HE).

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

As summarized in Table B-1 (Appendix B), four field duplicates and two field blanks were collected during the 2017 monitoring event.

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

Groundwater characteristics within the boundaries of the Muggah Creek Watershed were previously assessed through the installation and testing of a significant number of monitor wells as part of the Phase II and III Environmental Site Assessments (ESAs) (JDAC, 2001 and 2002). The wells were terminated within fill (F), native till (T), and shallow, intermediate and deeper bedrock units (SRx, IRx and DRx respectively). Analytical data collected in conjunction with the ESAs, as well as in subsequent sampling events, confirmed widespread impacts, particularly PAHs, metals, and inorganic parameters, resulting from long term industrial use of the land. The JDAC data also suggested that the more

permeable fractured shallow bedrock (SRx) unit represented the primary pathway for contaminant migration. The sampling wells included in the LTMM plan are specifically located in different areas across the sites in an attempt to monitor and assess the performance of remediation.

The field component of the 2017 groundwater monitoring event was consistent with pre-construction/baseline and quarterly construction monitoring events and 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 66 (i.e., 40 sampling and 26 water level wells) during the 2017 groundwater monitoring event.

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 Well Purging

Using the proactive 12V submersible pumps installed as part of the EEM program for the Sydney Tar Ponds (STP) remediation project, water was purged from each well scheduled for sample collection until select field parameters stabilized, including water level. The rate of flow (0.1 to 0.4 liters/minute) at each well was controlled by an in-line valve. In instances where the dedicated submersible pumps were no longer working, a peristaltic pump was used. 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-22 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 (L) of water was removed. Similar to the EEM program, stabilization of turbidity provided some challenges for a number of wells. In these cases, additional parameters, including dissolved oxygen (DO) and oxidation reduction potential (ORP), were referenced to confirm stabilized conditions.

2.3.3 Sample Collection

As detailed in Section 1.1, the 2017 groundwater monitoring program included the sampling of 40 monitor wells. Consistent previous LTMM monitoring events, monitor well COTS-001-MWA (located on the HE site) could not be sampled due to insufficient groundwater. Therefore, as per direction from NS Lands (in 2015), monitor well COTS-001-MWB was sampled in place of COTS-001-MWA.

2.3.4 Groundwater Analysis

Pursuant to RFP NSLAND57 Groundwater Monitoring Services, groundwater samples were analyzed for PHCs (i.e., CODT-201-MWC only), PAHs, metals, and general chemistry parameters, as listed 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 the Canadian Association for Laboratory Accreditation (CALA) certified laboratory Maxxam in Sydney, Nova Scotia for analysis.

Table 2-1 Water Quality Analytical Suite of Parameters

PHC[1]	PAHs	General Chemistry	Metals (dissolved)
Benzene	Acenaphthene	Anion/Cation sums	Aluminum
Toluene	Acenaphthylene	Ion Balance (% Difference)	Antimony
Ethylbenzene	Anthracene	Langelier Index @ 4&20 C	Arsenic
Total Xylenes	Benzo(a)anthracene	Saturation pH @ 4&20 C	Barium
C6-C10 (Less BTEX)	Benzo(a)pyrene	Alkalinity (total as $CaCo_3$)	Beryllium
>C10-C16 Hydrocarbons	Benzo(b)fluoranthene	Sodium	Bismuth
>C16-C21 Hydrocarbons	Benzo(j)fluoranthene	Potassium	Boron
>C21-<C32 Hydrocarbons	Benzo(k)fluoranthene	Calcium	Cadmium
Modified TPH (Tier I)	Benzo(g,h,i)perylene	Magnesium	Chromium
	Chrysene	Chloride	Cobalt
	Dibenz(a,h)anthracene	TDS	Copper
	Fluoranthene	Colour	Iron
	Fluorene	Nitrate	Lead
	Indeno(1,2,3-cd)pyrene	Nitrite	Manganese
	Naphthalene	Nitrate + Nitrite	Mercury (Total)
	Perylene	Nitrogen (Ammonic N)	Molybdenum
	Phenanthrene	Total Organic Carbon	Nickel
	Pyrene	Orthophosphate	Phosphorus
	1-methylnaphthalene	pH	Selenium
	2-methylnaphthalene	Silica	Silver
		Sulphate	Strontium Thallium
		Turbidity	Tin
		Conductivity	Titanium Uranium
			Vanadium
			Zinc

Note:
1. Since 2015 only CODT-2015-MWC was sampled for PHC.

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 2017 monitoring event also include available post-remediation data. Based on historical data, the following parameters, with concentrations generally consistently above applicable standards were selected as indicator parameters for OHP and HE:

- PAHs: anthracene, benzo(a)pyrene, chrysene, indeno(1,2,3-cd) pyrene, and naphthalene.

Additional general chemistry and metal parameters were also selected for Mann-Kendall analysis at three monitor wells, which are located in the vicinity of the solidification/stabilization (S/S) area in consideration of monitoring the S/S performance over the long term period:

- General chemistry and metals: selenium, sulfate, pH and TDS.

Trend analysis was not completed for PHCs, as only monitor well CODT-201-MWC is sampled for PHCs and detected concentrations have been below the Tier I EQSs.

2.4.1 Regulatory Framework

The remedial criteria used for this assessment were the July 2013 Nova Scotia Contaminated Sites Regulations (NS CSR) Tier I Environmental Quality Standards (EQS) for groundwater. The subject property is classified as having commercial receptors, non-potable groundwater usage, and coarse-grained soil. Where Tier I EQS were not available (e.g., for 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 applied.

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 (stable, decreasing, or increasing).

Based on a review of the analytical results from the LTMM and available post-remediation data, parameters with concentrations consistently above applicable standards were selected for Mann-Kendall analysis. These include PAH indicator parameters anthracene, benzo(a)pyrene, chrysene, indeno(1,2,3-cd)pyrene and naphthalene. Additional indicator general chemistry and metal parameters (i.e., selenium, sulfate, pH and TDS) were also selected for Mann-Kendall analysis at three monitor wells, which are located in the vicinity of the S/S area in consideration of monitoring the S/S performance over

the long term period. Up to four rounds (if available) of post-remediation groundwater analytical data were applied for performing the trend analysis for the indicator parameters.

In certain situations, Mann-Kendall analysis results may be biased due to elevated laboratory detection limits. Non-detected data on the Mann-Kendall analysis of indicator parameters was identified and confirmed the influence of non-detected data is minimal.

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 OHP Findings
- Section 3.4 HE Findings
- Section 3.5 QC Summary

3.1 Weather Conditions and General Observations

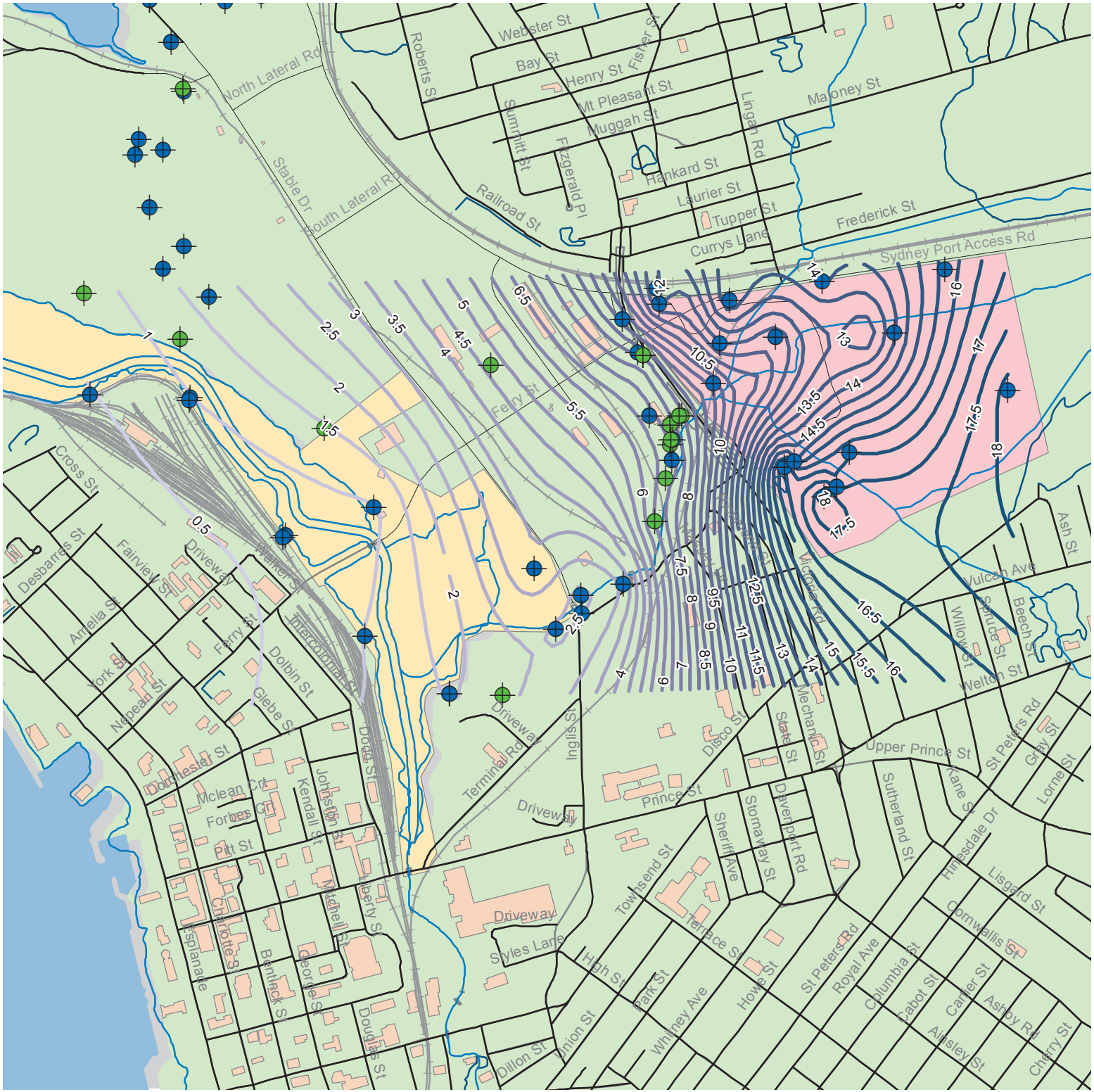
The current meteorological station (i.e., Sydney A, Climate ID: 8205700/8205701) is an official in-situ station established by Environment Canada since 1941. Historical precipitation recordings for the Sydney area can be traced back as far as 1870. Comparison of the recordings at the Sydney A station indicates that precipitation of approximately 1468.6 millimeters (mm) was recorded for 2017, which is less than the normal value of yearly precipitation (i.e., as recorded between 1981 and 2010) of 1517 mm (http://climate.weather.gc.ca). The monthly precipitation recorded for November 2016 was 95.1 mm and for December was 157.3 mm.

3.2 Groundwater Flow and Hydraulic Head Levels

A survey of the EEM program monitor well elevations across the OHP and HE sites was conducted in December 2011 and May 2014. The hydraulic head for the monitor wells at the OHP and HE sites are provided based on the new survey.

The hydraulic head data obtained from the monitoring areas during the 2017 monitoring event were employed to plot the equipotential groundwater contours. The groundwater contours were identified for different media within the unconsolidated till and/or fill unit (Figure 3-1), the upper fractured shallow bedrock (Figure 3-2), and the intermediate/deep bedrock (Figure 3-3).

Review of the available equipotential contour plots for the three media units (i.e., the fill/till, shallow bedrock and intermediate/deep bedrock) indicates that the groundwater flow direction in each of the units is generally consistent between the 2017 event and that observed during the previous LTMM



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Equipotential Groundwater Contours Fill TIII
FIGURE 3-1

LEGEND

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

Open Hearth Park

Harbourside East

Active Water Level Only

Active Sample and Water Level

0 50 100 200 300 m

N
W E
S

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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

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

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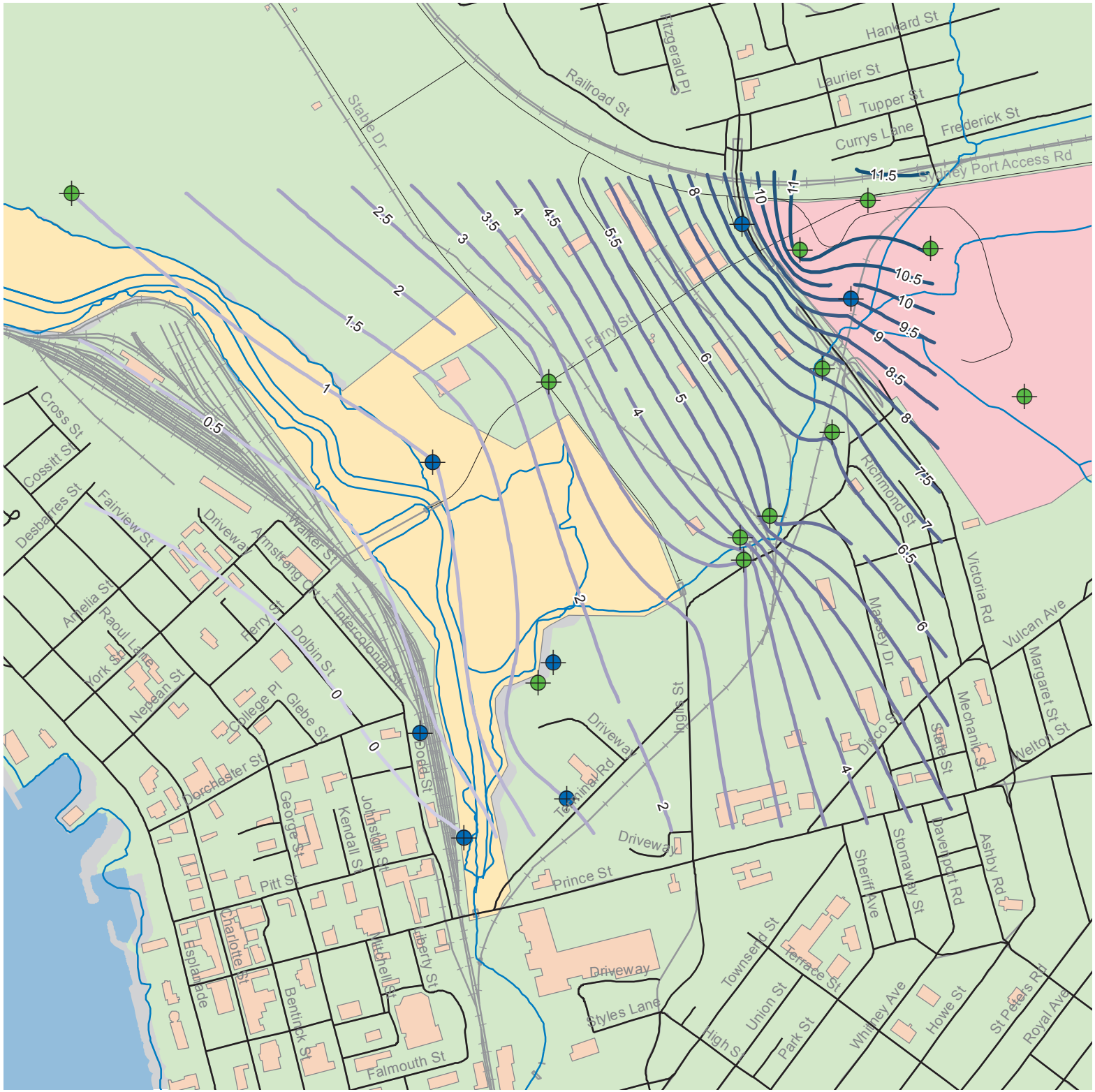
PROJECT: 14-1360
STATUS: FINAL
Date: 03/29/18



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2017 GROUNDWATER MONITORING EVENT

Equipotential Groundwater Contours Bedrock Aquifer
FIGURE 3-2

LEGEND

Equipotential Groundwater Contours

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

Harbourside East

Open Hearth Park

Active Water Level Only

Active Sample and Water Level

0 50 100 200 300 m

N W E S

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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

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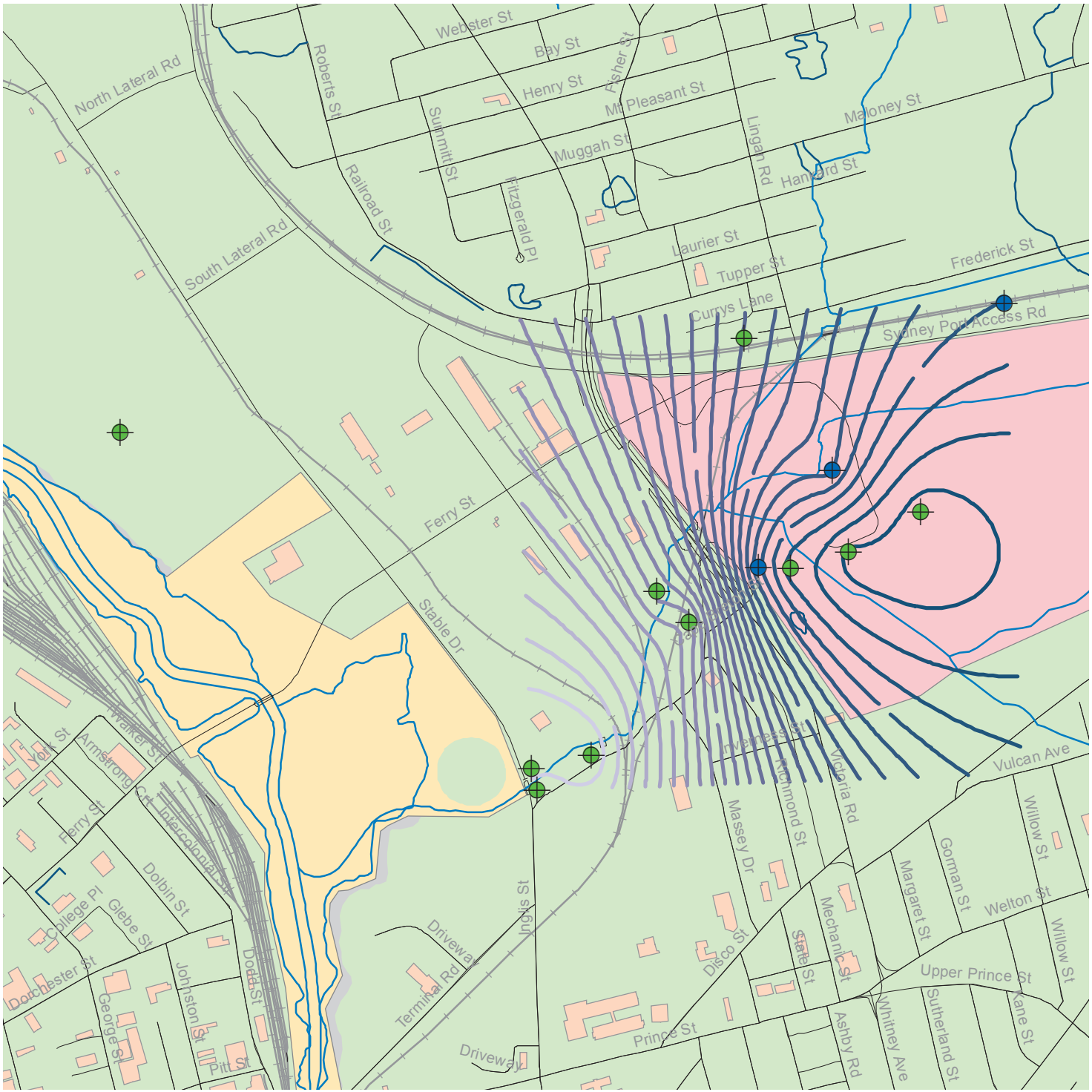
Date: 03/29/18



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OPEN HEARTH PARK AND
HARBOURSIDE EAST
2017 GROUNDWATER MONITORING EVENT

Equipotential Groundwater Contours Deep Bedrock Aquifer
FIGURE 3-3

LEGEND

Equipotential Groundwater Contours

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

Open Hearth Park

Harbourside East

Active Water Level Only

Active Sample and Water Level

0 50 100 200 300 m

N W E S

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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

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Date: 03/29/18

programs and the EEM program associated with the STP remediation project. Based on hydraulic head data, the groundwater flows generally from HE towards the southwest into Sydney Harbour. During the 2017 monitoring event, approximately 2 millimeters (mm) of DNAPL was measured in monitor well, CODT-103-MWB (located on the northwest portion of HE in the former Domtar site), which was added to the LTMM program in 2015 for water level/product check only. DNAPL was not detected at any other location in 2017. LNAPL was not detected at any location in 2017.

3.3 OHP Findings

The OHP area (i.e., formerly TP2/TP6/TP7 areas) includes the east, southeast, and western shorelines of the former Tar Ponds, as well as a portion of the former SYSCO property along Inglis Street (Figure 3-4). This area was remediated as part of the STP project using S/S processes. The LTMM program is used to evaluate groundwater quality post remediation. Results of the 2017 monitoring event are presented and discussed in the following subsections.

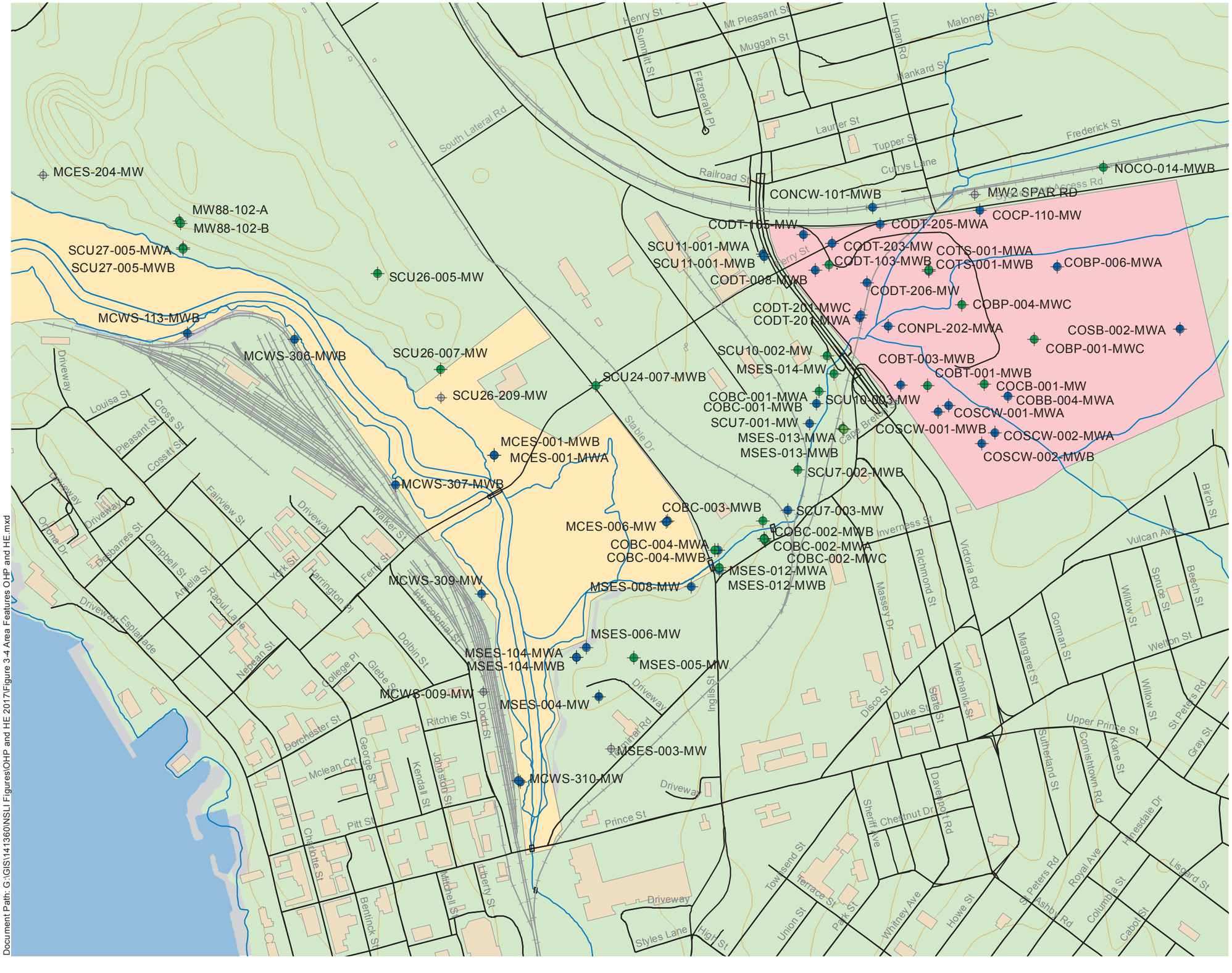
Monitor wells used for water level measurements in the OHP area include wells located in the "high dump" area, which is part of the HCP site and is located at the north end of the eastern shoreline. The high dump was used for disposal of blast furnace slag from the former steel plant. Historical in-filling of the southeast shoreline of the OHP used a variety of materials including slag, coal, brick and scrap wood, in addition to a former municipal disposal area on the south shoreline of OHP. The OHP also includes the footprint of a former open cooling pond used to contain steel plant effluents, a number of municipal outfalls, and a rail yard, bulk fuel terminal and a number of other former industrial sites on the west shoreline.

Results of the 2017 monitoring event at OHP indicate MCES-001-MWB, located on the eastern shoreline, contained an elevated concentration of sodium above the MOE standard. Although the concentration of sodium in MCES-001-MWB is above the MOE standard of 2,300,000 ug/L, this standard was not intended for use in a marine (saltwater) environment. The concentration of sodium is natural as marine waters have sodium concentrations of 10,000,000 ug/L or higher. Sodium was not identified as a contaminant of concern associated with the site.

3.3.1 OHP Groundwater Quality

Analytical data, including available historical post-remediation data for reference, are presented in Appendix A (Tables A-1 (TPH/BTEX), A-2 (PAHs) and A-3 (general chemistry and metals)). As stated previously, the LTMM 2017 Groundwater Monitoring Program included the collection of samples from 40 locations for analysis, 14 of which were collected from monitor wells located on the OHP site.

Analytical results indicate no exceedances of the Tier I EQS or the default MOE standards (where no Tier I EQS are available) for organic parameters.



Document Path: G:\GIS\141360\NSLI Figures\OHP and HE 2017\Figure 3-4 Area Features OHP and HE.mxd

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OPEN HEARTH PARK AND HARBOURSIDE EAST

2017 GROUNDWATER MONITORING EVENT

AREA FEATURES

Figure 3-4

LEGEND

Monitoring Wells

- Active Sample and Water Level
- Active Water Level Only
- Removed From Program, Destroyed and/or Decommissioned

Harbourside East

Open Hearth Park

NOTE:
MCES-204-MW destoyed in 2017
MW 2 SPAR RD removed from program,
MCWS-009-MW decomissioned December 2015,
SCU26-209-MW destroyed,
MSES-003-MW destroyed

0 75 150 300 450 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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

N W E S

DILLON CONSULTING

PROJECT: 14-1360
STATUS: FINAL
Date: 3/29/2018

No Tier I EQS standards are available for inorganic parameters (i.e., on a non-potable site). As noted above, one of the 14 monitor wells sampled on the OHP site had a single inorganic parameter concentration above the MOE standard, as follows:

- MCES-001-MWB: The sodium concentration of 6,300,000 ug/L exceeded the MOE standard of 2,300,000 ug/L.

Table 3-1 summarizes indicator parameter concentrations for select monitor wells, which are located in the vicinity of the S/S area in consideration of monitoring the S/S performance over the long term period.

Table 3-1 Summary of Indicator Parameter Concentrations

Well ID	Inorganic Parameters				
	Date	Selenium (ug/L)	Sulphur (mg/L)	TDS (mg/L)	pH
MOE Table 3[1]		63	-	-	-
MCES-006-MW	Mar 2013	6.3	34	374	7.50
	Jul 2013	<1.0	28	376	7.57
	Nov 2013	<1.0	34	390	7.61
	Dec 2014	2.9	70	260	8.91
	Dec 2015	3.3	88	260	9.44
	Dec 2016	<1.0	48	220	7.95
	Dec 2017	1.7	35	200	7.86
MCES-001-MWA	Mar 2013	1.8	85	631	11.8
	July 2013	1.6	160	542	11.8
	Dec 2014	1.8	120	730	11.9
	Dec 2015	1.5	160	540	11.8
	Nov 2016	1.9	190	730	11.9
	Dec 2017	1.8	160	560	12
MCES-001-MWB	Mar 2013	32	29	24,700	7.1
	July 2013	<10	25	21,000	7.42
	Nov 2013	<10	10	22,000	7.32
	Dec 2014	<1.0	6.7	21,000	7.4
	Dec 2015	<10	<2.0	22,000	7.49
	Nov 2016	<10	<2.0	19,000	7.42
	Dec 2017	<10	<2.0	21,000	7.47

Notes:

1. Ontario MOE Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011.
2. 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 selenium, sulphur, TDS or pH.
3. BOLD Exceeds the MOE Table 3 standards (when no Tier I EQS is available).
4. "-" Denotes no Tier I EQS or MOE standards available.

3.3.2 Trend Analysis - OHP

Mann-Kendall analysis was conducted based on available post-remediation data. Statistical analysis of available indicator parameter data indicated that most select parameter concentration trends are stable or decreasing, as presented in Table 3-2.

Table 3-2 OHP – Trend Analysis Summary

WELL ID	INDICATOR PARAMETER	TREND
MCES-006-MW	Selenium	Stable
	pH	Stable
	TDS	Decreasing
	SO4	Stable
MCES-001-MWA	Selenium	Stable
	pH	Stable
	TDS	Stable
	SO4	Stable
MCES-001-MWB	pH	Stable
	TDS	Stable
	SO4	Decreasing

Note:
1. Trend analysis not completed for selenium in monitor well MCES-001-MWB, as the majority of the analytical results are below laboratory detection limits.
2. Monitor well MCES-204-MW, which has been historically included in trend analysis completed as part of the LTMM, was not included in 2017, as this monitor well was found to be destroyed and could not be sampled as part of the 2017 LTMM.

In general, review of trend analysis indicates general plume stability relative to indicator concentrations. The groundwater quality trend analysis for the 2017 monitoring event was based on the available analytical results (i.e., four rounds of sampling events are required) for the parameters with concentrations above the applicable guidelines. Mann-Kendall tables are presented in Appendix D.

3.4 HE Area Findings

The HE area includes most of the former Coke Ovens Site; along Coke Ovens Brook from the southern area of the former Domtar site (near Victoria Road) and the mergence of Coke Ovens Brook into the South Pond to the downstream of the Municipal Ash Incinerator Disposal (MAID) area. In particular, the HE area contains part of the former CO1 (Coke Ovens Brook Connector), CO2 (Tar Cell), CO5 (Vertical Cut-Off Walls), CO6 (Surface Cap) and CO7 (Groundwater Collection System) (Figure 3-4).

Historical investigations confirmed the presence of contaminated sediments in the Coke Oven Brook and the Domtar Interceptor trench, as well as the in-filling of coal tar, particularly at the former Domtar site. Elevated concentrations of organics (i.e., PHCs and PAHs) and inorganics, such as metals, were present in the groundwater.

Results of the 2017 monitoring event at HE indicate that the concentrations of analyzed parameters at the majority of the sampling wells were below applicable standards. One monitor well, CODT-201-MWC, located in the former Domtar site, had an anthracene concentration above the MOE standard. Monitor well CODT-201-MWA, located within HE at the former Domtar site, contained multiple PAH concentrations above the respective MOE standard concentrations. Approximately 0.20 mm of DNAPL was measured in monitor well CODT-103-MWB.

3.4.1 HE Groundwater Quality

Analytical data, including available post-remediation data for reference, are presented in Appendix A (Tables A-1 (TPH/BTEX), A-2 (PAHs) and A-3 (general chemistry and metals)). As stated previously, the 2017 LTMM Groundwater Monitoring Program included the collection of samples from 40 locations for analysis, 26 of which were collected from monitor wells located on the HE site.

During the 2017 monitoring event, no exceedances of the Tier I EQS for organic parameters were identified. Two of the 26 monitor wells sampled on the HE site had organic parameter concentrations above the default MOE standards (when no Tier I EQS is available), as follows:

- CODT-201-MWA: Concentrations for anthracene (3.7 ug/L), benzo(a)anthracene (9.5 ug/L), benzo(a)pyrene (6.9 ug/L), benzo(b)fluoranthene (5.9 ug/L), benzo(g,h,i)perylene (3.1 ug/L), benzo(k)fluoranthene (3.4 ug/L), chrysene (8.6 ug/L), dibenzo(a,h)anthracene (1.1 ug/L) and indeno(1,2,3-cd)pyrene (2.9 ug/L) exceeded the MOE standards of 2.4 ug/L, 4.7 ug/L, 0.81 ug/L, 0.75 ug/L, 0.2 ug/L, 0.4 ug/L, 1 ug/L. 0.52 ug/L and 0.2 ug/L, respectively. These exceedances are consistent with historical LTMM data; however, the 2017 concentrations for the above noted MOE exceedances are the highest observed in this monitor well during the LTMM program.
- CODT-201-MWC: The anthracene concentration of 4.5 ug/L) exceeded the MOE standard 2.4 ug/L. Anthracene has historically exceeded MOE standards in this well during the LTMM; however, the 2017 concentration is the highest anthracene concentration observed in this well since 2013.
- Approximately 0.20 mm of DNAPL was measured in monitor well CODT-103-MWB

No Tier I EQS standards are available for inorganic parameters (i.e., on a non-potable site). One of the 26 monitor wells sampled on the HE site had inorganic parameter concentrations above the MOE standards as follows:

- COSB-002-MWA: Concentrations of cadmium (3.9 ug/L), copper (100 ug/L) and zinc (2,400 ug/L) exceeded the MOE standards of 2.7 ug/L, 87 ug/L and 1,100 ug/L, respectively. Cadmium, copper and zinc also exceeded the MOE standards in this well in 2015.

Elevated organic concentrations in the monitor wells at the former Domtar site may be associated with changes in groundwater conditions as a result of the completion of remedial activities in this area. Elevated inorganic concentrations may be related to the up gradient municipal landfill.

Table 3-3 summarizes indicator parameter concentrations for select monitor wells exhibiting concentrations above applicable criteria.

Table 3-3 HE – Summary of Indicator Parameter Concentrations

Well ID		Organic Parameters				
	Date	Anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Chrysene	Indeno(1,2,3-cd) pyrene (ug/L)	Napthalene (ug/L)
NSE Tier I EQS (or defaulted MOE Table 3 Standards (as denoted)		2.4[2]	0.81[2]	1[2]	0.2[2]	7000[1]
CODT-008-MWB	Mar 2013	15	1.7	4.2	0.65	17
	Jul 2013	140	30	57	14	29
	Oct 2013	11	2.6	46	0.64	2.8
	Dec 2014	2.0	0.032	0.058	0.018	<0.20
	Dec 2015	0.13	1.2	0.096	0.31	<0.20
	Nov 2016	43	*<5.0*	6.0	*<5.0*	4100
	Dec 2017	0.19	0.22	0.29	0.10	<0.20
CODT-201-MWA	Mar 2013	0.45	0.73	0.91	0.33	1.1
	Jul 2013	2.5	3.6	4.8	1.5	0.22
	Oct 2013	1.7	2.5	2.9	1.1	<0.2
	Dec 2014	2.5	3.7	4.5	1.5	46
	Dec 2015	2.3	4.7	5.1	1.9	<0.20
	Nov 2016	0.85	1.8	2.1	0.78	<0.20
	Dec 2017	3.7	6.9	8.6	2.9	<0.20
CODT-201-MWC	Mar 2013	4.9	<0.01	0.04	<0.01	5100
	Jul 2013	4.5	0.016	0.064	0.014	4900
	Mar 2013	3.3	<0.01	0.032	<0.01	6300
	Dec 2014	5.9	<0.01	0.048	<0.01	7200
	Dec 2015	*<10*	*<10*	*<10*	*<10*	9500
	Nov 2016	3.3	<0.010	0.036	<0.010	7500
	Dec 2017	4.5	<0.010	0.042	<0.010	6200
CODT-203-MW	Mar 2013	2.1	0.64	1.1	0.24	0.62
	Jul 2013	2.6	1.1	1.7	0.38	6.3
	Mar 2013	2.5	0.71	1.2	0.29	1.5
	Dec 2014	0.55	0.69	0.83	0.28	<0.2
	Dec 2015	0.42	0.61	0.73	0.29	<0.20
	Nov 2016	0.79	1.5	1.6	0.64	<0.20
	Dec 2017	0.27	0.24	0.35	0.10	0.52

Notes:
[1] NS Tier I EQS for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/ Industrial Site) 2013.
[2] Ontario MOE Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011.
3. Bold exceeds NSE Tier I EQS or default MOE standards when no Tier I EQS is available.
4. Italics denotes detection limit elevated above applicable standards.

3.4.2 Trend Analysis - HE

Mann-Kendall analysis was conducted based on available post-remediation data. Statistical analysis of available indicator parameter data indicated that most select parameter concentration trends are stable or fluctuating. Results of Mann-Kendall trend analysis for HE are presented in Table 3-4.

Table 3-4 HE – Trend Analysis Summary

WELL ID	INDICATOR PARAMETER	TREND
CODT-008-MWB	Anthracene	Fluctuating
	Benzo(a)pyrene	Stable
	Chrysene	Fluctuating
	Indeno(1,2,3-cd)pyrene	Fluctuating
	Naphthalene	Fluctuating
CODT-201-MWA	Anthracene	Stable
	Benzo(a)pyrene	Stable
	Chrysene	Stable
	Indeno(1,2,3-cd)pyrene	Stable
CODT-201-MWC	Anthracene	Stable
	Chrysene	Fluctuating
	Naphthalene	Stable
CODT-203-MW	Anthracene	Stable
	Benzo(a)pyrene	Stable
	Chrysene	Stable
	Indeno(1,2,3-cd)pyrene	Stable
	Naphthalene	Fluctuating

Note:

1. Trend analysis was not completed for naphthalene in monitor well CODT-201-MWA or for benzo(a)pyrene and indeno(1,2,3-cd)pyrene in monitor well CODT-201-MWC, as the majority of the analytical results for these parameters in these wells are below laboratory detection limits.

The groundwater quality trend analysis for the 2017 monitoring event was based on the available post-remediation analytical results (i.e., four rounds of sampling events are required) for the select monitor wells with concentrations above the applicable guidelines. In general, review of trend analysis indicates general plume stability relative to indicator PAH concentrations with isolated parameters in select wells within the plume indicating stable trends. Mann-Kendall Tables are presented in Appendix D.

3.5 QC Summary

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

- Section 3.5.1 Relative Percent Difference (RPD)
- Section 3.5.2 Laboratory Matrix Spikes, Spikes Blank and Method Blanks
- Section 3.5.3 Equipment Blanks

- Section 3.5.4 Holding Times

3.5.1 Relative Percent Difference

Four field duplicates were 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 samples indicated the calculated RPDs were within established limits (i.e., less than 30% RPD) with the exception of the following original sample and field duplicates that exhibited RPDs greater than the respective RPD Data Quality Objectives (DQOs), as presented in Tables B-2 and B-3 (Appendix B):

- Select parameters at FD-04 (field duplicate of CODT-206-MW): anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(j)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, phenanthrene, pyrene and total organic carbon; and,
- Select parameters at FD-06 (field duplicate of MCES-001-MWA): fluoranthene and pyrene; and,
- One parameter at FD-07 (field duplicate of MSES-004-MW): aluminum.

3.5.2 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:

- One analyte (i.e., benzo(a)anthracene) had a low recovery resulting in a multi-component analysis violation for monitor wells MCES-006-MW and SCU11-001-MWB;
- Two analytes (i.e., bismuth and selenium) had a low recovery resulting in a multi-component analysis violation for monitor wells MCES-001-MWB, SCU7-001-MW and SCU7-003-MW;
- One analyte (i.e., anthracene) had a low recovery resulting in a multi-component analysis violation for monitor well MCWS-113-MWB;
- The pH duplicates did not meet laboratory acceptance criteria for COSB-002-MWA, results were confirmed by repeat analysis.

Overall laboratory data quality is considered acceptable and the results representative with no identification of significant quality issues requiring further investigation or resampling. Further, discussions with the lab indicate that the data is reliable and that the above noted minor issues do not impact the quality of the data. The QA report is presented with the certificates of analysis in Appendix C.

3.5.3 Field Blanks

Two field blanks were collected and submitted for PAH analysis as part of the 2017 LTMM program for OHP and HE. PAHs were not detected in either of the field blank samples.

3.5.4 Equipment Blanks

No equipment blanks were collected associated with OHP and HE. One equipment blank was collected associated with Harbourside Commercial Park, which field program was conducted at the same time as the OHP and HE field program. Results are as follows:

- A modified TPH concentration of 0.11 mg/L was detected at the detection limit in the equipment blank sample and identified as unidentified compounds in the lube oil range. Near RDL detections of unidentified compounds are not uncommon in blanks;
- PAH concentrations (ranging from 0.37 ug/L to 9.7 ug/L were detected in the equipment blank sample; and,
- Metals concentrations including aluminum (6.0 ug/L), cadmium (0.020 ug/L), calcium (170 ug/L), manganese (3.0 ug/L), sodium (230 ug/L) and zinc (6.9 ug/L) were detected in the equipment blank sample.

Discussions with the laboratory indicate that there were no known quality issues associated with the equipment blank water provided by Maxxam and no apparent carry over of contaminants between samples during analysis.

Decontamination procedures were conducted in the same manner as those undertaken during previous LTMM programs. The field equipment used for the equipment blank was a rented stainless steel monsoon pump. This pump was used to sample monitor wells SCU27-002-MW, SCU32-002-MW, SCU32-003-MW and MSES-007-MW only.

The equipment blank was collected after sampling monitor well SCU32-003-MW and before sampling SCU27-002-MW. Review of the laboratory data for both of these monitor wells shows the equipment blank to generally have higher concentrations than those observed in both the before (i.e., SCU32-003-MW) and after (i.e., SCU27-002-MW) samples.

Review of the data for the HCP wells sampled using the stainless steel pump on the same day that the equipment blank was collected (i.e., SCU27-002-MW, SCU32-002-MW, SCU32-003-MW and MSES-007-MW) in comparison to the respective data from previous LTMM events show the 2017 results for each well to be comparable to historical data findings. Additionally, no exceedances of applicable criteria were identified in these four monitor wells, with the exception of selenium in SCU32-003-MW. However, selenium was not detected in the equipment blank, and has historically exceeded applicable criteria at SCU32-003-MW.

Although the detected concentrations are unacceptable, they appear to be isolated and not repeated in other QA/QC samples. Dillon will review our decontamination procedures prior to the 2018 LTMM. Collection of the equipment blank will also be undertaken at the onset of the program and additional equipment blanks may be added to the program if warranted.

3.5.5 Holding Times

There were no holding time exceedances, other than those noted above in relation to the laboratory error.

4.0 Summary

The OHP and HE 2017 monitoring event was conducted in accordance to RFP NSLAND57 Groundwater Monitoring Services. Findings were compared to July 2013 NS CSR Tier I EQSs for groundwater. Where Tier I EQS are not available (i.e., for PAH and metals in groundwater at non-potable sites), applicable MOE standards were used as alternative guidelines.

The groundwater elevation and flow direction for the monitored areas during the 2017 monitoring event was generally comparable to historical monitoring events. The groundwater flows generally from HE towards the southwest to Sydney Harbour.

The following observations are made based on the 2017 data:

OHP

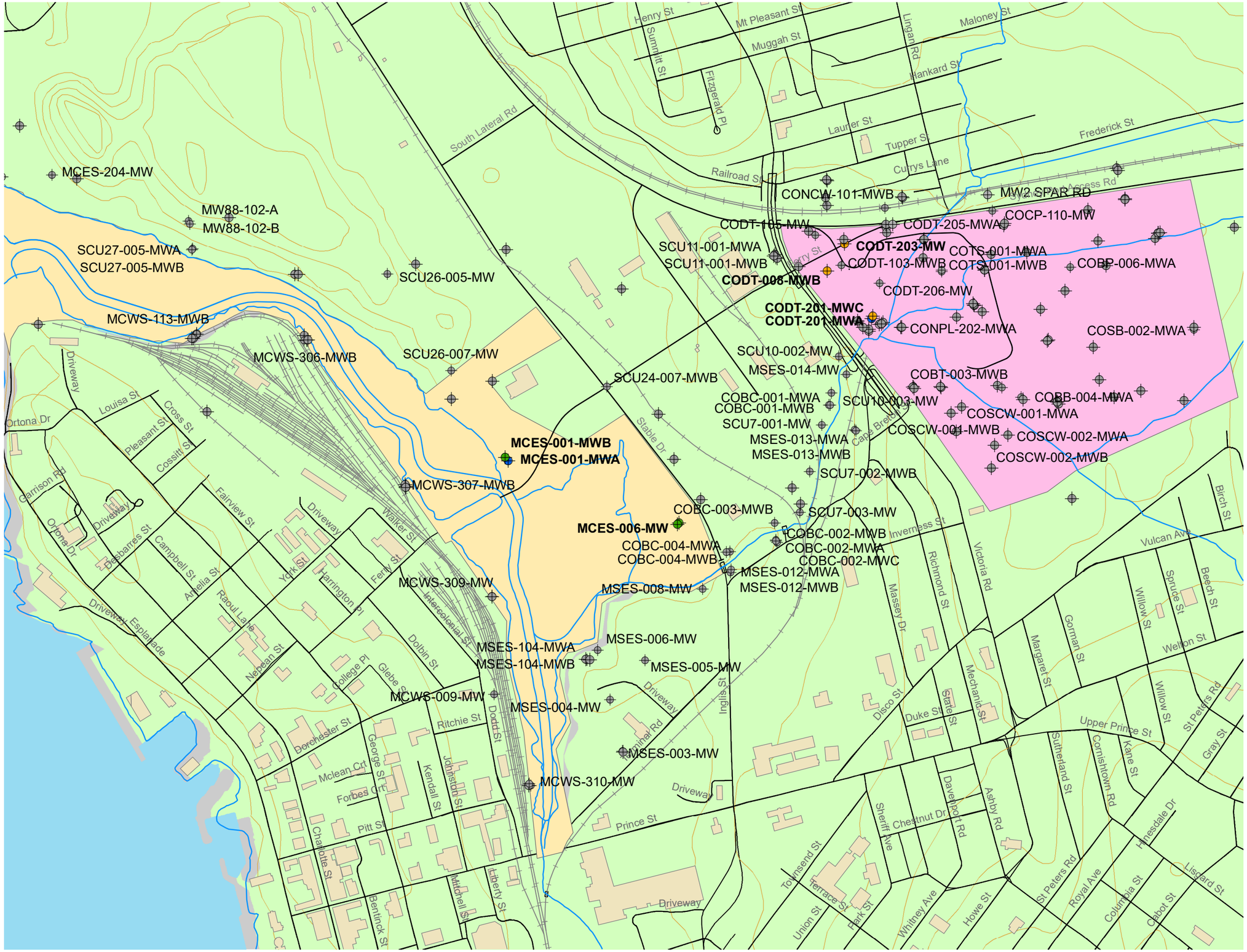
The majority of samples contained indicator parameters at concentrations below the applicable standards, and in most instances, concentrations were comparable to historical findings. Analytical results indicate no exceedances of the Tier I EQS or the default MOE standards (where no Tier I EQS are available) for organic parameters. Table 4-1 presents one inorganic parameter above the respective MOE standard at one monitoring location:

Table 4-1 Summary of 2017 OHP Groundwater Exceedances – Inorganic Parameters

Parameter	Location (Concentration / MOE Standard)
Sodium	• MCES-001-MWB (6,300,000 ug/L / 2,300,000 ug/L)

Note:
[1] The MOE standard for sodium was not intended for use in a marine (saltwater) environment. The concentration of sodium is natural as marine waters have sodium concentrations of 10,000,000 ug/L or higher. Sodium was not identified as a contaminant of concern associated with the site.

As presented in Figure 4-1, trend analysis showed indicator parameters on the OHP site to have stable or decreasing concentration trends via Mann-Kendall analysis.



NS Lands
nova scotia lands

OPEN HEARTH PARK AND HARBOURSIDE EAST

2017 GROUNDWATER MONITORING EVENT

INDICATOR PARAMETER CONCENTRATION TREND

Figure 4-1

LEGEND

Trend Analysis

- Increasing
- Fluctuating
- Stable
- Decreasing
- Monitoring Well
- **Open Hearth Park**
- **Harbourside East**

0 75 150 300 450 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

MAP CREATED BY: MCL
MAP CHECKED BY: NJW
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: 2018-03-29

HE

The majority of samples contained indicator parameters at concentrations below the Tier I EQS and/or MOE standards and, in most instances, concentrations were comparable to historical findings. No exceedances of the Tier I EQS for organic parameters were identified; however, it is noted that product (i.e., approximately 2.0 mm) was detected in monitor well CODT-103-MWB. Table 4-2 presents parameters above their respective MOE standards:

Table 4-2 Summary of 2017 HE Groundwater Exceedances – Organic Parameters

Parameter	Location (Concentration / MOE Standard)
Anthracene	• CODT-201-MWA (3.7 ug/L / 2.4 ug/L) • CODT-201-MWC (4.5 ug/L / 2.4 ug/L)
benzo(a)anthracene	• CODT-201-MWA (9.5 ug/L / 4.7 ug/L)
benzo(a)pyrene	• CODT-201-MWA (6.9 ug/L / 0.81 ug/L)
benzo(b)fluoranthene	• CODT-201-MWA (5.9 ug/L / 0.75 ug/L)
benzo(g,h,i)perylene	• CODT-201-MWA (3.1 ug/L / 0.2 ug/L)
benzo(k)fluoranthene	• CODT-201-MWA (3.4 ug/L / 0.4 ug/L)
chrysene	• CODT-201-MWA (8.6 ug/L / 1 ug/L)
dibenzo(a,h)anthracene	• CODT-201-MWA (1.1 ug/L / 0.52 ug/L)
indeno(1,2,3-cd)pyrene	• CODT-201-MWA (2.9 ug/L / 0.2 ug/L)

The exceedances reported for CODT-201-MWA are generally consistent with historical LTMM data; however, the 2017 concentrations for the above noted MOE exceedances are the highest observed in this monitor well during the LTMM program. Anthracene has historically exceeded MOE standards in CODT-201-MWC during the LTMM; however, the 2017 concentration is the highest anthracene concentration observed in this well since 2013.

No Tier I EQS standards are available for inorganic parameters (i.e., on a non-potable site). One of the 26 monitor wells sampled on the HE site had inorganic parameter concentrations above the MOE standards, as presented in Table 4-3:

Table 4-3 Summary of 2017 OHP Groundwater Exceedances – Inorganic Parameters

Parameter	Location (Concentration / MOE Standard)
Cadmium	• COSB-002-MWA (3.9 ug/L / 2.7 ug/L)
Copper	• COSB-002-MWA (100 ug/L / 87 ug/L)
Zinc	• COSB-002-MWA (2,400 ug/L / 1,100 ug/L)

Cadmium, copper and zinc also exceeded the MOE standards in COSB-002-MWA in 2015. Elevated organic concentrations in the monitor wells at the former Domtar site may be associated with changes in groundwater conditions as a result of the completion of remedial activities in this area.

As presented in Figure 4-1, trend analysis showed indicator parameters to be fluctuating or stable. Mann-Kendall tables are presented in Appendix D.

5.0 Recommendations

During the 2017 monitoring program, monitor well MCES-204-MW was found to be destroyed. As MCES-204-MW has historically exhibited concentrations of anthracene and selenium above the comparison criteria, it is recommended that this well be replaced prior to commencing the 2018 LTMM groundwater monitoring program.

Review of the 2017 groundwater sampling results, considered in context of historical data associated with OHP and HE sites, suggests that the fall 2018 groundwater monitoring program could include the following:

- The collection of 69 water levels (including replacement well MCES-204-MW);
- The continued inclusion of CODT-103-MWB in the LTMM for water level/product check only. and,
- The sampling of 41 monitor wells (including replacement well MCES-204-MW); reduced from 44 following the removal of MW-2 (Spar Road) from the program, decommissioning of MCWS-009-MW (which was damaged in 2015) and the destruction of MSES-003-MW (2016).

It is recommended that the groundwater monitoring program continue to include sampling of PHC at CODT-201-MWC only, with the remaining monitor wells scheduled for sampling to include analysis for PAHs, metals and general inorganic chemistry parameters.

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 AND DECEMBER 2017 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - BTEX/TPH

Sample Location (Monitor Well Depth)	Sample Date	BTEX Concentration (mg/L)				Petroleum Hydrocarbons (mg/L)						Reached Baseline at C32
		Benzene	Toluene	E. Benzene	Xylenes	C6 - C10	C10 - C21	C10 - C16	C16-C21	C21 - C32	Modified TPH	
NS Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
COBB-004-MWA (1.50 m)	03/27/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/14	<0.0013	<0.0013	<0.0013	<0.0026	<0.013	-	<0.05	<0.05	<0.1	<0.1	-
COBC-001-MWA (1.93 m)	03/15/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.13	-	-	<0.1	0.13	Yes
	12/12/14	0.0045	<0.001	<0.001	<0.002	<0.01	-	0.058	<0.05	<0.1	<0.1	-
COBC-002-MWA (4.14 m)	03/15/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COBC-004-MWA (3.96 m)	03/15/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COBP-006-MWA (2.25 m)	03/27/13[FD]	0.0043	<0.001	<0.001	<0.002	<0.01	0.34	-	-	0.1	0.43	Yes
	03/27/13	0.004	<0.001	<0.001	<0.002	<0.01	0.195	-	-	<0.1	0.19	Yes
	12/15/14	0.02	<0.001	0.0025	<0.002	<0.01	-	0.17	0.19	<0.1	0.35	Yes
COBT-003-MWB (3.45 m)	03/19/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.07	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COCP-110-MW (2.42 m)	04/04/12	<0.001	<0.001	<0.001	<0.002	<0.01	2.95	-	-	14	17	Yes
	09/13/12	<0.001	<0.001	<0.001	<0.002	<0.01	0.12	-	-	0.42	0.54	Yes
	12/11/12	<0.001	<0.001	<0.001	<0.002	<0.01	0.054	-	-	0.1	0.16	Yes
	03/27/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	0.11	0.11	Yes
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	0.072	0.29	0.36	Yes
CODT-008-MWB (1.88 m)	03/29/13	<0.001	<0.001	0.0014	0.0053	0.018	1.36	-	-	0.25	1.6	Yes
	12/15/14	<0.001	0.0015	<0.001	0.0028	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
CODT-105-MW (3.07 m)	03/13/13[L]	0.0015	<0.001	<0.001	<0.002	<0.01	NM	-	-	NM	NM	-
	03/13/13	0.0015	<0.001	<0.001	<0.002	<0.01	-	-	-	<0.1	<0.1	-
	12/16/14	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	<0.05	<0.05	<0.1	<0.1	-
CODT-201-MWA (3.74 m)	03/13/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/14	<0.001	<0.001	0.001	0.0045	<0.01	-	0.086	<0.05	<0.1	<0.1	-
CODT-201-MWC (3.97 m)	03/13/13	0.1	0.22	0.15	0.59	0.9	13.35	-	-	<0.1	15	Yes
	12/15/14	0.1	0.2	0.15	0.61	1.0	-	15	0.49	0.22	17	Yes
	12/09/15	0.11	0.26	0.17	0.71	1.4	-	14	0.38	0.1	16	Yes
	11/28/16	0.072	0.16	0.14	0.57	1.1	-	18	49	<0.01	20	Yes
	12/05/17	0.072	0.13	0.13	0.50	0.87	-	17	0.48	0.1	19	Yes
CODT-203-MW (2.79 m)	03/13/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
CODT-205-MWA (1.78 m)	03/13/13[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	03/13/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
CODT-206-MW (2.14 m)	03/13/13	0.0035	0.0027	0.0036	0.012	0.016	0.53	-	-	<0.1	0.55	Yes
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	0.064	<0.05	<0.1	<0.1	-
CONCW-101-MWB (1.75 m)	03/15/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.051	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
CONPL-202-MWA (5.39 m)	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COSB-002-MWA (1.91 m)	03/18/13[L]	<0.001	<0.001	<0.001	<0.002	<0.01	NM	-	-	NM	NM	-
	03/18/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-

TABLE A-1
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - BTEX/TPH

Sample Location (Monitor Well Depth)	Sample Date	BTEX Concentration (mg/L)				Petroleum Hydrocarbons (mg/L)						Reached Baseline at C32
		Benzene	Toluene	E. Benzene	Xylenes	C6 - C10	C10 - C21	C10 - C16	C16-C21	C21 - C32	Modified TPH	
NS Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
COSCW-001-MWA (3.04 m)	03/19/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.072	-	-	<0.1	<0.1	-
	12/16/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COSCW-001-MWB (3.70 m)	03/19/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COSCW-002-MWA (4.33 m)	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	NM	-	-	NM	NM	-
	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COSCW-002-MWB (3.03 m)	03/19/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
COTS-001-MWA (4.08 m)	12/15/14	DRY										
MCES-001-MWA (6.18 m)	03/28/13[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	0.129	-	-	0.1	0.23	Yes
	03/28/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.105	-	-	<0.1	0.1	Yes
	12/10/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MCES-001-MWB (6.39 m)	03/28/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/10/14	<0.001	<0.001	<0.001	<0.002	0.022	-	<0.05	<0.05	<0.1	<0.1	-
MCES-006-MW (2.93 m)	03/28/13	0.04	0.012	0.042	0.062	0.11	1.49	-	-	0.14	1.7	Yes
	12/10/14	0.0050	0.0018	0.0041	0.0043	<0.01	-	0.27	<0.05	<0.1	0.26	Yes
MCES-204-MW (4.17 m) (Destroyed 2017)	03/28/13	0.018	0.0078	<0.001	0.0082	0.028	0.53	-	-	0.16	0.72	Yes
	12/18/14[FD]	0.017	0.0072	<0.001	0.0068	0.01	-	0.19	0.11	0.11	0.42	Yes
	12/18/14	0.017	0.0072	<0.001	0.0069	0.013	-	0.19	0.11	<0.1	0.31	Yes
MCWS-009-MW (6.63 m) *Decommissioned 2015*	12/9/14[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12/09/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MCWS-113-MWB (2.52 m)	03/27/13[L]	<0.001	<0.001	<0.001	<0.002	0.013	NM	-	-	NM	NM	-
	03/27/13	<0.001	<0.001	<0.001	<0.002	0.013	0.5	-	-	<0.1	0.52	Yes
	12/09/14	<0.001	<0.001	<0.001	<0.002	0.019	-	0.48	0.21	0.17	0.87	Yes
MCWS-306-MWB (0.79 m)	03/27/13	<0.001	<0.001	<0.001	<0.002	0.31	<0.05	-	-	<0.1	0.31	Yes
	12/09/14	<0.001	<0.001	<0.001	<0.002	0.47	-	<0.05	<0.05	<0.1	0.47	Yes
MCWS-307-MWB (0.70 m)	03/27/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/09/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MCWS-309-MW (0.97 m)	12/09/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MCWS-310-MW (1.81 m)	03/29/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/09/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MSES-003-MW (9.10 m) *Destroyed 2016*	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/10/14[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12/10/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-

TABLE A-1
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - BTEX/TPH

Sample Location (Monitor Well Depth)	Sample Date	BTEX Concentration (mg/L)				Petroleum Hydrocarbons (mg/L)						Reached Baseline at C32
		Benzene	Toluene	E. Benzene	Xylenes	C6 - C10	C10 - C21	C10 - C16	C16-C21	C21 - C32	Modified TPH	
NS Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
MSES-004-MW (7.86 m)	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/10/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MSES-006-MW (3.82 m)	03/26/13	0.0012	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/10/14	0.011	<0.001	0.0053	0.0028	<0.01	-	0.32	0.092	0.29	0.70	Yes
MSES-008-MW (4.17 m)	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.052	-	-	<0.1	<0.1	-
	12/10/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	0.07	<0.05	<0.1	<0.1	-
MSES-012-MWA (3.50 m)	03/15/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/16/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
MSES-104-MWA (2.30 m)	03/28/13	<0.001	<0.001	<0.001	<0.002	<0.01	0.56	-	-	0.51	1.1	Yes
	12/10/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	0.12	0.069	<0.1	0.18	Yes
MSES-104-MWB (2.62 m)	03/26/13	0.012	0.0019	0.0081	0.0071	0.056	0.83	-	-	<0.1	0.89	Yes
	12/10/14	0.0078	0.0014	0.0045	0.0036	0.014	-	0.44	0.11	0.12	0.69	Yes
MW2 SPAR RD (2.62 m) *Removed from the LTMM in 2015*	3/19/13[L]	<0.001	<0.001	<0.001	<0.002	<0.01	NM	-	-	NM	NM	-
	03/19/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
		<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12/16/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
SCU11-001-MWA (2.79 m)	03/29/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	0.11	0.11	-
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
SCU11-001-MWB (2.13 m)	03/29/13	0.0072	<0.001	0.0047	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/14[FD]	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
	12/15/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
SCU7-001-MW (1.84 m)	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-
SCU7-003-MW (1.16 m)	03/29/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/12/14	<0.001	<0.001	<0.001	<0.002	<0.01	-	<0.05	<0.05	<0.1	<0.1	-

NOTES:
FD - Field Duplicate
L - Lab Duplicate
NM - Not measured or not analyzed; lab duplicates do not analyze for all parameters.
mg/L - milligrams per litre
- No applicable guideline criteria.
1 - Nova Scotia Environment (NSE) Tier 1 Environmental Quality Standards (EQS) for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013 (Revised January 2015)
2 - This summary is to be used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information
3 - Underline Exceeds NSE Tier I EQS

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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]
COBB-004-MWA (1.50 m)	03/27/13	0.022	0.029	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	0.14	<0.05	0.4	<0.01	0.011	<0.01
	07/26/13	0.025	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	0.017	<0.01	0.074	<0.05	0.45	<0.01	0.016	0.012
	11/06/13	0.013	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/15/14	0.023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/09/15	0.04	<0.010	0.014	0.021	0.015	<0.010	<0.010	<0.010	<0.010	0.022	<0.010	0.055	0.01	<0.010	<0.050	<0.050	<0.20	<0.010	0.054	0.038
	12/2/16	0.20	<0.010	0.014	0.017	0.012	0.010	<0.010	<0.010	<0.010	0.015	<0.010	0.033	0.063	<0.010	0.57	0.19	3.9	<0.010	0.06	0.025
	12/8/17	<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
COBC-001-MWA (1.93 m)	03/15/13	2.0	0.7	0.017	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.078	0.025	<0.01	0.061	<0.05	0.24	<0.01	<0.01	0.054
	07/26/13[FD]	1.4	0.58	0.029	0.03	0.017	0.015	<0.01	0.011	<0.01	0.028	<0.01	0.11	0.048	<0.01	0.06	<0.05	0.3	<0.01	0.045	0.085
	07/26/13	1.9	0.82	0.025	0.019	0.012	0.012	<0.01	<0.01	<0.01	0.017	<0.01	0.091	0.05	<0.01	0.052	<0.05	0.22	<0.01	0.024	0.069
	11/07/13	0.74	0.37	0.022	0.019	0.012	0.012	<0.01	<0.01	<0.01	0.020	<0.01	0.11	0.032	<0.01	<0.05	<0.05	<0.2	<0.01	0.023	0.084
	12/12/14	4.2	1.5	0.020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.075	0.15	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	0.047
	12/10/15	5.8	1.6	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.095	0.24	<0.010	0.54	0.37	5.4	<0.010	0.049	0.061
	12/2/16	0.42	0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.052	0.061	<0.010	0.36	0.19	4.2	<0.010	0.022	0.052
	12/11/17	6.1	1.4	0.019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.055	0.17	<0.010	0.065	<0.050	<0.20	<0.010	0.013	0.050
COBC-002-MWA (4.14 m)	03/15/13	0.043	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.022	<0.01	0.1	0.053	0.72	<0.01	0.023	<0.01
	07/18/13	0.066	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.013	0.039	<0.01	0.15	0.1	2.0	<0.01	0.036	<0.01
	11/05/13	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	<0.01
	12/12/14	0.019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	0.011
	12/10/15	0.25	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.079	<0.010	0.78	0.59	9.7	<0.010	0.048	<0.010
	11/22/16	<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
	12/7/17	0.15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.057	<0.010	0.25	0.14	1.7	<0.010	0.036	<0.010
COBC-004-MWA (3.96 m)	03/15/13	0.32	0.016	0.05	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.01	0.16	<0.01	0.75	0.44	6.7	<0.01	0.3	<0.01
	07/18/13	0.074	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.045	<0.01	0.19	0.12	2.1	<0.01	0.029	<0.01
	11/05/13	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.05	<0.05	<0.2	<0.01	0.013	<0.01
	12/12/14	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	0.01
	12/10/15	0.26	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.084	<0.010	0.84	0.63	11	<0.010	0.053	<0.010
	11/25/16	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	0.01	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.011
	11/25/16[R]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	12/7/17	0.20	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.076	<0.010	0.36	0.21	2.7	<0.010	0.039	<0.010
COBP-006-MWA (2.25 m)	03/27/13[FD]	4.8	0.23	0.081	0.07	0.029	0.024	0.013	NM	0.034	0.075	<0.01	0.26	0.19	0.015	0.53	0.055	0.97	<0.01	0.23	0.21
	03/27/13	3.9	0.2	0.15	0.14	0.046	0.029	0.014	NM	0.054	0.13	<0.01	0.51	0.21	0.015	0.48	0.084	0.92	0.012	0.46	0.4
	07/26/13	1.4	0.44	0.019	0.024	0.014	0.012	<0.01	<0.01	<0.01	0.021	<0.01	0.045	0.044	<0.01	0.26	<0.05	0.67	<0.01	0.036	0.048
	11/06/13	0.84	0.041	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.028	<0.01	<0.05	<0.05	<0.20	<0.01	0.02	0.026
	12/15/14	13	0.44	0.034	0.050	0.044	0.033	0.021	0.020	0.020	0.043	<0.01	0.10	0.67	0.020	1.2	<0.05	0.95	0.012	0.067	0.10
	12/9/15[FD]	8.3	0.23	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	0.024	0.26	<0.010	0.12	<0.050	0.48	<0.010	0.029	0.027
	12/09/15	8.4	0.25	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.020	0.24	<0.010	0.095	<0.050	0.21	<0.010	0.020	0.024
	11/28/16	14	0.22	0.02	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	<0.010	0.029	0.83	<0.010	4	0.69	16	<0.010	0.12	0.027
	12/21/17	18	0.21	0.024	0.030	0.025	0.018	0.012	0.013	0.012	0.031	<0.010	0.062	1.0	0.011	6.7	<0.050	18	<0.010	0.094	0.061
COBT-003-MWB (3.45 m)	03/19/13	0.024	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.017	<0.01	0.063	<0.05	0.38	<0.01	<0.01	<0.01
	07/18/13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	0.066	<0.05	0.84	<0.01	0.018	<0.01
	11/07/13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/12/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/09/15	0.053	<0.010	0.012	0.020	0.019	0.016	0.012	<0.010	0.010	0.018	<0.010	0.052	0.010	0.010	<0.050	<0.050	<0.20	<0.010	0.044	0.042
	11/28/16	0.41	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.13	<0.010	1.4	0.86	15	<0.010	0.066	<0.010
	12/7/17	0.13	<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	0.20	0.12	1.3	<0.010	0.034	<0.010

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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]
COCP-110-MW (2.42 m)	03/27/13	0.22	0.021	0.051	0.019	<0.01	<0.01	<0.01	NM	<0.01	0.022	<0.01	0.11	0.081	<0.01	0.32	0.057	0.75	<0.01	0.45	0.14
	07/18/13	0.41	0.047	0.043	0.027	0.016	0.014	0.011	<0.01	<0.01	0.034	<0.01	0.14	0.16	<0.01	0.49	0.093	2.6	<0.01	0.7	0.19
	11/06/13	0.20	0.048	0.10	0.16	0.086	0.081	0.043	0.045	0.046	0.18	0.012	0.37	0.10	0.037	0.20	<0.05	0.23	0.017	0.40	0.50
	12/15/14	0.062	0.021	0.056	0.10	0.071	0.056	0.042	0.035	0.033	0.12	0.012	0.19	0.042	0.035	0.060	<0.05	<0.2	0.017	0.16	0.24
	12/09/15	0.17	0.017	0.041	0.063	0.044	0.037	0.027	0.025	0.023	0.080	<0.010	0.16	0.037	0.022	0.065	<0.050	<0.20	<0.010	0.11	0.21
	11/28/16	0.014	<0.010	0.013	0.026	0.02	0.016	0.015	<0.010	<0.010	0.027	<0.010	0.054	0.011	<0.010	<0.050	<0.050	<0.20	<0.010	0.04	0.05
	12/8/17[FD]	0.023	<0.010	0.015	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	0.034	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.012	0.087
	12/8/17	0.024	<0.010	0.017	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	0.033	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.011	0.096
CODT-008-MWB (1.88 m)	03/29/13	16	0.6	**15**	**5.3**	**1.7**	**1.3**	**0.54**	NM	**1.7**	**4.2**	0.15	27	18	**0.65**	10	0.62	17	0.44	40	18
	07/24/13	110	2.8	**140**	**57**	**30**	**33**	**12**	24	**22**	**57**	**5.3**	**310**	90	**14**	35	1.9	29	9.1	260	**210**
	10/23/13	64	3.4	**11**	**5.9**	**2.6**	**1.9**	**0.60**	NM	**1.3**	**4.6**	0.22	29	34	**0.64**	40	0.31	2.8	0.47	6.5	19
	12/15/14	0.12	0.026	2.0	0.029	0.032	0.022	0.020	0.016	0.016	0.058	<0.01	0.11	0.060	0.018	0.15	0.064	<0.20	0.010	0.052	0.11
	12/10/15	0.064	0.047	0.13	1.1	**1.2**	**0.84**	**0.32**	0.71	0.63	0.96	0.097	2.4	0.11	**0.31**	0.057	<0.050	<0.20	0.28	0.054	4.1
	11/30/16	410	5.3	**43**	**7.6**	*<5.0*	*<5.0*	*<5.0*	<5.0	*<5.0*	**6.0**	*<5.0*	34	200	*<5.0*	970	1000	4100	<5.0	180	21
	12/7/17	0.076	0.020	0.19	0.26	0.22	0.20	0.13	0.11	0.11	0.29	0.033	0.69	0.083	0.10	<0.050	<0.050	<0.20	0.046	0.35	0.66
CODT-105-MW (3.07 m)	03/13/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/13/13	0.2	0.67	0.081	0.036	0.025	0.019	0.014	NM	0.025	0.034	<0.01	0.17	0.35	0.013	0.69	0.094	0.58	<0.01	0.34	0.12
	07/16/13	0.24	0.27	0.048	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.11	0.32	<0.01	0.61	0.19	13	<0.01	0.25	0.08
	10/23/13[L]	0.17	0.034	0.044	0.049	0.041	0.031	0.025	NM	0.018	0.05	<0.01	0.19	0.17	0.02	0.11	<0.05	<0.2	0.011	0.19	0.17
	10/23/13	0.11	0.029	0.013	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.065	0.10	<0.01	0.065	<0.05	<0.2	<0.01	0.023	0.063
	12/16/14	0.079	<0.01	<0.01	0.015	0.014	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	0.090	0.012	<0.01	<0.05	<0.05	<0.2	<0.01	0.042	0.072
	12/10/15	0.26	0.044	<0.030	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.07	0.21	<0.010	0.62	0.23	0.97	<0.010	0.11	0.058
	11/23/16[FD]	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.049	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.042
	11/23/16	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.047	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.041
	12/7/17	0.24	0.011	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.025	0.10	<0.010	0.41	0.15	2.3	<0.010	0.037	0.027
CODT-201-MWA (3.74 m)	03/13/13	0.3	0.012	0.45	1.0	0.73	0.5	**0.32**	NM	**0.66**	0.91	0.097	1.8	0.21	**0.33**	0.21	0.1	1.1	0.17	1.5	1.5
	07/16/13	0.98	0.083	**2.5**	**5.0**	**3.6**	**3.1**	**1.6**	1.8	**1.7**	**4.8**	0.49	11	0.98	**1.5**	0.15	0.15	0.22	0.75	8.6	8.7
	10/23/13	0.65	0.053	1.7	3.2	**2.5**	**1.9**	**1.1**	NM	**1.2**	**2.9**	0.34	6.9	0.67	**1.1**	0.087	0.094	<0.2	0.60	6.2	5.6
	12/15/14	1.6	0.16	**2.5**	4.5	**3.7**	**2.9**	**1.6**	1.9	**1.9**	**4.5**	**0.57**	10	1.3	**1.5**	3.3	2.1	46	0.83	8.1	8.1
	12/09/15	0.96	0.078	2.3	**4.9**	**4.7**	**3.5**	**2.0**	2.4	**2.3**	**5.1**	**0.67**	12	0.95	**1.9**	0.12	0.12	<0.20	1.0	9.0	9.3
	11/28/16	0.35	0.033	0.85	2.1	**1.8**	**1.4**	**0.81**	0.88	**0.85**	**2.1**	0.26	4.4	0.38	**0.78**	0.05	0.053	<0.20	0.4	3.2	3.6
	12/5/17	1.2	0.084	**3.7**	**9.5**	**6.9**	**5.9**	**3.1**	3.3	**3.4**	**8.6**	**1.1**	18	1.2	**2.9**	0.12	0.12	<0.20	1.5	12	13
CODT-201-MWC (3.97 m)	03/13/13	220	3.8	**4.9**	0.058	<0.01	<0.01	<0.01	NM	<0.01	0.04	<0.01	3.3	90	<0.01	490	310	5100	<0.01	76	1.6
	07/16/13	160	8.0	**4.5**	0.08	0.016	0.02	0.017	0.01	0.015	0.064	<0.01	2.7	66	0.014	360	300	4900	<0.01	51	1.3
	10/23/13[FD]	190	10	**2.5**	0.036	<0.01	<0.01	<0.01	NM	<0.01	0.029	<0.01	2.2	77	<0.01	450	320	6000	<0.01	57	1.1
	10/23/13	190	10	**3.3**	0.038	<0.01	<0.01	<0.01	NM	<0.01	0.032	<0.01	2.2	78	<0.01	470	330	6300	<0.01	56	1.1
	12/15/14	230	12	**5.9**	0.058	<0.01	<0.01	<0.01	<0.01	<0.01	0.048	<0.01	3.7	110	<0.01	670	450	**7200**	<0.01	76	1.8
	12/9/15	300	18	*<10*	*<10*	*<10*	*<10*	*<10*	<10	*<10*	*<10*	*<10*	<10	120	*<10*	750	610	**9500**	<10	89	<10
	11/28/16	250	11	**3.3**	0.044	<0.010	<0.010	<0.010	<0.010	<0.010	0.036	<0.010	1.9	120	<0.010	660	430	**7500**	<0.010	78	1
	12/5/17	240	11	**4.5**	0.054	<0.010	<0.010	<0.010	<0.010	<0.010	0.042	<0.010	3.5	96	<0.010	560	340	6200	<0.010	74	1.4
CODT-203-MW (2.79 m)	03/13/13	4.8	0.083	2.1	1.3	0.64	0.43	0.2	NM	**0.57**	**1.1**	0.064	4	2.2	**0.24**	0.63	0.22	0.62	0.14	5.1	3
	07/16/13[FD]	7.2	0.11	**2.6**	1.8	**1.2**	**0.93**	**0.48**	0.6	**0.58**	**1.6**	0.16	6.2	3.4	**0.4**	1.6	0.57	6.8	0.2	7.5	4.6
	07/16/13	7.0	0.13	**2.6**	1.8	**1.1**	**0.91**	**0.43**	0.53	**0.56**	**1.7**	0.14	6.2	3.3	**0.38**	1.6	0.53	6.3	0.22	7.6	4.6
	10/23/13[L]	10	0.19	**3.2**	1.8	**1.1**	**0.84**	**0.42**	0.59	**0.53**	**1.5**	0.15	6.6	4.8	**0.43**	2.0	0.31	1.6	0.25	9.8	4.6
	10/23/13	10	0.19	**2.5**	1.7	0.71	0.53	**0.27**	0.35	0.33	**1.2**	0.11	5.1	4.4	**0.29**	1.8	0.23	1.5	0.22	7.0	3.6
	12/12/14	0.23	<0.01	0.55	0.81	0.69	0.49	**0.29**	0.35	0.35	0.83	0.10	1.9	0.29	**0.28**	<0.05	<0.05	<0.2	0.14	1.7	1.4
	12/8/15[FD]	3.0	0.094	0.46	0.6	0.46	0.34	0.17	0.21	0.2	0.59	0.063	1.6	0.96	0.17	0.22	<0.050	<0.20	0.089	1.3	1.1
	12/8/15	0.61	0.026	0.42	0.75	0.61	0.42	**0.29**	0.27	0.26	0.73	0.11	1.8	0.24	**0.29**	<0.050	<0.050	<0.20	0.12	1.5	1.3
	11/23/16	0.37	<0.010	0.79	1.7	**1.5**	**1.1**	**0.65**	0.69	**0.67**	**1.6**	0.23	3.4	0.4	**0.64**	0.063	0.06	<0.20	0.31	2.6	2.7
	12/7/17	1.0	0.027	0.27	0.36	0.24	0.20	0.11	0.14	0.13	0.35	0.035	0.93	0.41	0.10	0.12	<0.050	0.52	0.049	0.74	0.65

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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]
CODT-205-MWA (1.78 m)	03/13/13[FD]	0.016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.027	0.021	<0.01	<0.05	<0.05	<0.2	<0.01	0.061	0.028
	03/13/13	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	NM	0.011	<0.01	<0.01	0.025	0.013	<0.01	<0.05	<0.05	<0.2	<0.01	0.055	0.024
	07/16/13	0.53	1.0	0.041	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.065	0.56	<0.01	0.54	<0.05	0.76	<0.01	0.29	0.041
	10/23/13	1.7	1.5	0.082	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	0.13	1.0	<0.01	4.9	2.7	53	<0.01	1.0	0.08
	12/15/14	0.37	0.35	0.030	0.018	0.012	0.012	<0.01	<0.01	<0.01	0.018	<0.01	0.15	0.31	<0.01	0.40	0.16	4.3	<0.01	0.15	0.088
	12/8/15	0.019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.022	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.017
	11/23/16	0.38	0.6	0.033	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.043	0.43	<0.010	0.3	<0.050	<0.20	<0.010	0.1	0.023
	12/5/17	0.26	0.30	0.018	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.031	0.26	<0.010	0.099	<0.050	<0.20	<0.010	0.043	0.020
CODT-206-MW (2.14 m)	03/13/13	32	1.2	1.6	0.16	0.089	0.08	0.03	NM	0.076	0.13	0.01	3.1	18	0.03	16	3.2	72	0.019	12	1.7
	07/16/13	90	4.4	**4.1**	0.16	0.074	0.068	0.025	0.028	0.035	0.13	<0.01	7.2	56	0.018	43	1.5	140	0.012	54	3.8
	10/23/13	3.6	0.12	0.041	0.048	0.068	0.054	0.03	NM	0.023	0.057	<0.01	0.81	0.073	0.025	<0.05	<0.05	<0.2	0.013	0.095	0.3
	12/15/14	0.89	0.060	0.076	0.083	0.12	0.10	0.057	0.052	0.052	0.16	0.015	0.27	0.36	0.049	0.86	0.38	8.7	0.023	0.31	0.19
	12/8/15	0.034	<0.010	0.023	0.04	0.072	0.05	0.038	0.029	0.028	0.059	0.011	0.089	0.018	0.032	<0.050	<0.050	<0.20	0.015	0.059	0.064
	11/28/16[FD]	0.059	0.015	0.041	0.066	0.095	0.092	0.057	0.042	0.039	0.095	0.014	0.19	0.055	0.045	<0.050	<0.050	<0.20	0.023	0.13	0.14
	11/28/16	0.032	<0.010	0.021	0.038	0.054	0.046	0.034	0.022	0.021	0.058	<0.010	0.11	0.029	0.028	<0.050	<0.050	<0.20	0.016	0.084	0.08
	12/5/17 [FD]	63	3.0	2.4	0.20	0.25	0.23	0.096	0.082	0.095	0.27	0.033	3.1	39	0.096	18	1.1	30	0.043	25	1.5
	12/5/17	46	2.3	1.2	0.11	0.15	0.13	0.076	0.055	0.061	0.13	0.022	1.8	26	0.066	13	1.3	36	0.027	14	0.86
CONCW-101-MWB (3.70 m)	03/15/13	0.19	0.03	0.024	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.028	0.095	<0.01	0.42	0.27	3.0	<0.01	0.14	0.021
	07/17/13	0.11	0.034	0.028	0.017	0.013	0.014	<0.01	<0.01	<0.01	0.018	<0.01	0.057	0.079	<0.01	0.21	0.14	2.2	<0.01	0.11	0.042
	10/24/13	0.071	0.026	0.02	0.013	0.013	<0.01	<0.01	NM	<0.01	0.015	<0.01	0.039	0.049	<0.01	0.058	<0.05	0.23	<0.01	0.087	0.034
	12/12/14	0.055	0.043	0.016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.032	0.035	<0.01	0.060	<0.05	0.20	<0.01	0.066	0.024
	12/8/15	0.064	0.027	0.033	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.08	0.07	<0.010	0.065	0.06	0.29	<0.010	0.21	0.052
	11/23/16	0.059	0.052	0.042	0.062	0.045	0.037	0.03	0.023	0.021	0.053	<0.010	0.15	0.078	0.026	0.091	0.073	0.55	0.011	0.22	0.11
	12/11/17	0.014	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	0.024	<0.010	<0.050	<0.050	<0.20	<0.010	0.038	0.020
CONPL-202-MWA (5.39 m)	12/15/14	0.054	0.030	0.031	0.062	0.059	0.045	0.030	0.026	0.027	0.053	<0.01	0.12	0.028	0.027	<0.05	<0.05	<0.2	0.014	0.086	0.096
	12/9/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	11/23/16	<0.010	<0.010	<0.010	0.021	0.015	0.011	<0.010	<0.010	<0.010	0.018	<0.010	0.037	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.033	0.028
	12/21/17	0.022	0.016	0.047	0.095	0.071	0.055	0.035	0.041	0.034	0.089	0.011	0.18	0.038	0.034	<0.050	<0.050	<0.20	0.020	0.14	0.14
COSB-002-MWA (1.91 m)	03/18/13[L]	0.026	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.01	0.014	<0.01	0.056	<0.05	0.42	<0.01	0.018	<0.01
	03/18/13	0.023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.05	<0.05	0.34	<0.01	0.016	<0.01
	07/26/13	0.2	0.21	0.44	0.53	0.52	0.4	**0.31**	0.25	0.23	0.52	0.073	1.3	0.35	**0.26**	0.17	0.21	0.25	0.13	1.4	1.2
	11/06/13[FD]	0.018	0.021	0.014	0.022	0.013	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	0.055	0.02	<0.01	<0.05	<0.05	<0.2	<0.01	0.033	0.055
	11/06/13	0.022	0.023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.027	0.019	<0.01	<0.05	<0.05	<0.2	<0.01	0.021	0.039
	12/15/14	0.013	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.015	<0.01	<0.05	<0.05	<0.2	<0.01	0.014	0.012
	12/9/15	0.014	0.019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.050	<0.050	<0.20	<0.010	0.010	0.012
	11/28/16	0.74	0.053	0.019	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.02	0.32	<0.010	2.5	1.6	33	<0.010	0.21	0.013
	12/8/17	<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	0.011	<0.010
COSCW-001-MWA (3.04 m)	03/19/13	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	0.3	0.2	2.3	<0.01	0.034	<0.01
	07/17/13[L]	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	0.046	0.017	<0.01	<0.05	<0.05	<0.2	<0.01	0.07	0.022
	07/17/13	<0.01	<0.01	0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	0.049	0.015	<0.01	<0.05	<0.05	<0.2	<0.01	0.068	0.027
	10/24/13	0.043	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.022	<0.01	<0.05	<0.05	<0.2	<0.01	0.016	<0.01
	12/12/14	0.045	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.12	0.05	1	<0.01	0.022	<0.01
	12/8/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	0.013	<0.010	<0.050	<0.050	<0.20	<0.010	0.022	0.01
	11/22/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.012	<0.010
	12/8/17	<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	0.014	<0.010
COSCW-001-MWB (1.75 m)	03/19/13	0.012	<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	<0.2	<0.01	<0.01	<0.01
	07/17/13	0.091	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.052	<0.01	0.24	0.16	3.2	<0.01	0.032	<0.01
	10/24/13	0.22	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.075	<0.01	0.85	0.57	12	<0.01	0.056	<0.01
	12/12/14	0.017	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.010	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/8/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.023	0.015
	11/22/16	<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
	12/8/17	<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
COSCW-002-MWA (4.33 m)	03/26/13[L]	0.074	0.13	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.012	0.071	<0.01	0.25	<0.05	0.49	<0.01	0.053	<0.01
	03/26/13	0.055	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.052	<0.01	0.19	<0.05	0.39	<0.01	0.034	<0.01
	07/17/13	0.036	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	0.022	<0.01	0.083	0.055	1.0	<0.01	0.025	<0.01
	10/24/13	0.46	0.034	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.15	<0.01	1.9	1.2	29	<0.01	0.11	<0.01
	12/12/14	0.039	0.020	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	0.031	0.028	<0.01	0.057	<0.05	0.22	<0.01	0.042	0.023
	12/8/15	0.015	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	<0.010	0.03	0.019	<0.010	<0.050	<0.050	<0.20	<0.010	0.046	0.024
	11/22/16	<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	0.011	<0.010
	12/8/17	<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	0.024	<0.010

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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]
COSCW-002-MWB (3.03 m)	03/19/13	0.023	0.012	<0.01	0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.023	0.022	<0.01	<0.05	<0.05	0.3	<0.01	0.036	0.018
	07/17/13	0.13	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.033	0.076	<0.01	0.28	0.15	3.1	<0.01	0.08	0.021
	10/24/13	0.062	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.015	0.031	<0.01	<0.05	<0.05	<0.2	<0.01	0.026	0.014
	12/12/14	0.020	0.010	0.013	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.019	0.011	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	0.011
	12/8/15	<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	0.014	<0.010
	11/22/16	<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
	12/8/17	<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
COTS-001-MWA[3] (4.08 m)	11/15/13	0.052	0.18	0.16	0.28	0.33	0.27	0.17	0.14	0.14	0.25	0.046	0.48	0.12	0.13	0.1	<0.05	0.22	0.062	0.29	0.37
	12/15/14	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	12/08/15	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
COTS-001-MWB[3] (4.44 m)	12/08/15	<0.010	<0.010	<0.010	0.011	0.011	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	0.029	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.023	0.023
	11/28/16	0.19	1.2	0.027	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	0.091	<0.010	0.49	<0.050	1.7	<0.010	0.017	<0.010
	12/21/17	<0.010	0.018	<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
MCES-001-MWA (6.18 m)	03/28/13[FD]	0.21	0.45	0.078	0.071	0.012	0.01	<0.01	NM	0.02	0.06	<0.01	0.38	0.36	<0.01	0.68	0.39	0.82	<0.01	0.39	0.75
	03/28/13	0.22	0.46	0.083	0.08	0.017	0.016	<0.01	NM	0.03	0.07	<0.01	0.41	0.35	<0.01	0.69	0.39	0.79	<0.01	0.41	0.81
	07/24/13	0.23	0.43	0.1	0.15	0.047	0.057	0.03	0.037	0.04	0.14	0.01	0.46	0.39	0.028	0.67	0.39	1.0	0.018	0.46	0.98
	12/10/14	0.069	0.098	0.023	0.039	0.021	0.022	0.014	0.014	0.014	0.044	<0.01	0.19	0.099	0.015	0.18	<0.05	<0.2	<0.01	0.068	0.25
	12/2/15	0.1	0.16	0.07	0.048	<0.010	<0.010	<0.010	<0.010	<0.010	0.046	<0.010	0.44	0.18	<0.010	0.28	0.1	<0.20	<0.010	0.21	0.7
	11/25/16	0.059	0.098	0.019	0.021	<0.010	<0.010	<0.010	<0.010	<0.010	0.025	<0.010	0.13	0.1	<0.010	0.18	0.05	<0.20	<0.010	0.04	0.16
	12/12/17[FD]	0.048	0.067	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	0.09	0.074	<0.010	0.12	<0.050	<0.20	<0.010	0.034	0.13
	12/12/17	0.052	0.073	0.021	0.021	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	0.22	0.076	<0.010	0.13	<0.050	<0.20	<0.010	0.041	0.13
MCES-001-MWB (6.39 m)	03/28/13	0.022	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.031	0.015	<0.01	0.064	<0.05	0.5	<0.01	0.019	0.05
	07/25/13	0.021	0.013	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.019	0.018	<0.01	0.064	<0.05	0.44	<0.01	0.023	0.031
	11/14/13	0.012	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.026	0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.013	0.037
	12/10/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.015	<0.01
	12/02/15	<0.010	<0.010	<0.010	0.02	0.012	0.01	<0.010	<0.010	<0.010	0.019	<0.010	0.045	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.036	0.037
	11/25/16	<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
	12/15/17	<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
MCES-006-MW (2.93 m)	03/28/13	52	0.79	1.1	0.16	0.019	0.021	<0.01	NM	0.02	0.14	<0.01	1.7	12	<0.01	34	7.0	34	<0.01	3.1	1.3
	07/26/13	62	1.1	0.84	0.3	0.11	0.11	0.02	0.051	0.06	0.29	<0.01	2.4	11	0.021	46	4.7	15	0.018	3.2	1.8
	11/05/13	60	1.4	0.69	0.15	0.035	0.037	<0.01	0.012	0.02	0.17	<0.01	2.1	13	<0.01	55	10	83	<0.01	2.9	1.7
	12/10/14	11	0.26	0.15	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	0.024	<0.01	0.25	3.3	<0.01	8.7	2.5	63	<0.01	1.1	0.22
	12/3/15	1.7	0.031	0.027	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	0.059	0.061	<0.010	<0.050	<0.050	<0.20	<0.010	0.029	0.048
	12/2/16	22	0.24	0.30	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	0.42	7.4	<0.010	17	0.53	<0.20	<0.010	2.6	0.30
	12/13/17	<0.010	0.014	0.012	<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	0.091
MCES-204-MW (4.17 m) *(Destroyed 2017)*	03/28/13	2.5	1.7	**3.6**	1.2	0.64	0.46	**0.27**	NM	**0.57**	1.00	0.052	5.6	5.9	**0.28**	5.9	8.9	68	0.16	14	3.7
	07/24/13	2.9	1.8	**3.3**	0.39	0.22	0.17	0.11	0.1	0.10	0.34	0.028	3.7	6.5	0.095	7.1	12	65	0.049	15	2.5
	11/07/13	3.2	2.5	**4.2**	0.79	0.39	0.36	0.20	0.18	0.25	0.70	0.049	6.1	7.1	0.18	8.2	12	90	0.094	16	4.0
	12/18/14[FD]	0.41	<0.04	<0.05	0.033	<0.01	<0.01	<0.01	<0.01	<0.01	0.043	<0.01	0.65	0.13	<0.01	0.087	0.08	0.35	<0.01	<0.04	0.45
	12/18/14	1.6	1.9	1.9	0.13	0.035	0.031	0.015	0.021	0.020	0.14	<0.01	2.6	4.7	0.013	4.6	7.1	34	<0.01	9.2	1.5
	12/10/15	1.8	1.8	**2.6**	0.13	0.018	0.014	<0.010	0.015	0.013	0.12	<0.010	2.7	4.6	<0.010	5	7.8	49	<0.010	11	1.6
	11/25/16[FD]	1.6	1.7	**2.7**	0.14	0.022	0.015	<0.010	0.015	0.01	0.14	<0.010	2.9	4.2	<0.010	4.8	7.2	46	<0.010	9.5	1.7
	11/25/16[FDR]	1.4	1.6	1.8	0.11	0.013	0.012	<0.010	<0.010	<0.010	0.099	<0.010	2.1	3.7	<0.010	4.1	6.2	43	<0.010	7.1	1.2
	11/25/16	1.6	1.7	**2.5**	0.12	0.021	0.018	<0.010	0.014	0.012	0.12	<0.010	2.4	4.2	<0.010	4.8	7.3	47	<0.010	8.2	1.5
	11/25/16[R]	1.7	1.8	2.0	0.12	0.016	0.014	<0.010	0.011	<0.010	0.12	<0.010	2.4	4.4	<0.010	4.9	7.4	49	<0.010	6.3	1.4
MCWS-009-MW[4] (6.63 m) *Decommissioned 2015*	12/9/14[FD]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.014	<0.01
	12/9/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	<0.01
MCWS-113-MWB (2.52 m)	03/27/13	0.86	0.035	0.082	0.034	0.016	0.011	<0.01	NM	0.02	0.03	<0.01	0.18	0.54	<0.01	9.2	0.14	2.4	<0.01	0.19	0.12
	07/24/13	1.0	0.043	0.11	0.12	0.11	0.087	0.06	0.05	0.05	0.11	0.02	0.27	0.65	0.058	16	0.55	8.2	0.028	0.49	0.21
	11/15/13	1.2	0.06	0.23	0.18	0.16	0.12	0.10	0.075	0.07	0.17	0.023	0.44	0.89	0.072	19	0.59	11	0.036	0.64	0.31
	12/9/14	0.74	0.042	0.097	0.042	0.032	0.022	0.019	0.013	0.015	0.044	<0.01	0.15	0.44	0.018	8.7	0.72	0.39	<0.01	0.26	0.12
	12/2/15	0.97	0.035	0.12	0.031	<0.010	0.012	<0.010	<0.010	<0.010	0.033	<0.010	0.24	0.52	<0.010	19	3.5	0.33	<0.010	0.35	0.14
	11/30/16	<0.010	0.013	0.03	0.024	0.038	0.034	0.025	0.033	0.028	0.044	<0.010	0.067	0.011	0.016	<0.050	<0.050	<0.20	<0.010	0.023	0.16
	12/12/17	<0.010	<0.010	<0.010	0.012	0.021	0.021	0.013	0.010	0.012	0.022	<0.010	0.014	<0.010	0.011	<0.050	<0.050	<0.20	<0.010	<0.010	0.13

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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]
MCWS-306-MWB (0.79 m)	03/27/13	0.028	<0.01	0.02	0.028	0.013	0.011	<0.01	NM	0.02	0.03	<0.01	0.087	0.018	<0.01	0.072	<0.05	0.6	<0.01	0.068	0.07
	07/24/13	0.011	<0.01	0.016	0.027	0.022	0.023	0.02	0.013	0.01	0.03	<0.01	0.052	0.016	0.016	<0.05	<0.05	0.22	<0.01	0.06	0.043
	11/15/13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.022	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.015	0.017
	12/9/14	<0.01	<0.01	0.011	0.018	0.019	0.016	0.011	<0.01	<0.01	0.018	<0.01	0.037	<0.01	0.01	<0.05	<0.05	<0.2	<0.01	0.033	0.034
	12/2/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.023	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.021	0.021
	11/30/16	<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
	12/12/17	<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
MCWS-307-MWB (0.70 m)	03/27/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/27/13	0.017	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	0.055	<0.05	0.25	<0.01	0.011	<0.01
	07/24/13	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.078	<0.05	0.42	<0.01	<0.01	<0.01
	11/14/13	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/9/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.017	0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.030	0.013
	12/2/15	<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
	12/2/16	<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
	12/12/17	<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
MCWS-309-MW (0.97 m)	07/26/13	0.041	0.067	0.074	0.16	0.17	0.13	0.11	0.078	0.08	0.16	0.025	0.35	0.056	0.089	<0.05	<0.05	<0.2	0.05	0.25	0.29
	11/14/13	0.09	0.049	0.033	0.029	0.027	0.024	0.02	0.013	0.01	0.03	<0.01	0.14	0.075	<0.01	0.13	0.06	1.3	<0.01	0.077	0.11
	12/9/14	0.028	0.13	0.22	0.51	0.50	0.37	**0.28**	0.24	0.24	0.48	0.084	1.0	0.13	0.28	<0.05	0.062	<0.2	0.13	0.60	0.79
	12/3/15	0.049	0.15	0.18	0.44	0.36	0.26	**0.22**	0.18	0.16	0.41	0.061	1.0	0.13	0.20	0.099	<0.050	<0.20	0.096	0.56	0.79
	12/2/16	<0.010	0.013	0.019	0.029	0.033	0.027	0.02	0.018	0.016	0.031	<0.010	0.093	0.014	0.018	<0.050	<0.050	<0.20	<0.010	0.052	0.080
	12/12/17	<0.010	0.021	0.039	0.10	0.09	0.13	0.064	0.051	0.053	0.11	0.019	0.29	0.024	0.059	<0.050	<0.050	<0.20	0.028	0.11	0.22
MCWS-310-MW (1.81 m)	03/29/13	0.014	<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	0.32	<0.01	<0.01	<0.01
	07/26/13[L]	0.029	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	0.076	<0.05	0.59	<0.01	<0.01	<0.01
	07/26/13	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	<0.01	0.056	<0.05	0.38	<0.01	<0.01	<0.01
	11/14/13[L]	0.11	0.047	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	0.051	<0.01	0.43	0.22	4.5	<0.01	0.061	<0.01
	11/14/13	0.069	0.028	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.038	<0.01	0.26	0.13	2.3	<0.01	0.041	<0.01
	12/9/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.016	<0.01
	12/10/15[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	<0.010	<0.010
	12/10/15	<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
	12/2/16	<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	0.013	<0.010
	12/12/17	0.037	0.032	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.021	0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.014
MSES-003-MW (9.10 m) *Destroyed 2016*	03/26/13	0.018	<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	0.056	<0.05	0.44	<0.01	<0.01	<0.01
	07/24/13[FD]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	07/24/13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	11/05/13	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/10/14[FD]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/10/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	<0.01
	12/3/15	<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	0.011	<0.010
MSES-004-MW (7.86 m)	03/26/13	0.033	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.015	0.019	<0.01	0.087	0.053	0.63	<0.01	0.018	0.012
	07/26/13	0.039	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.019	<0.01	0.08	<0.05	0.57	<0.01	0.011	<0.01
	11/15/13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	0.011
	12/10/14	0.038	0.069	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	0.023	<0.01	0.11	<0.05	<0.2	<0.01	0.017	0.011
	12/3/15	<0.010	<0.010	0.024	0.046	0.034	0.025	0.019	0.017	0.016	0.053	<0.010	0.12	0.015	0.015	<0.050	<0.050	<0.20	<0.010	0.10	0.10
	11/25/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	11/25/16[R]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	<0.010
	12-13-17 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	<0.010	0.010
	12/13/17	<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

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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]
MSES-006-MW (3.82 m)	03/26/13	0.73	1.1	0.013	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.1	0.36	<0.01	0.46	<0.05	0.74	<0.01	0.048	0.062
	07/24/13	0.46	0.79	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	0.22	<0.01	0.37	<0.05	0.67	<0.01	0.033	0.041
	11/05/13[L]	0.43	0.88	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.064	0.16	<0.01	0.22	<0.05	0.57	<0.01	0.02	0.042
	11/05/13	0.2	0.36	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.044	0.077	<0.01	0.073	<0.05	0.24	<0.01	0.017	0.03
	12/10/14	0.75	1.4	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.015	0.23	<0.01	0.52	<0.05	1.5	<0.01	0.015	<0.01
	12/3/15	0.89	1.2	0.015	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	0.046	0.27	<0.010	0.82	<0.050	1.4	<0.010	0.049	0.035
	11/25/16	0.66	0.94	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.035	0.16	<0.010	0.21	<0.050	<0.20	<0.010	<0.010	0.02
	11/25/16[R]	0.65	0.96	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.031	0.16	<0.010	0.2	<0.050	<0.20	<0.010	<0.010	0.02
	12/13/17	0.44	0.69	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.12	<0.010	0.25	<0.050	0.33	<0.010	<0.010	<0.010
MSES-008-MW (4.17 m)	03/26/13	2.3	4.2	0.37	0.096	0.011	<0.01	<0.01	NM	0.02	0.06	<0.01	1.7	5.2	<0.01	1.8	<0.05	0.88	<0.01	4.2	1.2
	07/26/13	2.5	3.2	0.29	0.078	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	1.4	4.7	<0.01	1.4	<0.05	0.36	<0.01	2.9	1.0
	11/15/13	3.1	4.1	0.53	0.10	0.011	0.012	<0.01	<0.01	<0.01	0.08	<0.01	1.9	5.7	<0.01	2.0	<0.05	0.23	<0.01	3.8	1.3
	12/10/14	1.9	2.7	0.21	0.070	<0.01	<0.01	<0.01	<0.01	<0.01	0.049	<0.01	1.2	3.6	<0.01	0.94	<0.05	<0.2	<0.01	1.9	0.94
	12/3/15[FD]	2.1	2.5	0.23	0.07	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	<0.010	1.5	3.8	<0.010	0.7	<0.050	<0.20	<0.010	1.7	1.1
	12/3/15	2.1	2.4	0.23	0.065	<0.010	<0.010	<0.010	<0.010	<0.010	0.051	<0.010	1.4	3.8	<0.010	0.69	<0.050	<0.20	<0.010	1.6	1.0
	11/25/16[FD]	1.4	1.8	0.16	0.049	<0.010	<0.010	<0.010	<0.010	<0.010	0.04	<0.010	1	3.1	<0.010	0.42	<0.050	<0.20	<0.010	0.8	0.77
	11/25/16[FDR]	1.6	2.0	0.15	0.063	<0.010	<0.010	<0.010	<0.010	<0.010	0.047	<0.010	1.3	3.6	<0.010	0.45	<0.050	<0.20	<0.010	0.88	0.92
	11/25/16	1.4	1.7	0.15	0.054	<0.010	<0.010	<0.010	<0.010	<0.010	0.045	<0.010	1	3.1	<0.010	0.4	<0.050	<0.20	<0.010	0.84	0.79
	11/25/16[R]	1.4	1.7	0.13	0.049	<0.010	<0.010	<0.010	<0.010	<0.010	0.036	<0.010	0.96	3.1	<0.010	0.39	<0.050	<0.20	<0.010	0.68	0.70
	12/13/17	1.6	1.9	0.13	0.062	<0.010	<0.010	<0.010	<0.010	<0.010	0.050	<0.010	1.3	2.9	<0.010	0.34	<0.050	<0.20	<0.010	0.83	0.88
MSES-012-MWA (3.50 m)	03/15/13	0.19	0.021	0.071	0.024	0.022	0.011	<0.01	NM	0.03	0.05	<0.01	0.14	0.3	0.01	0.37	0.19	2.6	<0.01	0.19	0.099
	07/25/13[FD]	0.026	0.015	0.023	0.029	0.02	0.013	<0.01	<0.01	0.01	0.03	<0.01	0.084	0.061	<0.01	<0.05	<0.05	0.26	<0.01	0.066	0.063
	07/25/13	0.038	0.034	0.1	0.16	0.11	0.075	0.04	0.052	0.04	0.13	0.017	0.31	0.11	0.044	0.053	<0.05	0.32	0.027	0.27	0.23
	11/05/13	0.12	0.029	0.085	0.051	0.032	0.023	0.01	0.016	0.01	0.05	<0.01	0.23	0.19	0.013	0.19	0.094	2.5	<0.01	0.14	0.16
	12/16/14	0.15	0.033	0.17	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.059	0.12	<0.01	0.43	0.19	4.0	<0.01	0.036	0.039
	12/3/15	0.014	0.017	0.014	0.018	0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	0.059	0.033	<0.010	<0.050	<0.050	<0.20	<0.010	0.037	0.042
	11/22/16	<0.010	<0.010	0.015	0.023	0.018	0.014	<0.010	<0.010	<0.010	0.028	<0.010	0.057	0.018	<0.010	<0.050	<0.050	<0.20	<0.010	0.034	0.041
	12/13/17	0.019	0.020	0.060	0.13	0.083	0.067	0.037	0.052	0.046	0.12	0.013	0.31	0.048	0.035	<0.050	<0.050	<0.20	0.021	0.16	0.22
MSES-104-MWA (2.30 m)	03/28/13	9.5	6.9	**2.8**	**5.8**	**2.7**	**2.0**	**1.10**	NM	**2.40**	**4.80**	0.28	29	2.2	**1.3**	0.69	0.52	2.4	0.6	3.1	18
	12/10/14	5.4	5.6	0.38	0.20	0.079	0.060	0.031	0.040	0.036	0.16	0.011	2.3	1.1	0.034	0.51	0.21	3.7	0.015	0.29	1.4
	12/3/15	8.1	7.5	0.70	0.24	0.035	0.028	<0.010	0.023	0.018	0.20	<0.010	4.2	1.6	<0.010	0.73	0.29	4.6	<0.010	0.55	2.6
	11/25/16	6.8	6.2	0.55	0.26	0.12	0.085	0.055	0.057	0.054	0.23	0.018	3.1	1.3	0.051	1.1	0.35	6.5	0.023	0.44	1.9
	11/25/16[R]	6.7	6.4	0.41	0.26	0.12	0.081	0.051	0.053	0.053	0.23	0.018	2.8	1.2	0.053	0.99	0.32	6	0.024	0.44	1.8
	12/13/17	7.3	6.3	0.53	0.20	0.028	0.026	<0.010	0.021	0.016	0.17	<0.010	3.4	1.9	<0.010	1.2	0.36	6.5	<0.010	0.60	2.0
MSES-104-MWB (2.63 m)	03/26/13	17	30	1.7	0.11	0.014	0.012	<0.01	NM	0.02	0.08	<0.01	1.4	13	<0.01	53	0.17	47	<0.01	11	0.86
	07/24/13	21	36	2.0	0.16	0.044	0.039	0.01	0.032	0.03	0.11	<0.01	1.4	16	0.013	58	0.12	37	0.015	12	0.96
	11/05/13[FD]	19	30	1.6	0.081	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	1.2	15	<0.01	55	0.19	26	<0.01	10	0.79
	11/05/13	20	32	1.7	0.11	0.018	0.012	<0.01	0.012	0.01	0.080	<0.01	1.3	15	<0.01	63	0.20	28	<0.01	11	0.84
	12/10/14	18	33	1.4	0.10	0.018	0.012	<0.01	0.013	0.011	0.074	<0.01	1.1	14	<0.01	45	0.12	17	<0.01	9.7	0.72
	12/3/15	18	31	1.4	0.038	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	0.83	13	<0.010	52	<0.050	9.1	<0.010	8.6	0.47
	11/25/16	25	39	1.4	0.034	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	0.8	18	<0.010	64	0.08	12	<0.010	2.9	0.45
	11/25/16[R]	24	45	1.1	0.032	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	<0.010	0.71	17	<0.010	66	0.079	11	<0.010	3	0.39
	12/13/17	16	28	1.1	0.031	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	0.71	11	<0.010	39	<0.050	3.3	<0.010	6.9	0.38
MW2 SPAR RD (2.62 m) *Removed from the LTMM program in 2015*	03/19/13[FD]	0.037	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	0.092	0.057	0.69	<0.01	0.013	<0.01
	03/19/13	0.039	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.099	0.063	0.74	<0.01	0.016	<0.01
	07/24/13	0.015	<0.01	0.013	0.041	0.03	0.028	0.021	NM	0.016	0.041	<0.01	0.065	0.013	0.019	<0.05	<0.05	0.36	<0.01	0.06	0.06
	11/06/13	0.026	0.028	0.012	0.017	0.014	0.015	0.012	NM	<0.01	0.021	<0.01	0.043	0.023	<0.01	<0.05	<0.05	<0.20	<0.01	0.038	0.03
	12/16/14[FD]	0.077	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	0.034	<0.01	0.25	0.12	1.7	<0.01	0.031	0.014
	12/16/14	0.055	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.024	<0.010	0.15	0.081	1.1	<0.010	0.016	<0.010

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAHs

Sample Location (Monitor Well Depth)	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[4]	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]
SCU11-001-MWA (2.79 m)	03/29/13	0.097	<0.01	0.18	0.041	0.012	<0.01	<0.01	NM	0.013	0.04	<0.01	0.21	0.21	<0.01	<0.05	<0.05	<0.2	<0.01	0.49	0.17
	07/17/13	0.076	0.013	0.23	0.14	0.081	0.072	0.039	0.048	0.043	0.13	0.011	0.43	0.13	0.035	<0.05	<0.05	<0.2	0.016	0.47	0.36
	10/24/13	0.074	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	0.018	<0.01	<0.01	0.012	0.025	<0.01	0.18	<0.05	0.58	0.087	0.059	0.011
	12/15/14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.015	<0.01
	12/11/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	0.01	<0.010	<0.050	<0.050	<0.20	<0.010	0.016	<0.010
	11/23/16	<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	0.016	<0.010
	12/13/17	<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
SCU11-001-MWB (2.13 m)	03/29/13	0.79	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	<0.01	0.071	<0.01	1.8	<0.05	3.2	<0.01	0.033	<0.01
	07/17/13	0.55	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	0.06	<0.01	0.7	<0.05	1.1	<0.01	0.024	0.015
	10/24/13	<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	<0.2	<0.01	<0.01	<0.01
	12/15/14[FD]	0.019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	0.014	<0.01	<0.05	<0.05	<0.2	<0.01	0.021	0.012
	12/15/14	0.019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	0.013	<0.01	<0.05	<0.05	<0.2	<0.01	0.019	0.012
	12/11/15	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	0.011	<0.010	<0.050	<0.050	<0.20	<0.010	0.015	0.012
	11/23/16	<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
	12/13/17	<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
SCU7-001-MW (1.84 m)	12/12/14	0.029	0.045	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.010	<0.01	0.030	0.024	<0.01	<0.05	<0.05	<0.2	<0.01	0.026	0.019
	12/10/15	<0.010	0.011	0.017	0.026	0.025	0.015	0.017	0.013	0.013	0.031	<0.010	0.064	0.012	0.013	<0.050	<0.050	<0.20	<0.010	0.056	0.053
	12/2/16	0.012	0.054	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	0.028	<0.010	<0.050	<0.050	<0.20	<0.010	0.014	0.011
	12/15/17	<0.010	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	<0.010	0.011
SCU7-003-MW (1.16 m)	03/29/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/29/13	0.016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NM	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	0.013
	07/17/13	0.097	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.031	0.059	<0.01	0.18	0.11	2.5	<0.01	0.13	0.026
	11/07/13	0.013	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	0.012
	12/12/14	0.060	0.011	0.026	0.044	0.025	0.022	0.012	0.013	0.013	0.047	<0.01	0.19	0.047	<0.01	<0.05	<0.05	<0.2	<0.01	0.10	0.11
	12/10/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	<0.010	<0.050	<0.050	<0.20	<0.010	0.014	0.018
	11/30/16	0.096	0.013	0.027	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.035	0.087	<0.010	0.11	0.19	0.68	<0.010	0.1	0.022
	12/15/17	<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

NOTES:

FD - Field Duplicate
L - Lab Duplicate
R - Sample analysis repeated due to a laboratory error.
FDR - Field duplicate sample analysis repeated due to a laboratory error.
NM - Not measured or not analyzed; lab duplicates do not analyze for all parameters.
µg/L - micrograms per litre
- No applicable guideline criteria.
1 - Nova Scotia Environment (NSE) Tier I Environmental Quality Standards (EQS) for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013 (Revised January 2015)
2 - Ontario Ministry of Environment, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011
3 - COTS-001-MWA could not be sampled during the December 2014 event due to insufficient water. COTS-001-MWB added to the LTMM in 2015 in place of COTS-001-MWA.
4 - Benzo(j)fluoranthene was historically not included in PAH analysis.
5 - Bold and Shaded Exceeds NSE Tier I EQS or default MOE standards when no Tier I EQS is available.
6 - *Italics indicates laboratory detection limit elevated above criteria*
7 - This summary is to be used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COBB-004-MWA (1.50 m)	03/27/13	7800	<3000	100000	4300	90	200	18	19	0.014	<500	0.19	<0.01	0.19	<0.05	<5	2.3	0.5	600	7.8	270	89	<1	402	6.38	4.76	0.314
	07/26/13	8990	3460	119000	5010	120	190	19	27	0.021	<100	<0.05	<0.01	<0.05	<0.05	<5	4.1	1.7	670	7.8	320	120	<1	444	6.84	0.07	0.489
	11/06/13	6800	3100	76000	2500	62	130	14	27	0.029	<100	<0.05	<0.01	<0.05	<0.05	15	6.7	1	430	7.65	200	62	<1	300	4.36	0	-0.096
	12/15/14	8000	3500	130000	4800	100	210	16	27	0.022	<100	0.16	<0.01	0.16	<50	10	7.4	1.8	680	7.56	340	100	<1	460	6.9	3.02	0.212
	12/9/15	8000	3700	140000	5900	160	210	14	24	0.02	<100	<0.050	<0.010	<0.050	0.094	5	NM	2.2	720	7.72	370	150	<1.0	500	7.86	0.32	0.583
	12/02/16	8900	4200	170000	6900	140	300	20	26	0.023	<100	<0.050	<0.010	<0.050	0.052	10	5.6	3.8	830	7.52	460	140	<1.0	630	9.72	0.26	0.424
	12/08/17	11000	4600	210000	9200	210	310	22	27	0.015	<100	0.076	<0.010	0.076	0.51	5.3	7.0	4.5	1100	7.69	560	210	<1.0	730	11.4	1.93	0.829
COBC-001-MWA (1.93 m)	03/15/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	770	7.4	NM	NM	NM	NM	NM	NM	NM
	03/15/13	29000	2000	110000	5700	170	140	64	8.5	<0.01	<100	<0.05	<0.01	<0.05	0.47	65	3	32	770	7.4	300	170	<1	470	8.17	4.08	0.22
	07/26/13[LFD]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	720	7.26	NM	NM	NM	NM	NM	NM	NM
	07/26/13[FD]	34400	2300	98800	5930	150	120	73	11	0.013	212	<0.05	<0.01	<0.05	0.9	<5	4	96	720	7.27	270	150	<1	446	7.46	0	-0.024
	07/26/13	34000	2260	107000	6110	120	120	73	11	<0.01	193	<0.05	<0.01	<0.05	0.9	<5	3.4	110	740	7.33	290	150	<1	454	7.56	1.69	0.086
	11/07/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1200	7.25	NM	NM	NM	NM	NM	NM	NM
	11/07/13	41000	2300	190000	12000	150	350	67	8.6	<0.01	140	<0.05	<0.01	<0.05	0.4	5.2	2.5	40	1200	7.24	520	150	<1	770	12.2	0.85	0.183
	12/12/14	39000	2400	130000	7200	160	170	78	11	<10	<100	0.1	0.017	0.12	0.69	6.5	3.8	49	860	7.1	350	160	<1	550	9.12	1.22	-0.06
	12/10/15	40000	2600	130000	7700	200	170	77	10	<0.010	160	<0.050	<0.010	<0.050	0.7	6	NM	57	880	7.32	360	200	<1.0	570	9.69	2.76	0.249
	12/02/16	45000	2600	270000	16000	170	560	68	8.6	0.012	<100	<0.050	0.013	<0.050	0.66	<5.0	3.1	31	1400	7.3	730	170	<1.0	1100	16.9	0.21	0.402
	12/11/17	42000	2600	170000	9900	160	430	76	9	<0.010	<100	<0.05	<0.010	<0.050	1.1	<5.0	4.3	42	1300	7.55	460	160	<1.0	840	14.4	12.1	0.455
COBC-002-MWA (4.14 m)	03/15/13	160000	2500	170000	15000	48	270	320	3.3	<0.01	<100	0.23	<0.01	0.23	<0.05	<5	1.2	2.2	1600	6.3	500	48	<1	971	15.6	3.68	-1.33
	07/18/13	115000	2440	129000	13900	51	170	230	4.6	<0.01	<100	0.35	<0.01	0.35	<0.05	<5	1.5	1.3	1400	6.19	380	51	<1	696	11	6.96	-1.5
	11/05/13	150000	2800	150000	16000	50	250	310	4.9	<0.01	<100	0.25	<0.01	0.25	<0.05	<5	1.4	4.1	1600	5.98	450	50	<1	920	14.9	2.43	-1.68
	12/12/14	110000	2200	130000	13000	61	300	190	4.4	<10	<100	0.15	<0.01	0.15	0.057	<5	1.5	1.4	1300	5.99	380	61	<1	790	12.8	1.38	-1.64
	12/10/15	120000	2500	140000	16000	48	180	320	3.2	<0.010	<100	0.27	<0.010	0.27	0.056	<5.0	NM	4.1	1500	6.25	410	48	<1.0	820	13.9	0.62	-1.45
	11/22/16	160000	2600	150000	16000	58	230	340	3.8	0.011	<100	0.5	<0.010	0.5	0.056	<5.0	1.4	7.1	1600	6.29	430	58	<1.0	930	15.4	0.19	-1.32
	11/22/16	160000	2600	150000	16000	58	230	340	3.8	0.011	<100	0.5	<0.010	0.5	0.056	<5.0	1.4	7.1	1600	6.29	430	58	<1.0	930	15.4	0.19	-1.32
	12/02/17	210000	3300	190000	22000	53	190	590	2.9	<0.010	<100	0.21	<0.010	0.21	<0.050	<5.0	1.8	1.8	2300	6.37	570	53	<1.0	1300	21.9	2.53	-1.20
COBC-004-MWA (3.96 m)	03/15/13	100000	5000	320000	28000	220	710	170	17	0.07	<100	<0.05	0.013	<0.05	<0.05	<5	1.2	<0.1	1900	7.6	920	210	<1.0	1480	23.9	2.09	0.837
	07/18/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1600	7.82	NM	NM	NM	NM	NM	NM	NM
	07/18/13	86300	5180	221000	35800	190	360	160	18	0.066	117	0.21	<0.01	0.21	0.18	<5	1.5	0.24	1700	7.8	700	190	1.1	999	15.7	6.45	0.88
	11/05/13	43000	4100	83000	14000	120	110	52	22	0.092	200	0.44	<0.01	0.44	<0.05	5.3	0.87	4.3	610	7.89	270	120	<1.0	410	6.26	7.74	0.449
	12/12/14	29000	2200	34000	5100	99	20	41	13	0.086	140	0.18	<0.01	0.18	<50	<5	0.53	3	350	7.83	110	98	<1	210	3.59	1.84	-0.035
	12/10/15	32000	2300	34000	4800	100	18	49	13	0.13	210	0.079	<0.010	0.079	0.05	<5.0	NM	1.1	370	7.92	110	100	<1.0	220	3.85	3.77	0.072
	11/25/16	34000	4100	120000	18000	130	240	54	21	0.19	200	0.53	<0.010	0.53	0.069	<5.0	1.5	8	780	7.81	360	130	<1.0	570	9.13	1.5	0.519
	12/07/17	90000	4800	150000	21000	160	280	140	21	0.16	180	0.053	<0.010	0.053	0.068	<5.0	1.9	2.0	1300	7.93	460	160	1.3	810	13.1	0.340	0.792
COBP-006-MWA (2.25 m)	03/27/13[FDL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	6	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/27/13[FD]	14000	3900	150000	17000	220	300	25	14	<0.01	<500	<0.05	<0.01	<0.05	1.00	370	6.4	250	940	6.9	440	220	<1	683	11.2	3.41	-0.094
	03/27/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1.00	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/27/13	14000	3900	150000	18000	220	300	25	14	<0.01	<500	<0.05	<0.01	<0.05	0.99	310	7.4	270	940	6.9	460	220	<1	690	11.2	1.81	-0.077
	07/26/13	15300	4090	169000	21000	210	320	25	15	<0.01	<100	<0.05	<0.01	<0.05	0.89	37	6.7	190	1000	7.16	510	210	<1	723	11.5	1.25	0.192
	11/06/13	14000	4300	170000	21000	200	330	24	14	<0.01	110	<0.05	<0.01	<0.05	0.92	48	5.1	170	1000	7.01	520	200	<1	740	11.6	0.94	0.046
	12/15/14	21000	4000	130000	17000	250	150	34	16	<10	130	<0.05	<0.01	<0.05	1.2	17	7.8	170	820	6.95	400	250	<1	550	8.98	4.42	-0.007
	12/9/15[FD]	19000	3900	130000	15000	250	140	36	16	0.012	120	<0.050	<0.010	<0.050	1.1	<5.0	NM	240	800	7.11	380	250	<1.0	530	8.85	1.88	0.122
	12/9/15	19000	3800	120000	15000	260	120	35	16	0.013	120	<0.050	<0.010	<0.050	1.1	11	NM	270	790	7.13	370	260	<1.0	510	8.65	2.7	0.166
	11/28/16	21000	4200	110000	15000	280	98	38	16	0.016	<100	<0.050	<0.010	<0.050	1.4	5.6	12	280	720	7.06	350	280	<1.0	500	8.78	0.8	0.104
	12/21/17	21000	4000	110000	14000	270	81	40	16	<0.01	110	<0.050	<0.010	<0.050	1.3	6.8	11	170	770	7.29	340	270	<1.0	470	8.30	0.42	0.316

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		**unitless**	**unitless**	**unitless**	**µg/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**	**µg/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**	**µg/L**
MOE Table 3[2]		-	-	-	-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
COBB-004-MWA (1.50 m)	03/27/13	0.065	7.49	7.74	<25	<5	<3	44	<2.5	<10	<500	0.12	<5	<5	<10	<500	<5	<20	0.013	<20	<15	<5	<0.5	430	<4	<100	<15	1.8	<10	26
	07/26/13	0.241	7.31	7.56	12.9	<1	3.3	56.1	<1	<2	75	0.096	<1	<0.4	<2	77	<0.5	972	NM	19	2.2	<1	<0.1	481	<0.1	<2	<2	2.03	<2	16
	11/06/13	-0.345	7.75	8	10	<1	3.3	37	<1	<2	59	0.1	<1	<0.4	4.4	<50	<0.5	390	NM	7.8	2.5	<1	<0.1	360	<0.1	<2	<2	0.6	<2	12
	12/15/14	-0.036	7.35	7.59	27	<1	2.2	57	<1	<2	55	0.46	<1	<0.4	5.7	<50	<0.5	41	<0.013	3.2	<2	1.5	<0.1	600	<0.1	<2	<2	1.6	<2	20
	12/9/15	0.335	7.14	7.39	23	<1.0	3	76	<1.0	<2.0	65	0.058	<1.0	1.1	<2.0	360	<0.50	2300	<0.013	13	3.5	<1.0	<0.10	600	<0.10	<2.0	<2.0	2.7	<2.0	12
	12/02/16	0.177	7.09	7.34	10	<1.0	3.2	87	<1.0	<2.0	66	0.03	<1.0	0.76	2.3	320	<0.50	1700	<0.013	11	2.5	<1.0	<0.10	740	<0.10	<2.0	<2.0	3.2	<2.0	48
	12/08/17	0.582	6.86	7.11	5.5	<1.0	2.9	94	<1.0	<2.0	82	0.069	<1.0	0.60	<2.0	280	<0.50	2300	<0.013	12	<2.0	<1.0	<0.10	880	<0.10	<2.0	<2.0	8.2	<2.0	<5.0
COBC-001-MWA (1.93 m)	03/15/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	<0.013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/15/13	-0.028	7.18	7.43	16	<1	1.6	33	<0.5	<2.0	<100	0.056	<1.0	<1.0	<2.0	2600	<1.0	950	<0.013	<4	<3	<1.0	<0.1	3500	<0.8	<20	<3	<0.15	<2.0	37
	07/26/13[LFD]	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
	07/26/13[FD]	-0.272	7.29	7.54	293	<1.0	3.9	43.9	<1.0	<2.0	<50	0.028	<1.0	0.53	<2.0	11900	<0.5	1060	NM	<2.0	<2.0	<1.0	<0.1	2380	<0.1	<2.0	<2.0	0.15	2.1	35.5
	07/26/13	-0.162	7.24	7.49	23.3	<1.0	3.8	42.2	<1.0	<2.0	<50	<0.017	<1.0	0.48	<2.0	11100	<0.5	1080	NM	<2.0	<2.0	<1.0	<0.1	2550	<0.1	<2.0	<2.0	<0.1	<2.0	19.2
	11/07/13[L]	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
	11/07/13	-0.063	7.06	7.3	21	<1.0	2.7	34	<1.0	<2.0	<50	<0.01	<1.0	0.61	<2.0	4400	<0.5	1600	NM	<2.0	<2.0	<1.0	<0.1	7300	<0.1	<2.0	<2.0	0.17	<2.0	36
	12/12/14	-0.308	7.16	7.41	10	<1	2	50	<1	<2	<50	0.058	<1	0.44	<2	3900	<0.5	1200	<0.013	<2	<2	<1	<0.1	3600	<0.1	<2	<2	<0.1	<2	20
	12/10/15	0.002	7.08	7.32	29	<1.0	2.1	58	<1.0	<2.0	<50	0.095	<1.0	0.48	<2.0	4400	<0.50	1300	<0.013	<2.0	<2.0	<1.0	<0.10	3800	<0.10	<2.0	<2.0	0.12	<2.0	21
	12/02/16	0.157	6.9	7.15	7.7	<1.0	2.1	42	<1.0	<2.0	<50	0.058	<1.0	0.86	<2.0	3800	1.3	2500	<0.013	<2.0	<2.0	<1.0	<0.10	10000	<0.10	<2.0	<2.0	0.17	<2.0	61
	12/11/17	0.208	7.10	7.34	<5.0	<1.0	1.8	71	<1.0	<2.0	50	0.054	<1.0	0.42	<2.0	3300	<0.50	1700	<0.013	<2.0	<2.0	<1.0	<0.10	5000	<0.10	<2.0	<2.0	0.11	<2.0	11
COBC-002-MWA (4.14 m)	03/15/13	-1.57	7.63	7.87	47	<1	<0.6	15	<0.5	<2	<100	0.6	<1	<1	30	<100	<1	67	<0.013	<4	6.2	10	<0.1	730	<0.8	<20	<3	<0.15	<2	370
	07/18/13	-1.75	7.69	7.94	40.2	<1	<1	12.7	<1	<2	82	0.203	<1	0.46	40.4	84	0.93	56.1	NM	<2	2.2	8.4	<0.1	547	<0.1	<2	<2	<0.1	<2	189
	11/05/13	-1.92	7.66	7.90	95	<1	<1	14	<1	<2	87	0.26	<1	0.85	46	<50	0.92	80	NM	<2	5.3	7.6	<0.1	610	<0.1	<2	<2	<0.1	<2	240
	12/12/14	-1.88	7.62	7.87	60	<1	<1	11	<1	<2	79	0.47	<1	0.41	7.2	<50	0.57	51	<0.013	<2	<2	8.3	<0.1	500	<0.1	<2	<2	<0.1	<2	110
	12/10/15	-1.7	7.7	7.94	36	<1.0	<1.0	17	<1.0	<2.0	77	0.17	<1.0	<0.40	5.9	57	0.63	62	<0.013	<2.0	<2.0	5.8	<0.10	600	<0.10	<2.0	<2.0	<0.10	<2.0	84
	11/22/16	-1.57	7.62	7.86	66	<1.0	<1.0	15	<1.0	<2.0	79	0.21	<1.0	0.75	44	<50	0.61	98	<0.013	<2.0	2.5	6.9	<0.10	650	<0.10	<2.0	<2.0	<0.10	<2.0	160
	11/22/16	-1.57	7.62	7.86	66	<1.0	<1.0	15	<1.0	<2.0	79	0.21	<1.0	0.75	44	<50	0.61	98	<0.013	<2.0	2.5	6.9	<0.10	650	<0.10	<2.0	<2.0	<0.10	<2.0	160
	12/02/17	-1.44	7.57	7.82	27	<1.0	<1.0	21	<1.0	<2.0	75	0.21	<1.0	<0.40	9.6	<50	<0.50	59	<0.013	<2.0	<2.0	5.6	<0.10	950	<0.10	<2.0	<2.0	<0.10	<2.0	140
COBC-004-MWA (3.96 m)	03/15/13	0.593	6.76	7.01	6.4	1.9	4.1	20	<0.5	<2.0	<100	0.064	<1.0	<1.0	<2.0	<100	<1.0	270	<0.013	4.1	4.3	1.2	<0.10	710	<0.80	<20	<3.0	1	13	23
	07/18/13[L]	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
	07/18/13	0.634	6.92	7.17	8.4	1.5	3.6	15.3	<1.0	<2.0	93	0.054	<1.0	<0.4	4.2	72	<0.5	908	NM	7.5	<2.0	1.2	<0.10	682	<0.10	<2.0	<2.0	0.6	10.6	24.7
	11/05/13	0.201	7.44	7.69	16	5.0	5.4	8.5	<1.0	<2.0	67	0.043	<1.0	<0.4	<2.0	370	<0.5	310	NM	4.2	2.4	1.7	<0.10	200	<0.10	<2.0	<2.0	0.21	9.2	41
	12/12/14	-0.285	7.86	8.11	11	1.5	4.6	3.9	<1	<2	<50	0.12	<1	<0.4	2.9	<50	<0.5	7.6	<0.013	<2	<2	<1	<0.1	210	<0.1	<2	<2	0.14	8.6	18
	12/10/15	-0.178	7.84	8.09	7.7	<1.0	3.9	5.1	<1.0	<2.0	<50	0.037	<1.0	<0.40	2.6	<50	<0.50	<2.0	<0.013	<2.0	<2.0	<1.0	<0.10	300	<0.10	<2.0	<2.0	0.17	7.3	17
	11/25/16	0.272	7.3	7.54	9.4	2.5	4.6	41	<1.0	<2.0	80	0.023	<1.0	<0.40	6.6	<50	<0.50	35	<0.013	3.8	<2.0	1.7	<0.10	400	<0.10	<2.0	<2.0	0.59	13	41
	12/07/17	0.545	7.14	7.39	19	1.0	5.2	25	<1.0	<2.0	86	0.036	<1.0	<0.40	2.4	<50	<0.50	160	<0.013	7.3	<2.0	<1.0	<0.10	510	<0.10	<2.0	<2.0	0.64	15	20
COBP-006-MWA (2.25 m)	03/27/13[FDL]	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
	03/27/13[FD]	-0.341	6.99	7.24	31	<5	3.1	30	<2.5	<10	<500	<0.085	<5	<5	<10	23000	<5	8400	0.022	<20	<15	<5	1	500	<4	<100	<15	<0.75	<10	34
	03/27/13[L]	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
	03/27/13	-0.324	6.98	7.22	<25	<5	<3	31	<2.5	<10	<500	<0.085	<5	<5	<10	23000	<5	8400	<0.013	<20	<15	<5	<0.5	510	<4	<100	<15	<0.75	<10	32
	07/26/13	-0.054	6.97	7.21	33.9	<1	2.7	32.8	<1	<2	71	0.06	<1	1.53	<2	20700	0.74	10500	NM	<2	<2	<1	<0.1	501	<0.1	<2	<2	0.26	<2	35
	11/06/13	-0.200	6.96	7.21	15	<1.0	3.4	30.0	<1.0	<2.0	64	<0.01	<1	0.93	<2	20000	<0.50	10000	NM	<2	<2	<1	<0.1	550	<0.1	<2	<2	0.18	<2	35
	12/15/14	-0.254	6.96	7.2	26	<1	1.4	37	<1	<2	61	0.18	<1	<0.40	<2	19000	<0.5	6200	<0.013	<2	<2	<1	<0.1	480	<0.1	<2	<2	<0.1	<2	29
	12/9/15[FD]	-0.126	6.99	7.23	<5.0	<1.0	<1.0	37	<1.0	<2.0	59	0.012	<1.0	<0.40	<2.0	19000	<0.50	5800	<0.013	<2.0	<2.0	<1.0	<0.10	440	<0.10	<2.0	<2.0	<0.10	<2.0	27
	12/9/15	-0.082	6.97	7.22	6.6	<1.0	<1.0	36	<1.0	<2.0	61	0.016	<1.0	<0.40	<2.0	19000	<0.50	5800	<0.013	<2.0	<2.0	<1.0	<0.10	440	<0.10	<2.0	<2.0	<0.10	<2.0	28
	11/28/16	-0.144	6.96	7.2	9	<1.0	<1.0	58	<1.0	<2.0	62	<0.010	<1.0	<0.40	<2.0	16000	<0.50	5300	<0.013	<2.0	<2.0	<1.0	<0.10	450	<0.10	<2.0	<2.0	<0.10	<2.0	47
	12/21/17	0.068	6.98	7.23	9.1	<1.0	<1.0	75	<1.0	<2.0	57	0.067	<1.0	<0.40	<2.0	15000	<0.50	5000	<0.013	<2.0	<2.0	<1.0	<0.10	450	<0.10	<2.0	<2.0	<0.10	<2.0	56

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COBT-003-MWB (3.45 m)	03/13/12[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.98	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/13/12[FD]	99000	2700	100000	11000	210	81	180	13	<0.01	<100	<0.05	<0.01	<0.05	<0.05	7.9	0.94	1	1100	7.7	300	210	1	621	11.1	3.73	0.535
	03/13/12	100000	2700	100000	12000	210	81	180	13	0.014	<100	<0.05	<0.01	<0.05	<0.05	9	<0.5	1.4	1100	7.7	300	210	1	620	11	2.89	0.535
	06/07/12	120000	3400	99000	12000	210	89	210	13	<0.01	<100	<0.05	<0.01	<0.05	0.064	<5	<0.5	0.96	1100	7.6	300	210	<1	677	11.9	2.36	0.408
	09/12/12[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1.2	NM	NM	NM	NM	NM	NM	NM	NM	NM
	09/12/12	130000	3300	100000	12000	210	87	230	12	<0.01	<100	<0.05	<0.01	<0.05	0.061	<5	0.55	1.3	1200	7.6	300	210	<1	695	12.4	3.3	0.409
	12/12/12[L]	NM	2900	110000	NM	NM	NM	NM	13	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	12/12/12	110000	3000	100000	12000	210	85	220	13	<0.01	<100	<0.05	<0.01	<0.05	<0.05	12	<0.5	0.37	1200	7.7	310	210	1	674	12.1	4.79	0.538
	03/19/13	130000	3200	120000	12000	210	89	220	12	<0.01	<100	<0.05	<0.01	<0.05	0.06	<5	<0.5	0.8	1200	7.7	340	210	1	717	12.4	1.12	0.578
	07/18/13	111000	2910	104000	11900	210	80	180	13	<0.01	<100	0.052	<0.01	0.052	0.058	<5	0.54	0.43	1200	7.41	310	210	<1	638	11.2	0.41	0.26
	11/07/13	110000	3100	110000	13000	210	80	200	13	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	<0.5	0.86	1200	7.31	330	210	<1	670	11.7	0.56	0.177
	12/12/14	120000	3100	110000	13000	220	78	220	13	<10	<100	0.14	<0.01	0.14	0.074	<5	<0.5	1.3	1200	7.32	340	220	<1	700	12.2	0.62	0.222
	12/9/15	110000	2800	110000	12000	230	76	200	13	0.012	<100	<0.050	<0.010	<0.050	0.14	<5.0	NM	1.3	1200	7.64	320	230	<1.0	670	11.9	2.11	0.549
	11/28/16	110000	3100	110000	12000	220	74	210	13	0.015	<100	0.052	<0.010	0.052	0.073	9.1	0.72	1.6	1100	7.55	320	220	<1.0	670	11.9	2.33	0.43
	12/07/17	100000	2900	110000	12000	210	69	200	13	<0.010	<100	<0.050	<0.010	<0.050	<0.050	<5.0	1.3	0.51	1200	7.64	320	210	<1.0	640	11.3	1.57	0.516
COCP-110-MW (2.42 m)	03/27/13[L]	NM	NM	NM	NM	NM	NM	NM	25	NM	<500	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/27/13	14000	6900	110000	7600	140	130	59	25	<0.01	<500	0.11	<0.01	0.11	1.3	5.8	1.8	56	680	7.5	320	140	<1	449	7.18	1.37	0.235
	07/18/13	17900	8680	139000	7800	170	130	62	37	<0.01	159	0.055	<0.01	0.055	2.3	7.9	3	79	860	7.44	380	170	<1	513	7.91	5.72	0.352
	11/06/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	85	1000	7.4	NM	NM	NM	NM	NM	NM	NM
	11/06/13	15000	9600	160000	10000	210	260	58	40	<0.01	240	0.076	0.012	0.088	2.5	17	5.5	85	1000	7.35	450	210	<1	690	11.3	4.87	0.392
	12/15/14	20000	10000	150000	11000	210	190	35	35	<10	170	0.15	0.012	0.16	1.2	9.2	5	73	880	7.48	430	210	<1	590	9.15	4.34	0.501
	12/9/15	29000	11000	150000	10000	190	220	61	34	0.019	<100	0.17	0.011	0.18	2.3	7.4	NM	70	980	7.5	410	190	<1.0	640	10.2	0.39	0.45
	11/28/16	24000	11000	120000	11000	180	150	55	35	0.041	140	0.18	<0.010	0.18	0.22	10	3	23	720	7.82	340	180	1.1	520	8.44	2.18	0.677
	12-8-17 FD	33000	12000	150000	13000	210	210	75	35	<0.01	310	0.16	<0.010	0.16	1.3	6	4.1	86	1000	7.69	430	210	<1.0	660	10.6	0.38	0.68
	12/8/17	33000	12000	150000	13000	210	200	75	34	<0.010	290	0.20	<0.010	0.20	1.4	5.7	4.1	69	990	7.67	420	210	<1.0	640	10.4	0.14	0.654
CODT-008-MWB (1.88 m)	03/29/13	27000	5500	56000	1700	95	31	75	20	0.042	<100	0.56	0.087	0.65	0.1	23	4.9	36	420	9.1	150	84	10	275	4.71	5.49	1.36
	07/16/13	30400	10200	76500	1390	120	85	61	18	0.074	141	<0.05	0.015	0.056	0.79	52	12	120	570	8.53	200	110	3.6	354	5.82	2.11	1.03
	10/23/13	8700	5200	79000	1600	87	130	6.8	26	<0.01	<100	0.53	0.11	0.63	0.12	33	12	>1000	450	7.56	200	86	<1.0	310	4.63	0.43	-0.029
	12/15/14	18000	7800	69000	330	80	58	31	23	<10	<100	0.23	0.15	0.39	0.31	20	3.6	1.8	460	10.9	170	38	5.5	260	3.73	8.91	2.04
	12/10/15	13000	8500	60000	190	74	97	17	18	0.03	110	0.24	0.37	0.61	0.37	46	NM	12	400	9.75	150	47	25	260	4.02	2.29	1.79
	11/30/16	40000	2300	38000	3500	100	12	87	6.1	0.067	<100	<0.050	0.011	<0.050	0.5	37	<5.0	16	470	7.55	110	100	<1.0	250	4.76	8.18	-0.267
	12/07/17	13000	5200	75000	700	67	130	14	23	0.011	<100	0.81	0.19	1.0	<0.050	19	6.0	6.3	450	10.1	190	28	33	300	4.44	0.670	2.00
CODT-105-MW (3.07 m)	01/15/13	26000	13000	96000	13000	150	140	39	12	<0.01	<100	0.58	0.093	0.67	0.066	<5	2.3	1.5	640	8	290	150	1.4	433	7.12	1.73	0.714
	03/13/13	250000	17000	99000	400	78	110	460	11	<0.01	<100	0.094	0.46	0.55	0.27	8	2.3	8.2	1900	10.7	250	43	9.2	995	16.8	1.69	2.11
	07/16/13	56000	11500	74200	4980	42	140	91	10	<0.01	<100	0.22	0.065	0.29	0.39	9	3.1	1.6	660	8.89	210	39	2.8	413	6.3	4.33	0.902
	10/23/13	41000	14000	77000	4700	81	140	62	10	0.017	<100	0.5	0.31	0.8	0.32	11	3.5	1.8	640	9.10	210	72	8.5	410	6.42	0.39	1.40
	12/16/14	14000	7200	130000	18000	180	110	230	17	0.018	<100	0.53	0.037	1.1	<50	11	3.3	0.56	780	7.79	390	300	1.7	500	8.84	1.14	0.902
	12/10/15	36000	9300	69000	6200	62	140	32	13	0.013	<100	0.55	0.18	0.74	0.17	<5.0	NM	0.65	510	8.64	200	60	2.5	350	5.09	6.43	0.825
	11/23/16[FD]	41000	21000	110000	17000	230	140	36	15	0.025	<100	0.74	0.23	0.97	0.095	<5.0	2.9	1.4	760	7.87	330	230	1.6	520	8.59	2.22	0.781
	11/23/16	42000	21000	110000	17000	220	140	36	14	0.026	<100	0.76	0.22	0.98	0.08	<5.0	2.9	1.3	750	7.91	340	220	1.7	520	8.51	3.13	0.811
	12/07/17	64000	9900	56000	2600	61	130	81	16	0.010	<100	1.4	0.45	1.9	0.092	6.6	4.3	0.38	650	8.28	150	59	1.1	400	6.24	1.22	0.358
CODT-201-MWA (3.74 m)	03/13/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1.9	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/13/13	16000	2300	87000	8200	200	53	22	13	<0.01	<100	1.1	<0.01	1.1	<0.05	5.8	1.8	15	530	7.5	250	200	<1	327	5.83	0.43	0.316
	07/16/13	15700	2690	89300	9070	220	51	20	14	0.015	<100	1	<0.01	1	<0.05	<5	<5	140	560	7.44	260	220	<1	339	6.11	1.33	0.302
	10/23/13	14000	2100	75000	7300	190	42	9	11	0.012	<100	3.3	<0.01	3.3	<0.05	13	5.9	110	460	7.71	220	180	<1	290	5.08	0.990	0.434
	12/15/14	9900	2800	100000	11000	220	67	12	14	0.019	<100	3.2	<0.01	3.2	<50	6.5	3.8	240	570	7.57	290	220	<1	360	6.3	0.47	0.472
	12/9/15	9800	2900	120000	12000	280	79	11	15	0.022	<100	7.0	<0.010	7	0.11	<5.0	NM	160	680	7.54	350	280	<1.0	450	7.96	3.11	0.601
	11/28/16	8200	3200	100000	11000	250	58	11	15	0.027	<100	3.7	<0.010	3.7	<0.050	6.3	3.8	75	560	7.61	310	250	<1.0	380	6.8	1.64	0.588
	12/05/17	9400	3100	94000	10000	230	53	9.4	15	0.021	<100	4.2	<0.010	4.2	<0.050	<5.0	<5.0	160	580	7.68	280	230	1.1	350	6.36	2.66	0.591
CODT-201-MWC (3.97 m)	03/13/13	59000	2400	43000	4700	210	4.7	42	11	<0.01	<100	<0.05	<0.01	<0.05	0.64	7.3	6.3	14	500	8	130	200	1.9	292	5.4	1.69	0.527
	07/16/13	64900	2360	40800	4730	210	6	40	11	0.15	<100	<0.05	<0.01	<0.05	0.58	<5	<5	25	500	7.91	120	210	1.6	298	5.48	1.2	0.422
	10/23/13[FD]	67000	2300	41000	4500	200	13	44	11	<0.01	<100	<0.05	<0.01	<0.05	0.43	6	4.3	2.3	510	7.97	120	200	1.7	300	5.5	1.1	0.456
	10/23/13	67000	2400	40000	4600	200	13	45	12	<0.01	<100	0.058	<0.01	0.058	0.42	5.5	4.5	2.2	510	7.92	120	200	1.6	300	5.53	1.47	0.401
	12/15/14	66000	2300	38000	4300	200	5.3	43	11	0.01	<100	<0.05	<0.01	<0.05	0.52	5.5	5.2	9.3	500	7.87	110	200	1.4	290	5.32	1.04	0.327
	12/9/15	60000	2300	45000	5100	220	11	45	11	0.019	<100	<0.050	<0.010	<0.050	0.91	<5.0	NM	1.2	530	7.99	130	220	2	310	5.87	4.08	0.556
	11/28/16	70000	2500	38000	4200	200	6.7	64	11	0.019	<100	0.054	<0.010	0.054	0.45	<5.0	<5.0	4	510	8.05	110	200	2.1	320	5.89	4.53	0.497
	12/05/17	69000	2500	40000	4900	210	4.0	59	12	<0.010	<100	<0.050	<0.010	<0.050	0.59	5.2	5.7	0.84	560	7.81	120	200	1.2	320	5.85	3.08	0.299

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		**unitless**	**unitless**	**unitless**	**µg/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**	**µg/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**	**µg/L**
MOE Table 3[2]		-	-	-	-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
COBT-003-MWB (3.45 m)	03/13/12[L]	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
	03/13/12[FD]	0.288	7.17	7.41	<5	0.51	3.4	42	<0.5	<2	<100	<0.017	<1	<1	<2	210	<1	2600	<0.013	<4	<3	<1	<0.1	1300	<0.8	<20	<3	0.45	<2	6.7
	03/13/12	0.288	7.17	7.41	23	<0.4	3.5	43	<0.5	<2	<100	<0.017	<1	<1	<2	220	<1	2700	<0.013	<4	<3	<1	<0.1	1300	<0.8	<20	<3	0.45	<2	7.3
	06/07/12	0.161	7.19	7.44	<5	<1	4.2	70	<0.5	<2	<100	<0.017	<1	<1	<2	170	<1	2000	<0.013	<4	<3	1.2	<0.1	1500	<0.8	<20	<3	0.22	<2	29
	09/12/12[L]	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
	09/12/12	0.162	7.19	7.44	<5	<1	3.7	67	<0.5	<2	<100	0.055	<1	<1	<2	170	<1	2000	<0.013	<4	<3	<1	<0.1	1500	<0.8	<20	<3	0.24	<2	16
	12/12/12[L]	NM	NM	NM	13	<1	3.5	42	<0.5	<2	<100	0.034	<1	<1	<2	110	<1	2300	NM	<4	<3	<1	<0.1	1400	<0.8	<20	<3	0.28	<2	7.9
	12/12/12	0.291	7.16	7.41	14	<1	3.5	42	<0.5	<2	<100	0.034	<1	<1	<2	110	<1	2300	<0.013	<4	<3	<1	<0.1	1500	<0.8	<20	<3	0.29	<2	8.1
	03/19/13	0.331	7.12	7.37	<5	<1	3	57	<0.5	<2	<100	0.02	<1	<1	<2	140	<1	2100	<0.013	<4	<3	<1	<0.1	1700	<0.8	<20	<3	0.3	<2	20
	07/18/13	0.013	7.15	7.4	5.4	<1	3.7	42.4	<1	<2	62	0.018	<1	0.44	<2	159	<0.5	2170	NM	<2	<2	<1	<0.1	1500	<0.1	<2	<2	0.22	<2	21.4
	11/07/13	-0.07	7.13	7.38	20	<1	3.8	43	<1	<2	61	0.02	<1	0.53	<2	190	<0.5	2200	NM	<2	<2	<1	<0.1	1400	<0.1	<2	<2	0.27	<2	22
	12/12/14	-0.025	7.1	7.35	20	<1	3.4	56	<1	<2	64	1.7	<1	0.42	<2	240	<0.5	2300	<0.013	<2	<2	<1	<0.1	1500	<0.1	<2	<2	0.26	<2	20
	12/9/15	0.302	7.09	7.34	<5.0	<1.0	3	43	<1.0	<2.0	64	0.039	<1.0	0.41	<2.0	200	<0.50	2400	<0.013	<2.0	<2.0	<1.0	<0.10	1400	<0.10	<2.0	<2.0	0.28	<2.0	15
	11/28/16	0.183	7.12	7.37	5.9	<1.0	2.5	46	<1.0	<2.0	65	<0.010	<1.0	<0.40	<2.0	220	<0.50	2200	<0.013	<2.0	<2.0	<1.0	<0.10	1400	<0.10	<2.0	<2.0	0.25	<2.0	21
	12/07/17	0.269	7.13	7.37	<5.0	<1.0	2.8	44	<1.0	<2.0	63	0.010	<1.0	0.48	<2.0	220	<0.50	2300	<0.013	<2.0	<2.0	<1.0	<0.10	1300	<0.10	<2.0	<2.0	0.44	<2.0	21
COCP-110-MW (2.42 m)	03/27/13[L]	NM	NM	NM	<25	<5	14	60	<2.5	<10	<500	0.1	<5	<5	<10	4200	<5	320	NM	<20	<15	<5	<0.5	410	<4	<100	<15	0.92	<10	28
	03/27/13	-0.013	7.27	7.51	<25	<5	14	61	<2.5	<10	<500	0.11	<5	<5	<10	4300	<5	330	<0.013	<20	<15	<5	<0.5	420	<4	<100	<15	0.92	<10	29
	07/18/13	0.105	7.09	7.34	7.8	<1	18.5	60.3	<1	<2	64	<0.017	<1	<0.4	<2	3880	<0.5	493	NM	4.1	<2	<1	<0.1	464	<0.1	<2	<2	0.54	<2	7.4
	11/06/13[L]	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
	11/06/13	0.145	6.96	7.21	14	1.8	19	81	<1	<2	82	0.011	<1	<0.4	<2	3300	<0.5	380	NM	5.7	<2	1.9	<0.1	660	<0.1	<2	<2	2.6	4.9	12
	12/15/14	0.254	6.98	7.23	13	2.5	13	77	<1	<2	76	0.18	<1	<0.4	<2	4400	<0.5	390	0.017	6.6	<2	1.3	<0.1	610	<0.1	<2	<2	3	5.1	9.8
	12/9/15	0.202	7.05	7.29	15	1.6	17	56	<1.0	<2.0	70	0.067	<1.0	<0.40	<2.0	6600	<0.50	550	<0.013	6.9	<2.0	<1.0	<0.10	490	<0.10	<2.0	<2.0	1	<2.0	55
	11/28/16	0.429	7.14	7.39	10	2.1	13	96	<1.0	<2.0	68	0.05	<1.0	<0.40	<2.0	800	<0.50	110	<0.013	4	<2.0	1.7	<0.10	500	<0.10	<2.0	<2.0	3	4.7	<5.0
	12-8-17 FD	0.433	7.01	7.26	<5.0	1.4	28	85	<1.0	<2.0	77	0.021	<1.0	<0.40	<2.0	4600	<0.50	390	0.015	7.9	<2.0	<1.0	<0.10	580	<0.10	<2.0	<2.0	2.5	3.4	<5.0
	12/8/17	0.406	7.02	7.26	<5.0	1.6	27	86	<1.0	<2.0	75	0.018	<1.0	<0.40	<2.0	4000	<0.50	370	<0.013	8.0	<2.0	1.1	<0.10	580	<0.10	<2.0	<2.0	2.4	3.6	<5.0
CODT-008-MWB (1.88 m)	03/29/13	1.11	7.74	7.99	34	<1	9.7	27	<0.5	<2	<100	<0.017	<1	<1	4.7	<100	<1	6.9	0.12	<4	<3	2.8	<0.1	250	<0.8	<20	<3	1.2	9.7	<5
	07/16/13	0.781	7.5	7.75	41.3	<1	41.7	52.7	<1	<2	<50	0.028	2.2	<0.4	<2	134	<0.5	143	NM	5.9	<2	1.3	<0.1	509	<0.1	<2	<2	1.45	2.9	8
	10/23/13	-0.278	7.59	7.84	45	<1	11	58	<1	<2	<50	<0.01	<1	<0.40	3.2	110	<0.50	220	NM	3.8	<2	1.6	<0.1	480	<0.1	<2	4.3	1.9	4.9	9.9
	12/15/14	1.79	8.83	9.08	510	<1	7.2	25	<1	<2	<50	0.085	1.3	<0.4	5.6	<50	<0.5	<2	<0.013	5.1	<2	1.8	<0.1	840	<0.1	<2	<2	0.19	11	<5
	12/10/15	1.54	7.96	8.21	250	<1.0	21	18	<1.0	<2.0	<50	0.13	<1.0	<0.40	8.2	<50	<0.50	<2.0	0.13	4.4	<2.0	2.1	<0.10	850	<0.10	<2.0	<2.0	0.18	16	<5.0
	11/30/16	-0.517	7.82	8.07	41	<1.0	1.4	190	<1.0	<2.0	<50	0.15	<1.0	<0.40	<2.0	69	<0.50	430	<0.013	<2.0	<2.0	<1.0	<0.10	280	<0.10	<2.0	<2.0	0.31	<2.0	<5.0
	12/07/17	1.75	8.10	8.35	160	<1.0	7.1	41	<1.0	<2.0	<50	0.046	<1.0	<0.40	6.1	<50	<0.50	<2.0	<0.013	2.8	<2.0	<2.0	<0.10	790	<2.0	<2.0	1.2	10	<2.0	5.0
CODT-105-MW (3.07 m)	01/15/13	0.466	7.29	7.53	18	2.3	1.7	22	<0.5	<2	<100	0.058	<1	<1	8.5	<100	<1	17	<0.013	9.5	<3	26	<0.1	480	<0.8	<20	<3	2.1	4.9	46
	03/13/13	1.86	8.59	8.84	1100	1.8	17	5.7	<0.5	<2	<100	<0.017	<1	<1	11	<100	<1	<4	0.013	14	<3	37	<0.1	1700	<0.8	<20	<3	<0.15	30	<5
	07/16/13	0.654	7.99	8.24	798	1.5	3.3	8.6	<1	<2	<50	0.027	1.1	<0.4	8.7	<50	<0.5	10.6	NM	14.9	3.1	19.1	<0.1	729	<0.1	<2	<2	0.74	7.4	12.3
	10/23/13	1.15	7.70	7.95	670	1.6	6.2	13	<1	<2	<50	0.053	1.8	<0.4	9.5	<50	<0.5	8.0	NM	9.9	<2.0	29	<0.1	1000	<0.1	<2.0	<2.0	0.97	9.7	<5.0
	12/16/14	0.654	6.89	7.13	20	2.2	2.1	25	<1	<2	62	0.13	<1	<0.4	4.3	<50	<0.5	2.9	<0.013	5.4	<2	15	<0.1	380	<0.1	<2	<2	2.3	2.5	18
	12/10/15	0.577	7.82	8.07	430	1.7	3.1	11	<1.0	<2.0	<50	0.034	1.1	<0.40	6	<50	6.6	2.6	<0.013	5.8	<2.0	21	<0.10	880	<0.10	<2.0	<2.0	0.82	6.6	11
	11/23/16[FD]	0.533	7.09	7.34	19	2.6	2.1	28	<1.0	<2.0	70	0.044	<1.0	<0.40	10	<50	0.52	7.5	<0.013	7.5	<2.0	11	<0.10	480	<0.10	<2.0	<2.0	2.5	3.4	69
	11/23/16	0.563	7.1	7.35	20	2.5	2.2	28	<1.0	<2.0	70	0.047	<1.0	<0.40	10	<50	0.52	7.6	<0.013	7.5	<2.0	12	<0.10	480	<0.10	<2.0	<2.0	2.5	3.3	68
	12/07/17	0.109	7.92	8.17	170	<1.0	2.9	13	<1.0	<2.0	<50	0.041	2.7	0.41	10	<50	<0.50	<2.0	<0.013	7.9	<2.0	11	<0.10	840	<0.10	<2.0	<2.0	0.43	10	16
CODT-201-MWA (3.74 m)	03/13/13[L]	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
	03/13/13	0.067	7.18	7.43	11	<1	0.73	17	<0.5	<2	<100	0.078	<1	<1	8	<100	<1	14	0.017	<4	<3	1.5	<0.1	310	<0.8	<20	<3	0.43	<2	48
	07/16/13	0.053	7.14	7.39	268	<1	<1	23.5	<1	<2	52	0.052	<1	<0.4	13	<50	<0.5	11.5	NM	<2	<2	2	<0.1	276	<0.1	<2	<2	0.67	<2	55.8
	10/23/13	0.185	7.28	7.53	20	<1	<1	25	<1	<2	<50	0.083	<1	<0.4	20	<50	<0.5	4.0	NM	<2	<2	2.3	<0.1	210	<0.1	<2	<2	0.49	<2	58
	12/15/14	0.223	7.1	7.35	17	<1	<1	27	<1	<2	<50	0.27	<1	<0.4	2.6	<50	<0.5	2.6	0.032	2.2	<2	4.3	<0.1	260	<0.1	<2	<2	0.71	<2	11
	12/9/15	0.353	6.94	7.18	14	<1.0	<1.0	23	<1.0	<2.0	<50	0.053	<1.0	<0.40	4	<50	<0.50	12	<0.013	<2.0	<2.0	5.2	<0.10	350	<0.10	<2.0	<2.0	0.72	<2.0	26
	11/28/16	0.339	7.02	7.27	8.2	<1.0	<1.0	24	<1.0	<2.0	<50	0.026	<1.0	<0.40	9.6	<50	<0.50	<2.0	<0.013	2.1	<2.0	4	<0.10	280	<0.10	<2.0	<2.0	0.6	<2.0	50
	12/05/17	0.343	7.09	7.34	15	<1.0	<1.0	20	<1.0	<2.0	56	0.036	<1.0	<0.40	16	<50	<0.50	<2.0	0.047	<2.0	<2.0	3.9	<0.10	290	<0.10	<2.0	0.68	<2.0	<2.0	48
CODT-201-MWC (3.97 m)	03/13/13	0.278	7.47	7.72	20	<1	4.1	340	<0.5	<2	<100	0.2	<1	<1	<2	<100	<1	780	<0.013	<4	<3	<1	<0.1	530	<0.8	<20	<3	<0.15	<2	7.5
	07/16/13	0.173	7.49	7.74	16.9	<1	4	331	<1	<2	73	<0.017	2.5	<0.4	<2	<50	<0.5	766	NM	<2	<2	<1	<0.1	504	<0.1	<2	<2	<0.1	<2	8.8
	10/23/13[FD]	0.207	7.51	7.76	9.7	<1	3.7	340	<1	<2	77	<0.01	<1	<0.4	<2	<50	<0.5	760	NM	<2	<2	1.6	<0.1	500	<0.1	<2	<2	<0.1	<2	<5
	10/23/13	0.152	7.52	7.77	10	<1	3.3	330	<1	<2	77	<0.01	<1	<0.4	<2	<50	<0.5	760	NM	<2	<2	2.7	<0.1	500	<0.1	<2	<2	<0.1	<2	6.1
	12/15/14	0.077	7.54	7.79	13	<1	4.1	340	<1	<2	77	0.28	<1	<0.4	<2	<50	<0.5	690	<0.013	<2	<2	3.2	<0.1	520	<0.1	<2	<2	<0.1	<2	6
	12/9/15	0.307	7.43	7.68	6.3	<1.0	4.2	420	<1.0	<2.0	73	<0.010	<1.0	<0.40	<2.0	<50	<0.50	930	<0.013	<2.0	<2.0	<1.0	<0.10	540	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11/28/16	0.248	7.56	7.81	7.6	<1.0	3.7	380	<1.0	<2.0	77	<0.010	<1.0	<0.40	<2.0	<50	<0.50	670	<0.013	<2.0	<2.0	<1.0	<0.10	520	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/05/17	0.050	7.51	7.76	<5.0	<1.0	3.5	420	<1.0	<2.0	80	<0.010	<1.0	<0.40	<2.0	<50	<0.50	810	<0.013	<2.0	<2.0	8.5	<0.10	560	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CODT-203-MW (2.79 m)	3/13/2013[L]	NM	NM	NM	NM	NM	200	210	NM	<0.01	NM	NM	<0.01	<0.05	NM	21	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/13/13	120000	6800	130000	13000	180	200	220	14	<0.01	<100	<0.05	<0.01	<0.05	0.66	14	2.3	56	1300	7.2	390	180	<1	824	13.9	2.51	0.065
	07/16/13[FD]	130000	6430	143000	13000	220	180	220	15	<0.01	<100	<0.05	<0.01	<0.05	0.69	19	2.7	62	1500	7.33	410	220	<1	848	14.2	0.11	0.294
	07/16/13	132000	6560	143000	13000	220	170	210	15	<0.01	<100	<0.05	<0.01	<0.05	0.68	15	2.6	70	1500	7.35	410	220	<1	832	13.8	2.14	0.318
	10/23/13	47000	5100	140000	15000	220	240	58	19	<0.01	<100	<0.05	<0.01	<0.05	0.47	21	4.1	98	980	7.22	420	220	<1	670	10.9	0.87	0.217
	12/12/14	24000	2500	110000	6000	120	190	27	23	<10	<100	0.42	<0.01	0.42	0.1	6.5	4.4	14	660	7.19	290	120	<1	450	7.05	0.57	-0.166
	12/8/15[FD]	36000	4100	130000	8600	180	210	34	18	0.016	<100	<0.050	0.041	0.083	0.29	6.7	3.6	26	820	7.51	350	180	<1.0	550	8.87	0.8	0.388
	12/8/15	36000	4100	130000	8600	180	210	35	18	0.014	<100	<0.050	0.038	0.084	0.28	5.9	3.6	23	830	7.56	350	180	<1.0	550	8.94	1.42	0.434
	11/23/16	59000	3800	110000	6000	160	170	74	22	0.024	<100	0.29	0.02	0.31	0.057	7.5	3.6	65	800	7.18	300	160	<1.0	540	8.82	1.26	-0.059
	12/07/17	160000	5500	93000	5200	150	160	200	14	<0.01	<100	<0.050	<0.010	<0.050	0.32	<5.0	3.6	3.6	1300	7.53	250	150	<1.0	730	11.9	1.70	0.150
CODT-205-MWA (1.78 m)	03/13/13[FD]	41000	5800	82000	11000	280	13	23	15	<0.01	<100	<0.05	<0.01	<0.05	0.26	9.1	7.2	130	600	7.6	250	280	1.1	363	6.59	2.66	0.527
	03/13/13	42000	5800	83000	11000	290	13	23	16	<0.01	<100	<0.05	<0.01	<0.05	0.25	9.7	6.7	130	610	7.5	250	290	<1	367	6.69	2.26	0.438
	07/16/13[L]	NM	NM	NM	NM	300	10	23	16	<0.01	NM	NM	<0.01	<0.05	0.16	6.8	5.2	33	610	7.64	NM	NM	NM	NM	NM	NM	NM
	07/16/13	40800	5720	72400	10700	300	11	22	16	<0.01	<100	<0.05	<0.01	<0.05	0.16	8.3	5.6	33	610	7.64	220	300	1.2	366	6.94	3.04	0.543
	10/23/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	600	7.64	NM	NM	NM	NM	NM	NM	NM
	10/23/13	38000	5900	80000	11000	310	9.6	22	18	<0.01	<100	<0.05	<0.01	<0.05	0.17	12	5.5	31	610	7.64	250	310	1.3	370	6.98	1.01	0.592
	12/15/14	35000	5400	84000	12000	310	24	18	17	<10	<100	<0.05	<0.01	<0.05	0.24	7.7	7	66	620	7.52	260	300	<1	380	7.12	1.5	0.482
	12/8/15	27000	4800	77000	11000	270	18	15	16	0.013	<100	0.052	<0.010	0.052	0.28	12	9.2	35	530	7.84	240	270	1.7	330	6.14	0.08	0.721
	11/23/16	33000	4800	68000	9500	270	18	14	16	0.016	<100	0.05	0.015	0.065	0.19	9	6.8	24	510	7.7	210	270	1.3	330	6.13	2.77	0.528
	12/05/17	30000	4800	70000	9600	260	24	13	16	<0.010	<100	<0.050	<0.010	<0.050	0.20	11	8.0	24	530	7.95	210	260	2.1	330	6.01	1.43	0.775
CODT-206-MW (2.14 m)	03/13/13[L]	NM	NM	NM	NM	NM	NM	NM	23	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/13/13	5800	2700	82000	5300	140	57	19	23	<0.01	<100	0.19	<0.01	0.19	0.24	19	6.1	7.8	440	7.5	230	140	<1	285	4.52	4.54	0.14
	07/16/13	7200	4090	97300	8620	200	83	19	14	0.035	<100	<0.05	<0.01	<0.05	1.2	74	11	24	590	7.1	280	200	<1	371	6.34	0.56	-0.042
	10/23/13	6800	2800	56000	3900	130	36	4.6	17	0.014	<100	0.47	<0.01	0.47	0.16	72	14	9.1	320	7.25	160	130	<1	210	3.46	0.86	-0.285
	12/15/14	4400	2300	47000	1800	96	27	5.7	37	0.035	<100	0.37	<0.01	0.37	<50	18	5.3	32	260	7.83	130	96	<1	190	2.68	1.47	0.106
	12/8/15	4400	3000	73000	2400	98	86	10	41	0.048	<100	0.48	<0.010	0.48	0.085	14	5	8	400	8.18	190	96	1.4	280	4.06	0.37	0.608
	11/28/16[FD]	5400	1700	41000	2000	91	17	7.4	13	0.038	<100	0.59	<0.010	0.59	0.094	32	7.5	71	210	7.35	110	91	<1.0	140	2.42	1.22	-0.45
	11/28/16	5300	1700	40000	2000	93	17	7.2	13	0.037	<100	0.24	<0.010	0.24	0.093	32	7.2	76	210	7.39	110	92	<1.0	140	2.43	0.82	-0.398
	12/05/17 FD	6700	4100	110000	7600	240	84	10	19	<0.010	<100	0.12	<0.010	0.12	1.1	22	19	95	650	7.33	300	240	<1.0	400	6.92	2.98	0.300
	12/05/17	6600	4100	110000	7600	230	91	9.8	21	<0.010	<100	0.16	<0.010	0.16	1.0	21	13	78	630	7.39	300	230	<1.0	400	6.84	2.70	0.333
CONCW-101-MWB (3.70 m)	03/15/13	86000	5700	90000	2000	24	130	150	14	<0.01	<100	0.25	0.024	0.27	0.24	5.9	2.1	0.38	770	9.1	230	21	2.5	489	7.31	7.93	0.918
	07/17/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.25	NM	NM	0.36	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/17/13	66100	5650	50700	4220	42	120	110	18	0.013	<100	0.24	0.078	0.32	0.26	8.6	2.4	0.36	670	9.18	140	36	5.1	398	6.37	3.66	0.993
	10/24/13	63000	6300	70000	2200	52	170	80	20	0.012	<100	0.095	0.035	0.13	0.43	9.1	3.1	1.4	700	9.65	180	35	15	440	6.78	1.42	1.59
	12/12/14	59000	5500	85000	1800	28	120	85	21	<10	<100	0.31	0.026	0.33	0.35	5.2	2.7	1.8	580	9.55	220	20	6.6	400	5.52	12.9	1.33
	12/8/15	56000	6500	96000	5900	39	130	82	17	0.015	<100	0.21	0.017	0.22	0.41	5.1	3.4	11	620	8.02	260	39	<1.0	420	5.93	14.2	0.139
	11/23/16	51000	5900	95000	<100	39	130	88	22	0.022	<100	<0.050	0.015	<0.050	1	6.3	3.1	18	790	11.1	240	<1.0	<1.0	420	5.96	9.35	NC
	12/11/17	49000	5200	76000	5700	100	120	56	25	0.036	<100	0.35	0.015	0.37	0.28	9.1	3.5	0.81	610	8.88	210	97	6.8	400	6.23	2.12	1.29
CONPL-202-MWA (5.39 m)	12/15/14	22000	1900	170000	28000	410	170	22	12	<10	<100	<0.05	<0.01	<0.05	0.081	<5	1.7	14	1000	7.34	550	410	<1	680	12.4	1.27	0.693
	12/9/15	17000	1600	160000	25000	390	170	17	11	0.013	<100	<0.050	<0.010	<0.050	<0.050	<5.0	NM	2.2	950	7.7	510	390	1.9	650	11.9	3.92	1.01
	11/23/16	16000	1600	150000	23000	350	150	14	11	0.017	<100	<0.050	0.014	0.053	0.074	<5.0	2.8	3.3	800	7.41	460	350	<1.0	570	10.5	2.8	0.634
	12/21/17	13000	1500	140000	20000	320	130	13	11	0.011	<100	<0.050	<0.010	<0.050	<0.050	<5.0	<5.0	18	810	7.55	420	320	1.1	520	9.53	2.58	0.715
COSB-002-MWA (1.91 m)	03/18/13	17000	3300	140000	16000	210	200	32	21	<0.01	<100	0.25	<0.01	0.25	<0.05	<5	1.9	160	800	7.1	400	210	<1	550	9.23	1.88	0.075
	07/26/13	19500	4200	178000	29200	170	410	39	26	<0.01	<100	<0.05	<0.01	<0.05	0.15	16	11	830	1100	6.97	560	170	<1	822	13.1	2.9	-0.075
	11/6/13[FDL]	20000	5600	230000	36000	NM	NM	NM	NM	NM	<100	NM	NM	NM	NM	NM	2.1	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/6/13[FD]	20000	5700	230000	36000	130	620	49	30	<0.01	<100	<0.05	0.021	<0.05	0.32	130	2.2	160	1400	6.61	720	130	<1	1100	17	2.69	-0.473
	11/06/13	20000	5500	230000	36000	130	610	49	29	<0.01	<100	<0.05	0.017	<0.05	0.33	120	1.9	77	1400	6.64	730	130	<1	1100	16.6	1.07	-0.451
	12/15/14	14000	3200	150000	17000	200	210	26	20	<10	<100	1.6	<0.01	1.6	0.098	<5	1.9	17	860	6.72	450	200	<1	580	9.29	2.57	-0.276
	12/9/15	11000	7100	340000	53000	<5.0	1500	12	150	0.066	240	0.18	<0.010	0.18	1.6	28	NM	250	2600	3.66	1100	<1.0	<1.0	2100	31.3	14.3	NC
	11/28/16	11000	3600	170000	25000	190	300	16	20	0.018	<100	0.36	<0.010	0.36	0.13	84	2.9	43	910	6.97	530	190	<1.0	670	10.6	3.24	-0.003
	12/08/17	18000	9700	470000	120000	10	1600	9.2	51	0.01	<100	0.76	<0.010	0.76	2.4	26	4.7	49	2700	4.43	1700	10	<1.0	2300	33.6	2.27	-3.55
COSCW-001-MWA (3.04 m)	03/19/13	11000	1400	64000	6900	160	49	14	8.6	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	<0.5	23	430	7.9	190	160	1.2	253	4.66	4.25	0.506
	07/17/13	12500	1660	66100	8100	170	50	13	11	0.013	<100	0.057	<0.01	0.057	<0.05	<5	1.1	24	440	7.71	200	170	<1	267	4.82	2.88	0.348
	10/24/13	14000	1800	72000	8700	170	52	14	12	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	0.62	43	460	7.57	220	170	<1	280	4.93	0.100	0.251
	12/16/14	13,000	1900	74,000	8,800	180	49	14	12	<10	<100	0.052	<0.01	0.052	0.093	<5	0.93	46	480	7.61	220	180	<1	290	5.11	0.29	0.334
	12/8/15	13,000	1600	74,000	8,400	180	51	14	11	0.011	<100	0.058	<0.010	0.058	<0.050	<5.0	0.78	43	460	7.8	220	180	1.1	280	5.04	0.3	0.51
	11/22/16	14000	1700	72000	8500	180	47	0.014	13	12	<100	<0.050	<0.010	<0.050	<0.050	<5.0	<5.0	95	450	7.68	220	180	<1.0	280	4.96	0	0.381
	12/8/17	13000	1800	74000	8200	190	41	14	12	0.011	<100	0.071	<0.01	0.071	0.13	<5.0	1.5	15	490	7.93	220	190	1.5	290	5.12	1.29	0.665
COSCW-001-MWB (1.75 m)	03/19/13	18000	3200	56000	9600	190	29	14	8.6	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	0.55	1	440	8	180	190	1.8	254	4.8	3.56	0.616
	07/17/13[L]	NM	NM	NM	NM	200	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/17/13	18200	3620	55800	10100	200	22	14	11	<0.01	<100	<0.05	<0.01	<0.05	0.057	<5	1.1	0.48	430	7.85	180	200	1.3	253	4.79	3.12	0.484
	10/24/13[L]	NM	NM	NM	NM	NM	23	14	12	<0.01	NM	NM	0.011	0.25	0.063	<5	1.5	2.5	NM	NM	NM	NM	NM	NM	NM	NM	NM
	10/24/13	20000	4000	61000	11000	200	22	14	12	<0.01	<100	0.25	<0.01	0.25	0.065	<5	1.4	2.4	450	7.91	200	200	1.5	260	4.83	1.02	0.581
	12/12/14	19000	3700	65000	11000	210	38	13	11	<10	<100	0.091	<0.01	0.091	0.11	<5	1.2	0.32	460	7.88	210	200	1.5	290	5.28	1.64	0.587
	12/8/15	16000	3200	80000	15000	270	30	12	12	0.011	<100	<0.050	<0.010	<0.050	<0.050	<5.0	2.8	2.1	540	7.84	260	270	1.8	330	6.39	3.48	0.746
	11/22/16	14000	1700	72000	8500	180	47	13	12	0.014	<100	<0.050	<0.010	<0.050	<0.050	<5.0	<5.0	95	450	7.68	220	180	<1.0	280	4.96	0	0.381
	12/8/17	17000	3400	73000	13000	240	28	16	13	<0.01	<100	0.076	<0.010	0.076	<0.050	<5.0	2.7	1.0	530	7.96	230	230	2.0	310	5.74	1.86	0.773

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		**unitless**	**unitless**	**unitless**	**µg/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**	**µg/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**	**µg/L**
MOE Table 3[2]		-	-	-	-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
CODT-203-MW (2.79 m)	3/13/2013[L]	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
	03/13/13	-0.182	7.14	7.38	13	<1	20	250	<0.5	<2	<100	0.028	<1	1.7	<2	5200	<1	7000	<0.013	<4	<3	<1	<0.1	850	<0.8	<20	<3	0.3	<2	41
	07/16/13[FD]	0.048	7.04	7.28	12.4	<1	16.9	230	<1	<2	<50	<0.017	<1	1.44	2.3	5000	<0.5	7650	NM	3.2	2.3	<1	<0.1	811	<0.1	<2	<2	0.91	<2	**5360**
	07/16/13	0.071	7.03	7.28	31.6	<1	17	229	<1	<2	<50	0.026	<1	1.54	2.3	5010	<0.5	7700	NM	3.5	<2	<1	<0.1	809	<0.1	<2	<2	0.93	<2	**5210**
	10/23/13	-0.0300	7.00	7.25	8.6	<1	30	150	<1	<2	52	0.013	<1	1.4	<2	10000	<0.50	5700	NM	3.2	<2	<1	<0.1	580	<0.1	<2	<2	0.76	<2	75
	12/12/14	-0.414	7.35	7.6	15	<1	<1	58	<1	<2	57	0.34	<1	<0.4	3.3	90	<0.5	130	<0.013	<2	<2	1	<0.1	260	0.19	<2	<2	0.72	<2	25
	12/8/15[FD]	0.14	7.13	7.37	7.3	<1.0	2.1	85	<1.0	<2.0	59	0.088	<1.0	0.48	4	720	<0.50	1900	0.057	2.6	<2.0	<1.0	<0.10	390	0.17	<2.0	<2.0	1.5	<2.0	46
	12/8/15	0.186	7.12	7.37	6.2	<1.0	2.1	85	<1.0	<2.0	59	0.08	<1.0	0.47	4.1	720	<0.50	1800	<0.013	2.7	<2.0	<1.0	<0.10	390	0.17	<2.0	<2.0	1.5	<2.0	46
	11/23/16	-0.306	7.24	7.49	18	<1.0	1.1	67	<1.0	<2.0	56	0.1	<1.0	<0.40	<2.0	54	<0.50	390	<0.013	<2.0	<2.0	<1.0	<0.10	340	0.15	<2.0	<2.0	1.1	<2.0	60
	12/07/17	-0.096	7.38	7.62	<5.0	<1.0	1.7	130	<1.0	<2.0	<50	0.10	<1.0	0.58	<2.0	270	<0.50	3300	<0.013	4.2	<2.0	<1.0	<0.10	510	0.12	<2.0	<2.0	0.94	<2.0	58
CODT-205-MWA (1.78 m)	03/13/13[FD]	0.278	7.07	7.32	5.6	<1	1.3	92	<0.5	<2	<100	0.044	<1	<1	<2	490	<1	1100	<0.013	5.4	<3	<1	<0.1	3700	<0.8	<20	<3	1.1	<2	31
	03/13/13	0.189	7.06	7.31	5.9	<1	1.3	93	<0.5	<2	<100	0.062	<1	<1	<2	460	<1	1200	<0.013	5.3	<3	<1	<0.1	3700	<0.8	<20	<3	1.1	<2	32
	07/16/13[L]	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
	07/16/13	0.294	7.1	7.35	10.6	<1	5	85.8	<1	<2	<50	0.025	<1	<0.4	5.3	2820	<0.5	1120	NM	2.2	<2	<1	<0.1	3380	<0.1	<2	<2	0.95	<2	24.5
	10/23/13[L]	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
	10/23/13	0.343	7.05	7.30	13	<1	6.8	120	<1	<2	58	0.012	<1	<0.40	<2	3200	<0.50	1200	NM	3.3	<2	<1	<0.1	3600	<0.1	<2	<2	1.10	<2	23
	12/15/14	0.234	7.03	7.28	29	<1	4.1	140	<1	<2	55	0.25	<1	<0.4	<2	2100	<0.5	1300	<0.013	5.7	<2	<1	<0.1	3900	<0.1	<2	<2	1.2	<2	16
	12/8/15	0.472	7.12	7.37	10	<1.0	4.6	320	<1.0	<2.0	<50	0.019	<1.0	<0.40	<2.0	2200	<0.50	860	<0.013	6.9	<2.0	<1.0	<0.10	3100	<0.10	<2.0	<2.0	0.79	<2.0	19
	11/23/16	0.279	7.17	7.42	14	<1.0	8	280	<1.0	<2.0	54	0.011	<1.0	<0.40	<2.0	2000	<0.50	920	<0.013	3.1	<2.0	<1.0	<0.10	3300	<0.10	<2.0	<2.0	0.79	<2.0	35
	12/05/17	0.526	7.17	7.42	46	<1.0	8.1	250	<1.0	<2.0	56	0.027	<1.0	<0.40	<2.0	3000	<0.50	980	<0.013	3.5	<2.0	<1.0	<0.10	3400	<0.10	<2.0	<2.0	0.73	<2.0	21
CODT-206-MW (2.14 m)	03/13/13[L]	NM	NM	NM	17	<1	2.4	41	<0.5	<2	<100	0.041	<1	<1	2.2	1600	<1	2900	NM	<4	<3	1.1	<0.1	250	<0.8	<20	<3	1.4	<2	36
	03/13/13	-0.11	7.36	7.61	17	<1	2.4	42	<0.5	<2	<100	0.041	<1	<1	2.3	1600	<1	3000	0.015	<4	<3	1.4	<0.1	260	<0.8	<20	<3	1.4	<2	36
	07/16/13	-0.29	7.14	7.39	29.8	<1	7.3	56.4	<1	<2	58	0.017	<1	0.61	8.5	5670	0.7	7880	NM	<2	2.1	<1	<0.1	250	<0.1	<2	<2	0.3	<2	137
	10/23/13	-0.535	7.54	7.79	71	<1.0	2.1	36	<1.0	<2.0	<50	0.17	<1.0	<0.4	19	580	0.61	860	NM	<2	<2	<1	<0.1	150	<0.1	<2	2.6	1.4	2.1	71
	12/15/14	-0.144	7.72	7.97	38	<1	4	33	<1	<2	<50	1.3	<1	<0.4	5.9	<50	<0.5	5.0	<0.013	<2	<2	1.4	<0.1	180	<0.1	<2	<2	2.2	4.9	14
	12/8/15	0.358	7.57	7.82	12	<1.0	4	46	<1.0	<2.0	<50	1.3	<1.0	<0.40	5.3	<50	<0.50	<2.0	<0.013	<2.0	<2.0	1.9	<0.10	340	<0.10	<2.0	<2.0	2.6	7.5	6.3
	11/28/16[FD]	-0.7	7.8	8.05	30	<1.0	1.1	39	<1.0	<2.0	<50	0.068	<1.0	<0.40	11	57	<0.50	250	<0.013	<2.0	<2.0	<1.0	<0.10	170	<0.10	<2.0	<2.0	0.72	<2.0	87
	11/28/16	-0.648	7.79	8.04	31	<1.0	1.1	39	<1.0	<2.0	<50	0.092	<1.0	<0.40	11	51	<0.50	250	<0.013	<2.0	<2.0	<1.0	<0.10	170	<0.10	<2.0	<2.0	0.71	<2.0	87
	12/05/17 FD	0.052	7.03	7.28	20	<1.0	4.7	100	<1.0	<2.0	60	0.090	<1.0	0.87	2.6	2400	<0.50	6100	<0.013	<2.0	<2.0	<1.0	<0.10	400	<0.10	<2.0	<2.0	2.8	<2.0	44
	12/05/17	0.084	7.05	7.30	19	<1.0	4.8	100	<1.0	<2.0	62	0.22	<1.0	0.87	2.3	2300	<0.50	6100	<0.013	<2.0	<2.0	<1.0	<0.10	400	<0.10	<2.0	<2.0	2.8	<2.0	45
CONCW-101-MWB (3.70 m)	03/15/13	0.67	8.18	8.43	43	<1	5.1	56	<0.5	<2	<100	0.041	1.1	<1	<2	<100	<1	19	<0.013	6.4	<3	2.3	<0.1	700	<0.8	<20	<3	0.79	3.1	6.6
	07/17/13[L]	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
	07/17/13	0.745	8.19	8.44	23.6	<1	8	38.4	<1	<2	<50	<0.017	<1	<0.4	3.2	<50	<0.5	9.8	NM	9.3	<2	<1	<0.1	438	<0.1	<2	<2	0.91	4.2	7.1
	10/24/13	1.34	8.06	8.31	38	<1.0	7.8	45	<1.0	<2.0	<50	<0.01	<1.0	<0.4	<2.0	<50	<0.5	6.6	NM	9.5	<2	1.1	<0.1	520	<0.1	<2.0	<2.0	0.40	4.2	<5.0
	12/12/14	1.08	8.22	8.47	82	<1	8.2	46	<1	<2	<50	0.27	<1	<0.4	<2	<50	<0.5	7.7	<0.013	7.2	<2	3.1	<0.1	540	<0.1	<2	<2	0.68	2.7	<5
	12/8/15	-0.109	7.88	8.13	63	<1.0	6.6	66	<1.0	<2.0	53	0.066	<1.0	<0.40	<2.0	<50	<0.50	250	<0.013	6.2	<2.0	2.8	<0.10	600	<0.10	<2.0	<2.0	1.2	<2.0	<5.0
	11/23/16	NC	NC	NC	170	<1.0	8.9	45	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	<50	<0.50	<2.0	0.013	5	<2.0	3.9	<0.10	560	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/11/17	1.05	7.58	7.83	39	<1.0	8.5	43	<1.0	<2.0	54	0.087	<1.0	<0.40	<2.0	<50	<0.50	310	<0.013	7.5	<2.0	1.7	<0.10	420	<0.10	<2.0	<2.0	1.6	5.7	<5.0
CONPL-202-MWA (5.39 m)	12/15/14	0.446	6.65	6.9	17	<1	2.2	43	<1	<2	<50	0.27	<1	0.84	<2	280	<0.5	1100	<0.013	<2	<2	<1	<0.1	720	<0.1	<2	<2	2.7	<2	14
	12/9/15	0.766	6.69	6.93	12	<1.0	2.2	36	<1.0	<2.0	<50	0.012	<1.0	0.46	<2.0	270	<0.50	830	<0.013	<2.0	<2.0	<1.0	<0.10	540	<0.10	<2.0	<2.0	2.1	<2.0	<5.0
	11/23/16	0.386	6.77	7.02	6	<1.0	<1.0	33	<1.0	<2.0	<50	0.025	<1.0	<0.40	<2.0	<50	<0.50	430	<0.013	<2.0	<2.0	<1.0	<0.10	470	<0.10	<2.0	<2.0	2	<2.0	<5.0
	12/21/17	0.468	6.84	7.09	5.3	<1.0	<1.0	31	<1.0	<2.0	<50	0.078	<1.0	<0.40	<2.0	<50	<0.50	470	<0.013	<2.0	<2.0	<1.0	<0.10	460	<0.10	<2.0	<2.0	1.7	<2.0	<5.0
COSB-002-MWA (1.91 m)	03/18/13	-0.173	7.03	7.27	10	2.3	<0.6	20	<0.5	<2	<100	0.098	<1	<1	3.3	220	<1	42	<0.013	<4	3.6	<1	<0.1	370	<0.8	<20	<3	0.54	<2	110
	07/26/13	-0.321	7.05	7.29	59	<1	<1	40	<1	<2	55	0.273	<1	3.51	<2	3660	<0.5	5980	NM	<2	30.7	<1	<0.1	533	<0.1	<2	<2	0.69	<2	466
	11/6/13[FDL]	NM	NM	NM	1000	<1	2.2	67	<1	<2	63	0.8	<1	9.2	3.1	17000	<0.5	14000	NM	<2	91	<1	<0.1	690	<0.1	<2	<2	0.4	<2	**1200**
	11/6/13[FD]	-0.718	7.08	7.33	1000	<1	2.3	68	<1	<2	63	0.81	<1	9.6	3.3	18000	<0.5	14000	NM	<2	92	<1	<0.1	690	<0.1	<2	<2	0.42	<2	**1300**
	11/06/13	-0.696	7.09	7.34	1100	<1	2.3	68	<1	<2	61	0.80	<1	9.2	4.0	18000	<0.5	14000	NM	<2	91	<1	<0.1	700	<0.1	<2	<2	0.40	<2	**1300**
	12/15/14	-0.524	7	7.25	73	<1	<1	19	<1	<2	<50	0.66	<1	0.43	5.1	1700	0.52	480	<0.013	<2	7.3	<1	<0.1	390	<0.1	<2	<2	0.22	<2	92
	12/9/15	NC	NC	NC	180000	<1.0	6.2	76	25	<2.0	120	**8.5**	91	**80**	**650**	32000	7.8	23000	<0.013	<2.0	270	<1.0	<0.10	1200	0.39	<2.0	<2.0	11	<2.0	**3800**
	11/28/16	-0.25	6.98	7.22	16	<1.0	<1.0	21	<1.0	<2.0	54	0.097	<1.0	<0.40	3.3	2800	<0.50	580	<0.013	<2.0	4.5	<1.0	<0.10	420	<0.10	<2.0	<2.0	0.14	<2.0	97
	12/08/17	-3.79	7.98	8.22	34000	<1.0	<1.0	70	3.7	<2.0	110	**3.9**	3.8	29	**100**	7500	1.8	16000	<0.013	<2.0	300	<1.0	<0.1	1700	0.33	<2.0	<2.0	1.6	<2.0	**2400**
COSCW-001-MWA (3.04 m)	03/19/13	0.257	7.39	7.64	7.3	<1	<0.6	41	<0.5	<2	<100	<0.017	<1	<1	5.3	280	<1	16	<0.013	<4	<3	<1	<0.1	560	<0.8	<20	<3	0.55	<2	38
	07/17/13	0.099	7.36	7.61	7.8	<1	<1	47.1	<1	<2	<50	0.104	<1	<0.4	11.2	<50	<0.5	1470	NM	<2	<2	<1	<0.1	672	<0.1	<2	<2	0.55	<2	52.5
	10/24/13	0.002	7.32	7.57	16	<1	<1	53	<1	<2	<50	0.032	<1	<0.4	2.2	<50	<0.5	620	NM	<2	<2	<1	<0.1	680	<0.1	<2	<2	0.59	<2	21
	12/16/14	0.085	7.28	7.53	13	<1	<1	48	<1	<2	<50	0.13	<1	<0.4	7.5	<50	<0.5	10	<0.013	<2	<2	<1	<0.1	650	<0.1	<2	<2	0.82	<2	45
	12/8/15	0.261	7.29	7.54	7.6	<1.0	<1.0	45	<1.0	<2.0	<50	0.061	<1.0	<0.40	12	<50	<0.50	87	0.11	<2.0	<2.0	<1.0	<0.10	600	<0.10	<2.0	<2.0	0.75	<2.0	44
	11/22/16	0.132	7.3	7.55	9.9	<1.0	<1.0	48	<1.0	<2.0	<50	0.13	<1.0	<0.40	15	<50	<0.50	66	<0.013	<2.0	<2.0	<1.0	<0.10	660	<0.10	<2.0	<2.0	0.63	<2.0	81
	12/8/17	0.416	7.26	7.51	7.6	<1.0	1.6	82	<1.0	<2.0	<50	0.10	<1.0	0.65	3.0	<50	<0.50	3900	<0.013	<2.0	<2.0	<1.0	<0.10	250	<0.10	<2.0	<2.0	0.70	<2.0	29
COSCW-001-MWB (1.75 m)	03/19/13	0.367	7.38	7.63	6.7	<1	1.8	120	<0.5	<2	<100	0.19	<1	<1	<2	640	<1	1000	<0.013	4.7	<3	<1	<0.1	1300	<0.8	<20	<3	0.87	<2	12
	07/17/13[L]	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
	07/17/13	0.234	7.37	7.62	16.2	<1	2.6	107	<1	<2	52	<0.017	<1	<0.4	4.9	181	<0.5	348	NM	2.2	<2	<1	<0.1	1260	<0.1	<2	<2	0.68	<2	19.1
	10/24/13[L]	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
	10/24/13	0.332	7.33	7.58	18	<1	1.1	120	<1	<2	62	<0.01	<1	<0.4	<2	200	<0.5	350	NM	2.7	<2	<1	<0.1	1300	<0.1	<2	<2	0.76	<2	14
	12/12/14	0.338	7.29	7.54	22	<1	<1	130	<1	<2	62	0.22	<1	<0.4	<2	57	1.1	66	<0.013	5.7	<2	<1	<0.1	1400	<0.1	<2	<2	1.2	<2	20
	12/8/15	0.497	7.1	7.35	5.2	<1.0	<1.0	150	<1.0	<2.0	62	0.051	<1.0	<0.40	<2.0	110	<0.50	160	0.19	3.4	<2.0	<1.0	<0.10	1400	<0.10	<2.0	<2.0	2.6	<2.0	<5.0
	11/22/16	0.132	7.3	7.55	9.9	<1.0	<1.0	48	<1.0	<2.0	<50	0.13	<1.0	<0.40	15	<50	<0.50	66	<0.013	<2.0	<2.0	<1.0	<0.10	660	<0.10	<2.0	<2.0	0.63	<2.0	81
	12/8/17	0.524	7.19	7.44	<5.0	<1.0	<1.0	130	<1.0	<2.0	56	0.012	<1.0	<0.40	<2.0	59	<0.50	120	<0.013	3.4	<2.0	<1.0	<0.10	1300	<0.10	<2.0	<2.0	1.8	<2.0	<5.0

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COSCW-002-MWA (4.33 m)	03/26/13	7400	1400	160000	17000	320	150	7.9	12	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	<0.5	5.5	820	7.5	470	320	<1	545	9.63	0.93	0.73
	07/17/13	7810	1650	154000	16700	340	150	8	13	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	1.1	20	830	7.48	450	330	<1	548	9.96	2.57	0.715
	10/24/13	8200	1800	160000	18000	300	160	8.2	13	<0.01	<100	0.073	<0.01	0.073	<0.05	<5	0.87	25	840	7.45	470	300	<1	540	9.49	1.15	0.641
	12/12/14	7400	1600	160000	17000	340	160	8.2	12	<10	<100	0.1	<0.01	0.1	0.066	<5	<0.5	8.1	840	7.49	480	330	<1	570	10.2	1.64	0.744
	12/8/15	8700	1500	160000	18000	350	150	8.2	13	0.012	<100	0.077	<0.010	0.077	<0.050	<5.0	1.1	4.2	830	7.88	470	340	2.4	560	10.2	2.3	1.13
	11/22/16	20000	3700	65000	12000	220	29	14	13	0.014	<100	<0.050	<0.010	<0.050	<0.050	<5.0	1.5	0.42	470	7.87	210	210	1.5	290	5.31	1.14	0.601
	12/8/17	7300	1500	160000	17000	330	130	7.7	14	<0.01	<100	0.083	<0.010	0.083	<0.050	<5.0	0.99	13	850	7.58	470	330	1.2	530	9.53	0.68	0.831
COSCW-002-MWB (3.03 m)	03/19/13[L]	22000	1900	91000	9600	NM	NM	NM	7	NM	<100	NM	NM	NM	<0.05	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/19/13	22000	1900	89000	9700	150	180	8.6	7	<0.01	<100	0.081	<0.01	0.081	<0.05	<5	<0.5	10	610	7.9	260	150	1.1	411	7.06	6.25	0.583
	07/17/13	24400	2380	92700	10900	170	150	8.2	9.5	<0.01	<100	0.056	<0.01	0.056	0.12	<5	0.52	1.6	620	7.74	280	170	<1	399	6.73	0.52	0.495
	10/24/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	640	7.81	NM	NM	NM	NM	NM	NM	NM
	10/24/13	26000	2700	98000	11000	180	150	7.9	10	<0.01	<100	0.16	<0.01	0.16	<0.05	<5	0.89	34	640	7.75	290	180	<1	420	6.98	0.36	0.543
	12/12/14	25,000	2100	100,000	11,000	180	160	9	9.1	<10	<100	0.11	<0.01	0.11	0.11	<5	0.5	3.9	640	7.64	300	180	<1	430	7.21	0.84	0.453
	12/8/15	24,000	1700	88,000	11,000	180	130	10	8.4	<0.010	<100	0.15	<0.010	0.15	<0.050	<5.0	0.63	1.5	600	7.85	270	180	1.2	380	6.59	1.23	0.609
	11/22/16	25000	1700	86000	11000	180	120	10	9.4	0.014	<100	0.087	<0.010	0.087	<0.050	<5.0	0.66	5	580	7.75	260	180	<1.0	370	6.4	0.39	0.507
	12/8/17	24000	1600	87000	10000	200	110	11	10	<0.010	<100	0.085	<0.010	0.085	<0.050	<5.0	1.2	2.0	610	7.88	260	200	1.4	370	6.51	1.56	0.680
COTS-001-MWA[3] (4.08 m)	11/15/13[L]	8000	3100	96000	7400	NM	NM	NM	NM	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/15/13	8000	3100	96000	7400	33	74	11	17	<0.01	<100	50	0.05	50	5.3	23	6.2	73	710	6.04	270	33	<1	470	6.08	0.98	-1.92
	12/15/14	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
	12/08/14	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
COTS-001-MWB[3] (4.44 m)	12/08/15	37,000	2,800	120,000	14,000	260	120	48	13	0	<100	2	<0.010	2	0	<5.0	2	4	810	8	360	260	2	520	9	3	1
	11/28/16	35000	2700	110000	13000	260	110	53	13	0.018	<100	1.2	<0.010	1.2	0.31	<5.0	1	1.6	740	7.6	340	260	<1.0	500	9.1	4.12	0.603
	12/21/17	33000	2800	120000	13000	280	98	51	14	<0.010	<100	<0.050	<0.010	<0.050	1.1	<5.0	1.2	0.86	810	7.75	340	280	1.5	500	9.04	3.20	0.791
MCES-001-MWA (6.18 m)	03/28/13[FD]	31000	17000	220000	<60	430	83	38	2.8	<0.01	<100	<0.05	0.39	0.28	1	<5	2.2	21	2100	12	550	<1	<1	656	11.5	5.81	NC
	03/28/13	30000	17000	200000	<60	430	85	36	3	<0.01	<100	<0.05	0.41	0.27	1	<5	2	18	2100	11.8	500	1.8	110	631	11.3	2.5	2.87
	07/24/13	36400	17800	230000	<100	87	160	43	2.9	<0.01	<100	<0.05	0.17	0.13	1.3	6.2	2.2	15	2300	11.8	570	<1	<1	542	6.24	37.2	NC
	12/10/14	34000	18,000	240000	<100	420	120	50	3.5	<10	<100	0.096	0.28	0.38	1.5	<5	3.4	37	1900	11.9	610	<1	17	730	12.4	6.93	2.12
	12/2/15	39000	17,000	240000	<100	66	160	44	2.7	<0.010	<100	<0.050	0.29	0.31	1.3	<5.0	2.2	3.5	2100	11.8	590	<1.0	<1.0	540	5.89	40.9	NC
	11/25/16	36000	19000	250000	<100	280	190	60	2.8	<0.010	<100	<0.050	0.47	0.39	1.1	<5.0	<5.0	10	1900	11.9	610	<1.0	<1.0	730	11.4	11.8	NC
	12/12/17 FD	42000	17000	240000	<0.10	70	150	55	2.4	<0.010	<100	<0.050	0.13	0.16	1.4	<5.0	3.1	0.27	2400	12	600	<1.0	<1.0	560	6.16	39.9	NC
	12/12/17	42000	17000	240000	<0.10	76	160	52	2.3	<0.010	<100	<0.050	0.13	0.16	1.4	5.5	3.1	0.25	2500	12	600	<1.0	<1.0	560	6.26	39.5	NC
MCES-001-MWB[8] (6.39 m)	03/28/13	**7200000**	160000	630000	910000	1400	29	15000	19	<0.01	<1000	<0.05	<0.01	<0.05	26	19	7.4	230	35000	7.1	5300	1400	1.7	24700	447	2.38	1.19
	07/25/13	**6500000**	148000	449000	868000	1400	25	12000	23	<0.01	<1000	<0.05	<0.01	<0.05	31	42	12	160	36000	7.42	4700	1400	3.4	21000	370	1.71	1.32
	11/14/13	**6500000**	160000	410000	830000	1300	10	13000	23	0.013	<1000	0.09	0.019	0.11	35	43	17	150	35000	7.32	4500	1300	2.5	22000	392	1.8	1.16
	12/10/14	**6800000**	160000	500000	900000	1500	6.7	11000	25	0.013	<1000	<0.05	<0.01	<0.05	33	39	17	130	34000	7.4	5000	1400	3.5	21000	346	7.51	1.38
	12/2/15	**6300000**	150000	480000	820000	1200	<2.0	13000	28	0.054	<1000	<0.050	0.013	<0.050	41	41	17	150	34000	7.49	4600	1200	3.4	22000	399	3.35	1.36
	11/25/16	**6200000**	150000	480000	790000	1200	<2.0	11000	28	0.04	<1000	<0.050	<0.010	<0.050	36	39	20	140	32000	7.42	4400	1200	3.1	19000	328	5.07	1.3
	12/15/17	**6300000**	150000	520000	820000	1500	<2.0	12000	28	0.013	<1000	<0.050	<0.010	<0.050	29	42	16	120	35,000	7.47	4700	1400	4.0	21000	379	0.52	1.46
MCES-006-MW (2.93 m)	03/28/13	14000	1300	100000	12000	280	34	17	13	0.062	<100	<0.05	<0.01	<0.05	0.17	14	11	310	610	7.50	310	280	<1.0	374	6.87	0.79	0.533
	07/26/13	13300	1030	103000	12100	300	28	20	13	<0.01	<100	<0.05	<0.01	<0.05	0.18	12	10	250	630	7.57	310	300	1	376	7.1	1.87	0.617
	11/05/13[L]	13000	1200	110000	12000	NM	NM	NM	NM	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/05/13	13000	1200	110000	12000	290	34	22	13	<0.01	<100	0.15	<0.01	0.15	0.29	17	10	100	640	7.61	320	290	1.1	390	7.21	1.34	0.664
	12/10/14	9600	5800	77000	3200	77	70	23	14	0.014	<100	1.4	0.11	1.5	0.18	10	3.6	10	360	8.91	200	71	5.4	260	3.77	10.7	1.24
	12/3/15	7800	5500	65000	1700	84	88	21	11	0.045	110	1.3	0.12	1.4	0.14	12	3.8	3.2	370	9.44	170	66	17	260	4.2	4.22	1.66
	12/02/16	7900	1800	59000	4700	100	48	17	14	0.015	<100	0.52	0.062	0.58	0.14	13	5.4	7.9	320	7.95	170	100	<1.0	220	3.58	2.19	0.334
	12/13/17	7600	3100	51000	2900	120	35	14	9.5	<0.010	<100	0.59	0.016	0.60	0.19	15	5.5	1.0	360	7.86	140	120	<1.0	200	3.57	5.15	0.262
MCES-204-MW[8] (4.17 m) (Destroyed 2017)	03/28/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	2.4	NM	NM	NM	24000	9.2	NM	NM	NM	NM	NM	NM	NM
	03/28/13	**4700000**	200000	630000	260000	53	1100	8600	<1.0	<0.01	<1000	<0.05	<0.01	<0.05	2.4	<5.0	<5.0	4.4	24000	9.1	2600	47	5.5	15600	267	0.91	1.67
	07/24/13	**4290000**	184000	618000	234000	25	1200	8100	<0.5	<0.01	<1000	<0.05	<0.01	<0.05	2.4	<5.0	0.75	3.6	24000	8.82	2500	23	1.4	14700	256	2.86	1.08
	11/07/13[L]	NM	NM	NM	NM	NM	1100	8100	0.83	<0.01	NM	NM	<0.01	<0.05	NM	7.2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/07/13	**4500000**	190000	660000	230000	28	1100	8200	0.81	<0.01	<1000	<0.05	<0.01	<0.05	4.7	7.2	2.8	22	24000	8.93	2600	25	2.0	15000	256	0.29	1.26
	12/18/14[FD]	**4400000**	190000	610,000	260000	21	740	7500	<5	<10	<1000	<0.05	<0.01	<0.05	2.5	<5	<5	<0.1	22000	7.28	2600	21	<1	14000	228	3.91	-0.505
	12/18/14	**4300000**	190000	610000	260000	22	730	7400	<5	<10	<100	<0.05	<0.01	<0.05	2.3	<5	<5	<0.1	23000	8	2600	22	<1	14000	224	4.44	0.228
	12/10/15	**3900000**	180000	530000	250000	29	800	7700	<0.50	<0.010	<1000	<0.050	<0.010	<0.050	2.8	<5.0	NM	0.1	22000	8.51	2300	28	<1.0	13000	235	3.17	0.785
	11/25/16[FD]	**3700000**	180000	560000	200000	29	1100	6200	<0.50	0.012	<1000	<0.050	<0.010	<0.050	3.4	<5.0	53	0.15	20000	8.89	2200	27	2	12000	199	3.34	1.18
	11/25/16	**3700000**	180000	560000	200000	30	1100	5800	<0.50	0.013	<1000	<0.050	<0.010	<0.050	3.4	<5.0	1.3	0.22	20000	8.71	2200	28	1.4	12000	187	6.16	1.02

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		**unitless**	**unitless**	**unitless**	**µg/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**	**µg/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**	**µg/L**
MOE Table 3[2]		-	-	-	-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
COSCW-002-MWA (4.33 m)	03/26/13	0.482	6.77	7.02	9.5	<1	<0.6	21	<0.5	<2	<100	0.066	<1	<1	5	<100	<1	<4	<0.013	<4	<3	<1	<0.1	240	<0.8	<20	<3	3.9	<2	37
	07/17/13	0.468	6.77	7.01	7.1	<1	<1	21.7	<1	<2	<50	0.298	<1	<0.4	48.1	<50	0.68	<2	NM	<2	3.2	<1	<0.1	255	<0.1	<2	<2	3.87	<2	216
	10/24/13	0.393	6.81	7.06	16	<1	<1	24	<1	<2	51	0.36	<1	<0.4	37	<50	0.55	5.5	NM	<2	2.8	<1	<0.1	240	<0.1	<2	<2	4.6	<2	260
	12/12/14	0.205	6.75	7	17	<1	<1	22	<1	<2	<50	0.26	<1	<0.4	12	<50	<0.5	5.2	<0.013	<2	<2	<1	<0.1	250	<0.1	<2	<2	4.9	<2	59
	12/8/15	0.883	6.75	6.99	7.8	<1.0	<1.0	22	<1.0	<2.0	<50	0.14	<1.0	<0.40	65	<50	1	<2.0	<0.013	<2.0	2.9	<1.0	<0.10	240	<0.10	<2.0	<2.0	4.1	<2.0	210
	11/22/16	0.352	7.27	7.52	5.6	<1.0	<1.0	130	<1.0	<2.0	66	0.014	<1.0	<0.40	<2.0	<50	<0.50	18	<0.013	5.6	<2.0	<1.0	<0.10	1300	<0.10	<2.0	<2.0	1.1	<2.0	<5.0
	12/8/17	0.583	6.75	7.00	7.0	<1.0	<1.0	23	<1.0	<2.0	<50	0.10	<1.0	<0.40	23	<50	<0.50	2.3	<0.013	<2.0	<2.0	<1.0	<0.10	250	<0.10	<2.0	<2.0	4.4	<2.0	110
COSCW-002-MWB (3.03 m)	03/19/13[L]	NM	NM	NM	6.1	<1	<0.6	26	<0.5	<2	<100	0.045	<1	<1	<2	<100	<1	130	NM	<4	<3	<1	<0.1	170	<0.8	<20	<3	2.7	<2	33
	03/19/13	0.335	7.32	7.57	6.3	<1	<0.6	26	<0.5	<2	<100	0.043	<1	<1	<2	<100	<1	130	<0.013	<4	<3	<1	<0.1	170	<0.8	<20	<3	2.6	<2	33
	07/17/13	0.246	7.25	7.49	10.2	<1	2.7	24.1	<1	<2	<50	<0.017	<1	0.44	<2	273	<0.5	470	NM	4.2	<2	<1	<0.1	173	<0.1	<2	<2	2.4	<2	13.9
	10/24/13[L]	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
	10/24/13	0.295	7.21	7.46	26	<1	2.3	30	<1	<2	<50	0.15	<1	<0.4	<2	320	<0.5	460	NM	5.4	<2	<1	<0.1	180	<0.1	<2	<2	2.3	<2	20
	12/12/14	0.497	7.19	7.43	11	<1	<1	34	<1	<2	<50	0.63	<1	<0.4	4.5	80	<0.5	130	<0.013	7.2	<2	<1	<0.1	190	<0.1	<2	<2	3.2	<2	47
	12/8/15	0.36	7.24	7.49	7.5	<1.0	<1.0	31	<1.0	<2.0	<50	0.038	<1.0	<0.40	6.3	61	0.65	110	<0.013	5.3	<2.0	<1.0	<0.10	150	<0.10	<2.0	<2.0	1.9	<2.0	38
	11/22/16	0.259	7.25	7.49	7.7	<1.0	<1.0	30	<1.0	<2.0	<50	0.23	<1.0	<0.40	2.3	130	<0.50	200	<0.013	7.1	<2.0	<1.0	<0.10	150	<0.10	<2.0	<2.0	1.7	<2.0	80
	12/8/17	0.431	7.20	7.45	<5.0	<1.0	<1.0	32	<1.0	<2.0	<50	0.031	<1.0	<0.40	3.9	130	<0.50	340	<0.013	5.3	<2.0	<1.0	<0.10	160	<0.10	<2.0	<2.0	1.7	<2.0	25
COTS-001-MWA[3] (4.08 m)	11/15/13[L]	NM	NM	NM	230	<1	<1	64	<1	<2	<50	0.59	<1	2.4	47	59	2.8	3200	NM	<2	7.2	<1	<0.1	300	<0.1	<2	<2	0.24	<2	160
	11/15/13	-2.17	7.96	8.21	230	<1	<1	63	<1	<2	<50	0.57	<1	2.5	47	60	2.8	3100	NM	<2	7.2	<1	<0.1	300	<0.1	<2	<2	0.24	<2	160
	12/15/14	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
	12/08/14	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
COTS-001-MWB[3] (4.44 m)	12/08/15	1	7	7	6	<1.0	<1.0	43	<1.0	<2.0	<50	0.029	<1.0	<0.40	<2.0	<50	<0.50	22	<0.013	<2.0	<2.0	<1.0	<0.10	1600	<0.10	<2.0	<2.0	1	<2.0	<5.0
	11/28/16	0.355	6.99	7.24	11	<1.0	<1.0	38	<1.0	<2.0	<50	0.20	<1.0	<0.40	<2.0	<50	<0.50	1400	<0.013	<2.0	<2.0	<1.0	<0.10	1500	<0.10	<2.0	<2.0	0.62	<2.0	<5.0
	12/21/17	0.543	6.96	7.21	6.0	<1.0	2.8	44	<1.0	<2.0	<50	<0.010	<1.0	0.45	<2.0	530	<0.50	2100	<0.013	<2.0	<2.0	<1.0	<0.10	1600	<0.10	2.2	<2.0	0.52	<2.0	<5.0
MCES-001-MWA (6.18 m)	03/28/13[FD]	NC	NC	NC	18	<1	0.9	150	<0.5	<2	<100	<0.017	<1	<1	4.7	100	3.9	<4	0.015	8.1	<3	4	<0.1	1100	<0.8	<20	<3	<0.15	26	12
	03/28/13	2.63	8.93	9.17	20	<1	<0.6	150	<0.5	<2	<100	<0.017	<1	<1	4.8	110	3.9	<4	0.015	8.3	<3	1.8	<0.1	1100	<0.8	<20	<3	<0.15	21	14
	07/24/13	NC	NC	NC	30.8	<1	<1	159	<1	<2	<50	<0.017	<1	<0.4	13.3	<50	1.87	3.2	NM	9.4	<2	1.6	<0.1	1180	<0.1	<2	<2	<0.1	23.3	8.7
	12/10/14	1.88	9.78	10	310	<1	<1	160	<1	<2	<50	0.085	2.6	<0.4	10	<50	0.83	2.9	<0.013	9.5	<2	1.8	<0.1	1200	<0.1	<2	<2	<0.1	16	7.7
	12/2/15	NC	NC	NC	53	<1.0	<1.0	150	<1.0	<2.0	<50	<0.010	<1.0	<0.40	2.7	<50	2.9	<2.0	<0.013	8.9	<2.0	1.5	<0.10	1300	<0.10	<2.0	<2.0	<0.10	20	<5.0
	11/25/16	NC	NC	NC	79	<1.0	<1.0	160	<1.0	<2.0	<50	<0.010	2.6	<0.40	4.3	<50	5.1	<2.0	<0.013	9.3	<2.0	1.9	<0.10	1300	<0.10	<2.0	<2.0	<0.10	18	<5.0
	12/12/17 FD	NC	NC	NC	54	<1.0	<1.0	140	<1.0	<2.0	<50	0.017	2.1	<0.40	4.3	<50	4.2	<2.0	<0.013	9.0	<2.0	1.8	<0.10	1300	<0.10	<2.0	<2.0	<0.10	18	<5.0
	12/12/17	NC	NC	NC	52	<1.0	<1.0	140	<1.0	<2.0	<50	<0.010	2.0	<0.40	11	<50	4.0	<2.0	<0.013	8.5	<2.0	1.8	<0.10	1300	<0.10	<2.0	<2.0	<0.10	18	<5.0
MCES-001-MWB[8] (6.39 m)	03/28/13	0.948	5.91	6.15	<50	<10	<6	3500	<5	<20	2200	0.19	<10	<10	<20	18000	<10	2200	<0.013	<40	<30	32	<1	68000	<8	<200	<30	6.6	49	110
	07/25/13	1.09	6.1	6.34	<50	<10	<10	5210	<10	<20	3260	<0.17	11	<4	<20	14700	<5	1220	NM	<20	<20	<10	<1	51000	<1	<20	<20	5	<20	<50
	11/14/13	0.926	6.16	6.39	110	<10	<10	7000	<10	<20	3600	<0.1	<10	<4	<20	15000	<5	1000	NM	<20	<20	<10	<1	41000	<1	<20	<20	3.7	<20	120
	12/10/14	1.14	6.03	6.27	86	<1	8.7	7200	<1	<2	3600	0.16	1.5	0.88	<2	14000	<0.5	1400	0.017	<2	<2	<1	<0.1	52000	<0.1	<2	3.3	2.5	2.3	10
	12/2/15	1.12	6.13	6.37	<50	<10	<10	7000	<10	<20	3500	<0.10	<10	<4.0	<20	11000	<5.0	1300	<0.013	<20	<20	<10	<1.0	54000	<1.0	<20	<20	1.9	<20	<50
	11/25/16	1.07	6.11	6.35	<50	<10	<10	7200	<10	<20	3700	<0.10	<10	<4.0	<20	10000	<5.0	1300	<0.013	<20	<20	<10	<1.0	54000	<1.0	<20	<20	1.3	<20	<50
	12/15/17	1.22	6.01	6.25	<50	<10	<10	7700	<10	<20	3300	<0.10	<10	<4.0	<2.0	11000	<5.0	1300	0.015	<20	<20	<10	<1.0	58000	<1.0	<20	<20	<1.0	<20	<50
MCES-006-MW (2.93 m)	03/28/13	0.285	6.97	7.22	7.7	<1.0	13	490	<0.5	<2.0	<100	<0.017	<1.0	<1.0	<2.0	2000	<1.0	4500	<0.013	<4	<3.0	6.3	<0.1	860	<0.8	<20	<3.0	0.84	18	<5
	07/26/13	0.368	6.95	7.2	16.6	<1.0	12.1	588	<1.0	<2.0	<50	<0.017	<1.0	<0.4	<2.0	2200	<0.5	4520	NM	<2.0	<2.0	<1.0	<0.1	883	<0.1	<2.0	<2.0	0.89	7.6	<5
	11/05/13[L]	NM	NM	NM	25	<1.0	12	520	<1.0	<2.0	<50	0.037	<1.0	<0.4	<2.0	2500	<0.5	4800	NM	<2.0	<2.0	<1.0	<0.1	830	<0.1	<2.0	<2.0	0.79	9.0	15
	11/05/13	0.415	6.95	7.2	27	<1.0	12	520	<1.0	<2.0	<50	0.038	<1.0	<0.4	<2.0	2500	<0.5	4800	NM	<2.0	<2.0	<1.0	<0.1	840	<0.1	<2.0	<2.0	0.79	9.1	16
	12/10/14	0.99	7.67	7.92	210	1.5	10	130	<1	<2	<50	0.041	<1	<0.4	9.3	110	<0.5	550	<0.013	4.5	<2	2.9	<0.1	730	<0.1	<2	<2	0.21	120	<5
	12/3/15	1.41	7.78	8.03	300	1.3	11	65	<1.0	<2.0	<50	<0.010	<1.0	0.47	13	<50	<0.50	160	<0.013	4.8	<2.0	3.3	<0.10	580	<0.10	<2.0	<2.0	0.37	140	<5.0
	12/02/16	0.084	7.62	7.87	23	<1.0	11	240	<1.0	<2.0	<50	0.049	<1.0	<0.40	2.5	650	<0.50	2700	<0.013	<2.0	<2.0	<1.0	<0.10	510	<0.10	<2.0	<2.0	0.6	16	<5.0
	12/13/17	0.012	7.60	7.85	20	<1.0	4.3	120	<1.0	<2.0	<50	0.018	<1.0	<0.40	5.2	130	<0.50	1100	<0.013	3.7	<2.0	1.7	<0.10	360	<0.10	<2.0	<2.0	0.91	23	<5.0
MCES-204-MW[8] (4.17 m) (Destroyed 2017)	03/28/13[L]	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
	03/28/13	1.43	7.43	7.67	62	<10	<6	75	<5.0	<20	1300	<0.17	<10	<10	<20	1600	<10	<40	0.028	<40	<30	**210**	<1.0	5400	<8	<200	<30	<1.5	52	<50
	07/24/13	0.838	7.75	7.98	<50	<10	<10	70	<10	<20	1240	<0.17	<10	<4.0	<20	<500	<5.0	31	NM	<20	<20	**120**	<1.0	4880	<1.0	<20	<20	<1.0	<20	<50
	11/07/13[L]	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
	11/07/13	1.02	7.67	7.91	59	<10	<10	71	<10	<20	1200	<0.10	<10	<4.0	<20	<500	<5.0	<20	NM	<20	<20	36	<1.0	5100	<1.0	<20	<20	<1.0	<20	<50
	12/18/14[FD]	-0.742	7.78	8.02	27	<1	1.5	74	<1	<2	1100	0.43	<1	<0.4	<2	97	<0.5	18	<0.013	<2	<2	39	<0.1	5000	<0.1	<2	<2	<0.1	<2	<5
	12/18/14	-0.01	7.77	8.01	20	<1	1.9	74	<1	<2	1100	0.21	<1	<0.4	<2	65	<0.5	19	<0.013	<2	<2	**67**	<0.1	5000	<0.1	<2	<2	<0.1	<2	<5
	12/10/15	0.548	7.73	7.97	<50	<10	<10	60	<10	<20	1200	0.43	<10	<4.0	<20	<500	<5.0	<20	<0.013	<20	<20	<10	<1.0	4700	<1.0	<20	<20	<1.0	<20	<50
	11/25/16[FD]	0.94	7.71	7.95	<50	<10	<10	64	<10	<20	1100	<0.10	<10	<4.0	<20	<500	<5.0	<20	<0.13	<20	<20	48	<1.0	4700	<1.0	<20	<20	<1.0	<20	<50
	11/25/16	0.784	7.69	7.93	<50	<10	<10	61	<10	<20	1200	<0.10	<10	<4.0	<20	<500	<5.0	<20	<0.13	<20	<20	**86**	<1.0	4800	<1.0	<20	<20	<1.0	<20	<50

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MCWS-009-MW (6.63 m) *Decommissioned 2015*	12/9/14[FD]	55000	1800	110000	9100	300	36	77	12	<10	<100	0.071	<0.01	0.071	<50	<5	1	0.8	810	7.29	320	300	<1	490	8.93	0.39	0.36
	12/9/14	55000	1700	110000	8900	300	37	76	12	<10	<100	0.079	<0.01	0.079	0.069	<5	1.1	1.1	810	7.3	320	300	<1.0	480	8.93	1.02	0.361
MCWS-113-MWB (2.525 m)	03/27/13	91000	7200	83000	13000	300	<2	98	7.1	<0.01	<500	<0.05	<0.01	<0.05	1.6	9.8	4.6	13	820	7.4	260	300	<1	486	8.68	4.72	0.324
	07/24/13	72600	6710	73300	10800	310	<2	92	9.4	<0.01	315	<0.05	<0.01	<0.05	1.8	7.7	4.6	8.8	820	7.48	230	310	<1	458	8.72	3.69	0.371
	11/15/13	78000	7300	74000	11000	310	<2	93	10	<0.01	310	<0.05	<0.01	<0.05	1.8	8.1	<5	13	850	7.52	230	310	<1	470	8.87	2.78	0.42
	12/9/14	74000	6800	72000	12000	310	<2	100	10	<10	290	<0.05	<0.01	<0.05	1.9	11	<5	15	790	7.47	230	300	<1	470	9.03	5.18	0.354
	12/2/15	71000	6800	73000	12000	310	<2.0	91	10	0.017	310	<0.050	0.012	0.052	1.7	7.8	<5.0	20	760	7.65	230	300	1.3	460	8.69	3.51	0.542
	11/30/16	72000	7200	74000	13000	300	<2.0	91	9.9	0.012	160	<0.050	0.01	<0.050	1.7	12	5.2	16	780	7.78	240	300	1.7	460	8.66	2.61	0.677
	12/12/17	67000	6800	77000	13000	300	<2.0	98	10	<0.010	260	<0.050	<0.010	<0.050	1.7	7.0	0.97	7.9	810	7.85	250	300	2.0	460	8.86	4.05	0.760
MCWS-306-MWB (0.79 m)	03/27/13	43000	5400	110000	34000	210	280	51	11	0.011	<100	0.052	<0.01	0.052	<0.05	<5	1.2	94	990	7.6	420	210	<1	664	11.4	4.72	0.463
	07/24/13	31700	3990	109000	27700	230	230	21	11	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	1	46	870	7.61	390	230	<1	573	9.92	3.66	0.529
	11/15/13	23000	3900	110000	26000	250	170	14	12	0.012	<100	0.057	<0.01	0.057	<0.05	<5	2.7	>1000	810	7.71	370	250	1.2	510	8.95	2.29	0.672
	12/9/14	16000	2900	110000	20000	250	130	17	12	0.015	<100	<0.05	<0.01	<0.05	0.065	<5	1.2	83	700	7.46	350	250	<1	460	8.2	2.5	0.432
	12/2/15	16000	3000	110000	21000	290	140	16	13	0.018	<100	<0.050	0.01	<0.050	<0.050	<5.0	1.2	2.6	720	7.66	360	280	1.2	490	9.03	6.49	0.686
	11/30/16	23000	3900	130000	24000	270	190	16	13	0.015	<100	<0.050	<0.010	<0.050	0.12	<5.0	1.5	22	850	7.61	430	270	1	560	9.72	0.36	0.678
	12/12/17	13000	2600	110000	20000	280	95	16	13	<0.010	<100	<0.050	<0.010	<0.050	0.066	<5.0	1.5	1.5	710	7.61	350	280	1.1	440	8.02	2.30	0.627
MCWS-307-MWB (0.70 m)	03/27/13	180000	2200	70000	10000	330	110	160	11	<0.01	<100	0.064	<0.01	0.064	<0.05	<5	0.88	1.2	1200	7.8	220	330	2	738	13.4	5.02	0.65
	07/24/13	193000	2130	64300	10000	340	100	160	10	<0.01	<100	<0.05	<0.01	<0.05	0.063	<5	0.92	1.6	1300	7.77	200	340	1.9	744	13.4	3.52	0.592
	11/14/13	190000	2100	65000	9800	340	97	150	10	<0.01	<100	<0.05	<0.01	<0.05	0.11	<5	1.4	5.0	1300	7.72	200	340	1.7	730	13.1	3.14	0.556
	12/9/14	190000	2200	70000	11000	330	96	170	10	0.012	<100	0.088	0.011	0.099	0.12	<5	1	50	1200	7.73	220	330	1.7	750	13.3	2.46	0.432
	12/2/15	190000	2000	68000	10000	350	96	180	10	0.017	<100	<0.050	0.011	0.052	0.11	<5.0	0.93	3	1300	7.87	210	340	2.4	770	14	5.23	0.725
	12/02/16	200000	2100	71000	11000	360	90	200	11	0.016	<100	<0.050	<0.010	<0.050	0.1	<5.0	0.94	0.4	1200	7.7	220	350	1.7	790	14.5	5.1	0.582
	12/12/17	200000	2000	69000	11000	340	90	200	11	<0.010	<100	<0.050	<0.010	<0.050	0.087	<5.0	1.0	0.85	1400	7.91	220	340	2.6	790	14.2	3.51	0.752
MCWS-309-MW (0.97 m)	03/29/13	170000	7300	5400	2900	280	84	37	14	0.093	180	<0.05	<0.01	<0.05	0.14	33	18	>1000	700	7.7	25	280	1.3	490	8.46	2.61	-0.583
	07/26/13	177000	7870	4010	2230	250	84	39	8.1	0.11	179	<0.05	<0.01	<0.05	<0.05	19	12	170	760	7.68	19	250	1.1	475	7.92	2.22	-0.778
	11/14/13	170000	8000	4000	2000	260	89	39	8.3	0.10	250	<0.05	<0.01	<0.05	<0.05	18	13	110	800	7.52	18	260	<1.0	480	8.26	2.93	-0.92
	12/9/14	88000	4700	3900	1100	110	35	18	4.7	0.091	180	0.15	<0.01	0.15	0.13	21	<5	510	340	7.31	14	110	<1	220	3.4	11.5	0.432
	12/3/15	160000	7700	5000	1800	250	95	48	7	0.095	180	<0.050	0.011	<0.050	0.13	18	9.4	910	750	7.62	20	250	<1.0	480	8.41	4.15	-0.742
	12/02/16	170000	8400	8200	2200	310	88	49	10	0.067	150	<0.050	<0.010	<0.050	0.14	18	9.8	130	800	7.62	30	310	1.2	530	9.42	6.44	-0.453
	12/12/17	180000	8800	6700	2200	310	90	51	7.9	0.14	190	<0.050	<0.010	<0.050	0.31	17	14	470	880	7.52	26	300	<1.0	540	9.42	3.80	-0.649
MCWS-310-MW (1.81 m)	03/29/13[L]	49000	3400	75000	10000	NM	NM	NM	9.5	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/29/13	51000	3600	79000	11000	240	49	51	9.5	<0.01	<100	2.7	<0.01	2.7	<0.05	<5	<0.5	0.24	650	7.6	240	240	<1	410	7.46	2.26	0.431
	07/26/13	76100	3430	97100	14200	210	120	120	10	<0.01	<100	1.7	0.016	1.7	<0.05	<5	0.77	0.4	980	7.68	300	210	<1	574	10.2	4.03	0.506
	11/14/13	43000	3700	75000	9600	220	46	46	9.5	<0.01	<100	2.3	0.023	2.4	<0.05	<5	1.3	0.37	640	7.89	230	210	1.6	370	6.72	1.9	0.653
	12/9/14	17000	1500	21000	2400	130	29	30	6.6	<10	<100	0.81	<0.01	0.81	0.097	11	1.3	31	400	7.42	61	130	<1	190	4.02	33.3	0.432
	12/10/15[FD]	8200	3200	10000	1400	50	7.5	6.4	3.6	<0.010	<100	<0.050	<0.010	<0.050	0.15	25	NM	8.3	120	7.19	32	50	<1.0	72	1.33	8.13	-1.42
	12/10/15	8000	3200	10000	1400	49	6.7	6.5	3.7	<0.010	<100	<0.050	<0.010	<0.050	0.16	27	NM	8.0	110	7.23	32	49	<1.0	71	1.31	8.26	-1.38
	12/02/16	7600	3200	14000	1500	49	6.4	11	3.4	0.011	<100	<0.050	0.013	<0.050	0.053	14	1.7	3.2	120	7.15	42	49	<1.0	76	1.41	6.02	-1.33
	12/12/17	16000	1600	29000	3800	52	10	12	2.6	<0.010	<100	0.22	<0.010	0.22	<0.25	26	6.9	12	150	7.43	89	52	<1.0	110	1.59	22.4	-0.737
MSES-003-MW (9.10 m) *Destroyed 2016*	03/26/13	89000	<6000	250000	27000	170	630	120	18	<0.01	<1000	<0.05	<0.01	<0.05	0.11	49	6.7	160	1600	7.3	730	170	<1	1260	19.9	2.57	0.355
	07/24/13[FD]	88300	1660	232000	27500	170	600	110	14	<0.01	<100	<0.05	<0.01	<0.05	0.13	130	5.8	130	1600	7.15	690	170	<1	1200	19	2.13	0.178
	07/24/13[L]	89300	1690	234000	27600	NM	NM	NM	NM	NM	<100	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/24/13	88600	1650	237000	27600	170	600	110	14	<0.01	<100	<0.05	<0.01	<0.05	0.14	110	5.7	140	1600	7.14	710	170	<1	1200	19	1.36	0.181
	11/05/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1700	6.88	NM	NM	NM	NM	NM	NM	NM
	11/05/13	92000	1700	240000	30000	160	630	110	14	<0.01	<100	0.057	<0.01	0.057	0.17	62	8.1	200	1700	6.9	730	160	<1	1300	19.6	0.750	-0.089
	12/10/14[FD]	82000	1700	240000	27000	180	550	93	14	<10	<100	0.21	<0.01	0.21	0.19	96	6.3	130	1500	7.05	710	180	<1	1100	17.7	1.69	0.111
	12/10/14	84000	1700	240000	28000	180	550	94	14	<10	<100	0.063	<0.01	0.063	0.19	91	6	110	1500	7.02	710	180	<1	1100	17.7	2.19	0.432
	12/03/15	78000	1700	220000	27000	150	480	92	14	0.015	<100	<0.050	0.012	<0.050	0.23	15	6.5	200	1500	7.2	670	150	<1.0	1000	15.5	5.87	0.177

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		**unitless**	**unitless**	**unitless**	**µg/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**	**µg/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**	**µg/L**
MOE Table 3[2]		-	-	-	-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
MCWS-009-MW (6.63 m) *Decommissioned 2015*	~~12/9/14~~[FD]	0.112	6.93	7.18	8.3	<1	<1	74	<1	<2	<50	0.042	<1	<0.4	<2	<50	<0.5	130	<0.013	<2	<2	<1	<0.1	320	<0.1	<2	<2	0.69	<2	<5
	12/9/14	0.113	6.94	7.19	7.8	<1.0	<1	73	<1	<2	<50	0.033	<1	<0.4	<2	<50	<0.5	130	<0.013	<2	<2	<1	<0.1	310	<0.1	<2	<2	0.7	<2	<5
MCWS-113-MWB (2.525 m)	03/27/13	0.076	7.08	7.32	<25	<5	<3	210	<2.5	<10	<500	<0.085	<5	<5	<10	2300	<5	4900	0.014	<20	<15	<5	<0.5	340	<4	<100	<15	<0.75	<10	32
	07/24/13	0.123	7.11	7.36	13.2	<1	<1	218	<1	<2	253	<0.017	<1	<0.4	<2	2570	<0.5	4580	NM	<2	<2	<1	<0.1	357	<0.1	<2	<2	<0.1	<2	21.3
	11/15/13	0.172	7.1	7.35	16	<1	<1	210	<1	<2	330	0.041	<1	<0.4	<2	2200	<0.5	4600	NM	<2	<2	<1	<0.1	370	<0.1	<2	<2	<0.1	<2	41
	12/9/14	0.106	7.12	7.37	13	<1	<1	190	<1	<2	320	1.0	<1	<0.4	4.1	1800	<0.5	4300	<0.013	<2	<2	<1	<0.1	340	<0.1	<2	<2	<0.1	<2	45
	12/2/15	0.294	7.11	7.36	44	<1.0	<1.0	210	<1.0	<2.0	310	<0.010	<1.0	0.61	<2.0	2200	26	4300	<0.013	<2.0	<2.0	<1.0	<0.10	350	<0.10	<2.0	<2.0	<0.10	<2.0	13
	11/30/16	0.429	7.11	7.35	7.7	<1.0	<1.0	150	<1.0	<2.0	330	0.046	<1.0	<0.40	<2.0	1300	<0.50	3500	<0.013	<2.0	<2.0	<1.0	<0.10	350	<0.10	<2.0	<2.0	<0.10	<2.0	97
	12/12/17	0.512	7.09	7.34	5.1	<1.0	<1.0	210	<1.0	<2.0	300	<0.010	<1.0	<0.40	<2.0	2100	<0.50	3500	<0.013	<2.0	<2.0	<1.0	<0.10	360	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
MCWS-306-MWB (0.79 m)	03/27/13	0.216	7.14	7.38	12	<1	<0.6	17	<0.5	<2	110	0.38	<1	<1	<2	<100	<1	2600	0.018	5.7	<3	<1	<0.1	290	<0.8	<20	<3	1.7	<2	48
	07/24/13	0.281	7.08	7.33	8.1	<1	<1	20.2	<1	<2	97	0.108	<1	0.72	<2	<50	<0.5	2870	NM	3.5	2.2	<1	<0.1	250	<0.1	<2	<2	1.33	<2	33.9
	11/15/13	0.424	7.04	7.29	24	<1	<1	21	<1	<2	96	0.22	<1	0.95	<2	<50	<0.5	2800	NM	2.3	<2	<1	<0.1	250	<0.1	<2	<2	1.2	<2	5.3
	12/9/14	0.184	7.03	7.28	9.4	<1	<1	31	<1	<2	78	0.28	<1	0.85	<2	<50	<0.5	2200	<0.013	<2	<2	<1	<0.1	260	<0.1	<2	<2	0.89	<2	5.6
	12/2/15	0.438	6.97	7.22	9.7	<1.0	<1.0	46	<1.0	<2.0	73	0.12	<1.0	1.1	<2.0	150	<0.50	2900	<0.013	<2.0	2.2	<1.0	<0.10	280	<0.10	<2.0	<2.0	1.1	<2.0	<5.0
	11/30/16	0.431	6.93	7.18	16	<1.0	<1.0	58	<1.0	<2.0	84	0.038	<1.0	0.98	<2.0	320	<0.50	2900	<0.013	2.3	2	<1.0	<0.10	340	<0.10	<2.0	<2.0	1.9	<2.0	5.3
	12/12/17	0.378	6.98	7.23	<5.0	<1.0	<1.0	69	<1.0	<2.0	69	0.10	<1.0	1.2	<2.0	100	<0.50	3000	<0.013	<2.0	2.4	<1.0	<0.10	270	<0.10	<2.0	<2.0	0.78	<2.0	<5.0
MCWS-307-MWB (0.70 m)	03/27/13	0.404	7.15	7.4	7.7	<1.0	3.7	25	<0.5	<2.0	120	0.051	<1.0	<1.0	2.9	<100	<1.0	110	<0.013	<4.0	<3.0	<1.0	<0.1	290	<0.8	<20	<3.0	1.3	<2.0	31
	07/24/13	0.346	7.18	7.42	9.5	<1.0	4.2	24.9	<1.0	<2.0	116	<0.017	<1.0	<0.4	2.2	<50	<0.5	162	NM	<2.0	<2.0	<1.0	<0.1	281	<0.1	<2.0	<2.0	1.25	<2.0	11.3
	11/14/13	0.309	7.16	7.41	21	<1.0	5.7	24	<1.0	<2.0	120	<0.01	<1.0	<0.4	<2.0	100	<0.5	140	NM	<2.0	<2.0	<1.0	<0.1	280	<0.1	<2.0	<2.0	1.2	<2.0	53
	12/9/14	0.336	7.15	7.39	20	<1	1.8	37	<1	<2	130	<0.01	<1	<0.4	<2	83	<0.5	120	<0.013	<2	<2	<1	<0.1	290	<0.1	<2	<2	1.3	<2	5.2
	12/2/15	0.478	7.15	7.4	7.1	<1.0	1.4	33	<1.0	<2.0	140	<0.010	<1.0	<0.40	<2.0	95	<0.50	130	<0.013	<2.0	<2.0	<1.0	<0.10	300	<0.10	<2.0	<2.0	1.3	<2.0	<5.0
	12/02/16	0.335	7.12	7.37	13	<1.0	<1.0	33	<1.0	<2.0	120	0.14	<1.0	<0.40	<2.0	61	<0.50	130	<0.013	<2.0	<2.0	<1.0	<0.10	310	<0.10	<2.0	<2.0	1.3	<2.0	<5.0
	12/12/17	0.506	7.16	7.40	5.4	<1.0	<1.0	31	<1.0	<2.0	120	0.020	<1.0	<0.40	<2.0	<50	<0.50	130	<0.013	<2.0	<2.0	<1.0	<0.10	320	<0.10	<2.0	<2.0	1.2	<2.0	<5.0
MCWS-309-MW (0.97 m)	03/29/13	-0.831	8.28	8.53	1800	<1.0	5.1	21	<0.5	<2.0	640	0.17	2.2	<1.0	11	2500	3	99	NM	5.4	<3.0	<1.0	<0.1	45	<0.8	<20	58	0.33	3.5	11
	07/26/13	-1.03	8.46	8.71	145	<1.0	4.8	10.1	<1.0	<2.0	386	<0.017	<1.0	0.49	<2.0	352	<0.5	1030	NM	2.4	<2.0	<1.0	<0.1	20.9	<0.1	<2.0	<2.0	0.17	<2.0	5.7
	11/14/13	-1.17	8.44	8.69	380	<1.0	4.7	13	<1.0	<2.0	390	0.013	<1.0	0.43	<2.0	690	0.61	880	NM	<2.0	<2.0	<1.0	<0.1	22	<0.1	<2.0	7.8	0.12	<2.0	14
	12/9/14	-1.72	8.78	9.02	160	<1	2.7	6.3	<1	<2	210	0.023	<1	<0.4	<2	770	0.75	520	0.013	<2	<2	<1	<0.1	14	<0.1	<2	3.3	0.13	<2	10
	12/3/15	-0.99	8.36	8.61	120	<1.0	2.3	9.3	<1.0	<2.0	370	0.072	<1.0	0.43	<2.0	190	<0.50	890	<0.013	2.0	<2.0	<1.0	<0.10	22	<0.10	<2.0	5.3	0.45	<2.0	<5.0
	12/02/16	-0.701	8.07	8.32	60	<1.0	4.4	17	<1.0	<2.0	400	0.076	<1.0	<0.40	<2.0	590	<0.50	2000	0.013	2.3	<2.0	<1.0	<0.10	29	<0.10	<2.0	<2.0	0.19	<2.0	<5.0
	12/12/17	-0.896	8.17	8.42	62	<1.0	3.6	12	<1.0	<2.0	410	0.019	<1.0	<0.40	<2.0	190	<0.50	1200	0.018	<2.0	<2.0	<1.0	<0.10	28	<0.10	<2.0	3.1	0.20	<2.0	<5.0
MCWS-310-MW (1.81 m)	03/29/13[L]	NM	NM	NM	<5	<1.0	<0.6	60	<0.5	<2.0	100	<0.017	<1.0	<1.0	3.3	<100	<1.0	<4.0	NM	<4.0	<3.0	1.2	<0.1	2300	<0.8	<20	<3.0	0.89	<2.0	22
	03/29/13	0.183	7.17	7.42	<5	<1.0	<0.6	63	<0.5	<2.0	110	<0.017	<1.0	<1.0	3.6	<100	<1.0	<4.0	<0.013	<4.0	<3.0	<1.0	<0.1	2400	<0.8	<20	<3.0	0.93	<2.0	24
	07/26/13	0.258	7.17	7.42	12	<1.0	<1.0	76	<1.0	<2.0	122	0.035	<1.0	<0.4	2.8	<50	<0.5	90.1	NM	<2.0	<2.0	<1.0	<0.1	3210	<0.1	<2.0	<2.0	0.85	<2.0	13.7
	11/14/13	0.405	7.24	7.49	8.1	<1.0	<1.0	63	<1.0	<2.0	100	0.061	<1.0	<0.4	14	<50	<0.5	7.2	NM	<2.0	<2.0	<1.0	<0.1	2100	<0.1	<2.0	<2.0	0.9	<2.0	60
	12/9/14	-0.796	7.97	8.22	84	<1	<1	23	<1	<2	<50	0.038	<1	<0.4	3.0	50	<0.5	4.1	<0.013	<2	<2	<1	<0.1	360	<0.1	<2	2.5	0.37	<2	410
	12/10/15[FD]	-1.67	8.61	8.86	81	<1.0	<1.0	15	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	1100	<0.50	39	<0.013	<2.0	<2.0	<1.0	<0.10	110	<0.10	<2.0	<2.0	<0.10	<2.0	79
	12/10/15	-1.63	8.62	8.87	78	<1.0	<1.0	15	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	990	<0.50	36	<0.013	<2.0	<2.0	<1.0	<0.10	100	<0.10	<2.0	2.2	<0.10	<2.0	82
	12/02/16	-1.58	8.48	8.73	18	<1.0	<1.0	17	<1.0	<2.0	<50	0.048	<1.0	<0.40	<2.0	<50	<0.50	2.3	<0.013	<2.0	6	<1.0	<0.10	130	<0.10	<2.0	<2.0	<0.10	<2.0	440
	12/12/17	-0.988	8.17	8.42	100	<1.0	<1.0	29	<1.0	<2.0	<50	0.023	<1.0	<0.40	<2.0	<50	<0.50	3.6	0.013	<2.0	<2.0	<1.0	<0.10	830	<0.10	<2.0	<2.0	0.40	<2.0	190
MSES-003-MW (9.10 m) *Destroyed 2016*	03/26/13	0.11	6.95	7.19	<50	<10	49	14	<5	<20	<1000	0.65	14	<10	<20	12000	<10	7900	0.015	<40	<30	<10	<1.0	1300	<8	<200	<30	<1.5	<20	78
	07/24/13[FD]	-0.067	6.97	7.22	11	<1.0	54.3	14.6	<1.0	<2.0	<50	0.237	<1.0	1.57	<2.0	12900	<0.5	8210	NM	<2.0	<2.0	<1.0	<0.1	1220	<0.1	<2.0	<2.0	0.22	<2.0	16
	07/24/13[L]	NM	NM	NM	7.3	<1.0	57	14.7	<1.0	<2.0	<50	0.194	<1.0	1.7	<2.0	13700	<0.5	8590	NM	<2.0	<2.0	<1.0	<0.1	1230	<0.1	<2.0	<2.0	0.26	<2.0	14.5
	07/24/13	-0.064	6.96	7.2	11.2	<1.0	57.3	14.9	<1.0	<2.0	<50	0.225	<1.0	1.65	<2.0	13700	<0.5	8580	NM	<2.0	<2.0	<1.0	<0.1	1230	<0.1	<2.0	<2.0	0.23	<2.0	15.9
	11/05/13[L]	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
	11/05/13	-0.334	6.99	7.23	13	<1.0	64	18	<1.0	<2.0	53	0.036	<1.0	1.9	12	19000	<0.5	11000	NM	<2.0	2.7	<1.0	<0.1	1300	<0.1	<2.0	<2.0	0.19	<2.0	87
	12/10/14[FD]	-0.135	6.94	7.18	13	<1	67	14	<1	<2	64	0.08	<1	1.8	<2	14000	<0.5	8900	<0.013	<2	<2	<1	<0.1	1300	<0.1	<2	<2	0.23	<2	5.7
	12/10/14	-0.157	6.93	7.18	11	<1	69	15	<1	<2	58	0.38	<1	1.7	<2	15000	<0.5	9100	<0.013	<2	<2	<1	<0.1	1300	<0.1	<2	<2	0.21	<2	7.5
	12/03/15	-0.069	7.03	7.27	17	<1.0	65	15	<1.0	<2.0	58	0.013	<1.0	1.8	<2.0	16000	0.76	9700	<0.013	<2.0	<2.0	<1.0	<0.10	1200	<0.10	<2.0	<2.0	0.23	<2.0	<5.0

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MSES-004-MW (7.86 m)	03/26/13	12000	2300	320000	58000	61	1100	24	9.1	<0.01	<1000	<0.05	<0.01	<0.05	0.19	76	1.1	4.9	1800	6.3	1000	61	<1	1560	24.5	6.54	-1.02
	07/26/13	14100	2400	345000	61400	70	1000	25	6.9	<0.01	<100	<0.05	<0.01	<0.05	0.18	68	1.3	2	1800	6.25	1100	70	<1	1550	23.8	1.64	-0.978
	11/15/13	13000	2600	360000	60000	67	980	25	6.7	0.031	<100	<0.05	<0.01	<0.05	0.18	72	2.1	48	1900	6.15	1200	67	<1	1500	22.5	2.68	-1.07
	12/10/14	11000	2100	300000	49000	92	690	21	5.4	<10	<100	<0.05	0.011	<0.05	0.19	30	1.5	12	1500	6.37	940	92	<1	1100	16.7	7.67	0.432
	12/3/15	13000	2300	320000	55000	98	740	26	5.7	0.01	<100	<0.050	0.013	<0.050	0.28	25	1.9	7.5	1700	6.49	1000	98	<1.0	1200	18.1	8.41	-0.581
	11/25/16	12000	2200	260000	44000	140	650	17	4.9	<0.010	<100	<0.050	<0.010	<0.050	0.21	13	2.3	15	1300	6.57	830	140	<1.0	1100	16.8	1	-0.444
	12/13/17[FD]	12000	2000	260000	39000	130	630	17	4.6	<0.010	<100	<0.050	<0.010	<0.050	0.19	23	2.5	6.6	1300	6.61	810	130	<1.0	1000	16.1	2.04	-0.429
	12/13/17	12000	2000	240000	39000	130	630	17	4.6	<0.010	<100	<0.050	<0.010	<0.050	0.18	21	2.4	4.6	1400	6.54	750	130	<1.0	1000	16.1	1.29	-0.536
MSES-006-MW (3.82 m)	03/26/13	130000	13000	450000	210000	330	2100	100	15	<0.01	<1000	<0.05	<0.01	<0.05	0.18	41	0.75	9.8	3500	6.9	2000	330	<1	3290	53.5	7.78	0.348
	07/24/13[L]	NM	NM	NM	NM	340	2100	110	12	<0.01	NM	NM	<0.01	<0.05	NM	68	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/24/13	142000	12900	483000	216000	340	2000	100	12	<0.01	<100	<0.05	<0.01	<0.05	0.17	81	0.51	8.4	3600	6.79	2100	340	<1	3230	51.3	2.9	0.278
	11/05/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	<0.5	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/05/13	140000	14000	470000	230000	330	2200	100	12	<0.01	<100	<0.05	<0.01	<0.05	0.16	31	<0.5	11	3500	6.74	2100	330	<1	3400	54.2	5.25	0.2
	12/10/14	25000	6900	430000	62000	250	790	52	23	<10	<100	<0.05	0.015	<0.05	0.22	5	1.7	4.6	2000	7.49	1300	250	<1	1500	22.9	9.74	0.432
	12/3/15	26000	7100	410000	64000	310	820	62	23	0.049	<100	<0.050	0.015	<0.050	0.45	<5.0	2.4	1.3	2100	7.42	1300	310	<1.0	1600	25.1	3.4	0.906
	11/25/16	130000	13000	470000	210000	350	1700	99	13	0.013	<100	<0.050	<0.010	<0.050	0.22	<5.0	2.6	9.1	3200	6.81	2000	350	<1.0	2900	44.5	1.92	0.327
	12/13/17	7000	2300	130000	18000	100	270	14	27	0.022	<100	<0.050	<0.010	<0.050	0.056	6.8	8.1	2.8	780	7.41	400	100	<1.0	540	8.16	1.27	0.067
MSES-008-MW (4.17 m)	03/26/13[L]	NM	NM	NM	NM	190	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	2400	7.3	NM	NM	NM	NM	NM	NM	NM
	03/26/13	130000	6600	420000	28000	190	1000	190	32	<0.01	<1000	<0.05	<0.01	<0.05	0.1	37	1.2	130	2400	7.3	1200	180	<1	1950	30.2	0.38	0.55
	07/26/13	115000	5770	458000	28700	160	1100	200	24	<0.01	<100	<0.05	<0.01	<0.05	0.1	46	1.3	120	2500	7.25	1300	160	<1	2080	32.6	2.78	0.472
	11/15/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	2500	7.12	NM	NM	NM	NM	NM	NM	NM
	11/15/13	120000	6100	430000	27000	200	930	200	27	<0.01	<100	<0.05	<0.01	<0.050	0.076	270	1.1	83	2500	7.11	1200	200	<1	1900	29	0.8	0.408
	12/10/14	120000	5400	420000	27000	180	760	150	27	<10	<100	<0.05	<0.01	<0.05	0.11	160	2.7	140	2300	6.96	1200	180	<1	1600	23.7	9.68	0.432
	12/3/15[FD]	90000	4500	390000	24000	200	740	150	27	0.026	<100	<0.050	0.011	<0.050	0.092	24	1.4	120	2200	7.4	1100	200	<1.0	1600	23.6	4.69	0.676
	12/3/15	89000	4500	400000	24000	200	620	150	28	0.025	<100	<0.050	<0.010	<0.050	0.096	<5.0	1.5	110	2100	7.32	1100	200	<1.0	1400	21.2	10.3	0.614
	11/25/16[FD]	110000	5400	460000	31000	200	1000	200	28	0.02	<100	0.074	<0.010	0.074	0.088	<5.0	1.6	180	2400	7.11	1300	200	<1.0	2000	31	0.78	0.424
	11/25/16	110000	5400	450000	32000	210	990	210	29	0.02	<100	<0.050	<0.010	<0.050	0.099	<5.0	1.5	150	2400	7.09	1300	210	<1.0	2000	30.6	0.15	0.417
	12/13/17	100000	4900	410000	25000	180	840	190	27	<0.010	<100	<0.050	<0.010	<0.050	0.071	17	2.4	170	2300	7.34	1100	170	<1.0	1700	26.3	2.14	0.567
MSES-012-MWA (3.50 m)	03/15/13	290000	4900	240000	19000	180	510	360	35	<0.01	<100	0.43	<0.01	0.43	<0.05	17	0.85	5.5	2600	7.1	680	180	<1.0	1570	24.3	4.6	0.116
	07/25/13[FDL]	NM	NM	NM	NM	200	480	330	37	<0.01	NM	NM	<0.01	0.23	NM	19	NM	10	2200	7.08	NM	NM	NM	NM	NM	NM	NM
	07/25/13[FD]	198000	4230	242000	24300	200	440	330	37	<0.01	<100	0.23	<0.01	0.23	<0.05	15	0.85	11	2200	7.07	700	200	<1.0	1410	22.7	0.37	0.168
	07/25/13	197000	4170	244000	24500	190	`	330	37	<0.01	<100	0.22	<0.01	0.22	0.052	25	0.91	15	2200	7.19	710	190	<1.0	1470	23.9	1.9	0.259
	11/05/13	200000	4600	240000	25000	200	570	280	37	<0.01	<100	0.19	<0.01	0.19	0.33	70	1.5	49	2200	6.91	720	200	<1.0	1500	23.9	0.97	0.005
	12/16/14	150000	3500	290000	26000	180	49	230	43	18	<100	0.052	<0.01	<0.01	0.088	46	1.3	18	2100	6.9	220	180	<1	290	21.5	0.29	0.022
	12/3/15	180000	3700	350000	29000	180	600	320	47	0.035	<100	0.14	0.014	0.16	0.12	<5.0	0.88	3.5	2500	7.26	980	180	<1.0	1600	25.2	4.65	0.438
	11/22/16	140000	3300	330000	33000	200	740	170	45	0.031	<100	0.5	<0.010	0.5	<0.050	<5.0	1.3	20	2200	7.02	970	200	<1.0	1600	24.2	2.81	0.232
	12/13/17	190000	3700	290000	23000	190	600	300	44	<0.010	<100	0.091	<0.010	0.091	<0.050	<5.0	1.5	8.7	2200	7.17	810	190	<1.0	1600	24.6	0.220	0.287
MSES-104-MWA (2.30 m)	03/28/13	17000	5600	410000	38000	67	1100	53	4.8	<0.01	<100	<0.05	<0.01	<0.05	0.25	15	16	960	2000	7.60	1200	67	<1	1700	26.4	3.94	0.409
	12/10/14	29000	7700	530000	44000	59	1400	56	5.4	<10	<100	<0.05	0.011	<0.05	0.44	<5	1	12	2300	7.61	1500	59	<1	2100	30.9	1.42	0.432
	12/3/15	30000	8500	510000	42000	48	1200	62	4.6	0.012	110	<0.050	0.01	<0.050	0.62	<5.0	1.3	1.9	2300	8.07	1500	47	<1.0	1900	27.7	5.16	0.818
	11/25/16	28000	9300	470000	31000	35	1100	55	3.4	0.013	<100	<0.050	<0.010	<0.050	0.55	<5.0	1.7	13	2000	7.5	1300	35	<1.0	1700	25.2	4.18	0.087
	12/13/17	32000	9200	560000	37000	35	1400	55	3.1	0.012	<100	<0.050	<0.010	<0.05	0.61	<5.0	1.6	0.6	2400	7.6	1500	35	<1.0	2100	30.4	3.30	0.244
MSES-104-MWB (2.63 m)	03/26/13	170000	12000	420000	200000	320	2200	70	18	<0.01	<1000	<0.05	<0.01	<0.05	0.55	54	3.5	92	3500	6.9	1900	320	<1	3370	53.9	8.24	0.299
	07/24/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	78	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/24/13	189000	11900	426000	208000	350	2100	73	12	<0.01	<100	<0.05	<0.01	<0.05	0.45	190	3.7	77	3500	6.86	1900	350	<1	3340	53.1	5.81	0.302
	11/05/13[FD]	190000	12000	400000	200000	370	2000	71	13	<0.01	<100	<0.05	<0.01	<0.05	0.42	30	3.8	100	3500	6.88	1800	370	<1	3200	50.6	5.3	0.33
	11/05/13	190000	12000	390000	200000	370	2000	73	13	<0.01	<100	<0.05	<0.01	<0.05	0.42	40	4.1	99	3400	6.80	1800	370	<1	3200	51.8	6.56	0.242
	12/10/14	170000	13000	440000	210000	330	1800	70	14	<10	<100	<0.05	<0.01	<0.05	0.57	190	3.5	55	3400	6.67	2000	330	<1	3000	46.3	1.16	0.432
	12/3/15	180000	13000	390000	190000	430	1000	77	13	0.016	<100	<0.050	0.014	<0.050	0.59	18	4.0	58	3400	7.00	1800	430	<1.0	2200	31.5	16.2	0.562
	11/25/16	160000	14000	380000	140000	570	1100	75	11	0.013	<100	<0.050	<0.010	<0.050	0.54	9.1	5.3	33	2700	6.96	1500	570	<1.0	2300	37.2	0.93	0.622
	12/13/17	150000	12000	370000	170000	410	1700	78	12	<0.010	<1000	<0.050	<0.010	<0.050	0.49	13	4.0	50	3400	7.07	1600	410	<1.0	2800	45.4	7.09	0.556

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		unitless	unitless	unitless	µg/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	µg/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
MOE Table 3[2]		-	-	-	-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
MSES-004-MW (7.86 m)	03/26/13	-1.26	7.32	7.56	240	<10	<6	7.4	<5	<20	<1000	<0.17	<10	<10	<20	2500	<10	1300	<0.013	<40	<30	<10	<1	320	<8	<200	<30	<1.5	<20	210
	07/26/13	-1.22	7.23	7.47	517	<1.0	1.7	8.8	<1.0	<2.0	91	0.179	<1.0	1.22	<2.0	2510	<0.5	1630	NM	<2.0	3.2	<1.0	<0.1	314	<0.1	<2.0	<2.0	0.18	3.3	69.9
	11/15/13	-1.31	7.22	7.46	290	<1.0	1.8	7.3	<1.0	<2.0	82	0.14	<1.0	1.6	<2.0	2700	<0.5	1700	NM	<2.0	2.4	<1.0	<0.1	370	<0.1	<2.0	<2.0	0.12	<2.0	7.5
	12/10/14	-1.01	7.13	7.38	170	<1	1.9	7.5	<1	<2	85	0.073	<1	0.91	<2	1900	<0.5	1200	<0.013	<2	2.0	<1	<0.1	290	<0.1	<2	<2	<0.1	<2	63
	12/3/15	-0.826	7.07	7.32	130	<1.0	1.9	7.5	<1.0	<2.0	83	0.051	<1.0	1.1	<2.0	2000	<0.50	1500	<0.013	<2.0	3.0	<1.0	<0.10	340	<0.10	<2.0	<2.0	0.15	<2.0	97
	11/25/16	-0.69	7.01	7.26	61	<1.0	2.5	8.6	<1.0	<2.0	81	0.14	<1.0	0.5	<2.0	1700	<0.50	1100	<0.013	<2.0	<2.0	<1.0	<0.10	280	<0.10	<2.0	<2.0	0.16	<2.0	140
	12/13/17[FD]	-0.674	7.04	7.28	63	<1.0	2.1	9.3	<1.0	<2.0	82	0.016	<1.0	0.48	<2.0	1100	<0.50	860	<0.013	<2.0	<2.0	<1.0	<0.10	270	<0.10	<2.0	<2.0	0.15	<2.0	100
	12/13/17	-0.782	7.08	7.32	61	<1.0	1.9	9.4	<1.0	<2.0	80	0.027	<1.0	0.52	<2.0	1100	<0.50	860	<0.013	<2.0	<2.0	<1.0	<0.10	270	<0.10	<2.0	<2.0	0.17	<2.0	99
MSES-006-MW (3.82 m)	03/26/13	0.107	6.55	6.79	<50	<10	<6	13	<5	<20	<1000	0.24	<10	<10	<20	3000	<10	49000	0.017	<40	<30	<10	<1	3500	<8	<200	<30	4.3	<20	65
	07/24/13[L]	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
	07/24/13	0.037	6.51	6.75	35.9	<1	1.5	13.9	<1	<2	309	0.083	<1	5.29	<2	1940	<0.5	50300	NM	<2	12.6	<1	<0.1	3610	<0.1	<2	<2	4.95	<2	55.9
	11/05/13[L]	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
	11/05/13	-0.041	6.54	6.78	11	<1	1.8	13	<1	<2	300	0.027	<1	5.4	<2	2200	<0.5	60000	NM	<2	14	<1	<0.1	3600	<0.1	<2	<2	4.4	<2	89
	12/10/14	0.667	6.58	6.83	34	<1	1.1	23	<1	<2	100	0.11	<1	<0.4	<2	160	<0.5	1900	<0.013	<2	<2	<1	<0.1	770	<0.1	<2	<2	4.3	4.4	6.2
	12/3/15	0.662	6.51	6.76	11	<1.0	<1.0	22	<1.0	<2.0	100	<0.010	<1.0	<0.40	<2.0	<50	<0.50	1800	<0.013	<2.0	<2.0	13	<0.10	810	<0.10	<2.0	<2.0	4.2	4.8	<5.0
	11/25/16	0.085	6.48	6.73	<5.0	<1.0	2.2	13	<1.0	<2.0	330	0.012	<1.0	4.6	<2.0	1900	<0.50	54000	<0.013	<2.0	13	<1.0	<0.10	3600	<0.10	<2.0	<2.0	4.4	<2.0	250
	12/13/17	-0.181	7.34	7.59	8.9	<1.0	1.9	23	<1.0	<2.0	<50	0.013	1.1	<0.40	<2.0	<50	<0.50	86	<0.013	<2.0	<2.0	1.2	<0.10	330	<0.10	<2.0	<2.0	3.6	30	<5.0
MSES-008-MW (4.17 m)	03/26/13[L]	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
	03/26/13	0.307	6.75	6.99	<50	<10	16	8.1	<5	<20	<1000	<0.17	<10	<10	<20	13000	<10	1400	<0.013	<40	<30	<10	<1.0	660	<8	<200	<30	<1.5	<20	69
	07/26/13	0.228	6.78	7.02	10.7	<1.0	11.6	8.3	<1.0	<2.0	68	0.107	<1.0	<0.4	<2.0	12200	<0.50	1190	NM	3.2	<2.0	<1.0	<0.10	707	<0.10	<2.0	<2.0	0.72	<2.0	19
	11/15/13[L]	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
	11/15/13	0.164	6.7	6.95	9.3	<1.0	11	9.9	<1.0	<2.0	66	0.073	<1	<0.40	<2.0	9200	<0.50	820	NM	2.9	<2.0	<1.0	<0.10	660	<0.10	<2.0	<2.0	0.68	<2.0	72
	12/10/14	-0.024	6.74	6.98	100	<1	14	7.9	<1	<2	70	0.082	<1	<0.4	<2	15000	<0.5	1200	<0.013	3.1	<2	<1	<0.1	590	<0.1	<2	<2	0.6	<2	41
	12/3/15[FD]	0.432	6.72	6.96	5.2	<1.0	10	7.5	<1.0	<2.0	63	0.01	<1.0	<0.40	<2.0	9200	<0.50	650	<0.013	2.3	<2.0	<1.0	<0.10	490	<0.10	<2.0	<2.0	0.55	<2.0	39
	12/3/15	0.369	6.71	6.96	5.0	<1.0	10	7.7	<1.0	<2.0	67	0.016	<1.0	<0.40	<2.0	9200	<0.50	650	<0.013	2.4	<2.0	<1.0	<0.10	490	<0.10	<2.0	<2.0	0.55	<2.0	38
	11/25/16[FD]	0.181	6.68	6.93	6.8	<1.0	11	8.6	<1.0	<2.0	67	0.027	<1.0	<0.40	<2.0	11000	<0.50	990	<0.013	3	<2.0	<1.0	<0.10	600	<0.10	<2.0	<2.0	0.74	<2.0	100
	11/25/16	0.174	6.67	6.92	6.2	<1.0	12	8.7	<1.0	<2.0	66	0.013	<1.0	<0.40	<2.0	12000	<0.50	1000	<0.013	3	<2.0	<1.0	<0.10	600	<0.10	<2.0	<2.0	0.74	<2.0	110
	12/13/17	0.323	6.77	7.01	<5.0	<1.0	11	7.8	<1.0	<2.0	65	0.025	<1.0	<0.40	<2.0	13000	<0.50	1100	<0.013	2.4	<2.0	<1.0	<0.10	570	<0.10	<2.0	<2.0	0.57	<2.0	38
MSES-012-MWA (3.50 m)	03/15/13	-0.129	6.98	7.23	14	<1.0	1.4	4.7	<0.5	<2.0	<100	0.039	<1.0	<1.0	<2.0	750	<1.0	110	<0.013	<4	3.3	9.3	<0.1	300	<0.8	<20	<3.0	0.3	2.5	58
	07/25/13[FDL]	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
	07/25/13[FD]	-0.077	6.9	7.15	12.6	<1.0	<1.0	6.7	<1.0	<2.0	<50	0.028	<1.0	<0.40	<2.0	1960	<0.50	230	NM	<2.0	<2.0	6.7	<0.1	315	<0.1	<2.0	<2.0	0.34	<2.0	92
	07/25/13	0.015	6.93	7.18	21.4	<1.0	<1.0	7.1	<1.0	<2.0	<50	0.054	<1.0	<0.40	<2.0	2190	<0.50	253	NM	<2.0	2.1	6.6	<0.1	316	<0.1	<2.0	<2.0	0.31	<2.0	103
	11/05/13	-0.240	6.91	7.15	17	<1.0	2.4	4.9	<1.0	<2.0	<50	0.069	<1.0	<0.40	<2.0	4800	<0.50	670	NM	<2.0	2.2	4.3	<0.1	300	<0.1	<2.0	<2.0	0.31	<2.0	190
	12/16/14	-0.222	6.88	7.13	26	<1	<1	5.3	<1	<2	<50	0.37	<1	<0.4	3.7	1800	<0.5	230	<0.013	<2	<2	6.2	<0.1	320	<0.1	<2	<2	0.33	<2	52
	12/3/15	0.194	6.82	7.06	5.7	<1.0	<1.0	5.7	<1.0	<2.0	<50	0.042	<1.0	<0.40	<2.0	90	<0.50	20	<0.013	<2.0	<2.0	3.5	<0.10	410	<0.10	<2.0	<2.0	0.43	<2.0	39
	11/22/16	-0.013	6.79	7.03	9.7	<1.0	<1.0	6.5	<1.0	<2.0	<50	0.066	<1.0	<0.40	20	180	<0.50	81	<0.013	<2.0	<2.0	13	<0.10	400	<0.10	<2.0	<2.0	0.47	<2.0	82
	12/13/17	0.042	6.88	7.12	7.0	<1.0	<1.0	4.7	<1.0	<2.0	<50	0.025	<1.0	<0.40	<2.0	670	<0.50	95	<0.013	<2.0	<2.0	3.5	<0.10	340	<0.10	<2.0	<2.0	0.38	<2.0	42
MSES-104-MWA (2.30 m)	03/28/13	0.165	7.19	7.44	8.9	<1	1.8	12	<0.5	<2	<100	<0.017	<1	<1	<2	1600	<1	400	0.28	<4	<3	3.4	<0.1	420	<0.8	<20	<3	<0.15	6.9	<5
	12/10/14	0.217	7.15	7.4	11	<1	1.8	16	<1	<2	<50	0.065	<1	<0.4	<2	890	<0.5	220	<0.013	5.6	<2	<1	<0.1	540	<0.1	<2	<2	<0.1	<2	<5
	12/3/15	0.574	7.26	7.5	<5.0	<1.0	1.5	20	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	580	<0.50	190	<0.013	5.7	<2.0	<1.0	<0.10	560	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11/25/16	-0.157	7.42	7.66	33	<1.0	1.4	17	<1.0	<2.0	<50	0.64	<1.0	<0.40	<2.0	300	<0.50	100	<0.013	6.3	<2.0	<1.0	<0.10	520	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	12/13/17	0.000	7.36	7.60	<5.0	<1.0	1.4	17	<1.0	<2.0	<50	0.054	<1.0	<0.40	<2.0	200	<0.50	91	<0.013	6.8	<2.0	<1.0	<0.10	590	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
MSES-104-MWB (2.63 m)	03/26/13	0.058	6.6	6.84	400	<10	<6	19	<5	<20	<1000	<0.17	<10	44	<20	13000	<10	83000	0.014	<40	48	<10	<1	2300	<8	<200	<30	<1.5	<20	110
	07/24/13[L]	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
	07/24/13	0.061	6.56	6.8	239	<1	4.2	17.5	<1	<2	187	0.071	<1	23.8	<2	9590	<0.5	75000	NM	<2	33.9	<1	<0.1	2230	<0.1	<2	<2	1.26	<2	45.2
	11/05/13[FD]	0.088	6.55	6.79	110	<1	4.9	16	<1	<2	200	0.085	<1	7.1	<2	7000	<0.5	73000	NM	<2	25	<1	<0.1	2100	<0.1	<2	<2	1.3	<2	110
	11/05/13	0.000	6.56	6.8	150	<1	5.0	16	<1	<2	200	0.07	<1	7.3	<2	7100	<0.5	74000	NM	<2	30	<1	<0.1	2100	<0.1	<2	<2	1.3	<2	110
	12/10/14	-0.13	6.56	6.8	550	<1	4.4	17	1.1	<2	200	0.14	<1	50	<2	11000	<0.5	88000	<0.013	<2	62	<1	<0.1	2400	<0.1	<2	<2	1.2	<2	34
	12/3/15	0.319	6.44	6.68	96	<1.0	4.7	16	<1.0	<2.0	200	0.076	<1.0	8.1	<2.0	5100	<0.50	68000	<0.013	<2.0	25	<1.0	<0.10	2100	<0.10	<2.0	<2.0	1.6	<2.0	<5.0
	11/25/16	0.379	6.34	6.59	42	<1.0	7.2	18	<1.0	<2.0	210	0.046	<1.0	2.4	<2.0	3500	9.6	37000	<0.013	<2.0	12	<1.0	<0.10	1600	<0.10	<2.0	<2.0	2	<2.0	<5.0
	12/13/17	0.313	6.52	6.76	89	<10	<10	15	<10	<20	<500	<0.10	<10	8.7	<20	4300	<5.0	63000	<0.013	<20	31	<10	<1.0	1900	<1.0	<20	<20	1.7	<20	<50

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURBIDITY	CONDUCTIVITY	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)
Units		µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	me/L	%	unitless
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW2 SPAR RD (2.62 m) *Removed from the LTMM program in 2015*	03/19/13[FD]	170000	5600	160000	5200	120	140	380	31	<0.01	<100	0.19	<0.01	0.19	<0.05	<5	0.66	0.49	1700	7.9	430	120	<1	967	16	0.16	0.636
	03/19/13[L]	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
	03/19/13	180000	5800	140000	5000	120	140	380	28	<0.01	<100	0.19	<0.01	0.19	<0.05	<5	0.61	0.51	1700	7.9	370	120	<1	949	16	1.72	0.575
	07/24/13	139000	8430	109000	5430	150	120	240	33	0.01	<100	<0.05	<0.01	<0.05	<0.05	5.8	0.86	3.2	1300	7.72	290	150	<1	743	12.3	0.53	0.417
	11/6/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	<0.05	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/06/13	150000	8500	140000	6600	190	180	270	41	0.017	<100	<0.05	<0.01	<0.05	<0.05	5.6	1.3	7.7	1500	7.77	390	190	1.0	920	15.2	1.78	0.659
	12/16/14[FD]	160,000	7700	120,000	5400	180	170	210	39	0.018	<100	0.07	0.01	0.081	<50	6.3	1.7	1.6	1400	7.83	320	180	1.1	820	13	2.12	0.638
	12/16/14	160000	8100	120000	5400	180	170	210	39	<10	<100	0.099	<0.01	<0.01	0.095	7.1	1.8	3.0	1400	7.83	320	180	1.1	820	13.1	1.14	0.631
SCU11-001-MWA (2.79 m)	03/29/13	53000	5400	120000	14000	130	42	220	7.3	<0.01	<100	0.058	<0.01	0.058	<0.05	<5	0.89	>1000	1000	8.1	340	120	1.5	534	9.65	1.74	0.781
	07/17/13	55500	6280	132000	15600	97	39	260	8.4	<0.01	<100	<0.05	<0.01	<0.05	<0.05	<5	<50	>1000	1200	7.66	390	96	<1	570	9.95	2.31	0.28
	10/24/13	250000	5300	66000	9000	170	520	49	8.0	0.20	260	<0.05	0.016	0.066	1.2	<5	<5	85	1500	7.72	200	170	<1	1000	15.6	2.13	0.213
	12/15/14	64000	6900	170000	19000	110	37	310	9.4	<10	<100	0.17	0.024	0.19	0.12	<5	<0.5	3.3	1400	7.52	490	110	<1	690	11.9	3.68	0.432
	12/11/15	27000	6100	62000	6800	110	6.1	170	6.2	0.15	240	0.11	0.016	0.12	2.7	6.6	NM	3.2	780	7.64	180	110	<1.0	350	7.04	15.4	0.022
	11/23/16	51000	8000	140000	16000	160	6.8	320	9	0.55	780	<0.050	0.016	<0.050	2.7	8.1	7.1	8.2	1300	7.45	430	160	<1.0	660	12.3	4.98	0.303
	12/13/17	43000	8100	130000	14000	230	11	210	11	0.68	820	0.16	<0.010	0.16	7.1	8.3	3.0	4.5	1100	7.71	380	230	1.1	580	10.8	3.30	0.690
SCU11-001-MWB (2.13 m)	03/29/13[L]	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
	03/29/13	220000	4500	45000	6200	160	440	43	5	<0.01	<100	<0.05	<0.01	<0.05	0.22	<5	1.8	>1000	1200	8.6	140	160	5.8	856	13.5	4.68	0.911
	07/17/13	246000	4620	60300	8370	140	500	51	8	0.026	<100	<0.05	<0.01	<0.05	0.081	<5	<5	240	1400	7.83	190	140	<1	967	14.7	0.79	0.213
	10/24/13	63000	7300	150000	18000	120	38	310	8.7	<0.010	<100	0.1	0.033	0.13	0.13	<5	1.8	>1000	1300	7.64	440	120	<1	670	12.0	1.06	0.377
	12/15/14[FD]	31000	2800	29000	3300	38	13	82	3.4	0.054	110	0.1	0.029	0.13	0.79	8.2	4.7	13	360	6.9	86	38	<1	190	3.35	2.29	-1.44
	12/15/14	31000	2900	29000	3400	39	12	83	3.4	0.054	130	0.075	0.028	0.1	0.74	9.1	4.4	5.1	360	7.02	87	39	<1	190	3.38	2.11	0.432
	12/11/15	22000	4500	17000	2000	40	5.5	48	1.6	0.23	510	<0.050	<0.010	<0.050	1.8	30	NM	3.2	240	7.04	51	40	<1.0	130	2.28	0	-1.48
	11/23/16	28000	8900	29000	3300	59	17	54	2.8	0.75	960	1.5	0.057	1.5	3.8	62	8.1	3.9	320	7.11	87	59	<1.0	190	3.21	3.75	-1.04
	12/13/17	72000	10000	64000	7200	93	27	190	5.8	1.8	2000	<0.050	0.011	<0.050	3.3	44	8.4	2.5	860	7.30	190	92	<1.0	440	7.89	3.20	-0.384
SCU7-001-MW (1.84 m)	12/12/14	27000	2400	390000	15000	220	780	55	19	<10	<100	0.093	<0.01	0.093	0.69	<5	1.3	7.5	1800	7.05	1000	220	<1	1400	22.2	0.77	0.432
	12/10/15	18000	2000	290000	12000	200	550	35	15	0.015	<100	<0.050	<0.010	<0.050	0.099	<5.0	NM	21	1400	7.33	760	200	<1.0	1000	16.4	0.86	0.526
	12/02/16	24000	2500	410000	15000	230	770	92	18	0.02	<100	<0.050	<0.010	<0.050	0.11	<5.0	1.6	5.0	1700	7.21	1100	230	<1.0	1500	23.3	0.63	0.588
	12/15/17	38000	2700	510000	15000	230	1000	140	16	0.01	<1000	<0.050	<0.010	<0.050	0.12	<5.0	1.5	0.5	2300	7.26	1300	230	<1.0	1900	29.8	2.46	0.688
SCU7-003-MW (1.16 m)	03/29/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	1.3	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/29/13	51000	6100	150000	13000	210	210	120	9.5	<0.01	<100	0.19	0.017	0.21	0.76	<5.0	1.1	67	1000	6.7	420	210	<1.0	685	11.9	4.92	-0.316
	07/17/13[L]	NM	NM	NM	NM	NM	170	120	9	<0.01	NM	NM	<0.01	0.13	NM	<5.0	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	07/17/13	51000	5890	142000	14100	190	170	120	8.9	<0.01	<100	0.13	<0.01	0.13	1.1	<5.0	1.3	37	1100	7.0	410	190	<1.0	631	10.7	0	-0.073
	11/07/13	63000	6100	130000	13000	180	180	130	8.7	<0.01	<100	<0.05	0.017	0.067	1.2	<5.0	1.1	41	1100	7.0	380	180	<1.0	640	10.9	1.44	-0.112
	12/12/14	67000	5600	130000	12000	190	190	110	9.6	0.011	<100	0.97	0.02	0.99	1.0	<5	1.3	500	1000	6.75	360	190	<1	640	10.9	2.31	0.432
	12/10/15	76000	6500	150000	15000	190	180	180	9.3	<0.010	<100	<0.050	<0.010	<0.050	1.2	11	NM	970	1200	7.01	430	190	<1.0	740	12.7	1.84	-0.057
	11/30/16	81000	6000	130000	13000	170	190	160	9.6	0.011	<100	0.18	0.021	0.2	0.89	18	1.3	86	1100	6.99	380	170	<1.0	700	11.9	2.06	-0.173
	12/15/17	87000	5900	130000	12000	170	170	180	9.3	<0.010	<100	0.069	<0.010	0.069	1.2	<5.0	1.6	4.6	1200	6.94	370	160	<1.0	700	12	2.74	-0.242

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Langelier Ind_ (@4C)	Sat_ pH (@20C)	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		**unitless**	**unitless**	**unitless**	**µg/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**	**µg/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**	**µg/L**
MOE Table 3[2]		-	-	-	-	20000	1900	29000	67	-	45000	2.7	810	66	87	-	25	-	0.29	9200	490	63	1.5	-	510	-	-	420	250	1100
MW2 SPAR RD (2.62 m) *Removed from the LTMM program in 2015*	03/19/13[FD]	0.39	7.26	7.51	9.7	10	13	78	<0.5	<2	<100	0.03	<1	<1	<2	<100	<1	<4	<0.013	<4	<3	6.5	<0.1	700	<0.8	<20	<3	3.2	4.1	12
	03/19/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	<0.013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/19/13	0.329	7.33	7.57	7.3	9.6	11	72	<0.5	<2	<100	0.037	<1	<1	<2	<100	<1	<4	<0.013	<4	<3	5.8	<0.1	680	<0.8	<20	<3	3.3	3	9.8
	07/24/13	0.171	7.3	7.55	11.9	4.2	12.6	57.1	<1	<2	58	0.026	<1	<0.4	<2	<50	<0.5	7.6	NM	2.2	<2	<1	<0.1	532	<0.1	<2	<2	1.54	<2	15
	11/6/13[L]	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
	11/06/13	0.413	7.11	7.36	13	6.7	14	68	<1.0	<2.0	73	0.024	<1	<0.4	3.0	<50	<0.5	4.0	NM	<2	<2	1.4	<0.1	690	<0.1	<2.0	<2	4.4	<2.0	22
	12/16/14[FD]	0.391	7.19	7.44	14	12	16	57	<1.0	<2.0	65	0.37	<1.0	<0.40	3.7	<50	<0.50	9.5	<0.013	2.1	<2.0	1.9	<0.10	560	<0.1	<2.0	<2.0	3.3	2.0	20
	12/16/14	0.384	7.2	7.44	13	12	16	53	<1.0	<2.0	65	0.38	<1.0	<0.40	<2.0	<50	<0.50	8.3	<0.013	2.1	<2.0	1.8	<0.10	560	<0.10	<2.0	<2.0	3.3	<2.0	18
SCU11-001-MWA (2.79 m)	03/29/13	0.533	7.32	7.57	37	<1	0.73	240	<0.5	<2	<100	0.11	<1	<1	<2	<100	<1	150	0.021	<4	<3	1.6	<0.1	2700	<0.8	<20	<3	3.6	4.5	14
	07/17/13	0.033	7.38	7.63	<5	<1	<1	244	<1	<2	<50	0.019	<1	<0.4	<2	<50	<0.5	292	NM	3.8	<2	<1	<0.1	3250	<0.1	<2	<2	3.47	<2	<5
	10/24/13	-0.032	7.51	7.75	120	<1	<1	28	<1	<2	160	0.03	<1	<0.40	<2.0	97	<0.50	170	NM	7.3	<2	4.6	<0.1	2300	<0.1	<2	4.8	0.60	<2	<5
	12/15/14	0.044	7.23	7.47	13	<1	<1	230	<1	<2	56	0.59	<1	<0.4	<2	<50	<0.5	440	<0.013	3.7	<2	<1	<0.1	3700	<0.1	<2	<2	3.9	<2	5.3
	12/11/15	-0.227	7.62	7.86	6.6	4	1.3	130	<1.0	<2.0	<50	0.022	<1.0	0.42	<2.0	<50	<0.50	1900	<0.013	<2.0	<2.0	<1.0	<0.10	1000	<0.10	<2.0	<2.0	0.22	<2.0	20
	11/23/16	0.056	7.14	7.39	8.9	<1.0	1.6	280	<1.0	<2.0	<50	0.013	<1.0	<0.40	<2.0	170	0.59	680	<0.013	<2.0	<2.0	<1.0	<0.10	3000	<0.10	<2.0	<2.0	0.22	<2.0	<5.0
	12/13/17	0.443	7.02	7.27	6.3	<1.0	2.0	350	<1.0	<2.0	<50	0.021	<1.0	<0.40	<2.0	200	<0.50	510	<0.013	<2.0	<2.0	<1.0	0.15	2100	<0.10	<2.0	<2.0	0.50	<2.0	<5.0
SCU11-001-MWB (2.13 m)	03/29/13[L]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	<0.013	NM	NM	NM	NM	NM	NM	NM	NM	NM	<2.0	NM
	03/29/13	0.665	7.69	7.94	8.6	<1	<0.6	22	<0.5	<2	140	<0.017	<1	<1	<2	100	<1	60	<0.013	28	<3	<1	<0.1	1700	<0.8	<20	<3	2.2	3.3	<5
	07/17/13	-0.033	7.62	7.86	139	<1	<1	27.9	<1	<2	164	<0.017	<1	<0.4	<2	200	<0.5	154	NM	37.3	<2	<1	<0.1	2190	<0.1	<2	2.1	0.57	<2	9
	10/24/13	0.130	7.26	7.51	18	<1	1.6	370	<1	<2	57	<0.01	<1	<0.4	<2	<50	<0.50	1000	NM	4.9	<2	<1	<0.1	3500	<0.1	<2	<2	3.9	<2	<5
	12/15/14[FD]	-1.69	8.34	8.59	21	<1	<1	36	<1	<2	<50	0.16	<1	<0.4	<2	130	<0.5	500	<0.013	<2	<2	<1	<0.1	530	<0.1	<2	<2	<0.1	<2	8.2
	12/15/14	-1.55	8.32	8.57	18	<1	<1	36	<1	<2	<50	0.12	<1	<0.4	<2	130	<0.5	510	<0.013	<2	<2	<1	<0.1	540	<0.1	<2	<2	<0.1	<2	7.3
	12/11/15	-1.73	8.52	8.77	23	<1.0	<1.0	18	<1.0	<2.0	<50	0.011	<1.0	<0.40	<2.0	1900	<0.50	160	<0.013	<2.0	<2.0	<1.0	<0.10	250	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
	11/23/16	-1.29	8.15	8.4	23	<1.0	<1.0	31	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	330	<0.50	240	<0.013	<2.0	<2.0	<1.0	<0.10	420	<0.10	<2.0	<2.0	<0.10	<2.0	11
	12/13/17	-0.633	7.69	7.94	19	<1.0	<1.0	77	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	380	<0.50	520	<0.013	<2.0	<2.0	<1.0	<0.10	1200	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
SCU7-001-MW (1.84 m)	12/12/14	0.142	6.66	6.91	12	<1	<1	51	<1	<2	<50	0.18	<1	<0.4	<2	<50	<0.5	160	<0.013	<2	<2	<1	<0.1	6100	<0.1	<2	<2	6.6	<2	6.7
	12/10/15	0.28	6.81	7.05	<5.0	<1.0	<1.0	69	<1.0	<2.0	<50	0.078	<1.0	<0.40	<2.0	<50	<0.50	79	<0.013	<2.0	<2.0	<1.0	<0.10	5200	<0.10	<2.0	<2.0	5.2	<2.0	<5.0
	12/02/16	0.344	6.62	6.86	8.1	<1.0	<1.0	62	<1.0	<2.0	<50	1.3	<1.0	<0.40	<2.0	<50	<0.50	69	<0.013	<2.0	<2.0	<1.0	<0.10	6900	<0.10	<2.0	<2.0	5.8	<2.0	<5.0
	12/15/17	0.445	6.58	6.82	<50	<10	<10	33	<10	<20	<500	0.19	<10	<4.0	<20	<500	<5.0	820	<0.013	<20	<20	<10	<1.0	9800	<1.0	<20	<20	5.7	<20	<50
SCU7-003-MW (1.16 m)	03/29/13[L]	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
	03/29/13	-0.563	7.02	7.26	<5	<1.0	0.72	16	<0.5	<2.0	<100	0.26	<1.0	1.1	<2.0	<100	<1.0	3200	0.013	<4	<3	<1	<0.10	610	<0.8	<20	<3	0.19	<2.0	72
	07/17/13[L]	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
	07/17/13	-0.32	7.07	7.32	5.2	<1.0	<1.0	17.5	<1.0	<2.0	99	0.213	<1.0	0.77	12.3	354	<0.5	2820	NM	<2.0	<2.0	<1.0	<0.10	586	<0.10	<2.0	<2.0	0.35	<2.0	93.2
	11/07/13	-0.359	7.11	7.36	11	<1.0	<1.0	19	<1.0	<2.0	100	0.22	<1.0	0.80	4.3	360	<0.5	2400	NM	<2.0	<2.0	<1.0	<0.10	550	<0.10	<2.0	<2.0	0.38	<2.0	65
	12/12/14	-0.622	7.13	7.37	10	<1	<1	17	<1	<2	100	0.31	<1	0.69	<2	190	<0.5	2400	<0.013	<2	<2	<1	<0.1	530	<0.1	<2	<2	0.28	<2	10
	12/10/15	-0.303	7.07	7.32	7.4	<1.0	<1.0	19	<1.0	<2.0	110	0.32	<1.0	0.96	<2.0	380	<0.50	3300	<0.013	<2.0	<2.0	<1.0	<0.10	650	<0.10	<2.0	<2.0	0.27	<2.0	6.6
	11/30/16	-0.42	7.16	7.41	6.6	<1.0	1.1	22	<1.0	<2.0	98	0.1	<1.0	1.2	<2.0	1100	<0.50	2900	<0.013	<2.0	<2.0	<1.0	<0.10	560	<0.10	<2.0	<2.0	0.26	<2.0	11
	12/15/17	-0.489	7.19	7.43	<5.0	<1.0	<1.0	23	<1.0	<2.0	92	0.25	<1.0	0.88	<2.0	410	<0.50	2600	<0.013	<2.0	<2.0	<1.0	<0.10	560	<0.10	<2.0	<2.0	0.23	<2.0	<5.0

NOTES:

FD - Field Duplicate
L - Lab Duplicate
NM - Not measured or not analyzed; lab duplicates do not analyze for all parameters.
mg/L - milligrams per litre
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 - COTS-001-MWA could not be sampled during the December 2014 event due to insufficient water. COTS-001-MWB added to the LTMM program in 2015 in place of COTS-001-MWA.
4 - During the 2015 groundwater monitoring program, MCWS-009-MW was found to be damaged beyond repair and was subsequently decommissioned.
5 - Bold and Shaded Exceeds MOE Table 3 Standards
6 - This summary is to used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information.
7 - Although sodium concentrations are above the MOE standard, this standard was not intended for use in a marine (saltwater) environment. The concentration of sodium is natural as marine waters have sodium concentrations of 10,000,000 ug/L or higher. Sodium is not associated with contamination or remediation at the site.

Appendix B

QC Tables

TABLE B-1
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2017 OHP & HE
SUMMARY OF FIELD DUPLICATES AND TRIP BLANKS

Field Duplicate Sample - Laboratory Number	Date Sampled	Field Blank Sample - Laboratory Certificate Number	Date Sampled
FD04 - B7R5176	12/5/2017	FB-01 - B7S0289	12/11/2017
FD05 - B7R9339	12/8/2017	FB-02 - B7S4627	12/15/2017
FD06 - B7S1461	12/12/2017		
FD07 - B7S2782	12/13/2017		

TABLE B-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2017 OHP AND HE
RPD FOR FIELD DUPLICATES (GROUNDWATER) - PAHs

Sample Location	Sample	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																			
CODT-206-MW	FD-04	Field Duplicate	12/5/2017	63	3.0	2.4	0.20	0.25	0.23	0.096	0.31	0.095	0.27	0.033	3.1	39	0.096	18	1.1	30	0.043	25	1.5
	FD-04	Regular	12/5/2017	46	2.3	1.2	0.11	0.15	0.13	0.076	0.18	0.061	0.13	0.022	1.8	26	0.066	13	1.3	36	0.027	14	0.86
	FD-04	RPD (%)	12/5/2017	31	26	**67**	**58**	**50**	**56**	23	**53**	**44**	**70**	NA	**53**	40	37	32	17	18	NA	**56**	**54**
COCP-110-MW	FD-05	Field Duplicate	12/8/2017	0.023	<0.01	0.015	0.011	<0.01	<0.02	<0.01	<0.01	<0.01	0.017	<0.01	0.034	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.012	0.087
	FD-05	Regular	12/8/2017	0.024	<0.01	0.017	0.011	<0.01	<0.02	<0.01	<0.01	<0.01	0.017	<0.01	0.033	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	0.011	0.096
	FD-05	RPD (%)	12/8/2017	NA	NA	NA	0	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	10
MCES-001-MWA	FD-06	Field Duplicate	12/12/2016	0.048	0.067	0.013	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	0.011	<0.01	0.09	0.074	<0.01	0.12	<0.05	<0.2	<0.01	0.034	0.13
	FD-06	Regular	12/12/2016	0.052	0.073	0.021	0.021	<0.01	<0.02	<0.01	<0.01	<0.01	0.024	<0.01	0.22	0.076	<0.01	0.13	<0.05	<0.2	<0.01	0.041	0.31
	FD-06	RPD (%)	12/12/2016	8	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	**84**	3	NA	8	NA	NA	NA	NA	**82**
MSES-004-MW	FD-07	Field Duplicate	12/13/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01	0.01
	FD-07	Regular	12/13/2017	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.2	<0.01	<0.01
	FD-07	RPD (%)	12/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	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.

R - Sample analysis repeated due to a laboratory error.

TABLE B-3
LTMM GROUNDW ATER MONITORING EVENT NOVEMBER/DECEMBER 2017 OHP AND HE
RPD FOR FIELD DUPLICATES (GROUNDW ATER) - INORGANIC CHEMISTRY

Sample Location	Sample	Type	Sample Date	Na	K	Ca	Mg	ALK	SO4	Cl	SiO2	OPO4	P	NO3	NO2	NO2-NO3	NH3	Colour	TOC	TURB	COND	pH	HARD	BICARB ALK	CARB ALK	TDS	Al	Sb
				µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	TCU	mg/L	NTU	µS/cm	pH	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L
CODT-206-MW	FD-04	Field Duplicate	12/5/2017	6700	4100	110000	7600	240	84	10	19	<0.01	<100	0.12	<0.01	0.12	1.1	22	19	95	650	7.33	300	240	<1	400	20	<1.0
	FD-04	Regular	12/5/2017	6600	4100	110000	7600	230	91	9.8	21	<0.01	<100	0.16	<0.01	0.16	1	21	13	78	630	7.39	300	230	<1	400	19	<1.0
	FD-04	RPD (%)	12/5/2017	2	0	0	0	4	8	2	10	NA	NA	29	NA	29	10	NA	**38**	20	3	1	0	4	NA	0	5	NA
COCP-110-MW	FD-05	Field Duplicate	12/8/2017	33000	12000	150000	13000	210	210	75	35	<0.01	310	0.16	<0.01	0.16	1.3	6	4.1	86	1000	7.69	430	210	<1	660	<5	1.4
	FD-05	Regular	12/8/2017	33000	12000	150000	13000	210	200	75	34	<0.01	290	0.2	<0.01	0.2	1.4	5.7	4.1	69	990	7.67	420	210	<1	640	<5	1.6
	FD-05	RPD (%)	12/8/2017	0	0	0	0	0	-5	0	NA	NA	NA	NA	NA	NA	7	NA	0	22	1	0	2	0	NA	3	NA	NA
MCES-001-MWA	FD-06	Field Duplicate	12/12/2016	42000	17000	240000	<0.1	70	150	55	2.4	<0.01	<100	<0.05	0.13	0.16	1.4	<5	3.1	0.27	2400	12	600	<1	<1	560	54	<1.0
	FD-06	Regular	12/12/2016	42000	17000	240000	<0.1	76	160	52	2.3	<0.01	<100	<0.05	0.13	0.16	1.4	5.5	3.1	0.25	2500	12	600	<1	<1	560	52	<1.0
	FD-06	RPD (%)	12/12/2016	0	0	0	NA	8	6	6	4	NA	NA	NA	NA	0	0	NA	0	8	4	NA	0	NA	NA	0	-4	NA
MSES-004-MW	FD-07	Field Duplicate	12/13/2017	12000	2000	260000	39000	130	630	17	4.6	<0.01	<100	<0.05	<0.01	<0.05	0.19	23	2.5	6.6	1300	6.61	810	130	<1	1000	30	<1.0
	FD-07	Regular	12/13/2017	12000	2000	240000	39000	130	630	17	4.6	<0.01	<100	<0.05	<0.01	<0.05	0.18	21	2.4	4.6	1400	6.54	750	130	<1	1000	63	<1.0
	FD-07	RPD (%)	12/13/2017	0	0	8	0	0	0	0	0	NA	NA	NA	NA	NA	5	0	4	36	7	1	8	0	NA	0	**61**	NA

Sample Location	Sample	Type	Sample Date	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
				µg/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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CODT-206-MW	FD-04	Field Duplicate	12/5/2017	4.7	100	<1.0	<2.0	60	0.09	<1.0	0.87	2.3	2300	<0.50	6100	<0.013	<2.0	<2.0	<1.0	<0.10	400	<0.10	<2.0	<2.0	2.8	<2.0	45
	FD-04	Regular	12/5/2017	4.8	100	<1.0	<2.0	62	0.22	<1.0	0.87	2.6	2400	<0.50	6100	<0.013	<2.0	<2.0	<1.0	<0.10	400	<0.10	<2.0	<2.0	2.8	<2.0	44
	FD-04	RPD (%)	12/5/2017	2	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	0	NA	0
COCP-110-MW	FD-05	Field Duplicate	12/8/2017	28	85	<1.0	<2.0	77	0.021	<1.0	<0.4	<2.0	4600	<0.5	390	0.015	7.9	<2.0	<1.0	<0.10	580	<0.10	<2.0	<2.0	2.5	3.4	<5.0
	FD-05	Regular	12/8/2017	27	86	<1.0	<2.0	75	0.018	<1.0	<0.4	<2.0	4000	<0.5	370	<0.013	8.0	<2.0	1.1	<0.10	580	<0.10	<2.0	<2.0	2.4	3.6	<5.0
	FD-05	RPD (%)	12/8/2017	NA	-1	NA	NA	-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MCES-001-MWA	FD-06	Field Duplicate	12/12/2016	<1	140	<1.0	<2.0	<50	0.017	2.1	<0.4	<5.0	4.3	<50	<2.0	<0.013	9.0	<2.0	1.8	<0.10	1300	<0.10	<2.0	<2.0	<0.10	18	<5.0
	FD-06	Regular	12/12/2016	<1	140	<1.0	<2.0	<50	<0.01	2.0	<0.4	11	<50	4.0	<2.0	<0.013	8.5	<2.0	1.8	<0.10	1300	<0.10	<2.0	<2.0	<0.10	18	<5.0
	FD-06	RPD (%)	12/12/2016	NA	0	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	5.7	NA	NA	NA	0	NA	NA	NA	0	0	NA
MSES-004-MW	FD-07	Field Duplicate	12/13/2017	2.1	9.3	<1.0	<2.0	82	0.016	<1.0	0.48	<2.0	1100	<0.50	860	<0.013	<2.0	<2.0	<1.0	<0.10	270	<0.10	<2.0	<2.0	0.15	<2.0	100
	FD-07	Regular	12/13/2017	1.9	9.4	<1.0	<2.0	80	0.027	<1.0	0.52	<2.0	1100	<0.50	860	<0.013	<2.0	<2.0	<1.0	<0.10	270	<0.10	<2.0	<2.0	0.17	<2.0	99
	FD-07	RPD (%)	12/13/2017	10	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13	NA	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.

Appendix C

Laboratory Certificates

Maxxam
A Bureau Veritas Group Company

Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention: Nadine Wambolt

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

Report Date: 2018/01/03
Report #: R4927135
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S9156
Received: 2017/12/21, 11:48

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	3	N/A	2018/01/02	N/A	SM 22 4500-CO2 D
Alkalinity (1)	3	N/A	2017/12/29	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	3	N/A	2018/01/02	N/A	Auto Calc.
Chloride (1)	3	N/A	2018/01/02	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	3	N/A	2018/01/03	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	3	N/A	2018/01/02	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	2	N/A	2017/12/28	ATL SOP 00048	SM 22 2340 B
Hardness (calculated as CaCO3) (1)	1	N/A	2017/12/29	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	3	2017/12/28	2017/12/29	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	2	N/A	2017/12/28	ATL SOP 00058	EPA 6020A R1 m
Metals Water Diss. MS (as rec'd) (1)	1	N/A	2017/12/29	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	3	N/A	2018/01/02	N/A	Auto Calc.
Anion and Cation Sum (1)	3	N/A	2018/01/02	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	3	N/A	2017/12/28	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	3	N/A	2018/01/02	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	3	N/A	2018/01/02	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	3	N/A	2018/01/02	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	3	2017/12/27	2017/12/30	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	3	N/A	2018/01/02	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	3	N/A	2018/01/02	ATL SOP 00021	SM 22 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	3	N/A	2018/01/03	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	3	N/A	2018/01/03	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	3	N/A	2018/01/02	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	3	N/A	2018/01/02	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	3	N/A	2018/01/03	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	3	N/A	2018/01/02	ATL SOP 00037	SM 22 5310C m
Turbidity (1)	3	N/A	2018/01/02	ATL SOP 00011	EPA 180.1 R2 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.

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Maxxam
A Bureau Veritas Group Company

Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention: Nadine Wambolt

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

Report Date: 2018/01/03
Report #: R4927135
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S9156
Received: 2017/12/21, 11:48

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.

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.

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.

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
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Sr. Project Manager
Email: NMacAskill@maxxam.ca
Phone# (902)567-1255 Ext:17

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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.

Maxxam Job #: B7S9156
Report Date: 2018/01/03

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FUP685			FUP686		FUP687		
Sampling Date		2017/12/21			2017/12/21		2017/12/21		
COC Number		641599			641599		641599		
	UNITS	COTS-001-MWB	RDL	QC Batch	CONPL-202-MWA	RDL	COBP-006-MWA	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	9.04	N/A	5326607	9.53	N/A	8.30	N/A	5327227
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	280	1.0	5326604	320	1.0	270	1.0	5327225
Calculated TDS	mg/L	500	1.0	5326612	520	1.0	470	1.0	5327231
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.5	1.0	5326604	1.1	1.0	<1.0	1.0	5327225
Cation Sum	me/L	8.48	N/A	5326607	9.05	N/A	8.37	N/A	5327227
Hardness (CaCO3)	mg/L	340	1.0	5327199	420	1.0	340	1.0	5327199
Ion Balance (% Difference)	%	3.20	N/A	5326606	2.58	N/A	0.420	N/A	5327226
Langelier Index (@ 20C)	N/A	0.791		5326610	0.715		0.316		5327229
Langelier Index (@ 4C)	N/A	0.543		5326611	0.468		0.0680		5327230
Nitrate (N)	mg/L	<0.050	0.050	5327228	<0.050	0.050	<0.050	0.050	5327228
Saturation pH (@ 20C)	N/A	6.96		5326610	6.84		6.98		5327229
Saturation pH (@ 4C)	N/A	7.21		5326611	7.09		7.23		5327230
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	280	25	5333244	320	25	270	25	5333244
Dissolved Chloride (Cl)	mg/L	51	1.0	5333265	13	1.0	40	1.0	5333265
Colour	TCU	<5.0	5.0	5333268	<5.0	5.0	6.8	5.0	5333268
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	5333270	<0.050	0.050	<0.050	0.050	5333270
Nitrite (N)	mg/L	<0.010	0.010	5333271	<0.010	0.010	<0.010	0.010	5333271
Nitrogen (Ammonia Nitrogen)	mg/L	1.1	0.050	5332994	<0.050	0.050	1.3	0.050	5332994
Total Organic Carbon (C)	mg/L	1.2	0.50	5336751	<5.0 (1)	5.0	11 (2)	5.0	5336751
Orthophosphate (P)	mg/L	<0.010	0.010	5333269	0.011	0.010	<0.010	0.010	5333269
pH	pH	7.75	N/A	5336502	7.55	N/A	7.29	N/A	5336502
Reactive Silica (SiO2)	mg/L	14	0.50	5333267	11	0.50	16	0.50	5333267
Dissolved Sulphate (SO4)	mg/L	98 (2)	10	5333266	130 (2)	10	81 (2)	10	5333266
Turbidity	NTU	0.86	0.10	5336610	18	0.10	170	1.0	5336610
Conductivity	uS/cm	810	1.0	5336503	810	1.0	770	1.0	5336503

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Reporting limit was increased due to turbidity.
(2) Elevated reporting limit due to sample matrix.

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Maxxam Job #: B7S9156
Report Date: 2018/01/03

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		FUP685	FUP686	FUP687		
Sampling Date		2017/12/21	2017/12/21	2017/12/21		
COC Number		641599	641599	641599		
	UNITS	**COTS-001-MWB**	**CONPL-202-MWA**	**COBP-006-MWA**	**RDL**	**QC Batch**
Metals						
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	0.013	5333074

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7S9156
Report Date: 2018/01/03

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FUP685	FUP686	FUP687		
Sampling Date		2017/12/21	2017/12/21	2017/12/21		
COC Number		641599	641599	641599		
	UNITS	COTS-001-MWB	CONPL-202-MWA	COBP-006-MWA	RDL	QC Batch
Metals						
Dissolved Aluminum (Al)	ug/L	6.0	5.3	9.1	5.0	5332001
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	1.0	5332001
Dissolved Arsenic (As)	ug/L	2.8	<1.0	<1.0	1.0	5332001
Dissolved Barium (Ba)	ug/L	44	31	75	1.0	5332001
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	1.0	5332001
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	2.0	5332001
Dissolved Boron (B)	ug/L	<50	<50	57	50	5332001
Dissolved Cadmium (Cd)	ug/L	<0.010	0.078	0.067	0.010	5332001
Dissolved Calcium (Ca)	ug/L	120000	140000	110000	100	5332001
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	5332001
Dissolved Cobalt (Co)	ug/L	0.45	<0.40	<0.40	0.40	5332001
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	<2.0	2.0	5332001
Dissolved Iron (Fe)	ug/L	530	<50	15000	50	5332001
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	0.50	5332001
Dissolved Magnesium (Mg)	ug/L	13000	20000	14000	100	5332001
Dissolved Manganese (Mn)	ug/L	2100	470	5000	2.0	5332001
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	<2.0	2.0	5332001
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	2.0	5332001
Dissolved Phosphorus (P)	ug/L	<100	<100	110	100	5332001
Dissolved Potassium (K)	ug/L	2800	1500	4000	100	5332001
Dissolved Selenium (Se)	ug/L	<1.0	<1.0	<1.0	1.0	5332001
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	0.10	5332001
Dissolved Sodium (Na)	ug/L	33000	13000	21000	100	5332001
Dissolved Strontium (Sr)	ug/L	1600	460	450	2.0	5332001
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	0.10	5332001
Dissolved Tin (Sn)	ug/L	2.2	<2.0	<2.0	2.0	5332001
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	2.0	5332001
Dissolved Uranium (U)	ug/L	0.52	1.7	<0.10	0.10	5332001
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	2.0	5332001
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	56	5.0	5332001

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FUP685	FUP686	FUP687		
Sampling Date		2017/12/21	2017/12/21	2017/12/21		
COC Number		641599	641599	641599		
	UNITS	COTS-001-MWB	CONPL-202-MWA	COBP-006-MWA	RDL	QC Batch
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	ug/L	<0.050	<0.050	6.7	0.050	5331887
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.050	5331887
Acenaphthene	ug/L	<0.010	0.022	18	0.010	5331887
Acenaphthylene	ug/L	0.018	0.016	0.21	0.010	5331887
Anthracene	ug/L	<0.010	0.047	0.024	0.010	5331887
Benzo(a)anthracene	ug/L	<0.010	0.095	0.030	0.010	5331887
Benzo(a)pyrene	ug/L	<0.010	0.071	0.025	0.010	5331887
Benzo(b)fluoranthene	ug/L	<0.010	0.055	0.018	0.010	5331887
Benzo(b/j)fluoranthene	ug/L	<0.020	0.097	0.031	0.020	5326755
Benzo(g,h,i)perylene	ug/L	<0.010	0.035	0.012	0.010	5331887
Benzo(j)fluoranthene	ug/L	<0.010	0.041	0.013	0.010	5331887
Benzo(k)fluoranthene	ug/L	<0.010	0.034	0.012	0.010	5331887
Chrysene	ug/L	<0.010	0.089	0.031	0.010	5331887
Dibenz(a,h)anthracene	ug/L	<0.010	0.011	<0.010	0.010	5331887
Fluoranthene	ug/L	<0.010	0.18	0.062	0.010	5331887
Fluorene	ug/L	<0.010	0.038	1.0	0.010	5331887
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.034	0.011	0.010	5331887
Naphthalene	ug/L	<0.20	<0.20	18	0.20	5331887
Perylene	ug/L	<0.010	0.020	<0.010	0.010	5331887
Phenanthrene	ug/L	<0.010	0.14	0.094	0.010	5331887
Pyrene	ug/L	<0.010	0.14	0.061	0.010	5331887
Surrogate Recovery (%)						
D10-Anthracene	%	82	62	67		5331887
D14-Terphenyl	%	99	69	74		5331887
D8-Acenaphthylene	%	92	70	76		5331887

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5331887	LGE	Matrix Spike [FUP686-05]	D10-Anthracene	2017/12/30		65	%	50 - 130
			D14-Terphenyl	2017/12/30		69	%	50 - 130
			D8-Acenaphthylene	2017/12/30		68	%	50 - 130
			1-Methylnaphthalene	2017/12/30		62	%	30 - 130
			2-Methylnaphthalene	2017/12/30		67	%	30 - 130
			Acenaphthene	2017/12/30		66	%	30 - 130
			Acenaphthylene	2017/12/30		72	%	30 - 130
			Anthracene	2017/12/30		64	%	30 - 130
			Benzo(a)anthracene	2017/12/30		76	%	30 - 130
			Benzo(a)pyrene	2017/12/30		66	%	30 - 130
			Benzo(b)fluoranthene	2017/12/30		72	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/30		67	%	30 - 130
			Benzo(j)fluoranthene	2017/12/30		62	%	30 - 130
			Benzo(k)fluoranthene	2017/12/30		60	%	30 - 130
			Chrysene	2017/12/30		76	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/30		57	%	30 - 130
			Fluoranthene	2017/12/30		91	%	30 - 130
			Fluorene	2017/12/30		70	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/30		62	%	30 - 130
			Naphthalene	2017/12/30		67	%	30 - 130
			Perylene	2017/12/30		59	%	30 - 130
			Phenanthrene	2017/12/30		81	%	30 - 130
			Pyrene	2017/12/30		84	%	30 - 130
5331887	LGE	Spiked Blank	D10-Anthracene	2017/12/30		96	%	50 - 130
			D14-Terphenyl	2017/12/30		92	%	50 - 130
			D8-Acenaphthylene	2017/12/30		94	%	50 - 130
			1-Methylnaphthalene	2017/12/30		79	%	30 - 130
			2-Methylnaphthalene	2017/12/30		85	%	30 - 130
			Acenaphthene	2017/12/30		86	%	30 - 130
			Acenaphthylene	2017/12/30		85	%	30 - 130
			Anthracene	2017/12/30		86	%	30 - 130
			Benzo(a)anthracene	2017/12/30		80	%	30 - 130
			Benzo(a)pyrene	2017/12/30		69	%	30 - 130
			Benzo(b)fluoranthene	2017/12/30		73	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/30		71	%	30 - 130
			Benzo(j)fluoranthene	2017/12/30		76	%	30 - 130
			Benzo(k)fluoranthene	2017/12/30		69	%	30 - 130
			Chrysene	2017/12/30		80	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/30		59	%	30 - 130
			Fluoranthene	2017/12/30		90	%	30 - 130
			Fluorene	2017/12/30		88	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/30		66	%	30 - 130
			Naphthalene	2017/12/30		83	%	30 - 130
			Perylene	2017/12/30		70	%	30 - 130
			Phenanthrene	2017/12/30		90	%	30 - 130
			Pyrene	2017/12/30		87	%	30 - 130
5331887	LGE	Method Blank	D10-Anthracene	2017/12/30		93	%	50 - 130
			D14-Terphenyl	2017/12/30		94	%	50 - 130
			D8-Acenaphthylene	2017/12/30		94	%	50 - 130
			1-Methylnaphthalene	2017/12/30	<0.050		ug/L	
			2-Methylnaphthalene	2017/12/30	<0.050		ug/L	
			Acenaphthene	2017/12/30	<0.010		ug/L	
			Acenaphthylene	2017/12/30	<0.010		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Anthracene	2017/12/30	<0.010		ug/L	
			Benzo(a)anthracene	2017/12/30	<0.010		ug/L	
			Benzo(a)pyrene	2017/12/30	<0.010		ug/L	
			Benzo(b)fluoranthene	2017/12/30	<0.010		ug/L	
			Benzo(g,h,i)perylene	2017/12/30	<0.010		ug/L	
			Benzo(j)fluoranthene	2017/12/30	<0.010		ug/L	
			Benzo(k)fluoranthene	2017/12/30	<0.010		ug/L	
			Chrysene	2017/12/30	<0.010		ug/L	
			Dibenz(a,h)anthracene	2017/12/30	<0.010		ug/L	
			Fluoranthene	2017/12/30	<0.010		ug/L	
			Fluorene	2017/12/30	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/12/30	<0.010		ug/L	
			Naphthalene	2017/12/30	<0.20		ug/L	
			Perylene	2017/12/30	<0.010		ug/L	
			Phenanthrene	2017/12/30	<0.010		ug/L	
			Pyrene	2017/12/30	<0.010		ug/L	
5331887	LGE	RPD [FUP685-05]	1-Methylnaphthalene	2017/12/30	NC		%	40
			2-Methylnaphthalene	2017/12/30	NC		%	40
			Acenaphthene	2017/12/30	NC		%	40
			Acenaphthylene	2017/12/30	9.8		%	40
			Anthracene	2017/12/30	NC		%	40
			Benzo(a)anthracene	2017/12/30	NC		%	40
			Benzo(a)pyrene	2017/12/30	NC		%	40
			Benzo(b)fluoranthene	2017/12/30	NC		%	40
			Benzo(g,h,i)perylene	2017/12/30	NC		%	40
			Benzo(j)fluoranthene	2017/12/30	NC		%	40
			Benzo(k)fluoranthene	2017/12/30	NC		%	40
			Chrysene	2017/12/30	NC		%	40
			Dibenz(a,h)anthracene	2017/12/30	NC		%	40
			Fluoranthene	2017/12/30	20		%	40
			Fluorene	2017/12/30	1.0		%	40
			Indeno(1,2,3-cd)pyrene	2017/12/30	NC		%	40
			Naphthalene	2017/12/30	NC		%	40
			Perylene	2017/12/30	NC		%	40
			Phenanthrene	2017/12/30	NC		%	40
			Pyrene	2017/12/30	15		%	40
5332001	MLB	Matrix Spike	Dissolved Aluminum (Al)	2017/12/29		102	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/29		NC	%	80 - 120
			Dissolved Arsenic (As)	2017/12/29		100	%	80 - 120
			Dissolved Barium (Ba)	2017/12/29		96	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/29		101	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/29		99	%	80 - 120
			Dissolved Boron (B)	2017/12/29		NC	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/29		102	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/29		NC	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/29		95	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/29		96	%	80 - 120
			Dissolved Copper (Cu)	2017/12/29		92	%	80 - 120
			Dissolved Iron (Fe)	2017/12/29		102	%	80 - 120
			Dissolved Lead (Pb)	2017/12/29		95	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/29		NC	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/29		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/29		NC	%	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 Nickel (Ni)	2017/12/29		96	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/29		108	%	80 - 120
			Dissolved Potassium (K)	2017/12/29		104	%	80 - 120
			Dissolved Selenium (Se)	2017/12/29		101	%	80 - 120
			Dissolved Silver (Ag)	2017/12/29		101	%	80 - 120
			Dissolved Sodium (Na)	2017/12/29		96	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/29		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/29		102	%	80 - 120
			Dissolved Tin (Sn)	2017/12/29		115	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/29		101	%	80 - 120
			Dissolved Uranium (U)	2017/12/29		104	%	80 - 120
			Dissolved Vanadium (V)	2017/12/29		100	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/29		101	%	80 - 120
5332001	MLB	Spiked Blank	Dissolved Aluminum (Al)	2017/12/28		102	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/28		87	%	80 - 120
			Dissolved Arsenic (As)	2017/12/28		97	%	80 - 120
			Dissolved Barium (Ba)	2017/12/28		96	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/28		102	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/28		102	%	80 - 120
			Dissolved Boron (B)	2017/12/28		103	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/28		99	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/28		98	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/28		96	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/28		97	%	80 - 120
			Dissolved Copper (Cu)	2017/12/28		95	%	80 - 120
			Dissolved Iron (Fe)	2017/12/28		101	%	80 - 120
			Dissolved Lead (Pb)	2017/12/28		99	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/28		101	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/28		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/28		98	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/28		97	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/28		102	%	80 - 120
			Dissolved Potassium (K)	2017/12/28		101	%	80 - 120
			Dissolved Selenium (Se)	2017/12/28		96	%	80 - 120
			Dissolved Silver (Ag)	2017/12/28		99	%	80 - 120
			Dissolved Sodium (Na)	2017/12/28		96	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/28		100	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/28		103	%	80 - 120
			Dissolved Tin (Sn)	2017/12/28		105	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/28		100	%	80 - 120
			Dissolved Uranium (U)	2017/12/28		103	%	80 - 120
			Dissolved Vanadium (V)	2017/12/28		99	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/28		104	%	80 - 120
5332001	MLB	Method Blank	Dissolved Aluminum (Al)	2017/12/28	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/28	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/28	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/28	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/28	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/28	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/28	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/28	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/28	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/28	<1.0		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Cobalt (Co)	2017/12/28	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/28	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/28	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/28	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/28	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/28	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/28	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/28	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/28	<100		ug/L	
			Dissolved Potassium (K)	2017/12/28	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/28	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/28	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/28	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/28	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/28	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/28	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/28	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/28	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/28	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/28	<5.0		ug/L	
5332001	MLB	RPD	Dissolved Aluminum (Al)	2017/12/29	18		%	20
			Dissolved Antimony (Sb)	2017/12/29	0.45		%	20
			Dissolved Arsenic (As)	2017/12/29	0.17		%	20
			Dissolved Barium (Ba)	2017/12/29	2.5		%	20
			Dissolved Beryllium (Be)	2017/12/29	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/29	NC		%	20
			Dissolved Boron (B)	2017/12/29	1.0		%	20
			Dissolved Cadmium (Cd)	2017/12/29	NC		%	20
			Dissolved Calcium (Ca)	2017/12/29	1.1		%	20
			Dissolved Chromium (Cr)	2017/12/29	NC		%	20
			Dissolved Cobalt (Co)	2017/12/29	NC		%	20
			Dissolved Copper (Cu)	2017/12/29	0.58		%	20
			Dissolved Iron (Fe)	2017/12/29	0.87		%	20
			Dissolved Lead (Pb)	2017/12/29	2.5		%	20
			Dissolved Magnesium (Mg)	2017/12/29	0.79		%	20
			Dissolved Manganese (Mn)	2017/12/29	0.95		%	20
			Dissolved Molybdenum (Mo)	2017/12/29	2.1		%	20
			Dissolved Nickel (Ni)	2017/12/29	1.3		%	20
			Dissolved Phosphorus (P)	2017/12/29	NC		%	20
			Dissolved Potassium (K)	2017/12/29	0.21		%	20
			Dissolved Selenium (Se)	2017/12/29	1.7		%	20
			Dissolved Silver (Ag)	2017/12/29	NC		%	20
			Dissolved Sodium (Na)	2017/12/29	0.49		%	20
			Dissolved Strontium (Sr)	2017/12/29	0.79		%	20
			Dissolved Thallium (Tl)	2017/12/29	NC		%	20
			Dissolved Tin (Sn)	2017/12/29	NC		%	20
			Dissolved Titanium (Ti)	2017/12/29	NC		%	20
			Dissolved Uranium (U)	2017/12/29	0.48		%	20
			Dissolved Vanadium (V)	2017/12/29	2.7		%	20
			Dissolved Zinc (Zn)	2017/12/29	2.8		%	20
5332994	JHY	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/28		91	%	80 - 120
5332994	JHY	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/28		96	%	80 - 120
5332994	JHY	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/28	<0.050		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5332994	JHY	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/28	NC		%	20
5333074	ARS	Matrix Spike	Total Mercury (Hg)	2017/12/29		105	%	80 - 120
5333074	ARS	Spiked Blank	Total Mercury (Hg)	2017/12/29		104	%	80 - 120
5333074	ARS	Method Blank	Total Mercury (Hg)	2017/12/29	<0.013		ug/L	
5333074	ARS	RPD	Total Mercury (Hg)	2017/12/29	NC		%	20
5333244	JHY	Matrix Spike	Total Alkalinity (Total as CaCO3)	2017/12/29		98	%	80 - 120
5333244	JHY	Spiked Blank	Total Alkalinity (Total as CaCO3)	2017/12/29		101	%	80 - 120
5333244	JHY	Method Blank	Total Alkalinity (Total as CaCO3)	2017/12/29	<5.0		mg/L	
5333244	JHY	RPD	Total Alkalinity (Total as CaCO3)	2017/12/29	NC		%	25
5333265	JHY	Matrix Spike	Dissolved Chloride (Cl)	2018/01/02		100	%	80 - 120
5333265	JHY	QC Standard	Dissolved Chloride (Cl)	2018/01/02		109	%	80 - 120
5333265	JHY	Spiked Blank	Dissolved Chloride (Cl)	2018/01/02		108	%	80 - 120
5333265	JHY	Method Blank	Dissolved Chloride (Cl)	2018/01/02	<1.0		mg/L	
5333265	JHY	RPD	Dissolved Chloride (Cl)	2018/01/02	4.8		%	25
5333266	JHY	Matrix Spike	Dissolved Sulphate (SO4)	2018/01/02		114	%	80 - 120
5333266	JHY	Spiked Blank	Dissolved Sulphate (SO4)	2018/01/02		100	%	80 - 120
5333266	JHY	Method Blank	Dissolved Sulphate (SO4)	2018/01/02	<2.0		mg/L	
5333266	JHY	RPD	Dissolved Sulphate (SO4)	2018/01/02	NC		%	25
5333267	JHY	Matrix Spike	Reactive Silica (SiO2)	2018/01/02		101	%	80 - 120
5333267	JHY	Spiked Blank	Reactive Silica (SiO2)	2018/01/02		103	%	80 - 120
5333267	JHY	Method Blank	Reactive Silica (SiO2)	2018/01/02	<0.50		mg/L	
5333267	JHY	RPD	Reactive Silica (SiO2)	2018/01/02	0.63		%	25
5333268	JHY	Spiked Blank	Colour	2018/01/03		88	%	80 - 120
5333268	JHY	Method Blank	Colour	2018/01/03	<5.0		TCU	
5333268	JHY	RPD	Colour	2018/01/03	0.79 (1)		%	20
5333269	JHY	Matrix Spike	Orthophosphate (P)	2018/01/02		90	%	80 - 120
5333269	JHY	Spiked Blank	Orthophosphate (P)	2018/01/02		96	%	80 - 120
5333269	JHY	Method Blank	Orthophosphate (P)	2018/01/02	<0.010		mg/L	
5333269	JHY	RPD	Orthophosphate (P)	2018/01/02	NC		%	25
5333270	JHY	Matrix Spike	Nitrate + Nitrite (N)	2018/01/02		98	%	80 - 120
5333270	JHY	Spiked Blank	Nitrate + Nitrite (N)	2018/01/02		96	%	80 - 120
5333270	JHY	Method Blank	Nitrate + Nitrite (N)	2018/01/02	<0.050		mg/L	
5333270	JHY	RPD	Nitrate + Nitrite (N)	2018/01/02	NC		%	25
5333271	JHY	Matrix Spike	Nitrite (N)	2018/01/02		90	%	80 - 120
5333271	JHY	Spiked Blank	Nitrite (N)	2018/01/02		104	%	80 - 120
5333271	JHY	Method Blank	Nitrite (N)	2018/01/02	<0.010		mg/L	
5333271	JHY	RPD	Nitrite (N)	2018/01/02	NC		%	25
5336502	JMV	QC Standard	pH	2018/01/02		100	%	97 - 103
5336502	JMV	RPD	pH	2018/01/02	2.3		%	N/A
5336503	JMV	Spiked Blank	Conductivity	2018/01/02		102	%	80 - 120
5336503	JMV	Method Blank	Conductivity	2018/01/02	2.4, RDL=1.0		uS/cm	
5336503	JMV	RPD	Conductivity	2018/01/02	0.90		%	25
5336610	JMV	QC Standard	Turbidity	2018/01/02		95	%	80 - 120
5336610	JMV	Spiked Blank	Turbidity	2018/01/02		91	%	80 - 120
5336610	JMV	Method Blank	Turbidity	2018/01/02	<0.10		NTU	
5336610	JMV	RPD	Turbidity	2018/01/02	8.7		%	20
5336751	LMP	Matrix Spike [FUP687-03]	Total Organic Carbon (C)	2018/01/02		NC	%	80 - 120
5336751	LMP	Spiked Blank	Total Organic Carbon (C)	2018/01/02		100	%	80 - 120
5336751	LMP	Method Blank	Total Organic Carbon (C)	2018/01/02	<0.50		mg/L	

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Maxxam Job #: B7S9156
Report Date: 2018/01/03

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5336751	LMP	RPD [FUP687-03]	Total Organic Carbon (C)	2018/01/02	5.7 (1)		%	20

N/A = Not Applicable

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.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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) Elevated reporting limit due to sample matrix.

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Maxxam Job #: B7S9156
Report Date: 2018/01/03

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

VALIDATION SIGNATURE PAGE

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

Kevin MacDonald, Inorganics Supervisor

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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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/22
Report #: R4920139
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S2782
Received: 2017/12/13, 16:10

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	10	N/A	2017/12/19	N/A	SM 22 4500-CO2 D
Alkalinity (1)	10	N/A	2017/12/20	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	10	N/A	2017/12/20	N/A	Auto Calc.
Chloride (1)	4	N/A	2017/12/20	ATL SOP 00014	SM 22 4500-Cl- E m
Chloride (1)	6	N/A	2017/12/21	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	10	N/A	2017/12/22	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	4	N/A	2017/12/18	ATL SOP 00004	SM 22 2510B m
Conductance - water (1)	6	N/A	2017/12/19	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	2	N/A	2017/12/19	ATL SOP 00048	SM 22 2340 B
Hardness (calculated as CaCO3) (1)	5	N/A	2017/12/20	ATL SOP 00048	SM 22 2340 B
Hardness (calculated as CaCO3) (1)	3	N/A	2017/12/21	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	10	2017/12/18	2017/12/19	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	7	N/A	2017/12/19	ATL SOP 00058	EPA 6020A R1 m
Metals Water Diss. MS (as rec'd) (1)	2	N/A	2017/12/20	ATL SOP 00058	EPA 6020A R1 m
Metals Water Diss. MS (as rec'd) (1)	1	N/A	2017/12/21	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	10	N/A	2017/12/22	N/A	Auto Calc.
Anion and Cation Sum (1)	7	N/A	2017/12/20	N/A	Auto Calc.
Anion and Cation Sum (1)	3	N/A	2017/12/21	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	10	N/A	2017/12/19	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	10	N/A	2017/12/21	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	10	N/A	2017/12/20	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	10	N/A	2017/12/22	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	1	2017/12/18	2017/12/18	ATL SOP 00103	EPA 8270D 2007 m
PAH in Water by GC/MS (SIM) (1)	9	2017/12/18	2017/12/19	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	4	N/A	2017/12/18	ATL SOP 00003	SM 22 4500-H+ B m
pH (1, 2)	6	N/A	2017/12/19	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	10	N/A	2017/12/22	ATL SOP 00021	SM 22 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	10	N/A	2017/12/22	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	10	N/A	2017/12/22	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	10	N/A	2017/12/21	ATL SOP 00022	EPA 366.0 m

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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/22
Report #: R4920139
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S2782
Received: 2017/12/13, 16:10

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Sulphate (1)	10	N/A	2017/12/20	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	10	N/A	2017/12/22	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	10	N/A	2017/12/22	ATL SOP 00037	SM 22 5310C m
Turbidity (1)	6	N/A	2017/12/19	ATL SOP 00011	EPA 180.1 R2 m
Turbidity (1)	4	N/A	2017/12/20	ATL SOP 00011	EPA 180.1 R2 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.

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.

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.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
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
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/22
Report #: R4920139
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S2782
Received: 2017/12/13, 16:10

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Sr. Project Manager
Email: NMacAskill@maxxam.ca
Phone# (902)567-1255 Ext:17
==========
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Maxxam Job #: B7S2782
Report Date: 2017/12/22

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FTG001			FTG002			FTG003		
Sampling Date		2017/12/13			2017/12/13			2017/12/13		
COC Number		641599			641599			641599		
	UNITS	MSES-104-MWA	RDL	QC Batch	MSES-104-MWB	RDL	QC Batch	MSES-006-MW	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	30.4	N/A	5315711	45.4	N/A	5315711	8.16	N/A	5315711
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	35	1.0	5315948	410	1.0	5315948	100	1.0	5315948
Calculated TDS	mg/L	2100	1.0	5315713	2800	1.0	5315713	540	1.0	5315713
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5315948	<1.0	1.0	5315948	<1.0	1.0	5315948
Cation Sum	me/L	32.4	N/A	5315711	39.4	N/A	5315711	8.37	N/A	5315711
Hardness (CaCO3)	mg/L	1500	1.0	5315709	1600	1.0	5315709	400	1.0	5315709
Ion Balance (% Difference)	%	3.30	N/A	5315710	7.09	N/A	5315710	1.27	N/A	5315710
Langelier Index (@ 20C)	N/A	0.244		5315949	0.556		5315949	0.0670		5315949
Langelier Index (@ 4C)	N/A	0.000		5315950	0.313		5315950	-0.181		5315950
Nitrate (N)	mg/L	<0.050	0.050	5315846	<0.050	0.050	5315846	<0.050	0.050	5315846
Saturation pH (@ 20C)	N/A	7.36		5315949	6.52		5315949	7.34		5315949
Saturation pH (@ 4C)	N/A	7.60		5315950	6.76		5315950	7.59		5315950
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	35	5.0	5321196	410	25	5321196	100 (1)	25	5321196
Dissolved Chloride (Cl)	mg/L	55	1.0	5321203	78	1.0	5321203	14	1.0	5321203
Colour	TCU	<5.0	5.0	5321225	13	5.0	5321225	6.8	5.0	5321225
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	5321230	<0.050	0.050	5321230	<0.050	0.050	5321230
Nitrite (N)	mg/L	<0.010	0.010	5321232	<0.010	0.010	5321232	<0.010	0.010	5321232
Nitrogen (Ammonia Nitrogen)	mg/L	0.61	0.050	5322509	0.49	0.050	5322510	0.056	0.050	5322510
Total Organic Carbon (C)	mg/L	1.6	0.50	5329393	4.0	0.50	5329398	8.1 (1)	5.0	5329398
Orthophosphate (P)	mg/L	0.012	0.010	5321227	<0.010	0.010	5321227	0.022	0.010	5321227
pH	pH	7.60	N/A	5320919	7.07	N/A	5320919	7.41	N/A	5322210
Reactive Silica (SiO2)	mg/L	3.1	0.50	5321220	12	0.50	5321220	27	1.0	5321220
Dissolved Sulphate (SO4)	mg/L	1400	100	5321217	1700	100	5321217	270 (1)	40	5321217
Turbidity	NTU	0.60	0.10	5322358	50	0.10	5322358	2.8	0.10	5322348
Conductivity	uS/cm	2400	1.0	5320921	3400	1.0	5320921	780	1.0	5322215

RDL = Reportable Detection Limit
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(1) Elevated reporting limit due to sample matrix.

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Maxxam Job #: B7S2782
Report Date: 2017/12/22

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FTG004			FTG005			FTG006		
Sampling Date		2017/12/13			2017/12/13			2017/12/13		
COC Number		641599			641599			641599		
	UNITS	MSES-004-MW	RDL	QC Batch	MSES-008-MW	RDL	QC Batch	MSES-012-MWA	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	16.1	N/A	5315711	26.3	N/A	5315711	24.6	N/A	5315711
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	130	1.0	5315948	170	1.0	5315948	190	1.0	5315948
Calculated TDS	mg/L	1000	1.0	5315713	1700	1.0	5315713	1600	1.0	5315713
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5315948	<1.0	1.0	5315948	<1.0	1.0	5315948
Cation Sum	me/L	15.7	N/A	5315711	27.5	N/A	5315711	24.7	N/A	5315711
Hardness (CaCO3)	mg/L	750	1.0	5315709	1100	1.0	5315709	810	1.0	5315709
Ion Balance (% Difference)	%	1.29	N/A	5315710	2.14	N/A	5315710	0.220	N/A	5315710
Langelier Index (@ 20C)	N/A	-0.536		5315949	0.567		5315949	0.287		5315949
Langelier Index (@ 4C)	N/A	-0.782		5315950	0.323		5315950	0.0420		5315950
Nitrate (N)	mg/L	<0.050	0.050	5315846	<0.050	0.050	5315846	0.091	0.050	5315846
Saturation pH (@ 20C)	N/A	7.08		5315949	6.77		5315949	6.88		5315949
Saturation pH (@ 4C)	N/A	7.32		5315950	7.01		5315950	7.12		5315950
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	130 (1)	25	5321236	180 (1)	25	5321236	190 (1)	25	5321236
Dissolved Chloride (Cl)	mg/L	17	1.0	5321246	190	1.0	5321246	300	5.0	5321246
Colour	TCU	21	5.0	5322195	17	5.0	5322195	<5.0	5.0	5322195
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	5322200	<0.050	0.050	5322200	0.091	0.050	5322200
Nitrite (N)	mg/L	<0.010	0.010	5322202	<0.010	0.010	5322202	<0.010	0.010	5322202
Nitrogen (Ammonia Nitrogen)	mg/L	0.18	0.050	5322510	0.071	0.050	5322510	<0.050	0.050	5322510
Total Organic Carbon (C)	mg/L	2.4	0.50	5329398	2.4	0.50	5329398	1.5	0.50	5329398
Orthophosphate (P)	mg/L	<0.010	0.010	5322197	<0.010	0.010	5322197	<0.010	0.010	5322197
pH	pH	6.54	N/A	5322210	7.34	N/A	5320919	7.17	N/A	5322191
Reactive Silica (SiO2)	mg/L	4.6	0.50	5322193	27	1.0	5322193	44	2.5	5322193
Dissolved Sulphate (SO4)	mg/L	630	40	5322190	840 (1)	100	5322190	600 (1)	60	5322190
Turbidity	NTU	4.6	0.10	5322348	170	1.0	5322358	8.7	0.10	5324433
Conductivity	uS/cm	1400	1.0	5322215	2300	1.0	5320921	2200	1.0	5322194

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RESULTS OF ANALYSES OF WATER

Maxxam ID		FTG007			FTG008			FTG009		
Sampling Date		2017/12/13			2017/12/13			2017/12/13		
COC Number		641599			641599			641599		
	UNITS	MCES-006-MW	RDL	QC Batch	SCU11-001-MWA	RDL	QC Batch	SCU11-001-MWB	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	3.57	N/A	5315711	10.8	N/A	5315711	7.89	N/A	5315711
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	120	1.0	5315948	230	1.0	5315948	92	1.0	5315948
Calculated TDS	mg/L	200	1.0	5315713	580	1.0	5315713	440	1.0	5315713
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5315948	1.1	1.0	5315948	<1.0	1.0	5315948
Cation Sum	me/L	3.22	N/A	5315711	10.1	N/A	5315711	7.40	N/A	5315711
Hardness (CaCO3)	mg/L	140	1.0	5315709	380	1.0	5315709	190	1.0	5315709
Ion Balance (% Difference)	%	5.15	N/A	5315710	3.30	N/A	5315710	3.20	N/A	5315710
Langelier Index (@ 20C)	N/A	0.262		5315949	0.690		5315949	-0.384		5315949
Langelier Index (@ 4C)	N/A	0.0120		5315950	0.443		5315950	-0.633		5315950
Nitrate (N)	mg/L	0.59	0.050	5315846	0.16	0.050	5315846	<0.050	0.050	5315846
Saturation pH (@ 20C)	N/A	7.60		5315949	7.02		5315949	7.69		5315949
Saturation pH (@ 4C)	N/A	7.85		5315950	7.27		5315950	7.94		5315950
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	120 (1)	25	5321236	230 (1)	25	5321236	93	5.0	5321236
Dissolved Chloride (Cl)	mg/L	14	1.0	5321246	210	5.0	5321246	190	1.0	5321246
Colour	TCU	15	5.0	5322195	8.3	5.0	5322195	44	5.0	5322195
Nitrate + Nitrite (N)	mg/L	0.60	0.050	5322200	0.16	0.050	5322200	<0.050	0.050	5322200
Nitrite (N)	mg/L	0.016	0.010	5322202	<0.010	0.010	5322202	0.011	0.010	5322202
Nitrogen (Ammonia Nitrogen)	mg/L	0.19	0.050	5322510	7.1	0.25	5322510	3.3	0.25	5322510
Total Organic Carbon (C)	mg/L	5.5	0.50	5329398	3.0	0.50	5329398	8.4 (1)	5.0	5329398
Orthophosphate (P)	mg/L	<0.010	0.010	5322197	0.68	0.050	5322197	1.8	0.050	5322197
pH	pH	7.86	N/A	5320919	7.71	N/A	5322191	7.30	N/A	5322196
Reactive Silica (SiO2)	mg/L	9.5	0.50	5322193	11	0.50	5322193	5.8	0.50	5322193
Dissolved Sulphate (SO4)	mg/L	35	2.0	5322190	11	2.0	5322190	27	2.0	5322190
Turbidity	NTU	1.0	0.10	5322358	4.5	0.10	5324433	2.5	0.10	5324430
Conductivity	uS/cm	360	1.0	5320921	1100	1.0	5322194	860	1.0	5322199

RDL = Reportable Detection Limit
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RESULTS OF ANALYSES OF WATER

Maxxam ID		FTG010		
Sampling Date		2017/12/13		
COC Number		641599		
	UNITS	FD-07	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	16.1	N/A	5315711
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	130	1.0	5315948
Calculated TDS	mg/L	1000	1.0	5315713
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5315948
Cation Sum	me/L	16.8	N/A	5315711
Hardness (CaCO3)	mg/L	810	1.0	5315709
Ion Balance (% Difference)	%	2.04	N/A	5315710
Langelier Index (@ 20C)	N/A	-0.429		5315949
Langelier Index (@ 4C)	N/A	-0.674		5315950
Nitrate (N)	mg/L	<0.050	0.050	5315846
Saturation pH (@ 20C)	N/A	7.04		5315949
Saturation pH (@ 4C)	N/A	7.28		5315950
Inorganics				
Total Alkalinity (Total as CaCO3)	mg/L	130 (1)	25	5321236
Dissolved Chloride (Cl)	mg/L	17	1.0	5321246
Colour	TCU	23	5.0	5322195
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	5322200
Nitrite (N)	mg/L	<0.010	0.010	5322202
Nitrogen (Ammonia Nitrogen)	mg/L	0.19	0.050	5322510
Total Organic Carbon (C)	mg/L	2.5	0.50	5329398
Orthophosphate (P)	mg/L	<0.010	0.010	5322197
pH	pH	6.61	N/A	5322196
Reactive Silica (SiO2)	mg/L	4.6	0.50	5322193
Dissolved Sulphate (SO4)	mg/L	630	40	5322190
Turbidity	NTU	6.6	0.10	5324430
Conductivity	uS/cm	1300	1.0	5322199

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
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(1) Elevated reporting limit due to sample matrix.

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MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		FTG001	FTG002	FTG003	FTG004	FTG005		
Sampling Date		2017/12/13	2017/12/13	2017/12/13	2017/12/13	2017/12/13		
COC Number		641599	641599	641599	641599	641599		
	UNITS	MSES-104-MWA	MSES-104-MWB	MSES-006-MW	MSES-004-MW	MSES-008-MW	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	5320434

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FTG006	FTG007	FTG008	FTG009	FTG010		
Sampling Date		2017/12/13	2017/12/13	2017/12/13	2017/12/13	2017/12/13		
COC Number		641599	641599	641599	641599	641599		
	UNITS	MSES-012-MWA	MCES-006-MW	SCU11-001-MWA	SCU11-001-MWB	FD-07	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	5320434

RDL = Reportable Detection Limit
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ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FTG001		FTG002		FTG003		FTG004		
Sampling Date		2017/12/13		2017/12/13		2017/12/13		2017/12/13		
COC Number		641599		641599		641599		641599		
	UNITS	MSES-104-MWA	RDL	MSES-104-MWB	RDL	MSES-006-MW	QC Batch	MSES-004-MW	RDL	QC Batch
Metals										
Dissolved Aluminum (Al)	ug/L	<5.0	5.0	89	50	8.9	5322172	61	5.0	5322173
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	<10	10	<1.0	5322172	<1.0	1.0	5322173
Dissolved Arsenic (As)	ug/L	1.4	1.0	<10	10	1.9	5322172	1.9	1.0	5322173
Dissolved Barium (Ba)	ug/L	17	1.0	15	10	23	5322172	9.4	1.0	5322173
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	<10	10	<1.0	5322172	<1.0	1.0	5322173
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	<20	20	<2.0	5322172	<2.0	2.0	5322173
Dissolved Boron (B)	ug/L	<50	50	<500	500	<50	5322172	80	50	5322173
Dissolved Cadmium (Cd)	ug/L	0.054	0.010	<0.10	0.10	0.013	5322172	0.027	0.010	5322173
Dissolved Calcium (Ca)	ug/L	560000	100	370000	1000	130000	5322172	240000	100	5322173
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	<10	10	1.1	5322172	<1.0	1.0	5322173
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	8.7	4.0	<0.40	5322172	0.52	0.40	5322173
Dissolved Copper (Cu)	ug/L	<2.0	2.0	<20	20	<2.0	5322172	<2.0	2.0	5322173
Dissolved Iron (Fe)	ug/L	200	50	4300	500	<50	5322172	1100	50	5322173
Dissolved Lead (Pb)	ug/L	<0.50	0.50	<5.0	5.0	<0.50	5322172	<0.50	0.50	5322173
Dissolved Magnesium (Mg)	ug/L	37000	100	170000	1000	18000	5322172	39000	100	5322173
Dissolved Manganese (Mn)	ug/L	91	2.0	63000	20	86	5322172	860	2.0	5322173
Dissolved Molybdenum (Mo)	ug/L	6.8	2.0	<20	20	<2.0	5322172	<2.0	2.0	5322173
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	31	20	<2.0	5322172	<2.0	2.0	5322173
Dissolved Phosphorus (P)	ug/L	<100	100	<1000	1000	<100	5322172	<100	100	5322173
Dissolved Potassium (K)	ug/L	9200	100	12000	1000	2300	5322172	2000	100	5322173
Dissolved Selenium (Se)	ug/L	<1.0	1.0	<10	10	1.2	5322172	<1.0	1.0	5322173
Dissolved Silver (Ag)	ug/L	<0.10	0.10	<1.0	1.0	<0.10	5322172	<0.10	0.10	5322173
Dissolved Sodium (Na)	ug/L	32000	100	150000	1000	7000	5322172	12000	100	5322173
Dissolved Strontium (Sr)	ug/L	590	2.0	1900	20	330	5322172	270	2.0	5322173
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	<1.0	1.0	<0.10	5322172	<0.10	0.10	5322173
Dissolved Tin (Sn)	ug/L	<2.0	2.0	<20	20	<2.0	5322172	<2.0	2.0	5322173
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	<20	20	<2.0	5322172	<2.0	2.0	5322173
Dissolved Uranium (U)	ug/L	<0.10	0.10	1.7	1.0	3.6	5322172	0.17	0.10	5322173
Dissolved Vanadium (V)	ug/L	<2.0	2.0	<20	20	30	5322172	<2.0	2.0	5322173
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	<50	50	<5.0	5322172	99	5.0	5322173

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Maxxam Job #: B7S2782
Report Date: 2017/12/22

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FTG005	FTG006	FTG007	FTG008	FTG009		
Sampling Date		2017/12/13	2017/12/13	2017/12/13	2017/12/13	2017/12/13		
COC Number		641599	641599	641599	641599	641599		
	UNITS	MSES-008-MW	MSES-012-MWA	MCES-006-MW	SCU11-001-MWA	SCU11-001-MWB	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	<5.0	7.0	20	6.3	19	5.0	5322173
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5322173
Dissolved Arsenic (As)	ug/L	11	<1.0	4.3	2.0	<1.0	1.0	5322173
Dissolved Barium (Ba)	ug/L	7.8	4.7	120	350	77	1.0	5322173
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5322173
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5322173
Dissolved Boron (B)	ug/L	65	<50	<50	<50	<50	50	5322173
Dissolved Cadmium (Cd)	ug/L	0.025	0.025	0.018	0.021	<0.010	0.010	5322173
Dissolved Calcium (Ca)	ug/L	410000	290000	51000	130000	64000	100	5322173
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5322173
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	5322173
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	5.2	<2.0	<2.0	2.0	5322173
Dissolved Iron (Fe)	ug/L	13000	670	130	200	380	50	5322173
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5322173
Dissolved Magnesium (Mg)	ug/L	25000	23000	2900	14000	7200	100	5322173
Dissolved Manganese (Mn)	ug/L	1100	95	1100	510	520	2.0	5322173
Dissolved Molybdenum (Mo)	ug/L	2.4	<2.0	3.7	<2.0	<2.0	2.0	5322173
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5322173
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	820	2000	100	5322173
Dissolved Potassium (K)	ug/L	4900	3700	3100	8100	10000	100	5322173
Dissolved Selenium (Se)	ug/L	<1.0	3.5	1.7	<1.0	<1.0	1.0	5322173
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	0.15	<0.10	0.10	5322173
Dissolved Sodium (Na)	ug/L	100000	190000	7600	43000	72000	100	5322173
Dissolved Strontium (Sr)	ug/L	570	340	360	2100	1200	2.0	5322173
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5322173
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5322173
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5322173
Dissolved Uranium (U)	ug/L	0.57	0.38	0.91	0.50	<0.10	0.10	5322173
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	23	<2.0	<2.0	2.0	5322173
Dissolved Zinc (Zn)	ug/L	38	42	<5.0	<5.0	<5.0	5.0	5322173

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FTG010		
Sampling Date		2017/12/13		
COC Number		641599		
	UNITS	FD-07	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	63	5.0	5322173
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	5322173
Dissolved Arsenic (As)	ug/L	2.1	1.0	5322173
Dissolved Barium (Ba)	ug/L	9.3	1.0	5322173
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	5322173
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	5322173
Dissolved Boron (B)	ug/L	82	50	5322173
Dissolved Cadmium (Cd)	ug/L	0.016	0.010	5322173
Dissolved Calcium (Ca)	ug/L	260000	100	5322173
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	5322173
Dissolved Cobalt (Co)	ug/L	0.48	0.40	5322173
Dissolved Copper (Cu)	ug/L	<2.0	2.0	5322173
Dissolved Iron (Fe)	ug/L	1100	50	5322173
Dissolved Lead (Pb)	ug/L	<0.50	0.50	5322173
Dissolved Magnesium (Mg)	ug/L	39000	100	5322173
Dissolved Manganese (Mn)	ug/L	860	2.0	5322173
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	5322173
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	5322173
Dissolved Phosphorus (P)	ug/L	<100	100	5322173
Dissolved Potassium (K)	ug/L	2000	100	5322173
Dissolved Selenium (Se)	ug/L	<1.0	1.0	5322173
Dissolved Silver (Ag)	ug/L	<0.10	0.10	5322173
Dissolved Sodium (Na)	ug/L	12000	100	5322173
Dissolved Strontium (Sr)	ug/L	270	2.0	5322173
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	5322173
Dissolved Tin (Sn)	ug/L	<2.0	2.0	5322173
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	5322173
Dissolved Uranium (U)	ug/L	0.15	0.10	5322173
Dissolved Vanadium (V)	ug/L	<2.0	2.0	5322173
Dissolved Zinc (Zn)	ug/L	100	5.0	5322173

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7S2782
Report Date: 2017/12/22

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FTG001	FTG002	FTG003	FTG004	FTG005		
Sampling Date		2017/12/13	2017/12/13	2017/12/13	2017/12/13	2017/12/13		
COC Number		641599	641599	641599	641599	641599		
	UNITS	MSES-104-MWA	MSES-104-MWB	MSES-006-MW	MSES-004-MW	MSES-008-MW	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	1.2	39	0.25	<0.050	0.34	0.050	5320488
2-Methylnaphthalene	ug/L	0.36	<0.050	<0.050	<0.050	<0.050	0.050	5320488
Acenaphthene	ug/L	7.3	16	0.44	<0.010	1.6	0.010	5320488
Acenaphthylene	ug/L	6.3	28	0.69	<0.010	1.9	0.010	5320488
Anthracene	ug/L	0.53	1.1	<0.010	<0.010	0.13	0.010	5320488
Benzo(a)anthracene	ug/L	0.20	0.031	<0.010	<0.010	0.062	0.010	5320488
Benzo(a)pyrene	ug/L	0.028	<0.010	<0.010	<0.010	<0.010	0.010	5320488
Benzo(b)fluoranthene	ug/L	0.026	<0.010	<0.010	<0.010	<0.010	0.010	5320488
Benzo(b/j)fluoranthene	ug/L	0.047	<0.020	<0.020	<0.020	<0.020	0.020	5315238
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5320488
Benzo(j)fluoranthene	ug/L	0.021	<0.010	<0.010	<0.010	<0.010	0.010	5320488
Benzo(k)fluoranthene	ug/L	0.016	<0.010	<0.010	<0.010	<0.010	0.010	5320488
Chrysene	ug/L	0.17	0.024	<0.010	<0.010	0.050	0.010	5320488
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5320488
Fluoranthene	ug/L	3.4	0.71	<0.010	<0.010	1.3	0.010	5320488
Fluorene	ug/L	1.9	11	0.12	<0.010	2.9	0.010	5320488
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5320488
Naphthalene	ug/L	6.5	3.3	0.33	<0.20	<0.20	0.20	5320488
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5320488
Phenanthrene	ug/L	0.60	6.9	<0.010	<0.010	0.83	0.010	5320488
Pyrene	ug/L	2.0	0.38	<0.010	<0.010	0.88	0.010	5320488
Surrogate Recovery (%)								
D10-Anthracene	%	90	97	69	97	90		5320488
D14-Terphenyl	%	101	99	71	100	107		5320488
D8-Acenaphthylene	%	69	72	50	69	70		5320488

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FTG006		FTG007		FTG008		
Sampling Date		2017/12/13		2017/12/13		2017/12/13		
COC Number		641599		641599		641599		
	UNITS	MSES-012-MWA	QC Batch	MCES-006-MW	QC Batch	SCU11-001-MWA	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	<0.050	5320488	<0.050	5322398	<0.050	0.050	5320488
2-Methylnaphthalene	ug/L	<0.050	5320488	<0.050	5322398	<0.050	0.050	5320488
Acenaphthene	ug/L	0.019	5320488	<0.010	5322398	<0.010	0.010	5320488
Acenaphthylene	ug/L	0.020	5320488	0.014	5322398	<0.010	0.010	5320488
Anthracene	ug/L	0.060	5320488	0.012	5322398	<0.010	0.010	5320488
Benzo(a)anthracene	ug/L	0.13	5320488	<0.010	5322398	<0.010	0.010	5320488
Benzo(a)pyrene	ug/L	0.083	5320488	<0.010	5322398	<0.010	0.010	5320488
Benzo(b)fluoranthene	ug/L	0.067	5320488	<0.010	5322398	<0.010	0.010	5320488
Benzo(b/j)fluoranthene	ug/L	0.12	5315238	<0.020	5315238	<0.020	0.020	5315238
Benzo(g,h,i)perylene	ug/L	0.037	5320488	<0.010	5322398	<0.010	0.010	5320488
Benzo(j)fluoranthene	ug/L	0.052	5320488	<0.010	5322398	<0.010	0.010	5320488
Benzo(k)fluoranthene	ug/L	0.046	5320488	<0.010	5322398	<0.010	0.010	5320488
Chrysene	ug/L	0.12	5320488	<0.010	5322398	<0.010	0.010	5320488
Dibenz(a,h)anthracene	ug/L	0.013	5320488	<0.010	5322398	<0.010	0.010	5320488
Fluoranthene	ug/L	0.31	5320488	0.010	5322398	<0.010	0.010	5320488
Fluorene	ug/L	0.048	5320488	<0.010	5322398	<0.010	0.010	5320488
Indeno(1,2,3-cd)pyrene	ug/L	0.035	5320488	<0.010	5322398	<0.010	0.010	5320488
Naphthalene	ug/L	<0.20	5320488	<0.20	5322398	<0.20	0.20	5320488
Perylene	ug/L	0.021	5320488	<0.010	5322398	<0.010	0.010	5320488
Phenanthrene	ug/L	0.16	5320488	<0.010	5322398	<0.010	0.010	5320488
Pyrene	ug/L	0.22	5320488	0.091	5322398	<0.010	0.010	5320488
Surrogate Recovery (%)								
D10-Anthracene	%	105	5320488	10 (1)	5322398	86		5320488
D14-Terphenyl	%	106	5320488	70	5322398	89		5320488
D8-Acenaphthylene	%	75	5320488	8.7 (1)	5322398	56		5320488

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PAH surrogate(s) not within acceptance limits. Analysis was repeated with similar results.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FTG009		FTG010		
Sampling Date		2017/12/13		2017/12/13		
COC Number		641599		641599		
	UNITS	SCU11-001-MWB	QC Batch	FD-07	RDL	QC Batch
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	ug/L	<0.050	5322398	<0.050	0.050	5320488
2-Methylnaphthalene	ug/L	<0.050	5322398	<0.050	0.050	5320488
Acenaphthene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Acenaphthylene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Anthracene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Benzo(a)anthracene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Benzo(a)pyrene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Benzo(b)fluoranthene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Benzo(b/j)fluoranthene	ug/L	<0.020	5315238	<0.020	0.020	5315238
Benzo(g,h,i)perylene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Benzo(j)fluoranthene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Benzo(k)fluoranthene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Chrysene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Dibenz(a,h)anthracene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Fluoranthene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Fluorene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Naphthalene	ug/L	<0.20	5322398	<0.20	0.20	5320488
Perylene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Phenanthrene	ug/L	<0.010	5322398	<0.010	0.010	5320488
Pyrene	ug/L	<0.010	5322398	0.010	0.010	5320488
Surrogate Recovery (%)						
D10-Anthracene	%	50	5322398	112		5320488
D14-Terphenyl	%	60	5322398	111		5320488
D8-Acenaphthylene	%	42 (1)	5322398	78		5320488

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PAH surrogate(s) not within acceptance limits. Analysis was repeated with similar results.

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GENERAL COMMENTS

Sample FTG002 [MSES-104-MWB] : Elevated reporting limits for trace metals due to sample matrix.
Poor RCAp Ion Balance due to sample matrix. Cation sum does not include contribution from Mn.

Sample FTG007 [MCES-006-MW] : Poor RCAp Ion Balance due to sample matrix. Cation sum does not include contribution from Mn.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5320434	ARS	Matrix Spike	Total Mercury (Hg)	2017/12/19		97	%	80 - 120
5320434	ARS	Spiked Blank	Total Mercury (Hg)	2017/12/19		99	%	80 - 120
5320434	ARS	Method Blank	Total Mercury (Hg)	2017/12/19	<0.013		ug/L	
5320434	ARS	RPD	Total Mercury (Hg)	2017/12/19	NC		%	20
5320488	LGE	Matrix Spike	D10-Anthracene	2017/12/18		78	%	50 - 130
			D14-Terphenyl	2017/12/18		80	%	50 - 130
			D8-Acenaphthylene	2017/12/18		58	%	50 - 130
			1-Methylnaphthalene	2017/12/18		67	%	30 - 130
			2-Methylnaphthalene	2017/12/18		74	%	30 - 130
			Acenaphthene	2017/12/18		81	%	30 - 130
			Acenaphthylene	2017/12/18		69	%	30 - 130
			Anthracene	2017/12/18		83	%	30 - 130
			Benzo(a)anthracene	2017/12/18		76	%	30 - 130
			Benzo(a)pyrene	2017/12/18		76	%	30 - 130
			Benzo(b)fluoranthene	2017/12/18		102	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/18		84	%	30 - 130
			Benzo(j)fluoranthene	2017/12/18		83	%	30 - 130
			Benzo(k)fluoranthene	2017/12/18		84	%	30 - 130
			Chrysene	2017/12/18		77	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/18		73	%	30 - 130
			Fluoranthene	2017/12/18		79	%	30 - 130
			Fluorene	2017/12/18		73	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/18		74	%	30 - 130
			Naphthalene	2017/12/18		71	%	30 - 130
			Perylene	2017/12/18		78	%	30 - 130
			Phenanthrene	2017/12/18		77	%	30 - 130
			Pyrene	2017/12/18		75	%	30 - 130
5320488	LGE	Spiked Blank	D10-Anthracene	2017/12/18		77	%	50 - 130
			D14-Terphenyl	2017/12/18		92	%	50 - 130
			D8-Acenaphthylene	2017/12/18		70	%	50 - 130
			1-Methylnaphthalene	2017/12/18		77	%	30 - 130
			2-Methylnaphthalene	2017/12/18		84	%	30 - 130
			Acenaphthene	2017/12/18		97	%	30 - 130
			Acenaphthylene	2017/12/18		84	%	30 - 130
			Anthracene	2017/12/18		84	%	30 - 130
			Benzo(a)anthracene	2017/12/18		86	%	30 - 130
			Benzo(a)pyrene	2017/12/18		84	%	30 - 130
			Benzo(b)fluoranthene	2017/12/18		96	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/18		83	%	30 - 130
			Benzo(j)fluoranthene	2017/12/18		92	%	30 - 130
			Benzo(k)fluoranthene	2017/12/18		91	%	30 - 130
			Chrysene	2017/12/18		84	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/18		64	%	30 - 130
			Fluoranthene	2017/12/18		101	%	30 - 130
			Fluorene	2017/12/18		89	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/18		76	%	30 - 130
			Naphthalene	2017/12/18		82	%	30 - 130
			Perylene	2017/12/18		82	%	30 - 130
			Phenanthrene	2017/12/18		78	%	30 - 130
			Pyrene	2017/12/18		92	%	30 - 130
5320488	LGE	Method Blank	D10-Anthracene	2017/12/18		90	%	50 - 130
			D14-Terphenyl	2017/12/18		94	%	50 - 130
			D8-Acenaphthylene	2017/12/18		68	%	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
			1-Methylnaphthalene	2017/12/18	<0.050		ug/L	
			2-Methylnaphthalene	2017/12/18	<0.050		ug/L	
			Acenaphthene	2017/12/18	<0.010		ug/L	
			Acenaphthylene	2017/12/18	<0.010		ug/L	
			Anthracene	2017/12/18	<0.010		ug/L	
			Benzo(a)anthracene	2017/12/18	<0.010		ug/L	
			Benzo(a)pyrene	2017/12/18	<0.010		ug/L	
			Benzo(b)fluoranthene	2017/12/18	<0.010		ug/L	
			Benzo(g,h,i)perylene	2017/12/18	<0.010		ug/L	
			Benzo(j)fluoranthene	2017/12/18	<0.010		ug/L	
			Benzo(k)fluoranthene	2017/12/18	<0.010		ug/L	
			Chrysene	2017/12/18	<0.010		ug/L	
			Dibenz(a,h)anthracene	2017/12/18	<0.010		ug/L	
			Fluoranthene	2017/12/18	<0.010		ug/L	
			Fluorene	2017/12/18	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/12/18	<0.010		ug/L	
			Naphthalene	2017/12/18	<0.20		ug/L	
			Perylene	2017/12/18	<0.010		ug/L	
			Phenanthrene	2017/12/18	<0.010		ug/L	
			Pyrene	2017/12/18	<0.010		ug/L	
5320488	LGE	RPD	1-Methylnaphthalene	2017/12/19	NC		%	40
			2-Methylnaphthalene	2017/12/19	NC		%	40
			Acenaphthene	2017/12/19	NC		%	40
			Acenaphthylene	2017/12/19	NC		%	40
			Anthracene	2017/12/19	NC		%	40
			Benzo(a)anthracene	2017/12/19	NC		%	40
			Benzo(a)pyrene	2017/12/19	NC		%	40
			Benzo(b)fluoranthene	2017/12/19	NC		%	40
			Benzo(g,h,i)perylene	2017/12/19	NC		%	40
			Benzo(j)fluoranthene	2017/12/19	NC		%	40
			Benzo(k)fluoranthene	2017/12/19	NC		%	40
			Chrysene	2017/12/19	NC		%	40
			Dibenz(a,h)anthracene	2017/12/19	NC		%	40
			Fluoranthene	2017/12/19	NC		%	40
			Fluorene	2017/12/19	NC		%	40
			Indeno(1,2,3-cd)pyrene	2017/12/19	NC		%	40
			Naphthalene	2017/12/19	NC		%	40
			Perylene	2017/12/19	NC		%	40
			Phenanthrene	2017/12/19	NC		%	40
			Pyrene	2017/12/19	NC		%	40
5320919	JMV	QC Standard	pH	2017/12/18		100	%	97 - 103
5320919	JMV	RPD [FTG007-01]	pH	2017/12/18	1.5		%	N/A
5320921	JMV	Spiked Blank	Conductivity	2017/12/18		101	%	80 - 120
5320921	JMV	Method Blank	Conductivity	2017/12/18	1.9, RDL=1.0		uS/cm	
5320921	JMV	RPD [FTG007-01]	Conductivity	2017/12/18	0.57		%	25
5321196	NRG	Matrix Spike	Total Alkalinity (Total as CaCO3)	2017/12/20		97	%	80 - 120
5321196	NRG	Spiked Blank	Total Alkalinity (Total as CaCO3)	2017/12/20		101	%	80 - 120
5321196	NRG	Method Blank	Total Alkalinity (Total as CaCO3)	2017/12/20	<5.0		mg/L	
5321196	NRG	RPD	Total Alkalinity (Total as CaCO3)	2017/12/20	1.1		%	25
5321203	NRG	Matrix Spike	Dissolved Chloride (Cl)	2017/12/20		98	%	80 - 120
5321203	NRG	QC Standard	Dissolved Chloride (Cl)	2017/12/21		109	%	80 - 120
5321203	NRG	Spiked Blank	Dissolved Chloride (Cl)	2017/12/20		104	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5321203	NRG	Method Blank	Dissolved Chloride (Cl)	2017/12/20	<1.0		mg/L	
5321203	NRG	RPD	Dissolved Chloride (Cl)	2017/12/20	0.97		%	25
5321217	NRG	Matrix Spike	Dissolved Sulphate (SO4)	2017/12/20		NC	%	80 - 120
5321217	NRG	Spiked Blank	Dissolved Sulphate (SO4)	2017/12/20		102	%	80 - 120
5321217	NRG	Method Blank	Dissolved Sulphate (SO4)	2017/12/20	<2.0		mg/L	
5321217	NRG	RPD	Dissolved Sulphate (SO4)	2017/12/20	1.8		%	25
5321220	NRG	Matrix Spike	Reactive Silica (SiO2)	2017/12/21		NC	%	80 - 120
5321220	NRG	Spiked Blank	Reactive Silica (SiO2)	2017/12/21		98	%	80 - 120
5321220	NRG	Method Blank	Reactive Silica (SiO2)	2017/12/21	<0.50		mg/L	
5321220	NRG	RPD	Reactive Silica (SiO2)	2017/12/21	3.7		%	25
5321225	NRG	Spiked Blank	Colour	2017/12/22		96	%	80 - 120
5321225	NRG	Method Blank	Colour	2017/12/22	<5.0		TCU	
5321225	NRG	RPD	Colour	2017/12/22	NC		%	20
5321227	NRG	Matrix Spike	Orthophosphate (P)	2017/12/22		89	%	80 - 120
5321227	NRG	Spiked Blank	Orthophosphate (P)	2017/12/22		88	%	80 - 120
5321227	NRG	Method Blank	Orthophosphate (P)	2017/12/22	<0.010		mg/L	
5321227	NRG	RPD	Orthophosphate (P)	2017/12/22	NC		%	25
5321230	NRG	Matrix Spike	Nitrate + Nitrite (N)	2017/12/21		87	%	80 - 120
5321230	NRG	Spiked Blank	Nitrate + Nitrite (N)	2017/12/21		87	%	80 - 120
5321230	NRG	Method Blank	Nitrate + Nitrite (N)	2017/12/21	<0.050		mg/L	
5321230	NRG	RPD	Nitrate + Nitrite (N)	2017/12/21	4.1		%	25
5321232	NRG	Matrix Spike	Nitrite (N)	2017/12/20		98	%	80 - 120
5321232	NRG	Spiked Blank	Nitrite (N)	2017/12/20		95	%	80 - 120
5321232	NRG	Method Blank	Nitrite (N)	2017/12/20	<0.010		mg/L	
5321232	NRG	RPD	Nitrite (N)	2017/12/20	NC		%	25
5321236	NRG	Matrix Spike [FTG009-01]	Total Alkalinity (Total as CaCO3)	2017/12/20		NC	%	80 - 120
5321236	NRG	Spiked Blank	Total Alkalinity (Total as CaCO3)	2017/12/20		103	%	80 - 120
5321236	NRG	Method Blank	Total Alkalinity (Total as CaCO3)	2017/12/20	<5.0		mg/L	
5321236	NRG	RPD [FTG009-01]	Total Alkalinity (Total as CaCO3)	2017/12/20	0.31		%	25
5321246	NRG	Matrix Spike [FTG009-01]	Dissolved Chloride (Cl)	2017/12/21		NC	%	80 - 120
5321246	NRG	QC Standard	Dissolved Chloride (Cl)	2017/12/21		113	%	80 - 120
5321246	NRG	Spiked Blank	Dissolved Chloride (Cl)	2017/12/20		104	%	80 - 120
5321246	NRG	Method Blank	Dissolved Chloride (Cl)	2017/12/20	<1.0		mg/L	
5321246	NRG	RPD [FTG009-01]	Dissolved Chloride (Cl)	2017/12/21	0.093		%	25
5322172	BAN	Matrix Spike	Dissolved Aluminum (Al)	2017/12/19		102	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/19		101	%	80 - 120
			Dissolved Arsenic (As)	2017/12/19		102	%	80 - 120
			Dissolved Barium (Ba)	2017/12/19		96	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/19		100	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/19		99	%	80 - 120
			Dissolved Boron (B)	2017/12/19		105	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/19		103	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/19		NC	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/19		98	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/19		98	%	80 - 120
			Dissolved Copper (Cu)	2017/12/19		95	%	80 - 120
			Dissolved Iron (Fe)	2017/12/19		103	%	80 - 120
			Dissolved Lead (Pb)	2017/12/19		98	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/19		NC	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/19		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/19		108	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/19		97	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/19		106	%	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)	2017/12/19		100	%	80 - 120
			Dissolved Selenium (Se)	2017/12/19		106	%	80 - 120
			Dissolved Silver (Ag)	2017/12/19		91	%	80 - 120
			Dissolved Sodium (Na)	2017/12/19		NC	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/19		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/19		103	%	80 - 120
			Dissolved Tin (Sn)	2017/12/19		110	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/19		102	%	80 - 120
			Dissolved Uranium (U)	2017/12/19		108	%	80 - 120
			Dissolved Vanadium (V)	2017/12/19		102	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/19		100	%	80 - 120
5322172	BAN	Spiked Blank	Dissolved Aluminum (Al)	2017/12/19		102	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/19		96	%	80 - 120
			Dissolved Arsenic (As)	2017/12/19		100	%	80 - 120
			Dissolved Barium (Ba)	2017/12/19		95	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/19		98	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/19		100	%	80 - 120
			Dissolved Boron (B)	2017/12/19		100	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/19		103	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/19		100	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/19		98	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/19		100	%	80 - 120
			Dissolved Copper (Cu)	2017/12/19		99	%	80 - 120
			Dissolved Iron (Fe)	2017/12/19		103	%	80 - 120
			Dissolved Lead (Pb)	2017/12/19		97	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/19		104	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/19		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/19		104	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/19		101	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/19		104	%	80 - 120
			Dissolved Potassium (K)	2017/12/19		99	%	80 - 120
			Dissolved Selenium (Se)	2017/12/19		103	%	80 - 120
			Dissolved Silver (Ag)	2017/12/19		102	%	80 - 120
			Dissolved Sodium (Na)	2017/12/19		101	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/19		102	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/19		100	%	80 - 120
			Dissolved Tin (Sn)	2017/12/19		105	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/19		102	%	80 - 120
			Dissolved Uranium (U)	2017/12/19		102	%	80 - 120
			Dissolved Vanadium (V)	2017/12/19		101	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/19		102	%	80 - 120
5322172	BAN	Method Blank	Dissolved Aluminum (Al)	2017/12/19	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/19	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/19	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/19	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/19	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/19	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/19	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/19	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/19	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/19	<1.0		ug/L	
			Dissolved Cobalt (Co)	2017/12/19	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/19	<2.0		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Iron (Fe)	2017/12/19	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/19	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/19	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/19	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/19	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/19	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/19	<100		ug/L	
			Dissolved Potassium (K)	2017/12/19	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/19	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/19	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/19	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/19	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/19	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/19	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/19	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/19	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/19	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/19	<5.0		ug/L	
5322172	BAN	RPD	Dissolved Aluminum (Al)	2017/12/19	3.3		%	20
			Dissolved Antimony (Sb)	2017/12/19	NC		%	20
			Dissolved Arsenic (As)	2017/12/19	NC		%	20
			Dissolved Barium (Ba)	2017/12/19	0.0030		%	20
			Dissolved Beryllium (Be)	2017/12/19	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/19	NC		%	20
			Dissolved Boron (B)	2017/12/19	0.62		%	20
			Dissolved Cadmium (Cd)	2017/12/19	NC		%	20
			Dissolved Calcium (Ca)	2017/12/19	5.9		%	20
			Dissolved Chromium (Cr)	2017/12/19	NC		%	20
			Dissolved Cobalt (Co)	2017/12/19	NC		%	20
			Dissolved Copper (Cu)	2017/12/19	NC		%	20
			Dissolved Iron (Fe)	2017/12/19	NC		%	20
			Dissolved Lead (Pb)	2017/12/19	NC		%	20
			Dissolved Magnesium (Mg)	2017/12/19	0.73		%	20
			Dissolved Manganese (Mn)	2017/12/19	0.68		%	20
			Dissolved Molybdenum (Mo)	2017/12/19	NC		%	20
			Dissolved Nickel (Ni)	2017/12/19	NC		%	20
			Dissolved Phosphorus (P)	2017/12/19	NC		%	20
			Dissolved Potassium (K)	2017/12/19	1.1		%	20
			Dissolved Selenium (Se)	2017/12/19	NC		%	20
			Dissolved Silver (Ag)	2017/12/19	NC		%	20
			Dissolved Sodium (Na)	2017/12/19	0.20		%	20
			Dissolved Strontium (Sr)	2017/12/19	0.79		%	20
			Dissolved Thallium (Tl)	2017/12/19	NC		%	20
			Dissolved Tin (Sn)	2017/12/19	NC		%	20
			Dissolved Titanium (Ti)	2017/12/19	NC		%	20
			Dissolved Uranium (U)	2017/12/19	2.3		%	20
			Dissolved Vanadium (V)	2017/12/19	NC		%	20
			Dissolved Zinc (Zn)	2017/12/19	NC		%	20
5322173	BAN	Matrix Spike [FTG005-04]	Dissolved Aluminum (Al)	2017/12/19		94	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/19		105	%	80 - 120
			Dissolved Arsenic (As)	2017/12/19		105	%	80 - 120
			Dissolved Barium (Ba)	2017/12/19		102	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/19		101	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Bismuth (Bi)	2017/12/19		100	%	80 - 120
			Dissolved Boron (B)	2017/12/19		104	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/19		104	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/19		NC	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/19		99	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/19		99	%	80 - 120
			Dissolved Copper (Cu)	2017/12/19		95	%	80 - 120
			Dissolved Iron (Fe)	2017/12/19		NC	%	80 - 120
			Dissolved Lead (Pb)	2017/12/19		98	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/19		NC	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/19		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/19		109	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/19		98	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/19		105	%	80 - 120
			Dissolved Potassium (K)	2017/12/19		101	%	80 - 120
			Dissolved Selenium (Se)	2017/12/19		108	%	80 - 120
			Dissolved Silver (Ag)	2017/12/19		101	%	80 - 120
			Dissolved Sodium (Na)	2017/12/19		NC	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/19		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/19		104	%	80 - 120
			Dissolved Tin (Sn)	2017/12/19		110	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/19		106	%	80 - 120
			Dissolved Uranium (U)	2017/12/19		108	%	80 - 120
			Dissolved Vanadium (V)	2017/12/19		104	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/19		98	%	80 - 120
5322173	BAN	Spiked Blank	Dissolved Aluminum (Al)	2017/12/19		97	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/19		94	%	80 - 120
			Dissolved Arsenic (As)	2017/12/19		98	%	80 - 120
			Dissolved Barium (Ba)	2017/12/19		95	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/19		99	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/19		101	%	80 - 120
			Dissolved Boron (B)	2017/12/19		102	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/19		104	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/19		101	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/19		95	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/19		98	%	80 - 120
			Dissolved Copper (Cu)	2017/12/19		97	%	80 - 120
			Dissolved Iron (Fe)	2017/12/19		100	%	80 - 120
			Dissolved Lead (Pb)	2017/12/19		98	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/19		101	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/19		97	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/19		101	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/19		99	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/19		102	%	80 - 120
			Dissolved Potassium (K)	2017/12/19		99	%	80 - 120
			Dissolved Selenium (Se)	2017/12/19		105	%	80 - 120
			Dissolved Silver (Ag)	2017/12/19		100	%	80 - 120
			Dissolved Sodium (Na)	2017/12/19		99	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/19		97	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/19		102	%	80 - 120
			Dissolved Tin (Sn)	2017/12/19		103	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/19		100	%	80 - 120
			Dissolved Uranium (U)	2017/12/19		104	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Vanadium (V)	2017/12/19		100	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/19		101	%	80 - 120
5322173	BAN	Method Blank	Dissolved Aluminum (Al)	2017/12/19	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/19	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/19	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/19	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/19	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/19	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/19	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/19	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/19	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/19	<1.0		ug/L	
			Dissolved Cobalt (Co)	2017/12/19	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/19	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/19	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/19	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/19	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/19	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/19	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/19	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/19	<100		ug/L	
			Dissolved Potassium (K)	2017/12/19	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/19	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/19	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/19	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/19	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/19	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/19	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/19	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/19	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/19	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/19	<5.0		ug/L	
5322173	BAN	RPD [FTG005-04]	Dissolved Aluminum (Al)	2017/12/19	NC		%	20
			Dissolved Antimony (Sb)	2017/12/19	NC		%	20
			Dissolved Arsenic (As)	2017/12/19	1.6		%	20
			Dissolved Barium (Ba)	2017/12/19	3.0		%	20
			Dissolved Beryllium (Be)	2017/12/19	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/19	NC		%	20
			Dissolved Boron (B)	2017/12/19	2.1		%	20
			Dissolved Cadmium (Cd)	2017/12/19	11		%	20
			Dissolved Calcium (Ca)	2017/12/19	0.016		%	20
			Dissolved Chromium (Cr)	2017/12/19	NC		%	20
			Dissolved Cobalt (Co)	2017/12/19	NC		%	20
			Dissolved Copper (Cu)	2017/12/19	NC		%	20
			Dissolved Iron (Fe)	2017/12/19	1.1		%	20
			Dissolved Lead (Pb)	2017/12/19	NC		%	20
			Dissolved Magnesium (Mg)	2017/12/19	0.065		%	20
			Dissolved Manganese (Mn)	2017/12/19	0.96		%	20
			Dissolved Molybdenum (Mo)	2017/12/19	6.5		%	20
			Dissolved Nickel (Ni)	2017/12/19	NC		%	20
			Dissolved Phosphorus (P)	2017/12/19	NC		%	20
			Dissolved Potassium (K)	2017/12/19	1.5		%	20
			Dissolved Selenium (Se)	2017/12/19	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 Silver (Ag)	2017/12/19	NC		%	20
			Dissolved Sodium (Na)	2017/12/19	1.1		%	20
			Dissolved Strontium (Sr)	2017/12/19	0.94		%	20
			Dissolved Thallium (Tl)	2017/12/19	NC		%	20
			Dissolved Tin (Sn)	2017/12/19	NC		%	20
			Dissolved Titanium (Ti)	2017/12/19	NC		%	20
			Dissolved Uranium (U)	2017/12/19	4.1		%	20
			Dissolved Vanadium (V)	2017/12/19	NC		%	20
			Dissolved Zinc (Zn)	2017/12/19	3.8		%	20
5322190	NRG	Matrix Spike [FTG009-01]	Dissolved Sulphate (SO4)	2017/12/20		NC	%	80 - 120
5322190	NRG	Spiked Blank	Dissolved Sulphate (SO4)	2017/12/20		97	%	80 - 120
5322190	NRG	Method Blank	Dissolved Sulphate (SO4)	2017/12/20	<2.0		mg/L	
5322190	NRG	RPD [FTG009-01]	Dissolved Sulphate (SO4)	2017/12/20	2.4		%	25
5322191	JMV	QC Standard	pH	2017/12/19		100	%	97 - 103
5322191	JMV	RPD	pH	2017/12/19	0.38		%	N/A
5322193	NRG	Matrix Spike [FTG009-01]	Reactive Silica (SiO2)	2017/12/21		93	%	80 - 120
5322193	NRG	Spiked Blank	Reactive Silica (SiO2)	2017/12/21		98	%	80 - 120
5322193	NRG	Method Blank	Reactive Silica (SiO2)	2017/12/21	<0.50		mg/L	
5322193	NRG	RPD [FTG009-01]	Reactive Silica (SiO2)	2017/12/21	0.010		%	25
5322194	JMV	Spiked Blank	Conductivity	2017/12/19		101	%	80 - 120
5322194	JMV	Method Blank	Conductivity	2017/12/19	1.8, RDL=1.0		uS/cm	
5322194	JMV	RPD	Conductivity	2017/12/19	0.88		%	25
5322195	NRG	Spiked Blank	Colour	2017/12/22		90	%	80 - 120
5322195	NRG	Method Blank	Colour	2017/12/22	<5.0		TCU	
5322195	NRG	RPD [FTG009-01]	Colour	2017/12/22	15		%	20
5322196	JMV	QC Standard	pH	2017/12/19		100	%	97 - 103
5322196	JMV	RPD	pH	2017/12/19	3.1 (1)		%	N/A
5322197	NRG	Matrix Spike [FTG009-01]	Orthophosphate (P)	2017/12/22		NC	%	80 - 120
5322197	NRG	Spiked Blank	Orthophosphate (P)	2017/12/22		91	%	80 - 120
5322197	NRG	Method Blank	Orthophosphate (P)	2017/12/22	<0.010		mg/L	
5322197	NRG	RPD [FTG009-01]	Orthophosphate (P)	2017/12/22	0.19		%	25
5322199	JMV	Spiked Blank	Conductivity	2017/12/19		101	%	80 - 120
5322199	JMV	Method Blank	Conductivity	2017/12/19	1.8, RDL=1.0		uS/cm	
5322199	JMV	RPD	Conductivity	2017/12/19	1.1		%	25
5322200	NRG	Matrix Spike [FTG009-01]	Nitrate + Nitrite (N)	2017/12/21		95	%	80 - 120
5322200	NRG	Spiked Blank	Nitrate + Nitrite (N)	2017/12/21		91	%	80 - 120
5322200	NRG	Method Blank	Nitrate + Nitrite (N)	2017/12/21	<0.050		mg/L	
5322200	NRG	RPD [FTG009-01]	Nitrate + Nitrite (N)	2017/12/21	11		%	25
5322202	NRG	Matrix Spike [FTG009-01]	Nitrite (N)	2017/12/20		98	%	80 - 120
5322202	NRG	Spiked Blank	Nitrite (N)	2017/12/20		99	%	80 - 120
5322202	NRG	Method Blank	Nitrite (N)	2017/12/20	<0.010		mg/L	
5322202	NRG	RPD [FTG009-01]	Nitrite (N)	2017/12/20	NC		%	25
5322210	JMV	QC Standard	pH	2017/12/19		100	%	97 - 103
5322210	JMV	RPD	pH	2017/12/19	0.79		%	N/A
5322215	JMV	Spiked Blank	Conductivity	2017/12/19		101	%	80 - 120
5322215	JMV	Method Blank	Conductivity	2017/12/19	1.4, RDL=1.0		uS/cm	
5322215	JMV	RPD	Conductivity	2017/12/19	2.2		%	25
5322348	JMV	QC Standard	Turbidity	2017/12/19		95	%	80 - 120
5322348	JMV	Spiked Blank	Turbidity	2017/12/19		91	%	80 - 120
5322348	JMV	Method Blank	Turbidity	2017/12/19	<0.10		NTU	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5322348	JMV	RPD	Turbidity	2017/12/19	1.9		%	20
5322358	JMV	QC Standard	Turbidity	2017/12/19		95	%	80 - 120
5322358	JMV	Spiked Blank	Turbidity	2017/12/19		92	%	80 - 120
5322358	JMV	Method Blank	Turbidity	2017/12/19	<0.10		NTU	
5322358	JMV	RPD	Turbidity	2017/12/19	2.9		%	20
5322398	LGE	Matrix Spike	D10-Anthracene	2017/12/19		87	%	50 - 130
			D14-Terphenyl	2017/12/19		88	%	50 - 130
			D8-Acenaphthylene	2017/12/19		87	%	50 - 130
			1-Methylnaphthalene	2017/12/19		NC	%	30 - 130
			2-Methylnaphthalene	2017/12/19		NC	%	30 - 130
			Acenaphthene	2017/12/19		NC	%	30 - 130
			Acenaphthylene	2017/12/19		NC	%	30 - 130
			Anthracene	2017/12/19		130 (2)	%	30 - 130
			Benzo(a)anthracene	2017/12/19		105	%	30 - 130
			Benzo(a)pyrene	2017/12/19		105	%	30 - 130
			Benzo(b)fluoranthene	2017/12/19		126	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/19		123	%	30 - 130
			Benzo(j)fluoranthene	2017/12/19		107	%	30 - 130
			Benzo(k)fluoranthene	2017/12/19		111	%	30 - 130
			Chrysene	2017/12/19		103	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/19		107	%	30 - 130
			Fluoranthene	2017/12/19		NC	%	30 - 130
			Fluorene	2017/12/19		NC	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/19		112	%	30 - 130
			Naphthalene	2017/12/19		NC	%	30 - 130
			Perylene	2017/12/19		103	%	30 - 130
			Phenanthrene	2017/12/19		NC	%	30 - 130
			Pyrene	2017/12/19		103	%	30 - 130
5322398	LGE	Spiked Blank	D10-Anthracene	2017/12/19		84	%	50 - 130
			D14-Terphenyl	2017/12/19		89	%	50 - 130
			D8-Acenaphthylene	2017/12/19		90	%	50 - 130
			1-Methylnaphthalene	2017/12/19		82	%	30 - 130
			2-Methylnaphthalene	2017/12/19		89	%	30 - 130
			Acenaphthene	2017/12/19		96	%	30 - 130
			Acenaphthylene	2017/12/19		84	%	30 - 130
			Anthracene	2017/12/19		107	%	30 - 130
			Benzo(a)anthracene	2017/12/19		99	%	30 - 130
			Benzo(a)pyrene	2017/12/19		100	%	30 - 130
			Benzo(b)fluoranthene	2017/12/19		123	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/19		118	%	30 - 130
			Benzo(j)fluoranthene	2017/12/19		108	%	30 - 130
			Benzo(k)fluoranthene	2017/12/19		110	%	30 - 130
			Chrysene	2017/12/19		97	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/19		100	%	30 - 130
			Fluoranthene	2017/12/19		107	%	30 - 130
			Fluorene	2017/12/19		92	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/19		105	%	30 - 130
			Naphthalene	2017/12/19		86	%	30 - 130
			Perylene	2017/12/19		103	%	30 - 130
			Phenanthrene	2017/12/19		93	%	30 - 130
			Pyrene	2017/12/19		101	%	30 - 130
5322398	LGE	Method Blank	D10-Anthracene	2017/12/19		102	%	50 - 130
			D14-Terphenyl	2017/12/19		101	%	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
			D8-Acenaphthylene	2017/12/19		90	%	50 - 130
			1-Methylnaphthalene	2017/12/19	<0.050		ug/L	
			2-Methylnaphthalene	2017/12/19	<0.050		ug/L	
			Acenaphthene	2017/12/19	<0.010		ug/L	
			Acenaphthylene	2017/12/19	<0.010		ug/L	
			Anthracene	2017/12/19	<0.010		ug/L	
			Benzo(a)anthracene	2017/12/19	<0.010		ug/L	
			Benzo(a)pyrene	2017/12/19	<0.010		ug/L	
			Benzo(b)fluoranthene	2017/12/19	<0.010		ug/L	
			Benzo(g,h,i)perylene	2017/12/19	<0.010		ug/L	
			Benzo(j)fluoranthene	2017/12/19	<0.010		ug/L	
			Benzo(k)fluoranthene	2017/12/19	<0.010		ug/L	
			Chrysene	2017/12/19	<0.010		ug/L	
			Dibenz(a,h)anthracene	2017/12/19	<0.010		ug/L	
			Fluoranthene	2017/12/19	<0.010		ug/L	
			Fluorene	2017/12/19	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/12/19	<0.010		ug/L	
			Naphthalene	2017/12/19	<0.20		ug/L	
			Perylene	2017/12/19	<0.010		ug/L	
			Phenanthrene	2017/12/19	<0.010		ug/L	
			Pyrene	2017/12/19	<0.010		ug/L	
5322398	LGE	RPD	1-Methylnaphthalene	2017/12/19	3.5		%	40
			2-Methylnaphthalene	2017/12/19	2.8		%	40
			Acenaphthene	2017/12/19	2.2		%	40
			Acenaphthylene	2017/12/19	3.3		%	40
			Anthracene	2017/12/19	14		%	40
			Benzo(a)anthracene	2017/12/19	31		%	40
			Benzo(a)pyrene	2017/12/19	22		%	40
			Benzo(b)fluoranthene	2017/12/19	16		%	40
			Benzo(g,h,i)perylene	2017/12/19	30		%	40
			Benzo(j)fluoranthene	2017/12/19	22		%	40
			Benzo(k)fluoranthene	2017/12/19	24		%	40
			Chrysene	2017/12/19	24		%	40
			Dibenz(a,h)anthracene	2017/12/19	NC		%	40
			Fluoranthene	2017/12/19	11		%	40
			Fluorene	2017/12/19	2.8		%	40
			Indeno(1,2,3-cd)pyrene	2017/12/19	6.8		%	40
			Naphthalene	2017/12/19	2.6		%	40
			Perylene	2017/12/19	NC		%	40
			Phenanthrene	2017/12/19	21		%	40
			Pyrene	2017/12/19	12		%	40
5322509	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/19		101	%	80 - 120
5322509	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/19		107	%	80 - 120
5322509	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/19	<0.050		mg/L	
5322509	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/19	NC		%	20
5322510	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/19		103	%	80 - 120
5322510	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/19		104	%	80 - 120
5322510	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/19	<0.050		mg/L	
5322510	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/19	NC		%	20
5324430	JMV	QC Standard	Turbidity	2017/12/20		95	%	80 - 120
5324430	JMV	Spiked Blank	Turbidity	2017/12/20		91	%	80 - 120
5324430	JMV	Method Blank	Turbidity	2017/12/20	<0.10		NTU	
5324430	JMV	RPD	Turbidity	2017/12/20	3.1		%	20

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Maxxam Job #: B7S2782
Report Date: 2017/12/22

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5324433	JMV	QC Standard	Turbidity	2017/12/20		95	%	80 - 120
5324433	JMV	Spiked Blank	Turbidity	2017/12/20		91	%	80 - 120
5324433	JMV	Method Blank	Turbidity	2017/12/20	<0.10		NTU	
5324433	JMV	RPD	Turbidity	2017/12/20	6.9		%	20
5329393	LMP	Matrix Spike	Total Organic Carbon (C)	2017/12/22		100	%	80 - 120
5329393	LMP	Spiked Blank	Total Organic Carbon (C)	2017/12/22		103	%	80 - 120
5329393	LMP	Method Blank	Total Organic Carbon (C)	2017/12/22	<0.50		mg/L	
5329393	LMP	RPD	Total Organic Carbon (C)	2017/12/22	3.1		%	20
5329398	LMP	Matrix Spike [FTG005-02]	Total Organic Carbon (C)	2017/12/22		102	%	80 - 120
5329398	LMP	Spiked Blank	Total Organic Carbon (C)	2017/12/22		107	%	80 - 120
5329398	LMP	Method Blank	Total Organic Carbon (C)	2017/12/22	<0.50		mg/L	
5329398	LMP	RPD [FTG004-02]	Total Organic Carbon (C)	2017/12/22	5.7		%	20

N/A = Not Applicable

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.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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) Poor duplicate results due to sample matrix, insufficient sample volume remaining for repeat analysis.

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

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Maxxam Job #: B7S2782
Report Date: 2017/12/22

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

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

Kevin MacDonald, Inorganics Supervisor

Mike MacGillivray, Scientific Specialist (Inorganics)

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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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention: Nadine Wambolt

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

Report Date: 2017/12/28
Report #: R4923832
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S4627
Received: 2017/12/15, 16:13

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	3	N/A	2017/12/21	N/A	SM 22 4500-CO2 D
Alkalinity (1)	3	N/A	2017/12/27	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	4	N/A	2017/12/22	N/A	Auto Calc.
Chloride (1)	3	N/A	2017/12/28	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	3	N/A	2017/12/27	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	3	N/A	2017/12/21	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	1	N/A	2017/12/21	ATL SOP 00048	SM 22 2340 B
Hardness (calculated as CaCO3) (1)	2	N/A	2017/12/22	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	3	2017/12/20	2017/12/21	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	3	N/A	2017/12/21	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	3	N/A	2017/12/28	N/A	Auto Calc.
Anion and Cation Sum (1)	3	N/A	2017/12/22	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	3	N/A	2017/12/21	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	3	N/A	2017/12/28	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	3	N/A	2017/12/27	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	3	N/A	2017/12/28	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	4	2017/12/21	2017/12/21	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	3	N/A	2017/12/21	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	3	N/A	2017/12/27	ATL SOP 00021	SM 22 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	3	N/A	2017/12/28	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	3	N/A	2017/12/28	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	3	N/A	2017/12/27	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	3	N/A	2017/12/27	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	3	N/A	2017/12/28	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	3	N/A	2017/12/28	ATL SOP 00037	SM 22 5310C m
Turbidity (1)	3	N/A	2017/12/21	ATL SOP 00011	EPA 180.1 R2 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.

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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention: Nadine Wambolt

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

Report Date: 2017/12/28
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Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S4627
Received: 2017/12/15, 16:13

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.

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.

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.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Sr. Project Manager
Email: NMacAskill@maxxam.ca
Phone# (902)567-1255 Ext:17

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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.

Maxxam Job #: B7S4627
Report Date: 2017/12/28

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FTR191		FTR192			FTR204		
Sampling Date		2017/12/15		2017/12/15			2017/12/15		
COC Number		641599		641599			641599		
	UNITS	MCES-001-MWB	RDL	SCU7-001-MW	RDL	QC Batch	SCU7-003-MW	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	379	N/A	29.8	N/A	5318429	12.0	N/A	5318429
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	1400	1.0	230	1.0	5318426	160	1.0	5318426
Calculated TDS	mg/L	21000	1.0	1900	1.0	5318432	700	1.0	5318432
Carb. Alkalinity (calc. as CaCO3)	mg/L	4.0	1.0	<1.0	1.0	5318426	<1.0	1.0	5318426
Cation Sum	me/L	375	N/A	28.4	N/A	5318429	11.4	N/A	5318429
Hardness (CaCO3)	mg/L	4700	1.0	1300	1.0	5318043	370	1.0	5318043
Ion Balance (% Difference)	%	0.520	N/A	2.46	N/A	5318428	2.74	N/A	5318428
Langelier Index (@ 20C)	N/A	1.46		0.688		5318430	-0.242		5318430
Langelier Index (@ 4C)	N/A	1.22		0.445		5318431	-0.489		5318431
Nitrate (N)	mg/L	<0.050	0.050	<0.050	0.050	5318194	0.069	0.050	5318194
Saturation pH (@ 20C)	N/A	6.01		6.58		5318430	7.19		5318430
Saturation pH (@ 4C)	N/A	6.25		6.82		5318431	7.43		5318431
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	1500 (1)	130	230 (1)	25	5327277	170 (1)	25	5327277
Dissolved Chloride (Cl)	mg/L	12000	120	140	1.0	5327283	180	1.0	5327283
Colour	TCU	42	5.0	<5.0	5.0	5327323	<5.0	5.0	5327323
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	<0.050	0.050	5327326	0.069	0.050	5327326
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	5327329	<0.010	0.010	5327329
Nitrogen (Ammonia Nitrogen)	mg/L	29	2.5	0.12	0.050	5326655	1.2	0.050	5326659
Total Organic Carbon (C)	mg/L	16 (1)	5.0	1.5	0.50	5333493	1.6	0.50	5333493
Orthophosphate (P)	mg/L	0.013	0.010	0.010	0.010	5327325	<0.010	0.010	5327325
pH	pH	7.47	N/A	7.26	N/A	5326516	6.94	N/A	5326516
Reactive Silica (SiO2)	mg/L	28	1.0	16	0.50	5327322	9.3	0.50	5327322
Dissolved Sulphate (SO4)	mg/L	<2.0	2.0	1000	60	5327293	170 (1)	10	5327293
Turbidity	NTU	120	1.0	0.52	0.10	5326555	4.6	0.10	5326555
Conductivity	uS/cm	35000	1.0	2300	1.0	5326517	1200	1.0	5326517

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.

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Maxxam Job #: B7S4627
Report Date: 2017/12/28

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		FTR191	FTR192	FTR204		
Sampling Date		2017/12/15	2017/12/15	2017/12/15		
COC Number		641599	641599	641599		
	UNITS	MCES-001-MWB	SCU7-001-MW	SCU7-003-MW	RDL	QC Batch
Metals						
Total Mercury (Hg)	ug/L	0.015	<0.013	<0.013	0.013	5325184

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7S4627
Report Date: 2017/12/28

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FTR191		FTR192		FTR204		
Sampling Date		2017/12/15		2017/12/15		2017/12/15		
COC Number		641599		641599		641599		
	UNITS	MCES-001-MWB	RDL	SCU7-001-MW	RDL	SCU7-003-MW	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	<50	50	<50	50	<5.0	5.0	5326523
Dissolved Antimony (Sb)	ug/L	<10	10	<10	10	<1.0	1.0	5326523
Dissolved Arsenic (As)	ug/L	<10	10	<10	10	<1.0	1.0	5326523
Dissolved Barium (Ba)	ug/L	7700	10	33	10	23	1.0	5326523
Dissolved Beryllium (Be)	ug/L	<10	10	<10	10	<1.0	1.0	5326523
Dissolved Bismuth (Bi)	ug/L	<20	20	<20	20	<2.0	2.0	5326523
Dissolved Boron (B)	ug/L	3300	500	<500	500	92	50	5326523
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	0.19	0.10	0.25	0.010	5326523
Dissolved Calcium (Ca)	ug/L	520000	1000	510000	1000	130000	100	5326523
Dissolved Chromium (Cr)	ug/L	<10	10	<10	10	<1.0	1.0	5326523
Dissolved Cobalt (Co)	ug/L	<4.0	4.0	<4.0	4.0	0.88	0.40	5326523
Dissolved Copper (Cu)	ug/L	<20	20	<20	20	<2.0	2.0	5326523
Dissolved Iron (Fe)	ug/L	11000	500	<500	500	410	50	5326523
Dissolved Lead (Pb)	ug/L	<5.0	5.0	<5.0	5.0	<0.50	0.50	5326523
Dissolved Magnesium (Mg)	ug/L	820000	1000	15000	1000	12000	100	5326523
Dissolved Manganese (Mn)	ug/L	1300	20	820	20	2600	2.0	5326523
Dissolved Molybdenum (Mo)	ug/L	<20	20	<20	20	<2.0	2.0	5326523
Dissolved Nickel (Ni)	ug/L	<20	20	<20	20	<2.0	2.0	5326523
Dissolved Phosphorus (P)	ug/L	<1000	1000	<1000	1000	<100	100	5326523
Dissolved Potassium (K)	ug/L	150000	1000	2700	1000	5900	100	5326523
Dissolved Selenium (Se)	ug/L	<10	10	<10	10	<1.0	1.0	5326523
Dissolved Silver (Ag)	ug/L	<1.0	1.0	<1.0	1.0	<0.10	0.10	5326523
Dissolved Sodium (Na)	ug/L	6300000	1000	38000	1000	87000	100	5326523
Dissolved Strontium (Sr)	ug/L	58000	200	9800	20	560	2.0	5326523
Dissolved Thallium (Tl)	ug/L	<1.0	1.0	<1.0	1.0	<0.10	0.10	5326523
Dissolved Tin (Sn)	ug/L	<20	20	<20	20	<2.0	2.0	5326523
Dissolved Titanium (Ti)	ug/L	<20	20	<20	20	<2.0	2.0	5326523
Dissolved Uranium (U)	ug/L	<1.0	1.0	5.7	1.0	0.23	0.10	5326523
Dissolved Vanadium (V)	ug/L	<20	20	<20	20	<2.0	2.0	5326523
Dissolved Zinc (Zn)	ug/L	<50	50	<50	50	<5.0	5.0	5326523

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7S4627
Report Date: 2017/12/28

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FTR191	FTR192	FTR204	FTR212		
Sampling Date		2017/12/15	2017/12/15	2017/12/15	2017/12/15		
COC Number		641599	641599	641599	641599		
	UNITS	MCES-001-MWB	SCU7-001-MW	SCU7-003-MW	FB-02	RDL	QC Batch
Polyaromatic Hydrocarbons							
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5326702
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5326702
Acenaphthene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Acenaphthylene	ug/L	<0.010	0.013	<0.010	<0.010	0.010	5326702
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	0.020	5317697
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Chrysene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Fluoranthene	ug/L	<0.010	0.012	<0.010	<0.010	0.010	5326702
Fluorene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Naphthalene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	5326702
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Phenanthrene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	5326702
Pyrene	ug/L	<0.010	0.011	<0.010	<0.010	0.010	5326702
Surrogate Recovery (%)							
D10-Anthracene	%	100	105	111	109		5326702
D14-Terphenyl	%	99	105	106	99		5326702
D8-Acenaphthylene	%	89	93	93	93		5326702

RDL = Reportable Detection Limit
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GENERAL COMMENTS

Sample FTR191 [MCES-001-MWB] : Elevated reporting limits for trace metals due to sample matrix.

Sample FTR192 [SCU7-001-MW] : Elevated reporting limits for trace metals due to sample matrix.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5325184	ARS	Matrix Spike	Total Mercury (Hg)	2017/12/21		101	%	80 - 120
5325184	ARS	Spiked Blank	Total Mercury (Hg)	2017/12/21		101	%	80 - 120
5325184	ARS	Method Blank	Total Mercury (Hg)	2017/12/21	<0.013		ug/L	
5325184	ARS	RPD	Total Mercury (Hg)	2017/12/21	NC		%	20
5326516	JMV	QC Standard	pH	2017/12/21		100	%	97 - 103
5326516	JMV	RPD	pH	2017/12/21	2.1		%	N/A
5326517	JMV	Spiked Blank	Conductivity	2017/12/21		102	%	80 - 120
5326517	JMV	Method Blank	Conductivity	2017/12/21	1.5, RDL=1.0		uS/cm	
5326517	JMV	RPD	Conductivity	2017/12/21	0.52		%	25
5326523	MLB	Matrix Spike	Dissolved Aluminum (Al)	2017/12/21		104	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/21		91	%	80 - 120
			Dissolved Arsenic (As)	2017/12/21		99	%	80 - 120
			Dissolved Barium (Ba)	2017/12/21		NC	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/21		96	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/21		78 (1)	%	80 - 120
			Dissolved Boron (B)	2017/12/21		96	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/21		97	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/21		NC	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/21		99	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/21		98	%	80 - 120
			Dissolved Copper (Cu)	2017/12/21		82	%	80 - 120
			Dissolved Iron (Fe)	2017/12/21		101	%	80 - 120
			Dissolved Lead (Pb)	2017/12/21		95	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/21		102	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/21		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/21		94	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/21		96	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/21		104	%	80 - 120
			Dissolved Potassium (K)	2017/12/21		NC	%	80 - 120
			Dissolved Selenium (Se)	2017/12/21		73 (1)	%	80 - 120
			Dissolved Silver (Ag)	2017/12/21		80	%	80 - 120
			Dissolved Sodium (Na)	2017/12/21		NC	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/21		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/21		99	%	80 - 120
			Dissolved Tin (Sn)	2017/12/21		106	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/21		106	%	80 - 120
			Dissolved Uranium (U)	2017/12/21		100	%	80 - 120
			Dissolved Vanadium (V)	2017/12/21		103	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/21		96	%	80 - 120
5326523	MLB	Spiked Blank	Dissolved Aluminum (Al)	2017/12/21		102	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/21		88	%	80 - 120
			Dissolved Arsenic (As)	2017/12/21		98	%	80 - 120
			Dissolved Barium (Ba)	2017/12/21		98	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/21		97	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/21		101	%	80 - 120
			Dissolved Boron (B)	2017/12/21		99	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/21		98	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/21		103	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/21		99	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/21		101	%	80 - 120
			Dissolved Copper (Cu)	2017/12/21		98	%	80 - 120
			Dissolved Iron (Fe)	2017/12/21		102	%	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 Lead (Pb)	2017/12/21		96	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/21		104	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/21		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/21		103	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/21		100	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/21		105	%	80 - 120
			Dissolved Potassium (K)	2017/12/21		104	%	80 - 120
			Dissolved Selenium (Se)	2017/12/21		97	%	80 - 120
			Dissolved Silver (Ag)	2017/12/21		96	%	80 - 120
			Dissolved Sodium (Na)	2017/12/21		103	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/21		99	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/21		101	%	80 - 120
			Dissolved Tin (Sn)	2017/12/21		100	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/21		101	%	80 - 120
			Dissolved Uranium (U)	2017/12/21		100	%	80 - 120
			Dissolved Vanadium (V)	2017/12/21		102	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/21		102	%	80 - 120
5326523	MLB	Method Blank	Dissolved Aluminum (Al)	2017/12/21	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/21	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/21	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/21	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/21	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/21	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/21	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/21	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/21	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/21	<1.0		ug/L	
			Dissolved Cobalt (Co)	2017/12/21	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/21	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/21	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/21	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/21	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/21	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/21	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/21	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/21	<100		ug/L	
			Dissolved Potassium (K)	2017/12/21	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/21	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/21	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/21	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/21	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/21	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/21	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/21	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/21	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/21	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/21	<5.0		ug/L	
5326523	MLB	RPD	Dissolved Aluminum (Al)	2017/12/21	2.5		%	20
			Dissolved Antimony (Sb)	2017/12/21	NC		%	20
			Dissolved Arsenic (As)	2017/12/21	NC		%	20
			Dissolved Barium (Ba)	2017/12/21	0.63		%	20
			Dissolved Beryllium (Be)	2017/12/21	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/21	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 Boron (B)	2017/12/21	NC		%	20
			Dissolved Cadmium (Cd)	2017/12/21	NC		%	20
			Dissolved Calcium (Ca)	2017/12/21	0.97		%	20
			Dissolved Chromium (Cr)	2017/12/21	NC		%	20
			Dissolved Cobalt (Co)	2017/12/21	NC		%	20
			Dissolved Copper (Cu)	2017/12/21	NC		%	20
			Dissolved Iron (Fe)	2017/12/21	NC		%	20
			Dissolved Lead (Pb)	2017/12/21	NC		%	20
			Dissolved Magnesium (Mg)	2017/12/21	NC		%	20
			Dissolved Manganese (Mn)	2017/12/21	NC		%	20
			Dissolved Molybdenum (Mo)	2017/12/21	7.1		%	20
			Dissolved Nickel (Ni)	2017/12/21	NC		%	20
			Dissolved Phosphorus (P)	2017/12/21	NC		%	20
			Dissolved Potassium (K)	2017/12/21	0.69		%	20
			Dissolved Selenium (Se)	2017/12/21	7.0		%	20
			Dissolved Silver (Ag)	2017/12/21	NC		%	20
			Dissolved Sodium (Na)	2017/12/21	0.19		%	20
			Dissolved Strontium (Sr)	2017/12/21	0.43		%	20
			Dissolved Thallium (Tl)	2017/12/21	NC		%	20
			Dissolved Tin (Sn)	2017/12/21	NC		%	20
			Dissolved Titanium (Ti)	2017/12/21	NC		%	20
			Dissolved Uranium (U)	2017/12/21	NC		%	20
			Dissolved Vanadium (V)	2017/12/21	NC		%	20
			Dissolved Zinc (Zn)	2017/12/21	NC		%	20
5326555	JMV	QC Standard	Turbidity	2017/12/21		92	%	80 - 120
5326555	JMV	Spiked Blank	Turbidity	2017/12/21		91	%	80 - 120
5326555	JMV	Method Blank	Turbidity	2017/12/21	<0.10		NTU	
5326555	JMV	RPD [FTR191-01]	Turbidity	2017/12/21	0.35		%	20
5326655	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/21		101	%	80 - 120
5326655	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/21		102	%	80 - 120
5326655	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/21	<0.050		mg/L	
5326655	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/21	NC		%	20
5326659	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/21		99	%	80 - 120
5326659	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/21		101	%	80 - 120
5326659	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/21	<0.050		mg/L	
5326659	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/21	NC		%	20
5326702	LGE	Matrix Spike [FTR192-05]	D10-Anthracene	2017/12/21		101	%	50 - 130
			D14-Terphenyl	2017/12/21		97	%	50 - 130
			D8-Acenaphthylene	2017/12/21		94	%	50 - 130
			1-Methylnaphthalene	2017/12/21		81	%	30 - 130
			2-Methylnaphthalene	2017/12/21		88	%	30 - 130
			Acenaphthene	2017/12/21		96	%	30 - 130
			Acenaphthylene	2017/12/21		85	%	30 - 130
			Anthracene	2017/12/21		91	%	30 - 130
			Benzo(a)anthracene	2017/12/21		94	%	30 - 130
			Benzo(a)pyrene	2017/12/21		88	%	30 - 130
			Benzo(b)fluoranthene	2017/12/21		113	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/21		107	%	30 - 130
			Benzo(j)fluoranthene	2017/12/21		93	%	30 - 130
			Benzo(k)fluoranthene	2017/12/21		98	%	30 - 130
			Chrysene	2017/12/21		93	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/21		92	%	30 - 130
			Fluoranthene	2017/12/21		98	%	30 - 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	2017/12/21		90	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/21		95	%	30 - 130
			Naphthalene	2017/12/21		85	%	30 - 130
			Perylene	2017/12/21		92	%	30 - 130
			Phenanthrene	2017/12/21		87	%	30 - 130
			Pyrene	2017/12/21		93	%	30 - 130
5326702	LGE	Spiked Blank	D10-Anthracene	2017/12/21		97	%	50 - 130
			D14-Terphenyl	2017/12/21		94	%	50 - 130
			D8-Acenaphthylene	2017/12/21		88	%	50 - 130
			1-Methylnaphthalene	2017/12/21		76	%	30 - 130
			2-Methylnaphthalene	2017/12/21		81	%	30 - 130
			Acenaphthene	2017/12/21		88	%	30 - 130
			Acenaphthylene	2017/12/21		82	%	30 - 130
			Anthracene	2017/12/21		89	%	30 - 130
			Benzo(a)anthracene	2017/12/21		89	%	30 - 130
			Benzo(a)pyrene	2017/12/21		87	%	30 - 130
			Benzo(b)fluoranthene	2017/12/21		110	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/21		95	%	30 - 130
			Benzo(j)fluoranthene	2017/12/21		97	%	30 - 130
			Benzo(k)fluoranthene	2017/12/21		94	%	30 - 130
			Chrysene	2017/12/21		86	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/21		76	%	30 - 130
			Fluoranthene	2017/12/21		97	%	30 - 130
			Fluorene	2017/12/21		83	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/21		86	%	30 - 130
			Naphthalene	2017/12/21		81	%	30 - 130
			Perylene	2017/12/21		89	%	30 - 130
			Phenanthrene	2017/12/21		84	%	30 - 130
			Pyrene	2017/12/21		90	%	30 - 130
5326702	LGE	Method Blank	D10-Anthracene	2017/12/21		103	%	50 - 130
			D14-Terphenyl	2017/12/21		95	%	50 - 130
			D8-Acenaphthylene	2017/12/21		90	%	50 - 130
			1-Methylnaphthalene	2017/12/21	<0.050		ug/L	
			2-Methylnaphthalene	2017/12/21	<0.050		ug/L	
			Acenaphthene	2017/12/21	<0.010		ug/L	
			Acenaphthylene	2017/12/21	<0.010		ug/L	
			Anthracene	2017/12/21	<0.010		ug/L	
			Benzo(a)anthracene	2017/12/21	<0.010		ug/L	
			Benzo(a)pyrene	2017/12/21	<0.010		ug/L	
			Benzo(b)fluoranthene	2017/12/21	<0.010		ug/L	
			Benzo(g,h,i)perylene	2017/12/21	<0.010		ug/L	
			Benzo(j)fluoranthene	2017/12/21	<0.010		ug/L	
			Benzo(k)fluoranthene	2017/12/21	<0.010		ug/L	
			Chrysene	2017/12/21	<0.010		ug/L	
			Dibenz(a,h)anthracene	2017/12/21	<0.010		ug/L	
			Fluoranthene	2017/12/21	<0.010		ug/L	
			Fluorene	2017/12/21	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/12/21	<0.010		ug/L	
			Naphthalene	2017/12/21	<0.20		ug/L	
			Perylene	2017/12/21	<0.010		ug/L	
			Phenanthrene	2017/12/21	<0.010		ug/L	
			Pyrene	2017/12/21	<0.010		ug/L	
5326702	LGE	RPD [FTR191-05]	1-Methylnaphthalene	2017/12/21	NC		%	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	2017/12/21	NC		%	40
			Acenaphthene	2017/12/21	NC		%	40
			Acenaphthylene	2017/12/21	NC		%	40
			Anthracene	2017/12/21	NC		%	40
			Benzo(a)anthracene	2017/12/21	NC		%	40
			Benzo(a)pyrene	2017/12/21	NC		%	40
			Benzo(b)fluoranthene	2017/12/21	NC		%	40
			Benzo(g,h,i)perylene	2017/12/21	NC		%	40
			Benzo(j)fluoranthene	2017/12/21	NC		%	40
			Benzo(k)fluoranthene	2017/12/21	NC		%	40
			Chrysene	2017/12/21	NC		%	40
			Dibenz(a,h)anthracene	2017/12/21	NC		%	40
			Fluoranthene	2017/12/21	NC		%	40
			Fluorene	2017/12/21	NC		%	40
			Indeno(1,2,3-cd)pyrene	2017/12/21	NC		%	40
			Naphthalene	2017/12/21	NC		%	40
			Perylene	2017/12/21	NC		%	40
			Phenanthrene	2017/12/21	NC		%	40
			Pyrene	2017/12/21	NC		%	40
5327277	JHY	Matrix Spike	Total Alkalinity (Total as CaCO3)	2017/12/27		NC	%	80 - 120
5327277	JHY	Spiked Blank	Total Alkalinity (Total as CaCO3)	2017/12/27		106	%	80 - 120
5327277	JHY	Method Blank	Total Alkalinity (Total as CaCO3)	2017/12/27	<5.0		mg/L	
5327277	JHY	RPD	Total Alkalinity (Total as CaCO3)	2017/12/27	2.4		%	25
5327283	JHY	Matrix Spike	Dissolved Chloride (Cl)	2017/12/28		NC	%	80 - 120
5327283	JHY	QC Standard	Dissolved Chloride (Cl)	2017/12/28		106	%	80 - 120
5327283	JHY	Spiked Blank	Dissolved Chloride (Cl)	2017/12/27		105	%	80 - 120
5327283	JHY	Method Blank	Dissolved Chloride (Cl)	2017/12/27	<1.0		mg/L	
5327283	JHY	RPD	Dissolved Chloride (Cl)	2017/12/28	2.5		%	25
5327293	JHY	Matrix Spike	Dissolved Sulphate (SO4)	2017/12/27		NC	%	80 - 120
5327293	JHY	Spiked Blank	Dissolved Sulphate (SO4)	2017/12/27		102	%	80 - 120
5327293	JHY	Method Blank	Dissolved Sulphate (SO4)	2017/12/27	<2.0		mg/L	
5327293	JHY	RPD	Dissolved Sulphate (SO4)	2017/12/27	2.7		%	25
5327322	JHY	Matrix Spike	Reactive Silica (SiO2)	2017/12/27		103	%	80 - 120
5327322	JHY	Spiked Blank	Reactive Silica (SiO2)	2017/12/27		98	%	80 - 120
5327322	JHY	Method Blank	Reactive Silica (SiO2)	2017/12/27	<0.50		mg/L	
5327322	JHY	RPD	Reactive Silica (SiO2)	2017/12/27	1.4		%	25
5327323	JHY	Spiked Blank	Colour	2017/12/27		94	%	80 - 120
5327323	JHY	Method Blank	Colour	2017/12/27	<5.0		TCU	
5327323	JHY	RPD	Colour	2017/12/27	1.8		%	20
5327325	JHY	Matrix Spike	Orthophosphate (P)	2017/12/27		62 (2)	%	80 - 120
5327325	JHY	Spiked Blank	Orthophosphate (P)	2017/12/27		97	%	80 - 120
5327325	JHY	Method Blank	Orthophosphate (P)	2017/12/27	<0.010		mg/L	
5327325	JHY	RPD	Orthophosphate (P)	2017/12/27	2.2		%	25
5327326	JHY	Matrix Spike	Nitrate + Nitrite (N)	2017/12/28		97	%	80 - 120
5327326	JHY	Spiked Blank	Nitrate + Nitrite (N)	2017/12/28		97	%	80 - 120
5327326	JHY	Method Blank	Nitrate + Nitrite (N)	2017/12/28	<0.050		mg/L	
5327326	JHY	RPD	Nitrate + Nitrite (N)	2017/12/28	NC		%	25
5327329	JHY	Matrix Spike	Nitrite (N)	2017/12/27		98	%	80 - 120
5327329	JHY	Spiked Blank	Nitrite (N)	2017/12/27		99	%	80 - 120
5327329	JHY	Method Blank	Nitrite (N)	2017/12/27	<0.010		mg/L	
5327329	JHY	RPD	Nitrite (N)	2017/12/27	NC		%	25
5333493	LMP	Matrix Spike	Total Organic Carbon (C)	2017/12/28		105	%	80 - 120
5333493	LMP	Spiked Blank	Total Organic Carbon (C)	2017/12/28		101	%	80 - 120

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Maxxam Job #: B7S4627
Report Date: 2017/12/28

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5333493	LMP	Method Blank	Total Organic Carbon (C)	2017/12/28	<0.50		mg/L	
5333493	LMP	RPD	Total Organic Carbon (C)	2017/12/28	7.8		%	20

N/A = Not Applicable

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.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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) Recovery is within QC acceptance limits. < 10 % of compounds in multi-component analysis in violation.

(2) Poor spike recovery due to sample matrix, result confirmed by repeat analysis.

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Maxxam Job #: B7S4627
Report Date: 2017/12/28

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

VALIDATION SIGNATURE PAGE

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

Mike MacGillivray, Scientific Specialist (Inorganics)

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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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/21
Report #: R4918379
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S1461
Received: 2017/12/12, 16:30

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	7	N/A	2017/12/19	N/A	SM 22 4500-CO2 D
Alkalinity (1)	7	N/A	2017/12/20	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	7	N/A	2017/12/20	N/A	Auto Calc.
Chloride (1)	7	N/A	2017/12/19	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	7	N/A	2017/12/18	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	7	N/A	2017/12/19	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	1	N/A	2017/12/19	ATL SOP 00048	SM 22 2340 B
Hardness (calculated as CaCO3) (1)	6	N/A	2017/12/20	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	7	2017/12/18	2017/12/19	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	7	N/A	2017/12/19	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	7	N/A	2017/12/20	N/A	Auto Calc.
Anion and Cation Sum (1)	7	N/A	2017/12/20	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	7	N/A	2017/12/19	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	7	N/A	2017/12/19	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	7	N/A	2017/12/19	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	7	N/A	2017/12/20	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	6	2017/12/18	2017/12/18	ATL SOP 00103	EPA 8270D 2007 m
PAH in Water by GC/MS (SIM) (1)	1	2017/12/18	2017/12/19	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	7	N/A	2017/12/19	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	7	N/A	2017/12/20	ATL SOP 00021	SM 22 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	7	N/A	2017/12/20	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	7	N/A	2017/12/20	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	7	N/A	2017/12/20	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	7	N/A	2017/12/18	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	7	N/A	2017/12/20	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	7	N/A	2017/12/20	ATL SOP 00037	SM 22 5310C m
Turbidity (1)	7	N/A	2017/12/19	ATL SOP 00011	EPA 180.1 R2 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.

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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/21
Report #: R4918379
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S1461
Received: 2017/12/12, 16:30

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.

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.

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.

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
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Sr. Project Manager
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.

Maxxam Job #: B7S1461
Report Date: 2017/12/21

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FSZ408			FSZ409			FSZ410		
Sampling Date		2017/12/12			2017/12/12			2017/12/12		
COC Number		641599			641599			641599		
	UNITS	MCWS-310-MW	RDL	QC Batch	MCWS-309-MW	RDL	QC Batch	MCWS-307-MWB	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	1.59	N/A	5313397	9.42	N/A	5313397	14.2	N/A	5313397
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	52	1.0	5313394	300	1.0	5313394	340	1.0	5313394
Calculated TDS	mg/L	110	1.0	5313400	540	1.0	5313400	790	1.0	5313400
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5313394	<1.0	1.0	5313394	2.6	1.0	5313394
Cation Sum	me/L	2.51	N/A	5313397	8.73	N/A	5313397	13.2	N/A	5313397
Hardness (CaCO3)	mg/L	89	1.0	5313395	26	1.0	5313395	220	1.0	5313395
Ion Balance (% Difference)	%	22.4	N/A	5313396	3.80	N/A	5313396	3.51	N/A	5313396
Langelier Index (@ 20C)	N/A	-0.737		5313398	-0.649		5313398	0.752		5313398
Langelier Index (@ 4C)	N/A	-0.988		5313399	-0.896		5313399	0.506		5313399
Nitrate (N)	mg/L	0.22	0.050	5313324	<0.050	0.050	5313324	<0.050	0.050	5313324
Saturation pH (@ 20C)	N/A	8.17		5313398	8.17		5313398	7.16		5313398
Saturation pH (@ 4C)	N/A	8.42		5313399	8.42		5313399	7.40		5313399
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	52	5.0	5317662	310	25	5317662	340	25	5317662
Dissolved Chloride (Cl)	mg/L	12	1.0	5317671	51	1.0	5317671	200	2.0	5317671
Colour	TCU	26	5.0	5317681	17	5.0	5317681	<5.0	5.0	5317681
Nitrate + Nitrite (N)	mg/L	0.22	0.050	5317684	<0.050	0.050	5317684	<0.050	0.050	5317684
Nitrite (N)	mg/L	<0.010	0.010	5317692	<0.010	0.010	5317692	<0.010	0.010	5317692
Nitrogen (Ammonia Nitrogen)	mg/L	<0.25	0.25	5322504	0.31	0.050	5322504	0.087	0.050	5322504
Total Organic Carbon (C)	mg/L	6.9 (1)	5.0	5325379	14 (1)	5.0	5325379	1.0	0.50	5325379
Orthophosphate (P)	mg/L	<0.010	0.010	5317694	0.14	0.010	5317694	<0.010	0.010	5317694
pH	pH	7.43	N/A	5322210	7.52	N/A	5322210	7.91	N/A	5322210
Reactive Silica (SiO2)	mg/L	2.6	0.50	5317677	7.9	0.50	5317677	11	0.50	5317677
Dissolved Sulphate (SO4)	mg/L	10	2.0	5317676	90 (2)	10	5317676	90 (2)	10	5317676
Turbidity	NTU	12	0.10	5322352	470	10	5322348	0.85	0.10	5322352
Conductivity	uS/cm	150	1.0	5322215	880	1.0	5322215	1400	1.0	5322215

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Reporting limit was increased due to turbidity.
(2) Elevated reporting limit due to sample matrix.

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Maxxam Job #: B7S1461
Report Date: 2017/12/21

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FSZ411		FSZ412		FSZ413	FSZ414		
Sampling Date		2017/12/12		2017/12/12		2017/12/12	2017/12/12		
COC Number		641599		641599		641599	641599		
	UNITS	MCWS-306-MWB	RDL	MCWS-113-MWB	RDL	MCES-001-MWA	FD-06	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	8.02	N/A	8.86	N/A	6.26	6.16	N/A	5313397
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	280	1.0	300	1.0	<1.0	<1.0	1.0	5313394
Calculated TDS	mg/L	440	1.0	460	1.0	560	560	1.0	5313400
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.1	1.0	2.0	1.0	<1.0	<1.0	1.0	5313394
Cation Sum	me/L	7.66	N/A	8.17	N/A	14.4	14.4	N/A	5313397
Hardness (CaCO3)	mg/L	350	1.0	250	1.0	600	600	1.0	5313395
Ion Balance (% Difference)	%	2.30	N/A	4.05	N/A	39.5	39.9	N/A	5313396
Langelier Index (@ 20C)	N/A	0.627		0.760		NC	NC		5313398
Langelier Index (@ 4C)	N/A	0.378		0.512		NC	NC		5313399
Nitrate (N)	mg/L	<0.050	0.050	<0.050	0.050	<0.050	<0.050	0.050	5313324
Saturation pH (@ 20C)	N/A	6.98		7.09		NC	NC		5313398
Saturation pH (@ 4C)	N/A	7.23		7.34		NC	NC		5313399
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	280	25	300	25	76	70	5.0	5317929
Dissolved Chloride (Cl)	mg/L	16	1.0	98	1.0	52	55	1.0	5317932
Colour	TCU	<5.0	5.0	7.0	5.0	5.5	<5.0	5.0	5317947
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	<0.050	0.050	0.16	0.16	0.050	5317952
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	0.13	0.13	0.010	5317953
Nitrogen (Ammonia Nitrogen)	mg/L	0.066	0.050	1.7	0.050	1.4	1.4	0.050	5322504
Total Organic Carbon (C)	mg/L	1.5	0.50	0.97 (1)	0.50	3.1	3.1	0.50	5325379
Orthophosphate (P)	mg/L	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5317948
pH	pH	7.61	N/A	7.85	N/A	12.0 (2)	12.0 (2)	N/A	5322210
Reactive Silica (SiO2)	mg/L	13	0.50	10	0.50	2.3	2.4	0.50	5317943
Dissolved Sulphate (SO4)	mg/L	95 (3)	10	<2.0	2.0	160	150	10	5317937
Turbidity	NTU	1.5	0.10	7.9	0.10	0.25	0.27	0.10	5322352
Conductivity	uS/cm	710	1.0	810	1.0	2500	2400	1.0	5322215

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Reporting limit was increased due to turbidity.
(2) pH: linear range exceedance. Extended linearity confirmed.
(3) Elevated reporting limit due to sample matrix.

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Maxxam Job #: B7S1461
Report Date: 2017/12/21

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		FSZ408	FSZ409	FSZ410	FSZ411	FSZ412		
Sampling Date		2017/12/12	2017/12/12	2017/12/12	2017/12/12	2017/12/12		
COC Number		641599	641599	641599	641599	641599		
	UNITS	MCWS-310-MW	MCWS-309-MW	MCWS-307-MWB	MCWS-306-MWB	MCWS-113-MWB	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	0.013	0.018	<0.013	<0.013	<0.013	0.013	5320432

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FSZ413	FSZ414		
Sampling Date		2017/12/12	2017/12/12		
COC Number		641599	641599		
	UNITS	MCES-001-MWA	FD-06	RDL	QC Batch
Metals					
Total Mercury (Hg)	ug/L	<0.013	<0.013	0.013	5320432

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7S1461
Report Date: 2017/12/21

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FSZ408	FSZ409		FSZ410		FSZ411		
Sampling Date		2017/12/12	2017/12/12		2017/12/12		2017/12/12		
COC Number		641599	641599		641599		641599		
	UNITS	MCWS-310-MW	MCWS-309-MW	QC Batch	MCWS-307-MWB	QC Batch	MCWS-306-MWB	RDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	100	62	5322171	5.4	5322172	<5.0	5.0	5322171
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	5322171	<1.0	5322172	<1.0	1.0	5322171
Dissolved Arsenic (As)	ug/L	<1.0	3.6	5322171	<1.0	5322172	<1.0	1.0	5322171
Dissolved Barium (Ba)	ug/L	29	12	5322171	31	5322172	69	1.0	5322171
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	5322171	<1.0	5322172	<1.0	1.0	5322171
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	5322171	<2.0	5322172	<2.0	2.0	5322171
Dissolved Boron (B)	ug/L	<50	410	5322171	120	5322172	69	50	5322171
Dissolved Cadmium (Cd)	ug/L	0.023	0.019	5322171	0.020	5322172	0.10	0.010	5322171
Dissolved Calcium (Ca)	ug/L	29000	6700	5322171	69000	5322172	110000	100	5322171
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	5322171	<1.0	5322172	<1.0	1.0	5322171
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	5322171	<0.40	5322172	1.2	0.40	5322171
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	5322171	<2.0	5322172	<2.0	2.0	5322171
Dissolved Iron (Fe)	ug/L	<50	190	5322171	<50	5322172	100	50	5322171
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	5322171	<0.50	5322172	<0.50	0.50	5322171
Dissolved Magnesium (Mg)	ug/L	3800	2200	5322171	11000	5322172	20000	100	5322171
Dissolved Manganese (Mn)	ug/L	3.6	1200	5322171	130	5322172	3000	2.0	5322171
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	5322171	<2.0	5322172	<2.0	2.0	5322171
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	5322171	<2.0	5322172	2.4	2.0	5322171
Dissolved Phosphorus (P)	ug/L	<100	190	5322171	<100	5322172	<100	100	5322171
Dissolved Potassium (K)	ug/L	1600	8800	5322171	2000	5322172	2600	100	5322171
Dissolved Selenium (Se)	ug/L	<1.0	<1.0	5322171	<1.0	5322172	<1.0	1.0	5322171
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	5322171	<0.10	5322172	<0.10	0.10	5322171
Dissolved Sodium (Na)	ug/L	16000	180000	5322171	200000	5322172	13000	100	5322171
Dissolved Strontium (Sr)	ug/L	830	28	5322171	320	5322172	270	2.0	5322171
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	5322171	<0.10	5322172	<0.10	0.10	5322171
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	5322171	<2.0	5322172	<2.0	2.0	5322171
Dissolved Titanium (Ti)	ug/L	<2.0	3.1	5322171	<2.0	5322172	<2.0	2.0	5322171
Dissolved Uranium (U)	ug/L	0.40	0.20	5322171	1.2	5322172	0.78	0.10	5322171
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	5322171	<2.0	5322172	<2.0	2.0	5322171
Dissolved Zinc (Zn)	ug/L	190	<5.0	5322171	<5.0	5322172	<5.0	5.0	5322171

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FSZ412	FSZ413	FSZ414		
Sampling Date		2017/12/12	2017/12/12	2017/12/12		
COC Number		641599	641599	641599		
	UNITS	MCWS-113-MWB	MCES-001-MWA	FD-06	RDL	QC Batch
Metals						
Dissolved Aluminum (Al)	ug/L	5.1	52	54	5.0	5322171
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	1.0	5322171
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	<1.0	1.0	5322171
Dissolved Barium (Ba)	ug/L	210	140	140	1.0	5322171
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	1.0	5322171
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	2.0	5322171
Dissolved Boron (B)	ug/L	300	<50	<50	50	5322171
Dissolved Cadmium (Cd)	ug/L	<0.010	<0.010	0.017	0.010	5322171
Dissolved Calcium (Ca)	ug/L	77000	240000	240000	100	5322171
Dissolved Chromium (Cr)	ug/L	<1.0	2.0	2.1	1.0	5322171
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	0.40	5322171
Dissolved Copper (Cu)	ug/L	<2.0	11	4.3	2.0	5322171
Dissolved Iron (Fe)	ug/L	2100	<50	<50	50	5322171
Dissolved Lead (Pb)	ug/L	<0.50	4.0	4.2	0.50	5322171
Dissolved Magnesium (Mg)	ug/L	13000	<100	<100	100	5322171
Dissolved Manganese (Mn)	ug/L	3500	<2.0	<2.0	2.0	5322171
Dissolved Molybdenum (Mo)	ug/L	<2.0	8.5	9.0	2.0	5322171
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	2.0	5322171
Dissolved Phosphorus (P)	ug/L	260	<100	<100	100	5322171
Dissolved Potassium (K)	ug/L	6800	17000	17000	100	5322171
Dissolved Selenium (Se)	ug/L	<1.0	1.8	1.8	1.0	5322171
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	0.10	5322171
Dissolved Sodium (Na)	ug/L	67000	42000	42000	100	5322171
Dissolved Strontium (Sr)	ug/L	360	1300	1300	2.0	5322171
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	0.10	5322171
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	2.0	5322171
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	2.0	5322171
Dissolved Uranium (U)	ug/L	<0.10	<0.10	<0.10	0.10	5322171
Dissolved Vanadium (V)	ug/L	<2.0	18	18	2.0	5322171
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0	5322171

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7S1461
Report Date: 2017/12/21

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FSZ408	FSZ409	FSZ410	FSZ411		
Sampling Date		2017/12/12	2017/12/12	2017/12/12	2017/12/12		
COC Number		641599	641599	641599	641599		
	UNITS	MCWS-310-MW	MCWS-309-MW	MCWS-307-MWB	MCWS-306-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons							
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5320488
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	5320488
Acenaphthene	ug/L	0.037	<0.010	<0.010	<0.010	0.010	5320488
Acenaphthylene	ug/L	0.032	0.021	<0.010	<0.010	0.010	5320488
Anthracene	ug/L	<0.010	0.039	<0.010	<0.010	0.010	5320488
Benzo(a)anthracene	ug/L	<0.010	0.10	<0.010	<0.010	0.010	5320488
Benzo(a)pyrene	ug/L	<0.010	0.090	<0.010	<0.010	0.010	5320488
Benzo(b)fluoranthene	ug/L	<0.010	0.077	<0.010	<0.010	0.010	5320488
Benzo(b/j)fluoranthene	ug/L	<0.020	0.13	<0.020	<0.020	0.020	5313510
Benzo(g,h,i)perylene	ug/L	<0.010	0.064	<0.010	<0.010	0.010	5320488
Benzo(j)fluoranthene	ug/L	<0.010	0.051	<0.010	<0.010	0.010	5320488
Benzo(k)fluoranthene	ug/L	<0.010	0.053	<0.010	<0.010	0.010	5320488
Chrysene	ug/L	<0.010	0.11	<0.010	<0.010	0.010	5320488
Dibenz(a,h)anthracene	ug/L	<0.010	0.019	<0.010	<0.010	0.010	5320488
Fluoranthene	ug/L	0.021	0.29	<0.010	<0.010	0.010	5320488
Fluorene	ug/L	0.010	0.024	<0.010	<0.010	0.010	5320488
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.059	<0.010	<0.010	0.010	5320488
Naphthalene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	5320488
Perylene	ug/L	<0.010	0.028	<0.010	<0.010	0.010	5320488
Phenanthrene	ug/L	<0.010	0.11	<0.010	<0.010	0.010	5320488
Pyrene	ug/L	0.014	0.22	<0.010	<0.010	0.010	5320488
Surrogate Recovery (%)							
D10-Anthracene	%	77	81	102	118		5320488
D14-Terphenyl	%	73	78	104	110		5320488
D8-Acenaphthylene	%	50	55	72	71		5320488

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FSZ412		FSZ413	FSZ414		
Sampling Date		2017/12/12		2017/12/12	2017/12/12		
COC Number		641599		641599	641599		
	UNITS	MCWS-113-MWB	QC Batch	MCES-001-MWA	FD-06	RDL	QC Batch
Polyaromatic Hydrocarbons							
1-Methylnaphthalene	ug/L	<0.050	5322398	0.13	0.12	0.050	5320488
2-Methylnaphthalene	ug/L	<0.050	5322398	<0.050	<0.050	0.050	5320488
Acenaphthene	ug/L	<0.010	5322398	0.052	0.048	0.010	5320488
Acenaphthylene	ug/L	<0.010	5322398	0.073	0.067	0.010	5320488
Anthracene	ug/L	<0.010	5322398	0.021	0.013	0.010	5320488
Benzo(a)anthracene	ug/L	0.012	5322398	0.021	<0.010	0.010	5320488
Benzo(a)pyrene	ug/L	0.021	5322398	<0.010	<0.010	0.010	5320488
Benzo(b)fluoranthene	ug/L	0.021	5322398	<0.010	<0.010	0.010	5320488
Benzo(b/j)fluoranthene	ug/L	0.031	5313510	<0.020	<0.020	0.020	5313510
Benzo(g,h,i)perylene	ug/L	0.013	5322398	<0.010	<0.010	0.010	5320488
Benzo(j)fluoranthene	ug/L	0.010	5322398	<0.010	<0.010	0.010	5320488
Benzo(k)fluoranthene	ug/L	0.012	5322398	<0.010	<0.010	0.010	5320488
Chrysene	ug/L	0.022	5322398	0.024	0.011	0.010	5320488
Dibenz(a,h)anthracene	ug/L	<0.010	5322398	<0.010	<0.010	0.010	5320488
Fluoranthene	ug/L	0.014	5322398	0.22	0.090	0.010	5320488
Fluorene	ug/L	<0.010	5322398	0.076	0.074	0.010	5320488
Indeno(1,2,3-cd)pyrene	ug/L	0.011	5322398	<0.010	<0.010	0.010	5320488
Naphthalene	ug/L	<0.20	5322398	<0.20	<0.20	0.20	5320488
Perylene	ug/L	<0.010	5322398	<0.010	<0.010	0.010	5320488
Phenanthrene	ug/L	<0.010	5322398	0.041	0.034	0.010	5320488
Pyrene	ug/L	0.13	5322398	0.31	0.13	0.010	5320488
Surrogate Recovery (%)							
D10-Anthracene	%	7.5 (1)	5322398	104	94		5320488
D14-Terphenyl	%	69	5322398	116	100		5320488
D8-Acenaphthylene	%	4.2 (1)	5322398	86	71		5320488

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PAH surrogate(s) not within acceptance limits. Analysis was repeated with similar results.

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GENERAL COMMENTS

Sample FSZ408 [MCWS-310-MW] : Poor RCAp Ion Balance due to sample matrix. Re-analysis of metals and chloride confirmed original results.

Sample FSZ413 [MCES-001-MWA] : Poor RCAp Ion Balance due to sample matrix.

Sample FSZ414 [FD-06] : Poor RCAp Ion Balance due to sample matrix.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5317662	NRG	Matrix Spike	Total Alkalinity (Total as CaCO3)	2017/12/20		NC	%	80 - 120
5317662	NRG	Spiked Blank	Total Alkalinity (Total as CaCO3)	2017/12/19		116	%	80 - 120
5317662	NRG	Method Blank	Total Alkalinity (Total as CaCO3)	2017/12/19	<5.0		mg/L	
5317662	NRG	RPD	Total Alkalinity (Total as CaCO3)	2017/12/20	1.4 (1)		%	25
5317671	NRG	Matrix Spike	Dissolved Chloride (Cl)	2017/12/19		NC	%	80 - 120
5317671	NRG	QC Standard	Dissolved Chloride (Cl)	2017/12/19		110	%	80 - 120
5317671	NRG	Spiked Blank	Dissolved Chloride (Cl)	2017/12/19		105	%	80 - 120
5317671	NRG	Method Blank	Dissolved Chloride (Cl)	2017/12/19	<1.0		mg/L	
5317671	NRG	RPD	Dissolved Chloride (Cl)	2017/12/19	1.4		%	25
5317676	NRG	Matrix Spike	Dissolved Sulphate (SO4)	2017/12/18		NC	%	80 - 120
5317676	NRG	Spiked Blank	Dissolved Sulphate (SO4)	2017/12/18		101	%	80 - 120
5317676	NRG	Method Blank	Dissolved Sulphate (SO4)	2017/12/18	<2.0		mg/L	
5317676	NRG	RPD	Dissolved Sulphate (SO4)	2017/12/18	1.2		%	25
5317677	NRG	Matrix Spike	Reactive Silica (SiO2)	2017/12/20		99	%	80 - 120
5317677	NRG	Spiked Blank	Reactive Silica (SiO2)	2017/12/20		100	%	80 - 120
5317677	NRG	Method Blank	Reactive Silica (SiO2)	2017/12/20	<0.50		mg/L	
5317677	NRG	RPD	Reactive Silica (SiO2)	2017/12/20	0.74		%	25
5317681	NRG	Spiked Blank	Colour	2017/12/18		96	%	80 - 120
5317681	NRG	Method Blank	Colour	2017/12/18	<5.0		TCU	
5317681	NRG	RPD	Colour	2017/12/18	NC		%	20
5317684	NRG	Matrix Spike	Nitrate + Nitrite (N)	2017/12/19		90	%	80 - 120
5317684	NRG	Spiked Blank	Nitrate + Nitrite (N)	2017/12/19		94	%	80 - 120
5317684	NRG	Method Blank	Nitrate + Nitrite (N)	2017/12/19	<0.050		mg/L	
5317684	NRG	RPD	Nitrate + Nitrite (N)	2017/12/19	6.4		%	25
5317692	NRG	Matrix Spike	Nitrite (N)	2017/12/19		102	%	80 - 120
5317692	NRG	Spiked Blank	Nitrite (N)	2017/12/19		106	%	80 - 120
5317692	NRG	Method Blank	Nitrite (N)	2017/12/19	<0.010		mg/L	
5317692	NRG	RPD	Nitrite (N)	2017/12/19	NC		%	25
5317694	NRG	Matrix Spike	Orthophosphate (P)	2017/12/20		93	%	80 - 120
5317694	NRG	Spiked Blank	Orthophosphate (P)	2017/12/20		97	%	80 - 120
5317694	NRG	Method Blank	Orthophosphate (P)	2017/12/20	<0.010		mg/L	
5317694	NRG	RPD	Orthophosphate (P)	2017/12/20	NC		%	25
5317929	NRG	Matrix Spike [FSZ411-01]	Total Alkalinity (Total as CaCO3)	2017/12/20		NC	%	80 - 120
5317929	NRG	Spiked Blank	Total Alkalinity (Total as CaCO3)	2017/12/20		109	%	80 - 120
5317929	NRG	Method Blank	Total Alkalinity (Total as CaCO3)	2017/12/20	<5.0		mg/L	
5317929	NRG	RPD [FSZ411-01]	Total Alkalinity (Total as CaCO3)	2017/12/20	3.0		%	25
5317932	NRG	Matrix Spike [FSZ411-01]	Dissolved Chloride (Cl)	2017/12/19		99	%	80 - 120
5317932	NRG	QC Standard	Dissolved Chloride (Cl)	2017/12/19		112	%	80 - 120
5317932	NRG	Spiked Blank	Dissolved Chloride (Cl)	2017/12/19		98	%	80 - 120
5317932	NRG	Method Blank	Dissolved Chloride (Cl)	2017/12/19	<1.0		mg/L	
5317932	NRG	RPD [FSZ411-01]	Dissolved Chloride (Cl)	2017/12/19	3.0		%	25
5317937	NRG	Matrix Spike [FSZ411-01]	Dissolved Sulphate (SO4)	2017/12/18		NC	%	80 - 120
5317937	NRG	Spiked Blank	Dissolved Sulphate (SO4)	2017/12/18		98	%	80 - 120
5317937	NRG	Method Blank	Dissolved Sulphate (SO4)	2017/12/18	<2.0		mg/L	
5317937	NRG	RPD [FSZ411-01]	Dissolved Sulphate (SO4)	2017/12/18	2.3 (1)		%	25
5317943	NRG	Matrix Spike [FSZ411-01]	Reactive Silica (SiO2)	2017/12/20		NC	%	80 - 120
5317943	NRG	Spiked Blank	Reactive Silica (SiO2)	2017/12/20		98	%	80 - 120
5317943	NRG	Method Blank	Reactive Silica (SiO2)	2017/12/20	<0.50		mg/L	
5317943	NRG	RPD [FSZ411-01]	Reactive Silica (SiO2)	2017/12/20	0.055		%	25
5317947	NRG	Spiked Blank	Colour	2017/12/18		93	%	80 - 120
5317947	NRG	Method Blank	Colour	2017/12/18	<5.0		TCU	
5317947	NRG	RPD [FSZ411-01]	Colour	2017/12/18	NC		%	20
5317948	NRG	Matrix Spike [FSZ411-01]	Orthophosphate (P)	2017/12/20		93	%	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
5317948	NRG	Spiked Blank	Orthophosphate (P)	2017/12/20		94	%	80 - 120
5317948	NRG	Method Blank	Orthophosphate (P)	2017/12/20	<0.010		mg/L	
5317948	NRG	RPD [FSZ411-01]	Orthophosphate (P)	2017/12/20	NC		%	25
5317952	NRG	Matrix Spike [FSZ411-01]	Nitrate + Nitrite (N)	2017/12/19		85	%	80 - 120
5317952	NRG	Spiked Blank	Nitrate + Nitrite (N)	2017/12/19		92	%	80 - 120
5317952	NRG	Method Blank	Nitrate + Nitrite (N)	2017/12/19	<0.050		mg/L	
5317952	NRG	RPD [FSZ411-01]	Nitrate + Nitrite (N)	2017/12/19	NC		%	25
5317953	NRG	Matrix Spike [FSZ411-01]	Nitrite (N)	2017/12/19		100	%	80 - 120
5317953	NRG	Spiked Blank	Nitrite (N)	2017/12/19		103	%	80 - 120
5317953	NRG	Method Blank	Nitrite (N)	2017/12/19	<0.010		mg/L	
5317953	NRG	RPD [FSZ411-01]	Nitrite (N)	2017/12/19	NC		%	25
5320432	ARS	Matrix Spike	Total Mercury (Hg)	2017/12/19		97	%	80 - 120
5320432	ARS	Spiked Blank	Total Mercury (Hg)	2017/12/19		98	%	80 - 120
5320432	ARS	Method Blank	Total Mercury (Hg)	2017/12/19	<0.013		ug/L	
5320432	ARS	RPD	Total Mercury (Hg)	2017/12/19	NC		%	20
5320488	LGE	Matrix Spike [FSZ409-06]	D10-Anthracene	2017/12/18		78	%	50 - 130
			D14-Terphenyl	2017/12/18		80	%	50 - 130
			D8-Acenaphthylene	2017/12/18		58	%	50 - 130
			1-Methylnaphthalene	2017/12/18		67	%	30 - 130
			2-Methylnaphthalene	2017/12/18		74	%	30 - 130
			Acenaphthene	2017/12/18		81	%	30 - 130
			Acenaphthylene	2017/12/18		69	%	30 - 130
			Anthracene	2017/12/18		83	%	30 - 130
			Benzo(a)anthracene	2017/12/18		76	%	30 - 130
			Benzo(a)pyrene	2017/12/18		76	%	30 - 130
			Benzo(b)fluoranthene	2017/12/18		102	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/18		84	%	30 - 130
			Benzo(j)fluoranthene	2017/12/18		83	%	30 - 130
			Benzo(k)fluoranthene	2017/12/18		84	%	30 - 130
			Chrysene	2017/12/18		77	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/18		73	%	30 - 130
			Fluoranthene	2017/12/18		79	%	30 - 130
			Fluorene	2017/12/18		73	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/18		74	%	30 - 130
			Naphthalene	2017/12/18		71	%	30 - 130
			Perylene	2017/12/18		78	%	30 - 130
			Phenanthrene	2017/12/18		77	%	30 - 130
			Pyrene	2017/12/18		75	%	30 - 130
5320488	LGE	Spiked Blank	D10-Anthracene	2017/12/18		77	%	50 - 130
			D14-Terphenyl	2017/12/18		92	%	50 - 130
			D8-Acenaphthylene	2017/12/18		70	%	50 - 130
			1-Methylnaphthalene	2017/12/18		77	%	30 - 130
			2-Methylnaphthalene	2017/12/18		84	%	30 - 130
			Acenaphthene	2017/12/18		97	%	30 - 130
			Acenaphthylene	2017/12/18		84	%	30 - 130
			Anthracene	2017/12/18		84	%	30 - 130
			Benzo(a)anthracene	2017/12/18		86	%	30 - 130
			Benzo(a)pyrene	2017/12/18		84	%	30 - 130
			Benzo(b)fluoranthene	2017/12/18		96	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/18		83	%	30 - 130
			Benzo(j)fluoranthene	2017/12/18		92	%	30 - 130
			Benzo(k)fluoranthene	2017/12/18		91	%	30 - 130
			Chrysene	2017/12/18		84	%	30 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibenz(a,h)anthracene	2017/12/18		64	%	30 - 130
			Fluoranthene	2017/12/18		101	%	30 - 130
			Fluorene	2017/12/18		89	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/18		76	%	30 - 130
			Naphthalene	2017/12/18		82	%	30 - 130
			Perylene	2017/12/18		82	%	30 - 130
			Phenanthrene	2017/12/18		78	%	30 - 130
			Pyrene	2017/12/18		92	%	30 - 130
5320488	LGE	Method Blank	D10-Anthracene	2017/12/18		90	%	50 - 130
			D14-Terphenyl	2017/12/18		94	%	50 - 130
			D8-Acenaphthylene	2017/12/18		68	%	50 - 130
			1-Methylnaphthalene	2017/12/18	<0.050		ug/L	
			2-Methylnaphthalene	2017/12/18	<0.050		ug/L	
			Acenaphthene	2017/12/18	<0.010		ug/L	
			Acenaphthylene	2017/12/18	<0.010		ug/L	
			Anthracene	2017/12/18	<0.010		ug/L	
			Benzo(a)anthracene	2017/12/18	<0.010		ug/L	
			Benzo(a)pyrene	2017/12/18	<0.010		ug/L	
			Benzo(b)fluoranthene	2017/12/18	<0.010		ug/L	
			Benzo(g,h,i)perylene	2017/12/18	<0.010		ug/L	
			Benzo(j)fluoranthene	2017/12/18	<0.010		ug/L	
			Benzo(k)fluoranthene	2017/12/18	<0.010		ug/L	
			Chrysene	2017/12/18	<0.010		ug/L	
			Dibenz(a,h)anthracene	2017/12/18	<0.010		ug/L	
			Fluoranthene	2017/12/18	<0.010		ug/L	
			Fluorene	2017/12/18	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/12/18	<0.010		ug/L	
			Naphthalene	2017/12/18	<0.20		ug/L	
			Perylene	2017/12/18	<0.010		ug/L	
			Phenanthrene	2017/12/18	<0.010		ug/L	
			Pyrene	2017/12/18	<0.010		ug/L	
5320488	LGE	RPD [FSZ410-03]	1-Methylnaphthalene	2017/12/19	NC		%	40
			2-Methylnaphthalene	2017/12/19	NC		%	40
			Acenaphthene	2017/12/19	NC		%	40
			Acenaphthylene	2017/12/19	NC		%	40
			Anthracene	2017/12/19	NC		%	40
			Benzo(a)anthracene	2017/12/19	NC		%	40
			Benzo(a)pyrene	2017/12/19	NC		%	40
			Benzo(b)fluoranthene	2017/12/19	NC		%	40
			Benzo(g,h,i)perylene	2017/12/19	NC		%	40
			Benzo(j)fluoranthene	2017/12/19	NC		%	40
			Benzo(k)fluoranthene	2017/12/19	NC		%	40
			Chrysene	2017/12/19	NC		%	40
			Dibenz(a,h)anthracene	2017/12/19	NC		%	40
			Fluoranthene	2017/12/19	NC		%	40
			Fluorene	2017/12/19	NC		%	40
			Indeno(1,2,3-cd)pyrene	2017/12/19	NC		%	40
			Naphthalene	2017/12/19	NC		%	40
			Perylene	2017/12/19	NC		%	40
			Phenanthrene	2017/12/19	NC		%	40
			Pyrene	2017/12/19	NC		%	40
5322171	MLB	Matrix Spike	Dissolved Aluminum (Al)	2017/12/19		103	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/19		85	%	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 Arsenic (As)	2017/12/19		100	%	80 - 120
			Dissolved Barium (Ba)	2017/12/19		97	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/19		99	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/19		95	%	80 - 120
			Dissolved Boron (B)	2017/12/19		96	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/19		99	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/19		98	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/19		97	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/19		98	%	80 - 120
			Dissolved Copper (Cu)	2017/12/19		95	%	80 - 120
			Dissolved Iron (Fe)	2017/12/19		100	%	80 - 120
			Dissolved Lead (Pb)	2017/12/19		97	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/19		97	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/19		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/19		100	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/19		98	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/19		107	%	80 - 120
			Dissolved Potassium (K)	2017/12/19		102	%	80 - 120
			Dissolved Selenium (Se)	2017/12/19		99	%	80 - 120
			Dissolved Silver (Ag)	2017/12/19		98	%	80 - 120
			Dissolved Sodium (Na)	2017/12/19		NC	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/19		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/19		101	%	80 - 120
			Dissolved Tin (Sn)	2017/12/19		103	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/19		103	%	80 - 120
			Dissolved Uranium (U)	2017/12/19		103	%	80 - 120
			Dissolved Vanadium (V)	2017/12/19		100	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/19		102	%	80 - 120
5322171	MLB	Spiked Blank	Dissolved Aluminum (Al)	2017/12/19		103	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/19		88	%	80 - 120
			Dissolved Arsenic (As)	2017/12/19		99	%	80 - 120
			Dissolved Barium (Ba)	2017/12/19		98	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/19		101	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/19		100	%	80 - 120
			Dissolved Boron (B)	2017/12/19		99	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/19		100	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/19		100	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/19		98	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/19		98	%	80 - 120
			Dissolved Copper (Cu)	2017/12/19		98	%	80 - 120
			Dissolved Iron (Fe)	2017/12/19		102	%	80 - 120
			Dissolved Lead (Pb)	2017/12/19		98	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/19		102	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/19		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/19		99	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/19		99	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/19		107	%	80 - 120
			Dissolved Potassium (K)	2017/12/19		102	%	80 - 120
			Dissolved Selenium (Se)	2017/12/19		101	%	80 - 120
			Dissolved Silver (Ag)	2017/12/19		100	%	80 - 120
			Dissolved Sodium (Na)	2017/12/19		99	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/19		102	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/19		102	%	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 Tin (Sn)	2017/12/19		104	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/19		97	%	80 - 120
			Dissolved Uranium (U)	2017/12/19		103	%	80 - 120
			Dissolved Vanadium (V)	2017/12/19		101	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/19		104	%	80 - 120
5322171	MLB	Method Blank	Dissolved Aluminum (Al)	2017/12/19	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/19	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/19	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/19	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/19	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/19	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/19	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/19	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/19	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/19	<1.0		ug/L	
			Dissolved Cobalt (Co)	2017/12/19	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/19	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/19	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/19	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/19	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/19	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/19	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/19	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/19	<100		ug/L	
			Dissolved Potassium (K)	2017/12/19	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/19	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/19	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/19	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/19	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/19	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/19	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/19	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/19	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/19	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/19	<5.0		ug/L	
5322171	MLB	RPD	Dissolved Aluminum (Al)	2017/12/19	1.1		%	20
			Dissolved Antimony (Sb)	2017/12/19	NC		%	20
			Dissolved Arsenic (As)	2017/12/19	NC		%	20
			Dissolved Barium (Ba)	2017/12/19	3.3		%	20
			Dissolved Beryllium (Be)	2017/12/19	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/19	NC		%	20
			Dissolved Boron (B)	2017/12/19	NC		%	20
			Dissolved Cadmium (Cd)	2017/12/19	1.6		%	20
			Dissolved Calcium (Ca)	2017/12/19	0.065		%	20
			Dissolved Chromium (Cr)	2017/12/19	NC		%	20
			Dissolved Cobalt (Co)	2017/12/19	NC		%	20
			Dissolved Copper (Cu)	2017/12/19	NC		%	20
			Dissolved Iron (Fe)	2017/12/19	NC		%	20
			Dissolved Lead (Pb)	2017/12/19	NC		%	20
			Dissolved Magnesium (Mg)	2017/12/19	0.52		%	20
			Dissolved Manganese (Mn)	2017/12/19	1.3		%	20
			Dissolved Molybdenum (Mo)	2017/12/19	NC		%	20
			Dissolved Nickel (Ni)	2017/12/19	7.1		%	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 Phosphorus (P)	2017/12/19	NC		%	20
			Dissolved Potassium (K)	2017/12/19	0.73		%	20
			Dissolved Selenium (Se)	2017/12/19	NC		%	20
			Dissolved Silver (Ag)	2017/12/19	NC		%	20
			Dissolved Sodium (Na)	2017/12/19	0.77		%	20
			Dissolved Strontium (Sr)	2017/12/19	1.1		%	20
			Dissolved Thallium (Tl)	2017/12/19	NC		%	20
			Dissolved Tin (Sn)	2017/12/19	NC		%	20
			Dissolved Titanium (Ti)	2017/12/19	NC		%	20
			Dissolved Uranium (U)	2017/12/19	NC		%	20
			Dissolved Vanadium (V)	2017/12/19	NC		%	20
			Dissolved Zinc (Zn)	2017/12/19	1.8		%	20
5322172	BAN	Matrix Spike [FSZ410-04]	Dissolved Aluminum (Al)	2017/12/19		102	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/19		101	%	80 - 120
			Dissolved Arsenic (As)	2017/12/19		102	%	80 - 120
			Dissolved Barium (Ba)	2017/12/19		96	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/19		100	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/19		99	%	80 - 120
			Dissolved Boron (B)	2017/12/19		105	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/19		103	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/19		NC	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/19		98	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/19		98	%	80 - 120
			Dissolved Copper (Cu)	2017/12/19		95	%	80 - 120
			Dissolved Iron (Fe)	2017/12/19		103	%	80 - 120
			Dissolved Lead (Pb)	2017/12/19		98	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/19		NC	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/19		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/19		108	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/19		97	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/19		106	%	80 - 120
			Dissolved Potassium (K)	2017/12/19		100	%	80 - 120
			Dissolved Selenium (Se)	2017/12/19		106	%	80 - 120
			Dissolved Silver (Ag)	2017/12/19		91	%	80 - 120
			Dissolved Sodium (Na)	2017/12/19		NC	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/19		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/19		103	%	80 - 120
			Dissolved Tin (Sn)	2017/12/19		110	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/19		102	%	80 - 120
			Dissolved Uranium (U)	2017/12/19		108	%	80 - 120
			Dissolved Vanadium (V)	2017/12/19		102	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/19		100	%	80 - 120
5322172	BAN	Spiked Blank	Dissolved Aluminum (Al)	2017/12/19		102	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/19		96	%	80 - 120
			Dissolved Arsenic (As)	2017/12/19		100	%	80 - 120
			Dissolved Barium (Ba)	2017/12/19		95	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/19		98	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/19		100	%	80 - 120
			Dissolved Boron (B)	2017/12/19		100	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/19		103	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/19		100	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/19		98	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/19		100	%	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 Copper (Cu)	2017/12/19		99	%	80 - 120
			Dissolved Iron (Fe)	2017/12/19		103	%	80 - 120
			Dissolved Lead (Pb)	2017/12/19		97	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/19		104	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/19		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/19		104	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/19		101	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/19		104	%	80 - 120
			Dissolved Potassium (K)	2017/12/19		99	%	80 - 120
			Dissolved Selenium (Se)	2017/12/19		103	%	80 - 120
			Dissolved Silver (Ag)	2017/12/19		102	%	80 - 120
			Dissolved Sodium (Na)	2017/12/19		101	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/19		102	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/19		100	%	80 - 120
			Dissolved Tin (Sn)	2017/12/19		105	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/19		102	%	80 - 120
			Dissolved Uranium (U)	2017/12/19		102	%	80 - 120
			Dissolved Vanadium (V)	2017/12/19		101	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/19		102	%	80 - 120
5322172	BAN	Method Blank	Dissolved Aluminum (Al)	2017/12/19	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/19	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/19	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/19	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/19	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/19	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/19	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/19	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/19	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/19	<1.0		ug/L	
			Dissolved Cobalt (Co)	2017/12/19	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/19	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/19	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/19	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/19	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/19	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/19	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/19	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/19	<100		ug/L	
			Dissolved Potassium (K)	2017/12/19	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/19	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/19	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/19	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/19	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/19	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/19	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/19	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/19	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/19	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/19	<5.0		ug/L	
5322172	BAN	RPD [FSZ410-04]	Dissolved Aluminum (Al)	2017/12/19	3.3		%	20
			Dissolved Antimony (Sb)	2017/12/19	NC		%	20
			Dissolved Arsenic (As)	2017/12/19	NC		%	20
			Dissolved Barium (Ba)	2017/12/19	0.0030		%	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 Beryllium (Be)	2017/12/19	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/19	NC		%	20
			Dissolved Boron (B)	2017/12/19	0.62		%	20
			Dissolved Cadmium (Cd)	2017/12/19	NC		%	20
			Dissolved Calcium (Ca)	2017/12/19	5.9		%	20
			Dissolved Chromium (Cr)	2017/12/19	NC		%	20
			Dissolved Cobalt (Co)	2017/12/19	NC		%	20
			Dissolved Copper (Cu)	2017/12/19	NC		%	20
			Dissolved Iron (Fe)	2017/12/19	NC		%	20
			Dissolved Lead (Pb)	2017/12/19	NC		%	20
			Dissolved Magnesium (Mg)	2017/12/19	0.73		%	20
			Dissolved Manganese (Mn)	2017/12/19	0.68		%	20
			Dissolved Molybdenum (Mo)	2017/12/19	NC		%	20
			Dissolved Nickel (Ni)	2017/12/19	NC		%	20
			Dissolved Phosphorus (P)	2017/12/19	NC		%	20
			Dissolved Potassium (K)	2017/12/19	1.1		%	20
			Dissolved Selenium (Se)	2017/12/19	NC		%	20
			Dissolved Silver (Ag)	2017/12/19	NC		%	20
			Dissolved Sodium (Na)	2017/12/19	0.20		%	20
			Dissolved Strontium (Sr)	2017/12/19	0.79		%	20
			Dissolved Thallium (Tl)	2017/12/19	NC		%	20
			Dissolved Tin (Sn)	2017/12/19	NC		%	20
			Dissolved Titanium (Ti)	2017/12/19	NC		%	20
			Dissolved Uranium (U)	2017/12/19	2.3		%	20
			Dissolved Vanadium (V)	2017/12/19	NC		%	20
			Dissolved Zinc (Zn)	2017/12/19	NC		%	20
5322210	JMV	QC Standard	pH	2017/12/19		100	%	97 - 103
5322210	JMV	RPD	pH	2017/12/19	0.79		%	N/A
5322215	JMV	Spiked Blank	Conductivity	2017/12/19		101	%	80 - 120
5322215	JMV	Method Blank	Conductivity	2017/12/19	1.4, RDL=1.0		uS/cm	
5322215	JMV	RPD	Conductivity	2017/12/19	2.2		%	25
5322348	JMV	QC Standard	Turbidity	2017/12/19		95	%	80 - 120
5322348	JMV	Spiked Blank	Turbidity	2017/12/19		91	%	80 - 120
5322348	JMV	Method Blank	Turbidity	2017/12/19	<0.10		NTU	
5322348	JMV	RPD	Turbidity	2017/12/19	1.9		%	20
5322352	JMV	QC Standard	Turbidity	2017/12/19		95	%	80 - 120
5322352	JMV	Spiked Blank	Turbidity	2017/12/19		91	%	80 - 120
5322352	JMV	Method Blank	Turbidity	2017/12/19	<0.10		NTU	
5322352	JMV	RPD	Turbidity	2017/12/19	NC		%	20
5322398	LGE	Matrix Spike	D10-Anthracene	2017/12/19		87	%	50 - 130
			D14-Terphenyl	2017/12/19		88	%	50 - 130
			D8-Acenaphthylene	2017/12/19		87	%	50 - 130
			1-Methylnaphthalene	2017/12/19		NC	%	30 - 130
			2-Methylnaphthalene	2017/12/19		NC	%	30 - 130
			Acenaphthene	2017/12/19		NC	%	30 - 130
			Acenaphthylene	2017/12/19		NC	%	30 - 130
			Anthracene	2017/12/19		130 (2)	%	30 - 130
			Benzo(a)anthracene	2017/12/19		105	%	30 - 130
			Benzo(a)pyrene	2017/12/19		105	%	30 - 130
			Benzo(b)fluoranthene	2017/12/19		126	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/19		123	%	30 - 130
			Benzo(j)fluoranthene	2017/12/19		107	%	30 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(k)fluoranthene	2017/12/19		111	%	30 - 130
			Chrysene	2017/12/19		103	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/19		107	%	30 - 130
			Fluoranthene	2017/12/19		NC	%	30 - 130
			Fluorene	2017/12/19		NC	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/19		112	%	30 - 130
			Naphthalene	2017/12/19		NC	%	30 - 130
			Perylene	2017/12/19		103	%	30 - 130
			Phenanthrene	2017/12/19		NC	%	30 - 130
			Pyrene	2017/12/19		103	%	30 - 130
5322398	LGE	Spiked Blank	D10-Anthracene	2017/12/19		84	%	50 - 130
			D14-Terphenyl	2017/12/19		89	%	50 - 130
			D8-Acenaphthylene	2017/12/19		90	%	50 - 130
			1-Methylnaphthalene	2017/12/19		82	%	30 - 130
			2-Methylnaphthalene	2017/12/19		89	%	30 - 130
			Acenaphthene	2017/12/19		96	%	30 - 130
			Acenaphthylene	2017/12/19		84	%	30 - 130
			Anthracene	2017/12/19		107	%	30 - 130
			Benzo(a)anthracene	2017/12/19		99	%	30 - 130
			Benzo(a)pyrene	2017/12/19		100	%	30 - 130
			Benzo(b)fluoranthene	2017/12/19		123	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/19		118	%	30 - 130
			Benzo(j)fluoranthene	2017/12/19		108	%	30 - 130
			Benzo(k)fluoranthene	2017/12/19		110	%	30 - 130
			Chrysene	2017/12/19		97	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/19		100	%	30 - 130
			Fluoranthene	2017/12/19		107	%	30 - 130
			Fluorene	2017/12/19		92	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/19		105	%	30 - 130
			Naphthalene	2017/12/19		86	%	30 - 130
			Perylene	2017/12/19		103	%	30 - 130
			Phenanthrene	2017/12/19		93	%	30 - 130
			Pyrene	2017/12/19		101	%	30 - 130
5322398	LGE	Method Blank	D10-Anthracene	2017/12/19		102	%	50 - 130
			D14-Terphenyl	2017/12/19		101	%	50 - 130
			D8-Acenaphthylene	2017/12/19		90	%	50 - 130
			1-Methylnaphthalene	2017/12/19	<0.050		ug/L	
			2-Methylnaphthalene	2017/12/19	<0.050		ug/L	
			Acenaphthene	2017/12/19	<0.010		ug/L	
			Acenaphthylene	2017/12/19	<0.010		ug/L	
			Anthracene	2017/12/19	<0.010		ug/L	
			Benzo(a)anthracene	2017/12/19	<0.010		ug/L	
			Benzo(a)pyrene	2017/12/19	<0.010		ug/L	
			Benzo(b)fluoranthene	2017/12/19	<0.010		ug/L	
			Benzo(g,h,i)perylene	2017/12/19	<0.010		ug/L	
			Benzo(j)fluoranthene	2017/12/19	<0.010		ug/L	
			Benzo(k)fluoranthene	2017/12/19	<0.010		ug/L	
			Chrysene	2017/12/19	<0.010		ug/L	
			Dibenz(a,h)anthracene	2017/12/19	<0.010		ug/L	
			Fluoranthene	2017/12/19	<0.010		ug/L	
			Fluorene	2017/12/19	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/12/19	<0.010		ug/L	
			Naphthalene	2017/12/19	<0.20		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Perylene	2017/12/19	<0.010		ug/L	
			Phenanthrene	2017/12/19	<0.010		ug/L	
			Pyrene	2017/12/19	<0.010		ug/L	
5322398	LGE	RPD	1-Methylnaphthalene	2017/12/19	3.5		%	40
			2-Methylnaphthalene	2017/12/19	2.8		%	40
			Acenaphthene	2017/12/19	2.2		%	40
			Acenaphthylene	2017/12/19	3.3		%	40
			Anthracene	2017/12/19	14		%	40
			Benzo(a)anthracene	2017/12/19	31		%	40
			Benzo(a)pyrene	2017/12/19	22		%	40
			Benzo(b)fluoranthene	2017/12/19	16		%	40
			Benzo(g,h,i)perylene	2017/12/19	30		%	40
			Benzo(j)fluoranthene	2017/12/19	22		%	40
			Benzo(k)fluoranthene	2017/12/19	24		%	40
			Chrysene	2017/12/19	24		%	40
			Dibenz(a,h)anthracene	2017/12/19	NC		%	40
			Fluoranthene	2017/12/19	11		%	40
			Fluorene	2017/12/19	2.8		%	40
			Indeno(1,2,3-cd)pyrene	2017/12/19	6.8		%	40
			Naphthalene	2017/12/19	2.6		%	40
			Perylene	2017/12/19	NC		%	40
			Phenanthrene	2017/12/19	21		%	40
			Pyrene	2017/12/19	12		%	40
5322504	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/19		102	%	80 - 120
5322504	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/19		107	%	80 - 120
5322504	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/19	<0.050		mg/L	
5322504	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/19	NC		%	20
5325379	LMP	Matrix Spike [FSZ411-02]	Total Organic Carbon (C)	2017/12/20		91	%	80 - 120
5325379	LMP	Spiked Blank	Total Organic Carbon (C)	2017/12/20		99	%	80 - 120
5325379	LMP	Method Blank	Total Organic Carbon (C)	2017/12/20	<0.50		mg/L	
5325379	LMP	RPD [FSZ410-02]	Total Organic Carbon (C)	2017/12/20	12		%	20

N/A = Not Applicable

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.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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) Elevated reporting limit due to sample matrix.

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

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Maxxam Job #: B7S1461
Report Date: 2017/12/21

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

VALIDATION SIGNATURE PAGE

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

Mike MacGillivray, Scientific Specialist (Inorganics)

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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A Bureau Veritas Group Company

Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/19
Report #: R4915303
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7R9339
Received: 2017/12/08, 16:35

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	8	N/A	2017/12/14	N/A	SM 22 4500-CO2 D
Alkalinity (1)	8	N/A	2017/12/18	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	8	N/A	2017/12/14	N/A	Auto Calc.
Chloride (1)	8	N/A	2017/12/18	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	8	N/A	2017/12/15	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	8	N/A	2017/12/14	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	6	N/A	2017/12/14	ATL SOP 00048	SM 22 2340 B
Hardness (calculated as CaCO3) (1)	1	N/A	2017/12/15	ATL SOP 00048	SM 22 2340 B
Hardness (calculated as CaCO3) (1)	1	N/A	2017/12/18	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	8	2017/12/14	2017/12/15	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	7	N/A	2017/12/14	ATL SOP 00058	EPA 6020A R1 m
Metals Water Diss. MS (as rec'd) (1)	1	N/A	2017/12/18	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	8	N/A	2017/12/19	N/A	Auto Calc.
Anion and Cation Sum (1)	6	N/A	2017/12/14	N/A	Auto Calc.
Anion and Cation Sum (1)	1	N/A	2017/12/15	N/A	Auto Calc.
Anion and Cation Sum (1)	1	N/A	2017/12/18	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	8	N/A	2017/12/13	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	8	N/A	2017/12/18	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	8	N/A	2017/12/15	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	8	N/A	2017/12/18	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	8	2017/12/13	2017/12/14	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	8	N/A	2017/12/14	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	8	N/A	2017/12/15	ATL SOP 00021	SM 22 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	8	N/A	2017/12/19	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	8	N/A	2017/12/19	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	8	N/A	2017/12/18	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	8	N/A	2017/12/15	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	8	N/A	2017/12/19	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	8	N/A	2017/12/18	ATL SOP 00037	SM 22 5310C m
Turbidity (1)	8	N/A	2017/12/14	ATL SOP 00011	EPA 180.1 R2 m

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CERTIFICATE OF ANALYSIS

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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.

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.

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.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Sr. Project Manager
Email: NMacAskill@maxxam.ca
Phone# (902)567-1255 Ext:17

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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.

Maxxam Job #: B7R9339
Report Date: 2017/12/19

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FSP392		FSP393		FSP394		
Sampling Date		2017/12/08		2017/12/08		2017/12/08		
COC Number		641599		641599		641599		
	UNITS	COSCW-002 MWA	RDL	COSCW-002 MWB	QC Batch	COSCW-001 MWA	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	9.53	N/A	6.51	5308895	5.12	N/A	5308895
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	330	1.0	200	5308891	190	1.0	5308891
Calculated TDS	mg/L	530	1.0	370	5308900	290	1.0	5308900
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.2	1.0	1.4	5308891	1.5	1.0	5308891
Cation Sum	me/L	9.66	N/A	6.31	5308895	4.99	N/A	5308895
Hardness (CaCO3)	mg/L	470	1.0	260	5308892	220	1.0	5308892
Ion Balance (% Difference)	%	0.680	N/A	1.56	5308894	1.29	N/A	5308894
Langelier Index (@ 20C)	N/A	0.831		0.680	5308898	0.665		5308898
Langelier Index (@ 4C)	N/A	0.583		0.431	5308899	0.416		5308899
Nitrate (N)	mg/L	0.083	0.050	0.085	5308896	0.071	0.050	5308896
Saturation pH (@ 20C)	N/A	6.75		7.20	5308898	7.26		5308898
Saturation pH (@ 4C)	N/A	7.00		7.45	5308899	7.51		5308899
Inorganics								
Total Alkalinity (Total as CaCO3)	mg/L	330 (1)	25	200 (1)	5315162	190 (1)	25	5315162
Dissolved Chloride (Cl)	mg/L	7.7	1.0	11	5315165	14	1.0	5315165
Colour	TCU	<5.0	5.0	<5.0	5315170	<5.0	5.0	5315170
Nitrate + Nitrite (N)	mg/L	0.083	0.050	0.085	5315175	0.071	0.050	5315175
Nitrite (N)	mg/L	<0.010	0.010	<0.010	5315176	<0.010	0.010	5315176
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	<0.050	5313519	0.13	0.050	5313519
Total Organic Carbon (C)	mg/L	0.99	0.50	1.2	5320736	1.5	0.50	5320736
Orthophosphate (P)	mg/L	<0.010	0.010	<0.010	5315174	0.011	0.010	5315174
pH	pH	7.58	N/A	7.88	5315129	7.93	N/A	5315132
Reactive Silica (SiO2)	mg/L	14	0.50	10	5315168	12	0.50	5315168
Dissolved Sulphate (SO4)	mg/L	130 (1)	20	110	5315167	41 (1)	10	5315167
Turbidity	NTU	13	0.10	2.0	5315166	15	0.10	5315166
Conductivity	uS/cm	850	1.0	610	5315131	490	1.0	5315133

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.

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Maxxam Job #: B7R9339
Report Date: 2017/12/19

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FSP395			FSP396			FSP397		
Sampling Date		2017/12/08			2017/12/08			2017/12/08		
COC Number		641599			641599			641599		
	UNITS	COSCW-001 MWB	RDL	QC Batch	COBB-004-MWA	RDL	QC Batch	COSB-002-MWA	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	5.74	N/A	5308895	11.4	N/A	5309266	33.6	N/A	5309266
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	230	1.0	5308891	210	1.0	5309262	10	1.0	5309262
Calculated TDS	mg/L	310	1.0	5308900	730	1.0	5309271	2300	1.0	5309271
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.0	1.0	5308891	<1.0	1.0	5309262	<1.0	1.0	5309262
Cation Sum	me/L	5.53	N/A	5308895	11.9	N/A	5309266	35.2	N/A	5309266
Hardness (CaCO3)	mg/L	230	1.0	5308892	560	1.0	5309264	1700	1.0	5309264
Ion Balance (% Difference)	%	1.86	N/A	5308894	1.93	N/A	5309265	2.27	N/A	5309265
Langelier Index (@ 20C)	N/A	0.773		5308898	0.829		5309269	-3.55		5309269
Langelier Index (@ 4C)	N/A	0.524		5308899	0.582		5309270	-3.79		5309270
Nitrate (N)	mg/L	0.076	0.050	5308896	0.076	0.050	5309267	0.76	0.050	5309267
Saturation pH (@ 20C)	N/A	7.19		5308898	6.86		5309269	7.98		5309269
Saturation pH (@ 4C)	N/A	7.44		5308899	7.11		5309270	8.22		5309270
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	240 (1)	25	5315162	210 (1)	25	5315162	10	5.0	5315162
Dissolved Chloride (Cl)	mg/L	16	1.0	5315165	22	1.0	5315165	9.2	1.0	5315165
Colour	TCU	<5.0	5.0	5315170	5.3	5.0	5315170	26	5.0	5315170
Nitrate + Nitrite (N)	mg/L	0.076	0.050	5315175	0.076	0.050	5315175	0.76	0.050	5315175
Nitrite (N)	mg/L	<0.010	0.010	5315176	<0.010	0.010	5315176	<0.010	0.010	5315176
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	5313519	0.51	0.050	5313519	2.4 (1)	0.25	5313519
Total Organic Carbon (C)	mg/L	2.7	0.50	5320736	7.0	0.50	5320736	4.7	0.50	5320736
Orthophosphate (P)	mg/L	<0.010	0.010	5315174	0.015	0.010	5315174	0.010	0.010	5315174
pH	pH	7.96	N/A	5315132	7.69	N/A	5315129	4.43	N/A	5315126
Reactive Silica (SiO2)	mg/L	13	0.50	5315168	27	1.0	5315168	51	2.5	5315168
Dissolved Sulphate (SO4)	mg/L	28	2.0	5315167	310 (1)	40	5315167	1600 (1)	200	5315167
Turbidity	NTU	1.0	0.10	5315166	4.5	0.10	5315166	49	0.10	5315166
Conductivity	uS/cm	530	1.0	5315133	1100	1.0	5315131	2700	1.0	5315128

RDL = Reportable Detection Limit
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Report Date: 2017/12/19

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FSP398		FSP399		
Sampling Date		2017/12/08		2017/12/08		
COC Number		641599		641599		
	UNITS	COCP-110 MW	QC Batch	FD-05	RDL	QC Batch
Calculated Parameters						
Anion Sum	me/L	10.4	5309266	10.6	N/A	5309266
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	210	5309262	210	1.0	5309262
Calculated TDS	mg/L	640	5309271	660	1.0	5309271
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	5309262	<1.0	1.0	5309262
Cation Sum	me/L	10.3	5309266	10.5	N/A	5309266
Hardness (CaCO3)	mg/L	420	5309264	430	1.0	5309264
Ion Balance (% Difference)	%	0.140	5309265	0.380	N/A	5309265
Langelier Index (@ 20C)	N/A	0.654	5309269	0.680		5309269
Langelier Index (@ 4C)	N/A	0.406	5309270	0.433		5309270
Nitrate (N)	mg/L	0.20	5309267	0.16	0.050	5309267
Saturation pH (@ 20C)	N/A	7.02	5309269	7.01		5309269
Saturation pH (@ 4C)	N/A	7.26	5309270	7.26		5309270
Inorganics						
Total Alkalinity (Total as CaCO3)	mg/L	210 (1)	5315162	210 (1)	25	5315162
Dissolved Chloride (Cl)	mg/L	75	5315165	75	1.0	5315165
Colour	TCU	5.7	5315170	6.0	5.0	5315170
Nitrate + Nitrite (N)	mg/L	0.20	5315175	0.16	0.050	5315175
Nitrite (N)	mg/L	<0.010	5315176	<0.010	0.010	5315176
Nitrogen (Ammonia Nitrogen)	mg/L	1.4	5313519	1.3	0.050	5313519
Total Organic Carbon (C)	mg/L	4.1	5320736	4.1	0.50	5320736
Orthophosphate (P)	mg/L	<0.010	5315174	<0.010	0.010	5315174
pH	pH	7.67	5315132	7.69	N/A	5315129
Reactive Silica (SiO2)	mg/L	34	5315168	35	1.0	5315168
Dissolved Sulphate (SO4)	mg/L	200 (1)	5315167	210 (1)	30	5315167
Turbidity	NTU	69	5315166	86	0.10	5315166
Conductivity	uS/cm	990	5315133	1000	1.0	5315131

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.

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Dillon Consulting Limited
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MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		FSP392	FSP393	FSP394	FSP395	FSP396		
Sampling Date		2017/12/08	2017/12/08	2017/12/08	2017/12/08	2017/12/08		
COC Number		641599	641599	641599	641599	641599		
	UNITS	COSCW-002 MWA	COSCW-002 MWB	COSCW-001 MWA	COSCW-001 MWB	COBB-004-MWA	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	5315199

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FSP397	FSP398	FSP399		
Sampling Date		2017/12/08	2017/12/08	2017/12/08		
COC Number		641599	641599	641599		
	UNITS	COSB-002-MWA	COCP-110 MW	FD-05	RDL	QC Batch
Metals						
Total Mercury (Hg)	ug/L	<0.013	<0.013	0.015	0.013	5315199

RDL = Reportable Detection Limit
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ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FSP392	FSP393	FSP394	FSP395		
Sampling Date		2017/12/08	2017/12/08	2017/12/08	2017/12/08		
COC Number		641599	641599	641599	641599		
	UNITS	COSCW-002 MWA	COSCW-002 MWB	COSCW-001 MWA	COSCW-001 MWB	RDL	QC Batch
Metals							
Dissolved Aluminum (Al)	ug/L	7.0	<5.0	7.6	<5.0	5.0	5312802
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5312802
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	1.6	<1.0	1.0	5312802
Dissolved Barium (Ba)	ug/L	23	32	82	130	1.0	5312802
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5312802
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	5312802
Dissolved Boron (B)	ug/L	<50	<50	<50	56	50	5312802
Dissolved Cadmium (Cd)	ug/L	0.10	0.031	0.10	0.012	0.010	5312802
Dissolved Calcium (Ca)	ug/L	160000	87000	74000	73000	100	5312802
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5312802
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	0.65	<0.40	0.40	5312802
Dissolved Copper (Cu)	ug/L	23	3.9	3.0	<2.0	2.0	5312802
Dissolved Iron (Fe)	ug/L	<50	130	<50	59	50	5312802
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5312802
Dissolved Magnesium (Mg)	ug/L	17000	10000	8200	13000	100	5312802
Dissolved Manganese (Mn)	ug/L	2.3	340	3900	120	2.0	5312802
Dissolved Molybdenum (Mo)	ug/L	<2.0	5.3	<2.0	3.4	2.0	5312802
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	5312802
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	<100	100	5312802
Dissolved Potassium (K)	ug/L	1500	1600	1800	3400	100	5312802
Dissolved Selenium (Se)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5312802
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	5312802
Dissolved Sodium (Na)	ug/L	7300	24000	13000	17000	100	5312802
Dissolved Strontium (Sr)	ug/L	250	160	650	1300	2.0	5312802
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	5312802
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	5312802
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	5312802
Dissolved Uranium (U)	ug/L	4.4	1.7	0.70	1.8	0.10	5312802
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	5312802
Dissolved Zinc (Zn)	ug/L	110	25	29	<5.0	5.0	5312802

RDL = Reportable Detection Limit
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Maxxam Job #: B7R9339
Report Date: 2017/12/19

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FSP396			FSP397			FSP398		
Sampling Date		2017/12/08			2017/12/08			2017/12/08		
COC Number		641599			641599			641599		
	UNITS	COBB-004-MWA	RDL	QC Batch	COSB-002-MWA	RDL	QC Batch	COCP-110 MW	RDL	QC Batch
Metals										
Dissolved Aluminum (Al)	ug/L	5.5	5.0	5312802	34000	5.0	5317377	<5.0	5.0	5312802
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	5312802	<1.0	1.0	5317377	1.6	1.0	5312802
Dissolved Arsenic (As)	ug/L	2.9	1.0	5312802	<1.0	1.0	5317377	27	1.0	5312802
Dissolved Barium (Ba)	ug/L	94	1.0	5312802	70	1.0	5317377	86	1.0	5312802
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	5312802	3.7	1.0	5317377	<1.0	1.0	5312802
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	5312802	<2.0	2.0	5317377	<2.0	2.0	5312802
Dissolved Boron (B)	ug/L	82	50	5312802	110	50	5317377	75	50	5312802
Dissolved Cadmium (Cd)	ug/L	0.069	0.010	5312802	3.9	0.010	5317377	0.018	0.010	5312802
Dissolved Calcium (Ca)	ug/L	210000	100	5312802	470000	100	5317377	150000	100	5312802
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	5312802	3.8	1.0	5317377	<1.0	1.0	5312802
Dissolved Cobalt (Co)	ug/L	0.60	0.40	5312802	29	0.40	5317377	<0.40	0.40	5312802
Dissolved Copper (Cu)	ug/L	<2.0	2.0	5312802	100	2.0	5317377	<2.0	2.0	5312802
Dissolved Iron (Fe)	ug/L	280	50	5312802	7500	50	5317377	4000	50	5312802
Dissolved Lead (Pb)	ug/L	<0.50	0.50	5312802	1.8	0.50	5317377	<0.50	0.50	5312802
Dissolved Magnesium (Mg)	ug/L	9200	100	5312802	120000	1000	5317377	13000	100	5312802
Dissolved Manganese (Mn)	ug/L	2300	2.0	5312802	16000	2.0	5317377	370	2.0	5312802
Dissolved Molybdenum (Mo)	ug/L	12	2.0	5312802	<2.0	2.0	5317377	8.0	2.0	5312802
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	5312802	300	2.0	5317377	<2.0	2.0	5312802
Dissolved Phosphorus (P)	ug/L	<100	100	5312802	<100	100	5317377	290	100	5312802
Dissolved Potassium (K)	ug/L	4600	100	5312802	9700	100	5317377	12000	100	5312802
Dissolved Selenium (Se)	ug/L	<1.0	1.0	5312802	<1.0	1.0	5317377	1.1	1.0	5312802
Dissolved Silver (Ag)	ug/L	<0.10	0.10	5312802	<0.10	0.10	5317377	<0.10	0.10	5312802
Dissolved Sodium (Na)	ug/L	11000	100	5312802	18000	100	5317377	33000	100	5312802
Dissolved Strontium (Sr)	ug/L	880	2.0	5312802	1700	2.0	5317377	580	2.0	5312802
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	5312802	0.33	0.10	5317377	<0.10	0.10	5312802
Dissolved Tin (Sn)	ug/L	<2.0	2.0	5312802	<2.0	2.0	5317377	<2.0	2.0	5312802
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	5312802	<2.0	2.0	5317377	<2.0	2.0	5312802
Dissolved Uranium (U)	ug/L	8.2	0.10	5312802	1.6	0.10	5317377	2.4	0.10	5312802
Dissolved Vanadium (V)	ug/L	<2.0	2.0	5312802	<2.0	2.0	5317377	3.6	2.0	5312802
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	5312802	2400	5.0	5317377	<5.0	5.0	5312802

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ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FSP399		
Sampling Date		2017/12/08		
COC Number		641599		
	UNITS	FD-05	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	<5.0	5.0	5312802
Dissolved Antimony (Sb)	ug/L	1.4	1.0	5312802
Dissolved Arsenic (As)	ug/L	28	1.0	5312802
Dissolved Barium (Ba)	ug/L	85	1.0	5312802
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	5312802
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	5312802
Dissolved Boron (B)	ug/L	77	50	5312802
Dissolved Cadmium (Cd)	ug/L	0.021	0.010	5312802
Dissolved Calcium (Ca)	ug/L	150000	100	5312802
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	5312802
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	5312802
Dissolved Copper (Cu)	ug/L	<2.0	2.0	5312802
Dissolved Iron (Fe)	ug/L	4600	50	5312802
Dissolved Lead (Pb)	ug/L	<0.50	0.50	5312802
Dissolved Magnesium (Mg)	ug/L	13000	100	5312802
Dissolved Manganese (Mn)	ug/L	390	2.0	5312802
Dissolved Molybdenum (Mo)	ug/L	7.9	2.0	5312802
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	5312802
Dissolved Phosphorus (P)	ug/L	310	100	5312802
Dissolved Potassium (K)	ug/L	12000	100	5312802
Dissolved Selenium (Se)	ug/L	<1.0	1.0	5312802
Dissolved Silver (Ag)	ug/L	<0.10	0.10	5312802
Dissolved Sodium (Na)	ug/L	33000	100	5312802
Dissolved Strontium (Sr)	ug/L	580	2.0	5312802
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	5312802
Dissolved Tin (Sn)	ug/L	<2.0	2.0	5312802
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	5312802
Dissolved Uranium (U)	ug/L	2.5	0.10	5312802
Dissolved Vanadium (V)	ug/L	3.4	2.0	5312802
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	5312802

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FSP392	FSP393	FSP394	FSP395	FSP396		
Sampling Date		2017/12/08	2017/12/08	2017/12/08	2017/12/08	2017/12/08		
COC Number		641599	641599	641599	641599	641599		
	UNITS	COSCW-002 MWA	COSCW-002 MWB	COSCW-001 MWA	COSCW-001 MWB	COBB-004-MWA	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5312875
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5312875
Acenaphthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Acenaphthylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5309263
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Chrysene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Fluoranthene	ug/L	0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Fluorene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Naphthalene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5312875
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Phenanthrene	ug/L	0.024	<0.010	0.014	<0.010	<0.010	0.010	5312875
Pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5312875
Surrogate Recovery (%)								
D10-Anthracene	%	85	94	84	76	77		5312875
D14-Terphenyl	%	90	94	85	84	91		5312875
D8-Acenaphthylene	%	84	84	75	72	80		5312875

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FSP397	FSP398	FSP399		
Sampling Date		2017/12/08	2017/12/08	2017/12/08		
COC Number		641599	641599	641599		
	UNITS	COSB-002-MWA	COCP-110 MW	FD-05	RDL	QC Batch
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.050	5312875
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.050	5312875
Acenaphthene	ug/L	<0.010	0.024	0.023	0.010	5312875
Acenaphthylene	ug/L	<0.010	<0.010	<0.010	0.010	5312875
Anthracene	ug/L	<0.010	0.017	0.015	0.010	5312875
Benzo(a)anthracene	ug/L	<0.010	0.011	0.011	0.010	5312875
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	0.010	5312875
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	5312875
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	<0.020	0.020	5309263
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	0.010	5312875
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	5312875
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	5312875
Chrysene	ug/L	<0.010	0.017	0.017	0.010	5312875
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	0.010	5312875
Fluoranthene	ug/L	<0.010	0.033	0.034	0.010	5312875
Fluorene	ug/L	<0.010	<0.010	<0.010	0.010	5312875
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	0.010	5312875
Naphthalene	ug/L	<0.20	<0.20	<0.20	0.20	5312875
Perylene	ug/L	<0.010	<0.010	<0.010	0.010	5312875
Phenanthrene	ug/L	0.011	0.011	0.012	0.010	5312875
Pyrene	ug/L	<0.010	0.096	0.087	0.010	5312875
Surrogate Recovery (%)						
D10-Anthracene	%	57	81	84		5312875
D14-Terphenyl	%	78	85	95		5312875
D8-Acenaphthylene	%	64	70	80		5312875

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5312802	BAN	Matrix Spike	Dissolved Aluminum (Al)	2017/12/14		99	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/14		99	%	80 - 120
			Dissolved Arsenic (As)	2017/12/14		97	%	80 - 120
			Dissolved Barium (Ba)	2017/12/14		98	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/14		102	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/14		100	%	80 - 120
			Dissolved Boron (B)	2017/12/14		100	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/14		99	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/14		99	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/14		99	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/14		99	%	80 - 120
			Dissolved Copper (Cu)	2017/12/14		98	%	80 - 120
			Dissolved Iron (Fe)	2017/12/14		100	%	80 - 120
			Dissolved Lead (Pb)	2017/12/14		99	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/14		99	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/14		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/14		103	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/14		98	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/14		103	%	80 - 120
			Dissolved Potassium (K)	2017/12/14		103	%	80 - 120
			Dissolved Selenium (Se)	2017/12/14		96	%	80 - 120
			Dissolved Silver (Ag)	2017/12/14		99	%	80 - 120
			Dissolved Sodium (Na)	2017/12/14		NC	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/14		98	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/14		103	%	80 - 120
			Dissolved Tin (Sn)	2017/12/14		105	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/14		101	%	80 - 120
			Dissolved Uranium (U)	2017/12/14		107	%	80 - 120
			Dissolved Vanadium (V)	2017/12/14		101	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/14		101	%	80 - 120
5312802	BAN	Spiked Blank	Dissolved Aluminum (Al)	2017/12/14		101	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/14		101	%	80 - 120
			Dissolved Arsenic (As)	2017/12/14		98	%	80 - 120
			Dissolved Barium (Ba)	2017/12/14		99	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/14		100	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/14		104	%	80 - 120
			Dissolved Boron (B)	2017/12/14		99	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/14		99	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/14		103	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/14		99	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/14		101	%	80 - 120
			Dissolved Copper (Cu)	2017/12/14		100	%	80 - 120
			Dissolved Iron (Fe)	2017/12/14		102	%	80 - 120
			Dissolved Lead (Pb)	2017/12/14		101	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/14		103	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/14		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/14		103	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/14		102	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/14		103	%	80 - 120
			Dissolved Potassium (K)	2017/12/14		104	%	80 - 120
			Dissolved Selenium (Se)	2017/12/14		96	%	80 - 120
			Dissolved Silver (Ag)	2017/12/14		98	%	80 - 120
			Dissolved Sodium (Na)	2017/12/14		101	%	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 Strontium (Sr)	2017/12/14		102	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/14		103	%	80 - 120
			Dissolved Tin (Sn)	2017/12/14		104	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/14		104	%	80 - 120
			Dissolved Uranium (U)	2017/12/14		105	%	80 - 120
			Dissolved Vanadium (V)	2017/12/14		101	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/14		106	%	80 - 120
5312802	BAN	Method Blank	Dissolved Aluminum (Al)	2017/12/14	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/14	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/14	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/14	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/14	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/14	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/14	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/14	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/14	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/14	<1.0		ug/L	
			Dissolved Cobalt (Co)	2017/12/14	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/14	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/14	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/14	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/14	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/14	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/14	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/14	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/14	<100		ug/L	
			Dissolved Potassium (K)	2017/12/14	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/14	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/14	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/14	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/14	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/14	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/14	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/14	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/14	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/14	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/14	<5.0		ug/L	
5312802	BAN	RPD	Dissolved Copper (Cu)	2017/12/14	2.4		%	20
5312875	GTH	Matrix Spike	D10-Anthracene	2017/12/13		80	%	50 - 130
			D14-Terphenyl	2017/12/13		88	%	50 - 130
			D8-Acenaphthylene	2017/12/13		78	%	50 - 130
			1-Methylnaphthalene	2017/12/13		77	%	30 - 130
			2-Methylnaphthalene	2017/12/13		84	%	30 - 130
			Acenaphthene	2017/12/13		92	%	30 - 130
			Acenaphthylene	2017/12/13		82	%	30 - 130
			Anthracene	2017/12/13		92	%	30 - 130
			Benzo(a)anthracene	2017/12/13		103	%	30 - 130
			Benzo(a)pyrene	2017/12/13		97	%	30 - 130
			Benzo(b)fluoranthene	2017/12/13		104	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/13		116	%	30 - 130
			Benzo(j)fluoranthene	2017/12/13		103	%	30 - 130
			Benzo(k)fluoranthene	2017/12/13		104	%	30 - 130
			Chrysene	2017/12/13		101	%	30 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibenz(a,h)anthracene	2017/12/13		104	%	30 - 130
			Fluoranthene	2017/12/13		102	%	30 - 130
			Fluorene	2017/12/13		84	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/13		104	%	30 - 130
			Naphthalene	2017/12/13		81	%	30 - 130
			Perylene	2017/12/13		98	%	30 - 130
			Phenanthrene	2017/12/13		87	%	30 - 130
			Pyrene	2017/12/13		96	%	30 - 130
5312875	GTH	Spiked Blank	D10-Anthracene	2017/12/13		92	%	50 - 130
			D14-Terphenyl	2017/12/13		96	%	50 - 130
			D8-Acenaphthylene	2017/12/13		86	%	50 - 130
			1-Methylnaphthalene	2017/12/13		85	%	30 - 130
			2-Methylnaphthalene	2017/12/13		92	%	30 - 130
			Acenaphthene	2017/12/13		101	%	30 - 130
			Acenaphthylene	2017/12/13		90	%	30 - 130
			Anthracene	2017/12/13		116	%	30 - 130
			Benzo(a)anthracene	2017/12/13		105	%	30 - 130
			Benzo(a)pyrene	2017/12/13		103	%	30 - 130
			Benzo(b)fluoranthene	2017/12/13		112	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/13		118	%	30 - 130
			Benzo(j)fluoranthene	2017/12/13		115	%	30 - 130
			Benzo(k)fluoranthene	2017/12/13		110	%	30 - 130
			Chrysene	2017/12/13		101	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/13		103	%	30 - 130
			Fluoranthene	2017/12/13		112	%	30 - 130
			Fluorene	2017/12/13		95	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/13		107	%	30 - 130
			Naphthalene	2017/12/13		87	%	30 - 130
			Perylene	2017/12/13		107	%	30 - 130
			Phenanthrene	2017/12/13		94	%	30 - 130
			Pyrene	2017/12/13		105	%	30 - 130
5312875	GTH	Method Blank	D10-Anthracene	2017/12/13		98	%	50 - 130
			D14-Terphenyl	2017/12/13		102	%	50 - 130
			D8-Acenaphthylene	2017/12/13		88	%	50 - 130
			1-Methylnaphthalene	2017/12/13	<0.050		ug/L	
			2-Methylnaphthalene	2017/12/13	<0.050		ug/L	
			Acenaphthene	2017/12/13	<0.010		ug/L	
			Acenaphthylene	2017/12/13	<0.010		ug/L	
			Anthracene	2017/12/13	<0.010		ug/L	
			Benzo(a)anthracene	2017/12/13	<0.010		ug/L	
			Benzo(a)pyrene	2017/12/13	<0.010		ug/L	
			Benzo(b)fluoranthene	2017/12/13	<0.010		ug/L	
			Benzo(g,h,i)perylene	2017/12/13	<0.010		ug/L	
			Benzo(j)fluoranthene	2017/12/13	<0.010		ug/L	
			Benzo(k)fluoranthene	2017/12/13	<0.010		ug/L	
			Chrysene	2017/12/13	<0.010		ug/L	
			Dibenz(a,h)anthracene	2017/12/13	<0.010		ug/L	
			Fluoranthene	2017/12/13	<0.010		ug/L	
			Fluorene	2017/12/13	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/12/13	<0.010		ug/L	
			Naphthalene	2017/12/13	<0.20		ug/L	
			Perylene	2017/12/13	<0.010		ug/L	
			Phenanthrene	2017/12/13	<0.010		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Pyrene	2017/12/13	<0.010		ug/L	
5312875	GTH	RPD	1-Methylnaphthalene	2017/12/13	NC		%	40
			2-Methylnaphthalene	2017/12/13	NC		%	40
			Acenaphthene	2017/12/13	NC		%	40
			Acenaphthylene	2017/12/13	NC		%	40
			Anthracene	2017/12/13	NC		%	40
			Benzo(a)anthracene	2017/12/13	NC		%	40
			Benzo(a)pyrene	2017/12/13	NC		%	40
			Benzo(b)fluoranthene	2017/12/13	NC		%	40
			Benzo(g,h,i)perylene	2017/12/13	NC		%	40
			Benzo(j)fluoranthene	2017/12/13	NC		%	40
			Benzo(k)fluoranthene	2017/12/13	NC		%	40
			Chrysene	2017/12/13	NC		%	40
			Dibenz(a,h)anthracene	2017/12/13	NC		%	40
			Fluoranthene	2017/12/13	NC		%	40
			Fluorene	2017/12/13	NC		%	40
			Indeno(1,2,3-cd)pyrene	2017/12/13	NC		%	40
			Naphthalene	2017/12/13	NC		%	40
			Perylene	2017/12/13	NC		%	40
			Phenanthrene	2017/12/13	6.8		%	40
			Pyrene	2017/12/13	NC		%	40
5313519	NRG	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/14		108	%	80 - 120
5313519	NRG	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/13		104	%	80 - 120
5313519	NRG	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/13	<0.050		mg/L	
5313519	NRG	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/14	NC		%	20
5315126	JMV	QC Standard	pH	2017/12/14		100	%	97 - 103
5315126	JMV	RPD	pH	2017/12/14	7.7 (1)		%	N/A
5315128	JMV	Spiked Blank	Conductivity	2017/12/14		100	%	80 - 120
5315128	JMV	Method Blank	Conductivity	2017/12/14	1.3, RDL=1.0		uS/cm	
5315128	JMV	RPD	Conductivity	2017/12/14	0.94		%	25
5315129	JMV	QC Standard	pH	2017/12/14		100	%	97 - 103
5315129	JMV	RPD	pH	2017/12/14	0.94		%	N/A
5315131	JMV	Spiked Blank	Conductivity	2017/12/14		100	%	80 - 120
5315131	JMV	Method Blank	Conductivity	2017/12/14	1.3, RDL=1.0		uS/cm	
5315131	JMV	RPD	Conductivity	2017/12/14	1.2		%	25
5315132	JMV	QC Standard	pH	2017/12/14		100	%	97 - 103
5315132	JMV	RPD [FSP398-01]	pH	2017/12/14	1.2		%	N/A
5315133	JMV	Spiked Blank	Conductivity	2017/12/14		103	%	80 - 120
5315133	JMV	Method Blank	Conductivity	2017/12/14	1.3, RDL=1.0		uS/cm	
5315133	JMV	RPD [FSP398-01]	Conductivity	2017/12/14	0.82		%	25
5315162	NRG	Matrix Spike [FSP393-01]	Total Alkalinity (Total as CaCO3)	2017/12/18		NC	%	80 - 120
5315162	NRG	Spiked Blank	Total Alkalinity (Total as CaCO3)	2017/12/18		112	%	80 - 120
5315162	NRG	Method Blank	Total Alkalinity (Total as CaCO3)	2017/12/18	<5.0		mg/L	
5315162	NRG	RPD [FSP393-01]	Total Alkalinity (Total as CaCO3)	2017/12/18	6.3 (2)		%	25
5315165	NRG	Matrix Spike [FSP393-01]	Dissolved Chloride (Cl)	2017/12/18		105	%	80 - 120
5315165	NRG	QC Standard	Dissolved Chloride (Cl)	2017/12/18		112	%	80 - 120
5315165	NRG	Spiked Blank	Dissolved Chloride (Cl)	2017/12/18		103	%	80 - 120
5315165	NRG	Method Blank	Dissolved Chloride (Cl)	2017/12/18	<1.0		mg/L	
5315165	NRG	RPD [FSP393-01]	Dissolved Chloride (Cl)	2017/12/18	2.0		%	25
5315166	JMV	QC Standard	Turbidity	2017/12/14		95	%	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
5315166	JMV	Spiked Blank	Turbidity	2017/12/14		92	%	80 - 120
5315166	JMV	Method Blank	Turbidity	2017/12/14	<0.10		NTU	
5315166	JMV	RPD	Turbidity	2017/12/14	NC		%	20
5315167	NRG	Matrix Spike [FSP393-01]	Dissolved Sulphate (SO4)	2017/12/15		NC	%	80 - 120
5315167	NRG	Spiked Blank	Dissolved Sulphate (SO4)	2017/12/15		95	%	80 - 120
5315167	NRG	Method Blank	Dissolved Sulphate (SO4)	2017/12/15	<2.0		mg/L	
5315167	NRG	RPD [FSP393-01]	Dissolved Sulphate (SO4)	2017/12/15	1.1		%	25
5315168	NRG	Matrix Spike [FSP393-01]	Reactive Silica (SiO2)	2017/12/18		104	%	80 - 120
5315168	NRG	Spiked Blank	Reactive Silica (SiO2)	2017/12/18		104	%	80 - 120
5315168	NRG	Method Blank	Reactive Silica (SiO2)	2017/12/18	<0.50		mg/L	
5315168	NRG	RPD [FSP393-01]	Reactive Silica (SiO2)	2017/12/18	0.27		%	25
5315170	NRG	Spiked Blank	Colour	2017/12/15		99	%	80 - 120
5315170	NRG	Method Blank	Colour	2017/12/15	<5.0		TCU	
5315170	NRG	RPD [FSP393-01]	Colour	2017/12/15	NC		%	20
5315174	NRG	Matrix Spike [FSP393-01]	Orthophosphate (P)	2017/12/15		81	%	80 - 120
5315174	NRG	Spiked Blank	Orthophosphate (P)	2017/12/15		96	%	80 - 120
5315174	NRG	Method Blank	Orthophosphate (P)	2017/12/15	<0.010		mg/L	
5315174	NRG	RPD [FSP393-01]	Orthophosphate (P)	2017/12/15	NC		%	25
5315175	NRG	Matrix Spike [FSP393-01]	Nitrate + Nitrite (N)	2017/12/18		92	%	80 - 120
5315175	NRG	Spiked Blank	Nitrate + Nitrite (N)	2017/12/18		95	%	80 - 120
5315175	NRG	Method Blank	Nitrate + Nitrite (N)	2017/12/18	<0.050		mg/L	
5315175	NRG	RPD [FSP393-01]	Nitrate + Nitrite (N)	2017/12/18	24		%	25
5315176	NRG	Matrix Spike [FSP393-01]	Nitrite (N)	2017/12/15		90	%	80 - 120
5315176	NRG	Spiked Blank	Nitrite (N)	2017/12/15		95	%	80 - 120
5315176	NRG	Method Blank	Nitrite (N)	2017/12/15	<0.010		mg/L	
5315176	NRG	RPD [FSP393-01]	Nitrite (N)	2017/12/15	NC		%	25
5315199	ARS	Matrix Spike	Total Mercury (Hg)	2017/12/15		89	%	80 - 120
5315199	ARS	Spiked Blank	Total Mercury (Hg)	2017/12/15		102	%	80 - 120
5315199	ARS	Method Blank	Total Mercury (Hg)	2017/12/15	<0.013		ug/L	
5315199	ARS	RPD [FSP397-05]	Total Mercury (Hg)	2017/12/15	NC		%	20
5317377	BAN	Matrix Spike	Dissolved Aluminum (Al)	2017/12/15		113	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/15		96	%	80 - 120
			Dissolved Arsenic (As)	2017/12/15		97	%	80 - 120
			Dissolved Barium (Ba)	2017/12/15		NC	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/15		101	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/15		96	%	80 - 120
			Dissolved Boron (B)	2017/12/15		101	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/15		101	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/15		NC	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/15		96	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/15		95	%	80 - 120
			Dissolved Copper (Cu)	2017/12/15		92	%	80 - 120
			Dissolved Iron (Fe)	2017/12/15		NC	%	80 - 120
			Dissolved Lead (Pb)	2017/12/15		94	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/15		95	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/15		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/15		101	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/15		95	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/15		104	%	80 - 120
			Dissolved Potassium (K)	2017/12/15		102	%	80 - 120
			Dissolved Selenium (Se)	2017/12/15		99	%	80 - 120
			Dissolved Silver (Ag)	2017/12/15		80	%	80 - 120
			Dissolved Sodium (Na)	2017/12/15		97	%	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 Strontium (Sr)	2017/12/15		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/15		100	%	80 - 120
			Dissolved Tin (Sn)	2017/12/15		102	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/15		97	%	80 - 120
			Dissolved Uranium (U)	2017/12/15		100	%	80 - 120
			Dissolved Vanadium (V)	2017/12/15		98	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/15		96	%	80 - 120
5317377	BAN	Spiked Blank	Dissolved Aluminum (Al)	2017/12/15		98	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/15		96	%	80 - 120
			Dissolved Arsenic (As)	2017/12/15		96	%	80 - 120
			Dissolved Barium (Ba)	2017/12/15		97	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/15		101	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/15		101	%	80 - 120
			Dissolved Boron (B)	2017/12/15		101	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/15		98	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/15		101	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/15		97	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/15		97	%	80 - 120
			Dissolved Copper (Cu)	2017/12/15		96	%	80 - 120
			Dissolved Iron (Fe)	2017/12/15		100	%	80 - 120
			Dissolved Lead (Pb)	2017/12/15		96	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/15		102	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/15		96	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/15		101	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/15		98	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/15		105	%	80 - 120
			Dissolved Potassium (K)	2017/12/15		103	%	80 - 120
			Dissolved Selenium (Se)	2017/12/15		97	%	80 - 120
			Dissolved Silver (Ag)	2017/12/15		98	%	80 - 120
			Dissolved Sodium (Na)	2017/12/15		101	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/15		96	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/15		102	%	80 - 120
			Dissolved Tin (Sn)	2017/12/15		100	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/15		102	%	80 - 120
			Dissolved Uranium (U)	2017/12/15		99	%	80 - 120
			Dissolved Vanadium (V)	2017/12/15		98	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/15		99	%	80 - 120
5317377	BAN	Method Blank	Dissolved Aluminum (Al)	2017/12/15	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/15	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/15	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/15	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/15	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/15	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/15	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/15	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/15	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/15	<1.0		ug/L	
			Dissolved Cobalt (Co)	2017/12/15	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/15	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/15	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/15	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/15	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/15	<2.0		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Molybdenum (Mo)	2017/12/15	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/15	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/15	<100		ug/L	
			Dissolved Potassium (K)	2017/12/15	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/15	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/15	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/15	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/15	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/15	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/15	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/15	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/15	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/15	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/15	<5.0		ug/L	
5317377	BAN	RPD	Dissolved Aluminum (Al)	2017/12/15	15		%	20
			Dissolved Antimony (Sb)	2017/12/15	NC		%	20
			Dissolved Arsenic (As)	2017/12/15	0.93		%	20
			Dissolved Barium (Ba)	2017/12/15	0.16		%	20
			Dissolved Beryllium (Be)	2017/12/15	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/15	NC		%	20
			Dissolved Boron (B)	2017/12/15	2.6		%	20
			Dissolved Cadmium (Cd)	2017/12/15	NC		%	20
			Dissolved Calcium (Ca)	2017/12/15	0.94		%	20
			Dissolved Chromium (Cr)	2017/12/15	NC		%	20
			Dissolved Cobalt (Co)	2017/12/15	2.9		%	20
			Dissolved Copper (Cu)	2017/12/15	NC		%	20
			Dissolved Iron (Fe)	2017/12/15	0.087		%	20
			Dissolved Lead (Pb)	2017/12/15	NC		%	20
			Dissolved Magnesium (Mg)	2017/12/15	2.0		%	20
			Dissolved Manganese (Mn)	2017/12/15	0.67		%	20
			Dissolved Molybdenum (Mo)	2017/12/15	NC		%	20
			Dissolved Nickel (Ni)	2017/12/15	NC		%	20
			Dissolved Phosphorus (P)	2017/12/15	NC		%	20
			Dissolved Potassium (K)	2017/12/15	1.8		%	20
			Dissolved Selenium (Se)	2017/12/15	NC		%	20
			Dissolved Silver (Ag)	2017/12/15	NC		%	20
			Dissolved Sodium (Na)	2017/12/15	0.50		%	20
			Dissolved Strontium (Sr)	2017/12/15	0.56		%	20
			Dissolved Thallium (Tl)	2017/12/15	NC		%	20
			Dissolved Tin (Sn)	2017/12/15	NC		%	20
			Dissolved Titanium (Ti)	2017/12/15	NC		%	20
			Dissolved Uranium (U)	2017/12/15	1.6		%	20
			Dissolved Vanadium (V)	2017/12/15	NC		%	20
			Dissolved Zinc (Zn)	2017/12/15	NC		%	20
5320736	LMP	Matrix Spike	Total Organic Carbon (C)	2017/12/18		101	%	80 - 120
5320736	LMP	Spiked Blank	Total Organic Carbon (C)	2017/12/18		102	%	80 - 120
5320736	LMP	Method Blank	Total Organic Carbon (C)	2017/12/18	<0.50		mg/L	

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Maxxam Job #: B7R9339
Report Date: 2017/12/19

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5320736	LMP	RPD	Total Organic Carbon (C)	2017/12/18	11		%	20

N/A = Not Applicable

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.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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) pH duplicates did not meet laboratory acceptance criteria, results confirmed by repeat analysis.

(2) Elevated reporting limit due to sample matrix.

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Maxxam Job #: B7R9339
Report Date: 2017/12/19

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

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)

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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/20
Report #: R4917109
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S0289
Received: 2017/12/11, 16:10

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	2	N/A	2017/12/15	N/A	SM 22 4500-CO2 D
Alkalinity (1)	2	N/A	2017/12/19	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	3	N/A	2017/12/18	N/A	Auto Calc.
Chloride (1)	2	N/A	2017/12/19	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	2	N/A	2017/12/18	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	2	N/A	2017/12/15	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	2	N/A	2017/12/18	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	1	2017/12/15	2017/12/18	ATL SOP 00026	EPA 245.1 R3 m
Mercury - Total (CVAA,LL) (1)	1	2017/12/15	2017/12/19	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	1	N/A	2017/12/15	ATL SOP 00058	EPA 6020A R1 m
Metals Water Diss. MS (as rec'd) (1)	1	N/A	2017/12/18	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	2	N/A	2017/12/20	N/A	Auto Calc.
Anion and Cation Sum (1)	2	N/A	2017/12/19	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	2	N/A	2017/12/18	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	2	N/A	2017/12/19	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	2	N/A	2017/12/19	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	2	N/A	2017/12/20	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	3	2017/12/15	2017/12/16	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	2	N/A	2017/12/15	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	2	N/A	2017/12/20	ATL SOP 00021	SM 22 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	2	N/A	2017/12/20	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	2	N/A	2017/12/20	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	2	N/A	2017/12/20	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	2	N/A	2017/12/18	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	2	N/A	2017/12/20	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	2	N/A	2017/12/19	ATL SOP 00037	SM 22 5310C m
Turbidity (1)	2	N/A	2017/12/15	ATL SOP 00011	EPA 180.1 R2 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.

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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/20
Report #: R4917109
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7S0289
Received: 2017/12/11, 16:10

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.

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.

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.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Sr. Project Manager
Email: NMacAskill@maxxam.ca
Phone# (902)567-1255 Ext:17

==========

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Maxxam Job #: B7S0289
Report Date: 2017/12/20

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FSU178		FSU179		
Sampling Date		2017/12/11		2017/12/11		
COC Number		641599		641599		
	UNITS	CONCW-101-MWB	RDL	COBC-001-MWA	RDL	QC Batch
Calculated Parameters						
Anion Sum	me/L	6.23	N/A	14.4	N/A	5310707
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	97	1.0	160	1.0	5310704
Calculated TDS	mg/L	400	1.0	840	1.0	5310712
Carb. Alkalinity (calc. as CaCO3)	mg/L	6.8	1.0	<1.0	1.0	5310704
Cation Sum	me/L	6.50	N/A	11.3	N/A	5310707
Hardness (CaCO3)	mg/L	210	1.0	460	1.0	5310705
Ion Balance (% Difference)	%	2.12	N/A	12.1	N/A	5310706
Langelier Index (@ 20C)	N/A	1.29		0.455		5310710
Langelier Index (@ 4C)	N/A	1.05		0.208		5310711
Nitrate (N)	mg/L	0.35	0.050	<0.050	0.050	5310708
Saturation pH (@ 20C)	N/A	7.58		7.10		5310710
Saturation pH (@ 4C)	N/A	7.83		7.34		5310711
Inorganics						
Total Alkalinity (Total as CaCO3)	mg/L	100 (1)	25	160 (1)	25	5317618
Dissolved Chloride (Cl)	mg/L	56	1.0	76	1.0	5317623
Colour	TCU	9.1	5.0	<5.0	5.0	5317630
Nitrate + Nitrite (N)	mg/L	0.37	0.050	<0.050	0.050	5317632
Nitrite (N)	mg/L	0.015	0.010	<0.010	0.010	5317633
Nitrogen (Ammonia Nitrogen)	mg/L	0.28	0.050	1.1	0.050	5320422
Total Organic Carbon (C)	mg/L	3.5	0.50	4.3	0.50	5322575
Orthophosphate (P)	mg/L	0.036	0.010	<0.010	0.010	5317631
pH	pH	8.88	N/A	7.55	N/A	5317314
Reactive Silica (SiO2)	mg/L	25	0.50	9.0	0.50	5317627
Dissolved Sulphate (SO4)	mg/L	120	10	430 (1)	60	5317625
Turbidity	NTU	0.81	0.10	42	0.10	5317334
Conductivity	uS/cm	610	1.0	1300	1.0	5317315

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.

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Maxxam Job #: B7S0289
Report Date: 2017/12/20

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		FSU178		FSU179		
Sampling Date		2017/12/11		2017/12/11		
COC Number		641599		641599		
	UNITS	CONCW-101-MWB	QC Batch	COBC-001-MWA	RDL	QC Batch
Metals						
Total Mercury (Hg)	ug/L	<0.013	5317445	<0.013	0.013	5317527

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7S0289
Report Date: 2017/12/20

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FSU178			FSU179		
Sampling Date		2017/12/11			2017/12/11		
COC Number		641599			641599		
	UNITS	CONCW-101-MWB	RDL	QC Batch	COBC-001-MWA	RDL	QC Batch
Metals							
Dissolved Aluminum (Al)	ug/L	39	5.0	5317377	<5.0	5.0	5317376
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	5317377	<1.0	1.0	5317376
Dissolved Arsenic (As)	ug/L	8.5	1.0	5317377	1.8	1.0	5317376
Dissolved Barium (Ba)	ug/L	43	1.0	5317377	71	1.0	5317376
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	5317377	<1.0	1.0	5317376
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	5317377	<2.0	2.0	5317376
Dissolved Boron (B)	ug/L	54	50	5317377	50	50	5317376
Dissolved Cadmium (Cd)	ug/L	0.087	0.010	5317377	0.054	0.010	5317376
Dissolved Calcium (Ca)	ug/L	76000	100	5317377	170000	100	5317376
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	5317377	<1.0	1.0	5317376
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	5317377	0.42	0.40	5317376
Dissolved Copper (Cu)	ug/L	<2.0	2.0	5317377	<2.0	2.0	5317376
Dissolved Iron (Fe)	ug/L	<50	50	5317377	3300	50	5317376
Dissolved Lead (Pb)	ug/L	<0.50	0.50	5317377	<0.50	0.50	5317376
Dissolved Magnesium (Mg)	ug/L	5700	100	5317377	9900	100	5317376
Dissolved Manganese (Mn)	ug/L	310	2.0	5317377	1700	2.0	5317376
Dissolved Molybdenum (Mo)	ug/L	7.5	2.0	5317377	<2.0	2.0	5317376
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	5317377	<2.0	2.0	5317376
Dissolved Phosphorus (P)	ug/L	<100	100	5317377	<100	100	5317376
Dissolved Potassium (K)	ug/L	5200	100	5317377	2600	100	5317376
Dissolved Selenium (Se)	ug/L	1.7	1.0	5317377	<1.0	1.0	5317376
Dissolved Silver (Ag)	ug/L	<0.10	0.10	5317377	<0.10	0.10	5317376
Dissolved Sodium (Na)	ug/L	49000	100	5317377	42000	100	5317376
Dissolved Strontium (Sr)	ug/L	420	2.0	5317377	5000	20	5317376
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	5317377	<0.10	0.10	5317376
Dissolved Tin (Sn)	ug/L	<2.0	2.0	5317377	<2.0	2.0	5317376
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	5317377	<2.0	2.0	5317376
Dissolved Uranium (U)	ug/L	1.6	0.10	5317377	0.11	0.10	5317376
Dissolved Vanadium (V)	ug/L	5.7	2.0	5317377	<2.0	2.0	5317376
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	5317377	11	5.0	5317376

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FSU178	FSU179	FSU180		
Sampling Date		2017/12/11	2017/12/11	2017/12/11		
COC Number		641599	641599	641599		
	UNITS	CONCW-101-MWB	COBC-001-MWA	FB-01	RDL	QC Batch
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	ug/L	<0.050	0.065	<0.050	0.050	5317399
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.050	5317399
Acenaphthene	ug/L	0.014	6.1	<0.010	0.010	5317399
Acenaphthylene	ug/L	0.015	1.4	<0.010	0.010	5317399
Anthracene	ug/L	<0.010	0.019	<0.010	0.010	5317399
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	0.010	5317399
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	0.010	5317399
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	5317399
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	<0.020	0.020	5311623
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	0.010	5317399
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	5317399
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	5317399
Chrysene	ug/L	<0.010	<0.010	<0.010	0.010	5317399
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	0.010	5317399
Fluoranthene	ug/L	0.024	0.055	<0.010	0.010	5317399
Fluorene	ug/L	0.024	0.17	<0.010	0.010	5317399
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	0.010	5317399
Naphthalene	ug/L	<0.20	<0.20	<0.20	0.20	5317399
Perylene	ug/L	<0.010	<0.010	<0.010	0.010	5317399
Phenanthrene	ug/L	0.038	0.013	<0.010	0.010	5317399
Pyrene	ug/L	0.020	0.050	<0.010	0.010	5317399
Surrogate Recovery (%)						
D10-Anthracene	%	91	69	103		5317399
D14-Terphenyl	%	95	91	94		5317399
D8-Acenaphthylene	%	89	91	97		5317399

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7S0289
Report Date: 2017/12/20

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

GENERAL COMMENTS

Sample FSU179 [COBC-001-MWA] : Poor RCAp Ion Balance due to sample matrix. Cation sum does not include contribution from Mn and Sr.

Results relate only to the items tested.

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Maxxam Job #: B7S0289
Report Date: 2017/12/20

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5317314	JMV	QC Standard	pH	2017/12/15		100	%	97 - 103
5317314	JMV	RPD	pH	2017/12/15	2.1		%	N/A
5317315	JMV	Spiked Blank	Conductivity	2017/12/15		102	%	80 - 120
5317315	JMV	Method Blank	Conductivity	2017/12/15	1.5, RDL=1.0		uS/cm	
5317315	JMV	RPD	Conductivity	2017/12/15	1.1		%	25
5317334	JMV	QC Standard	Turbidity	2017/12/15		95	%	80 - 120
5317334	JMV	Spiked Blank	Turbidity	2017/12/15		93	%	80 - 120
5317334	JMV	Method Blank	Turbidity	2017/12/15	<0.10		NTU	
5317334	JMV	RPD	Turbidity	2017/12/15	3.6		%	20
5317376	MLB	Matrix Spike [FSU179-02]	Dissolved Aluminum (Al)	2017/12/18		98	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/18		99	%	80 - 120
			Dissolved Arsenic (As)	2017/12/18		99	%	80 - 120
			Dissolved Barium (Ba)	2017/12/18		91	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/18		99	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/18		96	%	80 - 120
			Dissolved Boron (B)	2017/12/18		100	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/18		99	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/18		NC	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/18		97	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/18		96	%	80 - 120
			Dissolved Copper (Cu)	2017/12/18		93	%	80 - 120
			Dissolved Iron (Fe)	2017/12/18		NC	%	80 - 120
			Dissolved Lead (Pb)	2017/12/18		94	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/18		93	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/18		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/18		101	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/18		96	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/18		107	%	80 - 120
			Dissolved Potassium (K)	2017/12/18		99	%	80 - 120
			Dissolved Selenium (Se)	2017/12/18		100	%	80 - 120
			Dissolved Silver (Ag)	2017/12/18		87	%	80 - 120
			Dissolved Sodium (Na)	2017/12/18		NC	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/18		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/18		99	%	80 - 120
			Dissolved Tin (Sn)	2017/12/18		104	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/18		99	%	80 - 120
			Dissolved Uranium (U)	2017/12/18		102	%	80 - 120
			Dissolved Vanadium (V)	2017/12/18		97	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/18		99	%	80 - 120
5317376	MLB	Spiked Blank	Dissolved Aluminum (Al)	2017/12/15		101	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/15		96	%	80 - 120
			Dissolved Arsenic (As)	2017/12/15		98	%	80 - 120
			Dissolved Barium (Ba)	2017/12/15		95	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/15		97	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/15		99	%	80 - 120
			Dissolved Boron (B)	2017/12/15		100	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/15		98	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/15		100	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/15		97	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/15		99	%	80 - 120
			Dissolved Copper (Cu)	2017/12/15		98	%	80 - 120
			Dissolved Iron (Fe)	2017/12/15		102	%	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 Lead (Pb)	2017/12/15		97	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/15		105	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/15		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/15		101	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/15		100	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/15		104	%	80 - 120
			Dissolved Potassium (K)	2017/12/15		100	%	80 - 120
			Dissolved Selenium (Se)	2017/12/15		99	%	80 - 120
			Dissolved Silver (Ag)	2017/12/15		96	%	80 - 120
			Dissolved Sodium (Na)	2017/12/15		100	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/15		102	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/15		101	%	80 - 120
			Dissolved Tin (Sn)	2017/12/15		102	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/15		100	%	80 - 120
			Dissolved Uranium (U)	2017/12/15		101	%	80 - 120
			Dissolved Vanadium (V)	2017/12/15		98	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/15		106	%	80 - 120
5317376	MLB	Method Blank	Dissolved Aluminum (Al)	2017/12/15	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/15	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/15	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/15	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/15	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/15	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/15	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/15	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/15	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/15	<1.0		ug/L	
			Dissolved Cobalt (Co)	2017/12/15	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/15	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/15	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/15	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/15	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/15	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/15	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/15	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/15	<100		ug/L	
			Dissolved Potassium (K)	2017/12/15	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/15	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/15	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/15	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/15	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/15	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/15	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/15	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/15	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/15	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/15	<5.0		ug/L	
5317376	MLB	RPD [FSU179-02]	Dissolved Aluminum (Al)	2017/12/18	NC		%	20
			Dissolved Antimony (Sb)	2017/12/18	NC		%	20
			Dissolved Arsenic (As)	2017/12/18	3.2		%	20
			Dissolved Barium (Ba)	2017/12/18	0.66		%	20
			Dissolved Beryllium (Be)	2017/12/18	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/18	NC		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Boron (B)	2017/12/18	0.40		%	20
			Dissolved Cadmium (Cd)	2017/12/18	0.33		%	20
			Dissolved Calcium (Ca)	2017/12/18	1.5		%	20
			Dissolved Chromium (Cr)	2017/12/18	NC		%	20
			Dissolved Cobalt (Co)	2017/12/18	4.1		%	20
			Dissolved Copper (Cu)	2017/12/18	NC		%	20
			Dissolved Iron (Fe)	2017/12/18	0.0074		%	20
			Dissolved Lead (Pb)	2017/12/18	NC		%	20
			Dissolved Magnesium (Mg)	2017/12/18	0.28		%	20
			Dissolved Manganese (Mn)	2017/12/18	1.2		%	20
			Dissolved Molybdenum (Mo)	2017/12/18	NC		%	20
			Dissolved Nickel (Ni)	2017/12/18	NC		%	20
			Dissolved Phosphorus (P)	2017/12/18	NC		%	20
			Dissolved Potassium (K)	2017/12/18	0.72		%	20
			Dissolved Selenium (Se)	2017/12/18	NC		%	20
			Dissolved Silver (Ag)	2017/12/18	NC		%	20
			Dissolved Sodium (Na)	2017/12/18	0.052		%	20
			Dissolved Strontium (Sr)	2017/12/18	1.7		%	20
			Dissolved Thallium (Tl)	2017/12/18	NC		%	20
			Dissolved Tin (Sn)	2017/12/18	NC		%	20
			Dissolved Titanium (Ti)	2017/12/18	NC		%	20
			Dissolved Uranium (U)	2017/12/18	7.8		%	20
			Dissolved Vanadium (V)	2017/12/18	NC		%	20
			Dissolved Zinc (Zn)	2017/12/18	0.61		%	20
5317377	BAN	Matrix Spike	Dissolved Aluminum (Al)	2017/12/15		113	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/15		96	%	80 - 120
			Dissolved Arsenic (As)	2017/12/15		97	%	80 - 120
			Dissolved Barium (Ba)	2017/12/15		NC	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/15		101	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/15		96	%	80 - 120
			Dissolved Boron (B)	2017/12/15		101	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/15		101	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/15		NC	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/15		96	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/15		95	%	80 - 120
			Dissolved Copper (Cu)	2017/12/15		92	%	80 - 120
			Dissolved Iron (Fe)	2017/12/15		NC	%	80 - 120
			Dissolved Lead (Pb)	2017/12/15		94	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/15		95	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/15		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/15		101	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/15		95	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/15		104	%	80 - 120
			Dissolved Potassium (K)	2017/12/15		102	%	80 - 120
			Dissolved Selenium (Se)	2017/12/15		99	%	80 - 120
			Dissolved Silver (Ag)	2017/12/15		80	%	80 - 120
			Dissolved Sodium (Na)	2017/12/15		97	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/15		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/15		100	%	80 - 120
			Dissolved Tin (Sn)	2017/12/15		102	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/15		97	%	80 - 120
			Dissolved Uranium (U)	2017/12/15		100	%	80 - 120
			Dissolved Vanadium (V)	2017/12/15		98	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Zinc (Zn)	2017/12/15		96	%	80 - 120
5317377	BAN	Spiked Blank	Dissolved Aluminum (Al)	2017/12/15		98	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/15		96	%	80 - 120
			Dissolved Arsenic (As)	2017/12/15		96	%	80 - 120
			Dissolved Barium (Ba)	2017/12/15		97	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/15		101	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/15		101	%	80 - 120
			Dissolved Boron (B)	2017/12/15		101	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/15		98	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/15		101	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/15		97	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/15		97	%	80 - 120
			Dissolved Copper (Cu)	2017/12/15		96	%	80 - 120
			Dissolved Iron (Fe)	2017/12/15		100	%	80 - 120
			Dissolved Lead (Pb)	2017/12/15		96	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/15		102	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/15		96	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/15		101	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/15		98	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/15		105	%	80 - 120
			Dissolved Potassium (K)	2017/12/15		103	%	80 - 120
			Dissolved Selenium (Se)	2017/12/15		97	%	80 - 120
			Dissolved Silver (Ag)	2017/12/15		98	%	80 - 120
			Dissolved Sodium (Na)	2017/12/15		101	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/15		96	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/15		102	%	80 - 120
			Dissolved Tin (Sn)	2017/12/15		100	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/15		102	%	80 - 120
			Dissolved Uranium (U)	2017/12/15		99	%	80 - 120
			Dissolved Vanadium (V)	2017/12/15		98	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/15		99	%	80 - 120
5317377	BAN	Method Blank	Dissolved Aluminum (Al)	2017/12/15	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/15	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/15	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/15	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/15	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/15	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/15	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/15	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/15	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/15	<1.0		ug/L	
			Dissolved Cobalt (Co)	2017/12/15	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/15	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/15	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/15	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/15	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/15	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/15	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/15	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/15	<100		ug/L	
			Dissolved Potassium (K)	2017/12/15	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/15	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/15	<0.10		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Sodium (Na)	2017/12/15	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/15	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/15	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/15	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/15	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/15	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/15	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/15	<5.0		ug/L	
5317377	BAN	RPD	Dissolved Aluminum (Al)	2017/12/15	15		%	20
			Dissolved Antimony (Sb)	2017/12/15	NC		%	20
			Dissolved Arsenic (As)	2017/12/15	0.93		%	20
			Dissolved Barium (Ba)	2017/12/15	0.16		%	20
			Dissolved Beryllium (Be)	2017/12/15	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/15	NC		%	20
			Dissolved Boron (B)	2017/12/15	2.6		%	20
			Dissolved Cadmium (Cd)	2017/12/15	NC		%	20
			Dissolved Calcium (Ca)	2017/12/15	0.94		%	20
			Dissolved Chromium (Cr)	2017/12/15	NC		%	20
			Dissolved Cobalt (Co)	2017/12/15	2.9		%	20
			Dissolved Copper (Cu)	2017/12/15	NC		%	20
			Dissolved Iron (Fe)	2017/12/15	0.087		%	20
			Dissolved Lead (Pb)	2017/12/15	NC		%	20
			Dissolved Magnesium (Mg)	2017/12/15	2.0		%	20
			Dissolved Manganese (Mn)	2017/12/15	0.67		%	20
			Dissolved Molybdenum (Mo)	2017/12/15	NC		%	20
			Dissolved Nickel (Ni)	2017/12/15	NC		%	20
			Dissolved Phosphorus (P)	2017/12/15	NC		%	20
			Dissolved Potassium (K)	2017/12/15	1.8		%	20
			Dissolved Selenium (Se)	2017/12/15	NC		%	20
			Dissolved Silver (Ag)	2017/12/15	NC		%	20
			Dissolved Sodium (Na)	2017/12/15	0.50		%	20
			Dissolved Strontium (Sr)	2017/12/15	0.56		%	20
			Dissolved Thallium (Tl)	2017/12/15	NC		%	20
			Dissolved Tin (Sn)	2017/12/15	NC		%	20
			Dissolved Titanium (Ti)	2017/12/15	NC		%	20
			Dissolved Uranium (U)	2017/12/15	1.6		%	20
			Dissolved Vanadium (V)	2017/12/15	NC		%	20
			Dissolved Zinc (Zn)	2017/12/15	NC		%	20
5317399	LGE	Matrix Spike	D10-Anthracene	2017/12/16		87	%	50 - 130
			D14-Terphenyl	2017/12/16		89 (1)	%	50 - 130
			D8-Acenaphthylene	2017/12/16		88	%	50 - 130
			1-Methylnaphthalene	2017/12/16		82	%	30 - 130
			2-Methylnaphthalene	2017/12/16		88	%	30 - 130
			Acenaphthene	2017/12/16		100	%	30 - 130
			Acenaphthylene	2017/12/16		91	%	30 - 130
			Anthracene	2017/12/16		109	%	30 - 130
			Benzo(a)anthracene	2017/12/16		106	%	30 - 130
			Benzo(a)pyrene	2017/12/16		96	%	30 - 130
			Benzo(b)fluoranthene	2017/12/16		119	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/16		105	%	30 - 130
			Benzo(j)fluoranthene	2017/12/16		103	%	30 - 130
			Benzo(k)fluoranthene	2017/12/16		103	%	30 - 130
			Chrysene	2017/12/16		100	%	30 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibenz(a,h)anthracene	2017/12/16		91	%	30 - 130
			Fluoranthene	2017/12/16		106	%	30 - 130
			Fluorene	2017/12/16		92	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/16		95	%	30 - 130
			Naphthalene	2017/12/16		86	%	30 - 130
			Perylene	2017/12/16		95	%	30 - 130
			Phenanthrene	2017/12/16		89	%	30 - 130
			Pyrene	2017/12/16		98	%	30 - 130
5317399	LGE	Spiked Blank	D10-Anthracene	2017/12/16		78	%	50 - 130
			D14-Terphenyl	2017/12/16		87	%	50 - 130
			D8-Acenaphthylene	2017/12/16		86	%	50 - 130
			1-Methylnaphthalene	2017/12/16		80	%	30 - 130
			2-Methylnaphthalene	2017/12/16		88	%	30 - 130
			Acenaphthene	2017/12/16		95	%	30 - 130
			Acenaphthylene	2017/12/16		86	%	30 - 130
			Anthracene	2017/12/16		105	%	30 - 130
			Benzo(a)anthracene	2017/12/16		89	%	30 - 130
			Benzo(a)pyrene	2017/12/16		82	%	30 - 130
			Benzo(b)fluoranthene	2017/12/16		90	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/16		76	%	30 - 130
			Benzo(j)fluoranthene	2017/12/16		91	%	30 - 130
			Benzo(k)fluoranthene	2017/12/16		89	%	30 - 130
			Chrysene	2017/12/16		86	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/16		61	%	30 - 130
			Fluoranthene	2017/12/16		102	%	30 - 130
			Fluorene	2017/12/16		90	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/16		75	%	30 - 130
			Naphthalene	2017/12/16		85	%	30 - 130
			Perylene	2017/12/16		81	%	30 - 130
			Phenanthrene	2017/12/16		88	%	30 - 130
			Pyrene	2017/12/16		96	%	30 - 130
5317399	LGE	Method Blank	D10-Anthracene	2017/12/16		81	%	50 - 130
			D14-Terphenyl	2017/12/16		90	%	50 - 130
			D8-Acenaphthylene	2017/12/16		89	%	50 - 130
			1-Methylnaphthalene	2017/12/16	<0.050		ug/L	
			2-Methylnaphthalene	2017/12/16	<0.050		ug/L	
			Acenaphthene	2017/12/16	<0.010		ug/L	
			Acenaphthylene	2017/12/16	<0.010		ug/L	
			Anthracene	2017/12/16	<0.010		ug/L	
			Benzo(a)anthracene	2017/12/16	<0.010		ug/L	
			Benzo(a)pyrene	2017/12/16	<0.010		ug/L	
			Benzo(b)fluoranthene	2017/12/16	<0.010		ug/L	
			Benzo(g,h,i)perylene	2017/12/16	<0.010		ug/L	
			Benzo(j)fluoranthene	2017/12/16	<0.010		ug/L	
			Benzo(k)fluoranthene	2017/12/16	<0.010		ug/L	
			Chrysene	2017/12/16	<0.010		ug/L	
			Dibenz(a,h)anthracene	2017/12/16	<0.010		ug/L	
			Fluoranthene	2017/12/16	<0.010		ug/L	
			Fluorene	2017/12/16	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/12/16	<0.010		ug/L	
			Naphthalene	2017/12/16	<0.20		ug/L	
			Perylene	2017/12/16	<0.010		ug/L	
			Phenanthrene	2017/12/16	<0.010		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Pyrene	2017/12/16	<0.010		ug/L	
5317399	LGE	RPD	1-Methylnaphthalene	2017/12/16	NC		%	40
			2-Methylnaphthalene	2017/12/16	NC		%	40
			Acenaphthene	2017/12/16	NC		%	40
			Acenaphthylene	2017/12/16	NC		%	40
			Anthracene	2017/12/16	NC		%	40
			Benzo(a)anthracene	2017/12/16	NC		%	40
			Benzo(a)pyrene	2017/12/16	NC		%	40
			Benzo(b)fluoranthene	2017/12/16	NC		%	40
			Benzo(g,h,i)perylene	2017/12/16	NC		%	40
			Benzo(j)fluoranthene	2017/12/16	NC		%	40
			Benzo(k)fluoranthene	2017/12/16	NC		%	40
			Chrysene	2017/12/16	NC		%	40
			Dibenz(a,h)anthracene	2017/12/16	NC		%	40
			Fluoranthene	2017/12/16	NC		%	40
			Fluorene	2017/12/16	NC		%	40
			Indeno(1,2,3-cd)pyrene	2017/12/16	NC		%	40
			Naphthalene	2017/12/16	NC		%	40
			Perylene	2017/12/16	NC		%	40
			Phenanthrene	2017/12/16	NC		%	40
			Pyrene	2017/12/16	NC		%	40
5317445	ARS	Matrix Spike	Total Mercury (Hg)	2017/12/18		103	%	80 - 120
5317445	ARS	Spiked Blank	Total Mercury (Hg)	2017/12/18		102	%	80 - 120
5317445	ARS	Method Blank	Total Mercury (Hg)	2017/12/18	<0.013		ug/L	
5317445	ARS	RPD	Total Mercury (Hg)	2017/12/18	NC		%	20
5317527	ARS	Matrix Spike	Total Mercury (Hg)	2017/12/19		99	%	80 - 120
5317527	ARS	Spiked Blank	Total Mercury (Hg)	2017/12/19		102	%	80 - 120
5317527	ARS	Method Blank	Total Mercury (Hg)	2017/12/19	<0.013		ug/L	
5317527	ARS	RPD	Total Mercury (Hg)	2017/12/19	NC		%	20
5317618	NRG	Matrix Spike	Total Alkalinity (Total as CaCO3)	2017/12/19		39 (2)	%	80 - 120
5317618	NRG	Spiked Blank	Total Alkalinity (Total as CaCO3)	2017/12/19		116	%	80 - 120
5317618	NRG	Method Blank	Total Alkalinity (Total as CaCO3)	2017/12/19	<5.0		mg/L	
5317618	NRG	RPD	Total Alkalinity (Total as CaCO3)	2017/12/20	NC		%	25
5317623	NRG	Matrix Spike	Dissolved Chloride (Cl)	2017/12/19		100	%	80 - 120
5317623	NRG	QC Standard	Dissolved Chloride (Cl)	2017/12/19		111	%	80 - 120
5317623	NRG	Spiked Blank	Dissolved Chloride (Cl)	2017/12/19		104	%	80 - 120
5317623	NRG	Method Blank	Dissolved Chloride (Cl)	2017/12/19	<1.0		mg/L	
5317623	NRG	RPD	Dissolved Chloride (Cl)	2017/12/19	2.0		%	25
5317625	NRG	Matrix Spike	Dissolved Sulphate (SO4)	2017/12/18		NC	%	80 - 120
5317625	NRG	Spiked Blank	Dissolved Sulphate (SO4)	2017/12/18		99	%	80 - 120
5317625	NRG	Method Blank	Dissolved Sulphate (SO4)	2017/12/18	<2.0		mg/L	
5317625	NRG	RPD	Dissolved Sulphate (SO4)	2017/12/18	3.0		%	25
5317627	NRG	Matrix Spike	Reactive Silica (SiO2)	2017/12/20		NC	%	80 - 120
5317627	NRG	Spiked Blank	Reactive Silica (SiO2)	2017/12/20		98	%	80 - 120
5317627	NRG	Method Blank	Reactive Silica (SiO2)	2017/12/20	<0.50		mg/L	
5317627	NRG	RPD	Reactive Silica (SiO2)	2017/12/20	1.2		%	25
5317630	NRG	Spiked Blank	Colour	2017/12/18		98	%	80 - 120
5317630	NRG	Method Blank	Colour	2017/12/18	<5.0		TCU	
5317630	NRG	RPD	Colour	2017/12/18	11		%	20
5317631	NRG	Matrix Spike	Orthophosphate (P)	2017/12/20		1.5 (2)	%	80 - 120
5317631	NRG	Spiked Blank	Orthophosphate (P)	2017/12/20		96	%	80 - 120
5317631	NRG	Method Blank	Orthophosphate (P)	2017/12/20	<0.010		mg/L	
5317631	NRG	RPD	Orthophosphate (P)	2017/12/20	NC		%	25

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Maxxam Job #: B7S0289
Report Date: 2017/12/20

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5317632	NRG	Matrix Spike	Nitrate + Nitrite (N)	2017/12/19		92	%	80 - 120
5317632	NRG	Spiked Blank	Nitrate + Nitrite (N)	2017/12/19		97	%	80 - 120
5317632	NRG	Method Blank	Nitrate + Nitrite (N)	2017/12/19	<0.050		mg/L	
5317632	NRG	RPD	Nitrate + Nitrite (N)	2017/12/19	0.45		%	25
5317633	NRG	Matrix Spike	Nitrite (N)	2017/12/19		103	%	80 - 120
5317633	NRG	Spiked Blank	Nitrite (N)	2017/12/19		102	%	80 - 120
5317633	NRG	Method Blank	Nitrite (N)	2017/12/19	<0.010		mg/L	
5317633	NRG	RPD	Nitrite (N)	2017/12/19	NC		%	25
5320422	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/18		103	%	80 - 120
5320422	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/18		106	%	80 - 120
5320422	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/18	<0.050		mg/L	
5320422	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/18	NC		%	20
5322575	LMP	Matrix Spike	Total Organic Carbon (C)	2017/12/19		99	%	80 - 120
5322575	LMP	Spiked Blank	Total Organic Carbon (C)	2017/12/19		104	%	80 - 120
5322575	LMP	Method Blank	Total Organic Carbon (C)	2017/12/19	<0.50		mg/L	
5322575	LMP	RPD	Total Organic Carbon (C)	2017/12/19	6.4		%	20

N/A = Not Applicable

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.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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) PAH sample contained sediment.

(2) Poor spike recovery due to sample matrix, results confirmed by repeat analysis.

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Maxxam Job #: B7S0289
Report Date: 2017/12/20

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

VALIDATION SIGNATURE PAGE

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

Kevin MacDonald, Inorganics Supervisor

Mike MacGillivray, Scientific Specialist (Inorganics)

Rosemarie MacDonald, Scientific Specialist (Organics)

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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/15
Report #: R4911571
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7R7733
Received: 2017/12/08, 08:49

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	6	N/A	2017/12/13	N/A	SM 22 4500-CO2 D
Alkalinity (1)	6	N/A	2017/12/14	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	6	N/A	2017/12/14	N/A	Auto Calc.
Chloride (1)	6	N/A	2017/12/14	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	6	N/A	2017/12/14	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	6	N/A	2017/12/13	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	6	N/A	2017/12/14	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	6	2017/12/13	2017/12/14	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	6	N/A	2017/12/13	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	6	N/A	2017/12/15	N/A	Auto Calc.
Anion and Cation Sum (1)	6	N/A	2017/12/14	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	6	N/A	2017/12/13	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	6	N/A	2017/12/15	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	6	N/A	2017/12/13	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	6	N/A	2017/12/15	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	6	2017/12/13	2017/12/14	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	6	N/A	2017/12/13	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	6	N/A	2017/12/14	ATL SOP 00021	SM 22 4500-P E m
Sat. pH and Langelier Index (@ 20C) (1)	6	N/A	2017/12/15	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	6	N/A	2017/12/15	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	6	N/A	2017/12/14	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	6	N/A	2017/12/14	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	6	N/A	2017/12/15	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	6	N/A	2017/12/15	ATL SOP 00037	SM 22 5310C m
Turbidity (1)	6	N/A	2017/12/14	ATL SOP 00011	EPA 180.1 R2 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

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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/15
Report #: R4911571
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7R7733
Received: 2017/12/08, 08:49

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.

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.

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.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Sr. Project Manager
Email: NMacAskill@maxxam.ca
Phone# (902)567-1255 Ext:17

==========

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Maxxam Job #: B7R7733
Report Date: 2017/12/15

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FSH377			FSH378		FSH379		
Sampling Date		2017/12/07			2017/12/07		2017/12/07		
COC Number		641599			641599		641599		
	UNITS	CODT-203-MW	RDL	QC Batch	CODT-008-MWB	QC Batch	CODT-105-MW	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	11.9	N/A	5305670	4.44	5309266	6.24	N/A	5305670
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	150	1.0	5305666	28	5309262	59	1.0	5305666
Calculated TDS	mg/L	730	1.0	5305675	300	5309271	400	1.0	5305675
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5305666	33	5309262	1.1	1.0	5305666
Cation Sum	me/L	12.3	N/A	5305670	4.50	5309266	6.09	N/A	5305670
Hardness (CaCO3)	mg/L	250	1.0	5305668	190	5309264	150	1.0	5305668
Ion Balance (% Difference)	%	1.70	N/A	5305669	0.670	5309265	1.22	N/A	5305669
Langelier Index (@ 20C)	N/A	0.150		5305673	2.00	5309269	0.358		5305673
Langelier Index (@ 4C)	N/A	-0.0960		5305674	1.75	5309270	0.109		5305674
Nitrate (N)	mg/L	<0.050	0.050	5305671	0.81	5309267	1.4	0.050	5305671
Saturation pH (@ 20C)	N/A	7.38		5305673	8.10	5309269	7.92		5305673
Saturation pH (@ 4C)	N/A	7.62		5305674	8.35	5309270	8.17		5305674
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	150 (1)	25	5313092	67	5313092	61	5.0	5313092
Dissolved Chloride (Cl)	mg/L	200	5.0	5313095	14	5313095	81	1.0	5313095
Colour	TCU	<5.0	5.0	5313099	19	5313099	6.6	5.0	5313099
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	5313102	1.0	5313102	1.9	0.050	5313102
Nitrite (N)	mg/L	<0.010	0.010	5313103	0.19	5313103	0.45	0.010	5313103
Nitrogen (Ammonia Nitrogen)	mg/L	0.32	0.050	5313494	<0.050	5313494	0.092	0.050	5313494
Total Organic Carbon (C)	mg/L	3.6	0.50	5317906	6.0	5317906	4.3	0.50	5317906
Orthophosphate (P)	mg/L	<0.010	0.010	5313101	0.011	5313101	0.010	0.010	5313101
pH	pH	7.53	N/A	5312796	10.1 (2)	5312796	8.28	N/A	5312796
Reactive Silica (SiO2)	mg/L	14	0.50	5313098	23	5313098	16	0.50	5313098
Dissolved Sulphate (SO4)	mg/L	160	10	5313097	130	5313097	130	10	5313097
Turbidity	NTU	3.6	0.10	5315159	6.3	5315159	0.38	0.10	5315159
Conductivity	uS/cm	1300	1.0	5312798	450	5312798	650	1.0	5312798

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.
(2) pH: linear range exceedance. Extended linearity confirmed.

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Maxxam Job #: B7R7733
Report Date: 2017/12/15

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FSH380		FSH381		FSH382		
Sampling Date		2017/12/07		2017/12/07		2017/12/07		
COC Number		641599		641599		641599		
	UNITS	COBC-004-MWA	RDL	COBC-002-MWA	RDL	COBT-003-MWB	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	13.1	N/A	21.9	N/A	11.3	N/A	5305670
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	160	1.0	53	1.0	210	1.0	5305666
Calculated TDS	mg/L	810	1.0	1300	1.0	640	1.0	5305675
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.3	1.0	<1.0	1.0	<1.0	1.0	5305666
Cation Sum	me/L	13.2	N/A	20.8	N/A	11.0	N/A	5305670
Hardness (CaCO3)	mg/L	460	1.0	570	1.0	320	1.0	5305668
Ion Balance (% Difference)	%	0.340	N/A	2.53	N/A	1.57	N/A	5305669
Langelier Index (@ 20C)	N/A	0.792		-1.20		0.516		5305673
Langelier Index (@ 4C)	N/A	0.545		-1.44		0.269		5305674
Nitrate (N)	mg/L	0.053	0.050	0.21	0.050	<0.050	0.050	5305671
Saturation pH (@ 20C)	N/A	7.14		7.57		7.13		5305673
Saturation pH (@ 4C)	N/A	7.39		7.82		7.37		5305674
Inorganics								
Total Alkalinity (Total as CaCO3)	mg/L	160 (1)	25	53	5.0	210 (1)	25	5313092
Dissolved Chloride (Cl)	mg/L	140	1.0	590	5.0	200	1.0	5313095
Colour	TCU	<5.0	5.0	<5.0	5.0	<5.0	5.0	5313099
Nitrate + Nitrite (N)	mg/L	0.053	0.050	0.21	0.050	<0.050	0.050	5313102
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	5313103
Nitrogen (Ammonia Nitrogen)	mg/L	0.068	0.050	<0.050	0.050	<0.050	0.050	5313494
Total Organic Carbon (C)	mg/L	1.9	0.50	1.8	0.50	1.3	0.50	5317906
Orthophosphate (P)	mg/L	0.16	0.010	<0.010	0.010	<0.010	0.010	5313101
pH	pH	7.93	N/A	6.37	N/A	7.64	N/A	5312800
Reactive Silica (SiO2)	mg/L	21	0.50	2.9	0.50	13	0.50	5313098
Dissolved Sulphate (SO4)	mg/L	280 (1)	60	190 (2)	10	69 (1)	10	5313097
Turbidity	NTU	2.0	0.10	1.8	0.10	0.51	0.10	5315159
Conductivity	uS/cm	1300	1.0	2300	1.0	1200	1.0	5312804

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.
(2) Elevated rep[orting limit due to sample matrix.

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Maxxam Job #: B7R7733
Report Date: 2017/12/15

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		FSH377	FSH378	FSH379	FSH380	FSH381		
Sampling Date		2017/12/07	2017/12/07	2017/12/07	2017/12/07	2017/12/07		
COC Number		641599	641599	641599	641599	641599		
	UNITS	CODT-203-MW	CODT-008-MWB	CODT-105-MW	COBC-004-MWA	COBC-002-MWA	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	5313463

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FSH382		
Sampling Date		2017/12/07		
COC Number		641599		
	UNITS	COBT-003-MWB	RDL	QC Batch
Metals				
Total Mercury (Hg)	ug/L	<0.013	0.013	5313463

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7R7733
Report Date: 2017/12/15

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FSH377	FSH378	FSH379	FSH380	FSH381		
Sampling Date		2017/12/07	2017/12/07	2017/12/07	2017/12/07	2017/12/07		
COC Number		641599	641599	641599	641599	641599		
	UNITS	CODT-203-MW	CODT-008-MWB	CODT-105-MW	COBC-004-MWA	COBC-002-MWA	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	<5.0	160	170	19	27	5.0	5312797
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	1.0	<1.0	1.0	5312797
Dissolved Arsenic (As)	ug/L	1.7	7.1	2.9	5.2	<1.0	1.0	5312797
Dissolved Barium (Ba)	ug/L	130	41	13	25	21	1.0	5312797
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5312797
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5312797
Dissolved Boron (B)	ug/L	<50	<50	<50	86	75	50	5312797
Dissolved Cadmium (Cd)	ug/L	0.10	0.046	0.041	0.036	0.21	0.010	5312797
Dissolved Calcium (Ca)	ug/L	93000	75000	56000	150000	190000	100	5312797
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	2.7	<1.0	<1.0	1.0	5312797
Dissolved Cobalt (Co)	ug/L	0.58	<0.40	0.41	<0.40	<0.40	0.40	5312797
Dissolved Copper (Cu)	ug/L	<2.0	6.1	10	2.4	9.6	2.0	5312797
Dissolved Iron (Fe)	ug/L	270	<50	<50	<50	<50	50	5312797
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5312797
Dissolved Magnesium (Mg)	ug/L	5200	700	2600	21000	22000	100	5312797
Dissolved Manganese (Mn)	ug/L	3300	<2.0	<2.0	160	59	2.0	5312797
Dissolved Molybdenum (Mo)	ug/L	4.2	2.8	7.9	7.3	<2.0	2.0	5312797
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5312797
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	180	<100	100	5312797
Dissolved Potassium (K)	ug/L	5500	5200	9900	4800	3300	100	5312797
Dissolved Selenium (Se)	ug/L	<1.0	2.0	11	<1.0	5.6	1.0	5312797
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5312797
Dissolved Sodium (Na)	ug/L	160000	13000	64000	90000	210000	100	5312797
Dissolved Strontium (Sr)	ug/L	510	790	840	510	950	2.0	5312797
Dissolved Thallium (Tl)	ug/L	0.12	<0.10	<0.10	<0.10	<0.10	0.10	5312797
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5312797
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5312797
Dissolved Uranium (U)	ug/L	0.94	1.2	0.43	0.64	<0.10	0.10	5312797
Dissolved Vanadium (V)	ug/L	<2.0	10	10	15	<2.0	2.0	5312797
Dissolved Zinc (Zn)	ug/L	58	<5.0	16	20	140	5.0	5312797

RDL = Reportable Detection Limit
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Maxxam Job #: B7R7733
Report Date: 2017/12/15

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FSH382		
Sampling Date		2017/12/07		
COC Number		641599		
	UNITS	COBT-003-MWB	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	<5.0	5.0	5312797
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	5312797
Dissolved Arsenic (As)	ug/L	2.8	1.0	5312797
Dissolved Barium (Ba)	ug/L	44	1.0	5312797
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	5312797
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	5312797
Dissolved Boron (B)	ug/L	63	50	5312797
Dissolved Cadmium (Cd)	ug/L	0.010	0.010	5312797
Dissolved Calcium (Ca)	ug/L	110000	100	5312797
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	5312797
Dissolved Cobalt (Co)	ug/L	0.48	0.40	5312797
Dissolved Copper (Cu)	ug/L	<2.0	2.0	5312797
Dissolved Iron (Fe)	ug/L	220	50	5312797
Dissolved Lead (Pb)	ug/L	<0.50	0.50	5312797
Dissolved Magnesium (Mg)	ug/L	12000	100	5312797
Dissolved Manganese (Mn)	ug/L	2300	2.0	5312797
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	5312797
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	5312797
Dissolved Phosphorus (P)	ug/L	<100	100	5312797
Dissolved Potassium (K)	ug/L	2900	100	5312797
Dissolved Selenium (Se)	ug/L	<1.0	1.0	5312797
Dissolved Silver (Ag)	ug/L	<0.10	0.10	5312797
Dissolved Sodium (Na)	ug/L	100000	100	5312797
Dissolved Strontium (Sr)	ug/L	1300	2.0	5312797
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	5312797
Dissolved Tin (Sn)	ug/L	<2.0	2.0	5312797
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	5312797
Dissolved Uranium (U)	ug/L	0.44	0.10	5312797
Dissolved Vanadium (V)	ug/L	<2.0	2.0	5312797
Dissolved Zinc (Zn)	ug/L	21	5.0	5312797

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Maxxam Job #: B7R7733
Report Date: 2017/12/15

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FSH377	FSH378	FSH379	FSH380	FSH381		
Sampling Date		2017/12/07	2017/12/07	2017/12/07	2017/12/07	2017/12/07		
COC Number		641599	641599	641599	641599	641599		
	UNITS	CODT-203-MW	CODT-008-MWB	CODT-105-MW	COBC-004-MWA	COBC-002-MWA	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	0.12	<0.050	0.41	0.36	0.25	0.050	5312875
2-Methylnaphthalene	ug/L	<0.050	<0.050	0.15	0.21	0.14	0.050	5312875
Acenaphthene	ug/L	1.0	0.076	0.24	0.20	0.15	0.010	5312875
Acenaphthylene	ug/L	0.027	0.020	0.011	<0.010	<0.010	0.010	5312875
Anthracene	ug/L	0.27	0.19	0.011	<0.010	<0.010	0.010	5312875
Benzo(a)anthracene	ug/L	0.36	0.26	<0.010	<0.010	<0.010	0.010	5312875
Benzo(a)pyrene	ug/L	0.24	0.22	<0.010	<0.010	<0.010	0.010	5312875
Benzo(b)fluoranthene	ug/L	0.20	0.20	<0.010	<0.010	<0.010	0.010	5312875
Benzo(b/j)fluoranthene	ug/L	0.33	0.31	<0.020	<0.020	<0.020	0.020	5305827
Benzo(g,h,i)perylene	ug/L	0.11	0.13	<0.010	<0.010	<0.010	0.010	5312875
Benzo(j)fluoranthene	ug/L	0.14	0.11	<0.010	<0.010	<0.010	0.010	5312875
Benzo(k)fluoranthene	ug/L	0.13	0.11	<0.010	<0.010	<0.010	0.010	5312875
Chrysene	ug/L	0.35	0.29	<0.010	<0.010	<0.010	0.010	5312875
Dibenz(a,h)anthracene	ug/L	0.035	0.033	<0.010	<0.010	<0.010	0.010	5312875
Fluoranthene	ug/L	0.93	0.69	0.025	<0.010	<0.010	0.010	5312875
Fluorene	ug/L	0.41	0.083	0.10	0.076	0.057	0.010	5312875
Indeno(1,2,3-cd)pyrene	ug/L	0.10	0.10	<0.010	<0.010	<0.010	0.010	5312875
Naphthalene	ug/L	0.52	<0.20	2.3	2.7	1.7	0.20	5312875
Perylene	ug/L	0.049	0.046	<0.010	<0.010	<0.010	0.010	5312875
Phenanthrene	ug/L	0.74	0.35	0.037	0.039	0.036	0.010	5312875
Pyrene	ug/L	0.65	0.66	0.027	<0.010	<0.010	0.010	5312875
Surrogate Recovery (%)								
D10-Anthracene	%	84	68	86	73	80		5312875
D14-Terphenyl	%	91	78	92	75	80		5312875
D8-Acenaphthylene	%	80	51	86	71	75		5312875

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Maxxam Job #: B7R7733
Report Date: 2017/12/15

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FSH382		
Sampling Date		2017/12/07		
COC Number		641599		
	UNITS	COBT-003-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons				
1-Methylnaphthalene	ug/L	0.20	0.050	5312875
2-Methylnaphthalene	ug/L	0.12	0.050	5312875
Acenaphthene	ug/L	0.13	0.010	5312875
Acenaphthylene	ug/L	<0.010	0.010	5312875
Anthracene	ug/L	<0.010	0.010	5312875
Benzo(a)anthracene	ug/L	<0.010	0.010	5312875
Benzo(a)pyrene	ug/L	<0.010	0.010	5312875
Benzo(b)fluoranthene	ug/L	<0.010	0.010	5312875
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	5305827
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	5312875
Benzo(j)fluoranthene	ug/L	<0.010	0.010	5312875
Benzo(k)fluoranthene	ug/L	<0.010	0.010	5312875
Chrysene	ug/L	<0.010	0.010	5312875
Dibenz(a,h)anthracene	ug/L	<0.010	0.010	5312875
Fluoranthene	ug/L	<0.010	0.010	5312875
Fluorene	ug/L	0.051	0.010	5312875
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	5312875
Naphthalene	ug/L	1.3	0.20	5312875
Perylene	ug/L	<0.010	0.010	5312875
Phenanthrene	ug/L	0.034	0.010	5312875
Pyrene	ug/L	<0.010	0.010	5312875
Surrogate Recovery (%)				
D10-Anthracene	%	90		5312875
D14-Terphenyl	%	92		5312875
D8-Acenaphthylene	%	83		5312875

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GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Job #: B7R7733
Report Date: 2017/12/15

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5312796	JMV	QC Standard	pH	2017/12/13		101	%	97 - 103
5312796	JMV	RPD	pH	2017/12/13	1.7		%	N/A
5312797	BAN	Matrix Spike	Dissolved Aluminum (Al)	2017/12/14		98	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/14		101	%	80 - 120
			Dissolved Arsenic (As)	2017/12/14		98	%	80 - 120
			Dissolved Barium (Ba)	2017/12/14		97	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/14		99	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/14		101	%	80 - 120
			Dissolved Boron (B)	2017/12/14		98	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/14		101	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/14		100	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/14		95	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/14		95	%	80 - 120
			Dissolved Copper (Cu)	2017/12/14		93	%	80 - 120
			Dissolved Iron (Fe)	2017/12/14		NC	%	80 - 120
			Dissolved Lead (Pb)	2017/12/14		98	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/14		99	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/14		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/14		98	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/14		96	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/14		106	%	80 - 120
			Dissolved Potassium (K)	2017/12/14		100	%	80 - 120
			Dissolved Selenium (Se)	2017/12/14		101	%	80 - 120
			Dissolved Silver (Ag)	2017/12/14		98	%	80 - 120
			Dissolved Sodium (Na)	2017/12/14		95	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/14		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/14		102	%	80 - 120
			Dissolved Tin (Sn)	2017/12/14		103	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/14		97	%	80 - 120
			Dissolved Uranium (U)	2017/12/14		104	%	80 - 120
			Dissolved Vanadium (V)	2017/12/14		99	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/14		101	%	80 - 120
5312797	BAN	Spiked Blank	Dissolved Aluminum (Al)	2017/12/13		103	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/13		95	%	80 - 120
			Dissolved Arsenic (As)	2017/12/13		99	%	80 - 120
			Dissolved Barium (Ba)	2017/12/13		99	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/13		100	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/13		104	%	80 - 120
			Dissolved Boron (B)	2017/12/13		99	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/13		99	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/13		101	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/13		100	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/13		101	%	80 - 120
			Dissolved Copper (Cu)	2017/12/13		101	%	80 - 120
			Dissolved Iron (Fe)	2017/12/13		103	%	80 - 120
			Dissolved Lead (Pb)	2017/12/13		100	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/13		104	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/13		102	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/13		100	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/13		101	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/13		106	%	80 - 120
			Dissolved Potassium (K)	2017/12/13		107	%	80 - 120
			Dissolved Selenium (Se)	2017/12/13		98	%	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 Silver (Ag)	2017/12/13		99	%	80 - 120
			Dissolved Sodium (Na)	2017/12/13		102	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/13		104	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/13		103	%	80 - 120
			Dissolved Tin (Sn)	2017/12/13		104	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/13		102	%	80 - 120
			Dissolved Uranium (U)	2017/12/13		105	%	80 - 120
			Dissolved Vanadium (V)	2017/12/13		102	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/13		103	%	80 - 120
5312797	BAN	Method Blank	Dissolved Aluminum (Al)	2017/12/13	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/13	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/13	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/13	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/13	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/13	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/13	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/13	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/13	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/13	<1.0		ug/L	
			Dissolved Cobalt (Co)	2017/12/13	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/13	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/13	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/13	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/13	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/13	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/13	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/13	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/13	<100		ug/L	
			Dissolved Potassium (K)	2017/12/13	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/13	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/13	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/13	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/13	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/13	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/13	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/13	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/13	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/13	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/13	<5.0		ug/L	
5312797	BAN	RPD	Dissolved Aluminum (Al)	2017/12/14	8.5		%	20
			Dissolved Antimony (Sb)	2017/12/14	NC		%	20
			Dissolved Arsenic (As)	2017/12/14	NC		%	20
			Dissolved Barium (Ba)	2017/12/14	1.5		%	20
			Dissolved Beryllium (Be)	2017/12/14	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/14	NC		%	20
			Dissolved Boron (B)	2017/12/14	NC		%	20
			Dissolved Cadmium (Cd)	2017/12/14	1.3		%	20
			Dissolved Calcium (Ca)	2017/12/14	1.2		%	20
			Dissolved Chromium (Cr)	2017/12/14	NC		%	20
			Dissolved Cobalt (Co)	2017/12/14	1.3		%	20
			Dissolved Copper (Cu)	2017/12/14	NC		%	20
			Dissolved Iron (Fe)	2017/12/14	0.61		%	20
			Dissolved Lead (Pb)	2017/12/14	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 Magnesium (Mg)	2017/12/14	0.021		%	20
			Dissolved Manganese (Mn)	2017/12/14	0.69		%	20
			Dissolved Molybdenum (Mo)	2017/12/14	NC		%	20
			Dissolved Nickel (Ni)	2017/12/14	0.49		%	20
			Dissolved Phosphorus (P)	2017/12/14	NC		%	20
			Dissolved Potassium (K)	2017/12/14	1.2		%	20
			Dissolved Selenium (Se)	2017/12/14	NC		%	20
			Dissolved Silver (Ag)	2017/12/14	NC		%	20
			Dissolved Sodium (Na)	2017/12/14	0.14		%	20
			Dissolved Strontium (Sr)	2017/12/14	0.21		%	20
			Dissolved Thallium (Tl)	2017/12/14	NC		%	20
			Dissolved Tin (Sn)	2017/12/14	NC		%	20
			Dissolved Titanium (Ti)	2017/12/14	NC		%	20
			Dissolved Uranium (U)	2017/12/14	NC		%	20
			Dissolved Vanadium (V)	2017/12/14	NC		%	20
			Dissolved Zinc (Zn)	2017/12/14	0.091		%	20
5312798	JMV	Spiked Blank	Conductivity	2017/12/13		101	%	80 - 120
5312798	JMV	Method Blank	Conductivity	2017/12/13	<1.0		uS/cm	
5312798	JMV	RPD	Conductivity	2017/12/13	0.52		%	25
5312800	JMV	QC Standard	pH	2017/12/13		100	%	97 - 103
5312800	JMV	RPD	pH	2017/12/13	4.8 (1)		%	N/A
5312804	JMV	Spiked Blank	Conductivity	2017/12/13		100	%	80 - 120
5312804	JMV	Method Blank	Conductivity	2017/12/13	1.1, RDL=1.0		uS/cm	
5312804	JMV	RPD	Conductivity	2017/12/13	2.4		%	25
5312875	GTH	Matrix Spike	D10-Anthracene	2017/12/13		80	%	50 - 130
			D14-Terphenyl	2017/12/13		88	%	50 - 130
			D8-Acenaphthylene	2017/12/13		78	%	50 - 130
			1-Methylnaphthalene	2017/12/13		77	%	30 - 130
			2-Methylnaphthalene	2017/12/13		84	%	30 - 130
			Acenaphthene	2017/12/13		92	%	30 - 130
			Acenaphthylene	2017/12/13		82	%	30 - 130
			Anthracene	2017/12/13		92	%	30 - 130
			Benzo(a)anthracene	2017/12/13		103	%	30 - 130
			Benzo(a)pyrene	2017/12/13		97	%	30 - 130
			Benzo(b)fluoranthene	2017/12/13		104	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/13		116	%	30 - 130
			Benzo(j)fluoranthene	2017/12/13		103	%	30 - 130
			Benzo(k)fluoranthene	2017/12/13		104	%	30 - 130
			Chrysene	2017/12/13		101	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/13		104	%	30 - 130
			Fluoranthene	2017/12/13		102	%	30 - 130
			Fluorene	2017/12/13		84	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/13		104	%	30 - 130
			Naphthalene	2017/12/13		81	%	30 - 130
			Perylene	2017/12/13		98	%	30 - 130
			Phenanthrene	2017/12/13		87	%	30 - 130
			Pyrene	2017/12/13		96	%	30 - 130
5312875	GTH	Spiked Blank	D10-Anthracene	2017/12/13		92	%	50 - 130
			D14-Terphenyl	2017/12/13		96	%	50 - 130
			D8-Acenaphthylene	2017/12/13		86	%	50 - 130
			1-Methylnaphthalene	2017/12/13		85	%	30 - 130
			2-Methylnaphthalene	2017/12/13		92	%	30 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acenaphthene	2017/12/13		101	%	30 - 130
			Acenaphthylene	2017/12/13		90	%	30 - 130
			Anthracene	2017/12/13		116	%	30 - 130
			Benzo(a)anthracene	2017/12/13		105	%	30 - 130
			Benzo(a)pyrene	2017/12/13		103	%	30 - 130
			Benzo(b)fluoranthene	2017/12/13		112	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/13		118	%	30 - 130
			Benzo(j)fluoranthene	2017/12/13		115	%	30 - 130
			Benzo(k)fluoranthene	2017/12/13		110	%	30 - 130
			Chrysene	2017/12/13		101	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/13		103	%	30 - 130
			Fluoranthene	2017/12/13		112	%	30 - 130
			Fluorene	2017/12/13		95	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/13		107	%	30 - 130
			Naphthalene	2017/12/13		87	%	30 - 130
			Perylene	2017/12/13		107	%	30 - 130
			Phenanthrene	2017/12/13		94	%	30 - 130
			Pyrene	2017/12/13		105	%	30 - 130
5312875	GTH	Method Blank	D10-Anthracene	2017/12/13		98	%	50 - 130
			D14-Terphenyl	2017/12/13		102	%	50 - 130
			D8-Acenaphthylene	2017/12/13		88	%	50 - 130
			1-Methylnaphthalene	2017/12/13	<0.050		ug/L	
			2-Methylnaphthalene	2017/12/13	<0.050		ug/L	
			Acenaphthene	2017/12/13	<0.010		ug/L	
			Acenaphthylene	2017/12/13	<0.010		ug/L	
			Anthracene	2017/12/13	<0.010		ug/L	
			Benzo(a)anthracene	2017/12/13	<0.010		ug/L	
			Benzo(a)pyrene	2017/12/13	<0.010		ug/L	
			Benzo(b)fluoranthene	2017/12/13	<0.010		ug/L	
			Benzo(g,h,i)perylene	2017/12/13	<0.010		ug/L	
			Benzo(j)fluoranthene	2017/12/13	<0.010		ug/L	
			Benzo(k)fluoranthene	2017/12/13	<0.010		ug/L	
			Chrysene	2017/12/13	<0.010		ug/L	
			Dibenz(a,h)anthracene	2017/12/13	<0.010		ug/L	
			Fluoranthene	2017/12/13	<0.010		ug/L	
			Fluorene	2017/12/13	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/12/13	<0.010		ug/L	
			Naphthalene	2017/12/13	<0.20		ug/L	
			Perylene	2017/12/13	<0.010		ug/L	
			Phenanthrene	2017/12/13	<0.010		ug/L	
			Pyrene	2017/12/13	<0.010		ug/L	
5312875	GTH	RPD	1-Methylnaphthalene	2017/12/13	NC		%	40
			2-Methylnaphthalene	2017/12/13	NC		%	40
			Acenaphthene	2017/12/13	NC		%	40
			Acenaphthylene	2017/12/13	NC		%	40
			Anthracene	2017/12/13	NC		%	40
			Benzo(a)anthracene	2017/12/13	NC		%	40
			Benzo(a)pyrene	2017/12/13	NC		%	40
			Benzo(b)fluoranthene	2017/12/13	NC		%	40
			Benzo(g,h,i)perylene	2017/12/13	NC		%	40
			Benzo(j)fluoranthene	2017/12/13	NC		%	40
			Benzo(k)fluoranthene	2017/12/13	NC		%	40
			Chrysene	2017/12/13	NC		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibenz(a,h)anthracene	2017/12/13	NC		%	40
			Fluoranthene	2017/12/13	NC		%	40
			Fluorene	2017/12/13	NC		%	40
			Indeno(1,2,3-cd)pyrene	2017/12/13	NC		%	40
			Naphthalene	2017/12/13	NC		%	40
			Perylene	2017/12/13	NC		%	40
			Phenanthrene	2017/12/13	6.8		%	40
			Pyrene	2017/12/13	NC		%	40
5313092	NRG	Matrix Spike	Total Alkalinity (Total as CaCO3)	2017/12/14		94	%	80 - 120
5313092	NRG	Spiked Blank	Total Alkalinity (Total as CaCO3)	2017/12/14		102	%	80 - 120
5313092	NRG	Method Blank	Total Alkalinity (Total as CaCO3)	2017/12/14	<5.0		mg/L	
5313092	NRG	RPD	Total Alkalinity (Total as CaCO3)	2017/12/14	4.2		%	25
5313095	NRG	Matrix Spike	Dissolved Chloride (Cl)	2017/12/14		90	%	80 - 120
5313095	NRG	QC Standard	Dissolved Chloride (Cl)	2017/12/14		106	%	80 - 120
5313095	NRG	Spiked Blank	Dissolved Chloride (Cl)	2017/12/14		99	%	80 - 120
5313095	NRG	Method Blank	Dissolved Chloride (Cl)	2017/12/14	<1.0		mg/L	
5313095	NRG	RPD	Dissolved Chloride (Cl)	2017/12/14	0.22		%	25
5313097	NRG	Matrix Spike	Dissolved Sulphate (SO4)	2017/12/14		94	%	80 - 120
5313097	NRG	Spiked Blank	Dissolved Sulphate (SO4)	2017/12/14		97	%	80 - 120
5313097	NRG	Method Blank	Dissolved Sulphate (SO4)	2017/12/14	<2.0		mg/L	
5313097	NRG	RPD	Dissolved Sulphate (SO4)	2017/12/14	1.3		%	25
5313098	NRG	Matrix Spike	Reactive Silica (SiO2)	2017/12/14		97	%	80 - 120
5313098	NRG	Spiked Blank	Reactive Silica (SiO2)	2017/12/14		98	%	80 - 120
5313098	NRG	Method Blank	Reactive Silica (SiO2)	2017/12/14	<0.50		mg/L	
5313098	NRG	RPD	Reactive Silica (SiO2)	2017/12/14	0.40		%	25
5313099	NRG	Spiked Blank	Colour	2017/12/14		92	%	80 - 120
5313099	NRG	Method Blank	Colour	2017/12/14	<5.0		TCU	
5313099	NRG	RPD	Colour	2017/12/14	NC		%	20
5313101	NRG	Matrix Spike	Orthophosphate (P)	2017/12/14		NC	%	80 - 120
5313101	NRG	Spiked Blank	Orthophosphate (P)	2017/12/14		94	%	80 - 120
5313101	NRG	Method Blank	Orthophosphate (P)	2017/12/14	<0.010		mg/L	
5313101	NRG	RPD	Orthophosphate (P)	2017/12/14	1.8		%	25
5313102	NRG	Matrix Spike	Nitrate + Nitrite (N)	2017/12/15		100	%	80 - 120
5313102	NRG	Spiked Blank	Nitrate + Nitrite (N)	2017/12/15		101	%	80 - 120
5313102	NRG	Method Blank	Nitrate + Nitrite (N)	2017/12/15	<0.050		mg/L	
5313102	NRG	RPD	Nitrate + Nitrite (N)	2017/12/15	NC		%	25
5313103	NRG	Matrix Spike	Nitrite (N)	2017/12/13		43 (2)	%	80 - 120
5313103	NRG	Spiked Blank	Nitrite (N)	2017/12/13		102	%	80 - 120
5313103	NRG	Method Blank	Nitrite (N)	2017/12/13	<0.010		mg/L	
5313103	NRG	RPD	Nitrite (N)	2017/12/13	NC		%	25
5313463	ARS	Matrix Spike	Total Mercury (Hg)	2017/12/14		101	%	80 - 120
5313463	ARS	Spiked Blank	Total Mercury (Hg)	2017/12/14		101	%	80 - 120
5313463	ARS	Method Blank	Total Mercury (Hg)	2017/12/14	<0.013		ug/L	
5313463	ARS	RPD	Total Mercury (Hg)	2017/12/14	NC		%	20
5313494	NRG	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/13		100	%	80 - 120
5313494	NRG	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/13		105	%	80 - 120
5313494	NRG	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/13	<0.050		mg/L	
5313494	NRG	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/13	NC		%	20
5315159	JMV	QC Standard	Turbidity	2017/12/14		95	%	80 - 120
5315159	JMV	Spiked Blank	Turbidity	2017/12/14		93	%	80 - 120
5315159	JMV	Method Blank	Turbidity	2017/12/14	<0.10		NTU	
5315159	JMV	RPD	Turbidity	2017/12/14	2.2		%	20
5317906	SSI	Matrix Spike	Total Organic Carbon (C)	2017/12/15		105	%	80 - 120

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Maxxam Job #: B7R7733
Report Date: 2017/12/15

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5317906	SSI	Spiked Blank	Total Organic Carbon (C)	2017/12/15		109	%	80 - 120
5317906	SSI	Method Blank	Total Organic Carbon (C)	2017/12/15	<0.50		mg/L	
5317906	SSI	RPD	Total Organic Carbon (C)	2017/12/15	2.1		%	20

N/A = Not Applicable

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.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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) Poor duplicate results due to sample matrix, insufficient volume remaining for repeat analysis.

(2) Poor spike recovery due to sample matrix, result confirmed by repeat analysis.

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Maxxam Job #: B7R7733
Report Date: 2017/12/15

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

VALIDATION SIGNATURE PAGE

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

Mike MacGillivray, Scientific Specialist (Inorganics)

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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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/14
Report #: R4909437
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7R5176
Received: 2017/12/05, 16:50

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	4	N/A	2017/12/11	N/A	SM 22 4500-CO2 D
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2017/12/12	N/A	SM 22 4500-CO2 D
Alkalinity (1)	5	N/A	2017/12/12	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	4	N/A	2017/12/13	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (water) (1)	1	N/A	2017/12/14	N/A	Auto Calc.
Chloride (1)	5	N/A	2017/12/12	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	5	N/A	2017/12/11	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	4	N/A	2017/12/11	ATL SOP 00004	SM 22 2510B m
Conductance - water (1)	1	N/A	2017/12/12	ATL SOP 00004	SM 22 2510B m
TEH in Water (PIRI) (1)	1	2017/12/11	2017/12/11	ATL SOP 00113	Atl. RBCA v3.1 m
Hardness (calculated as CaCO3) (1)	5	N/A	2017/12/12	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	5	2017/12/11	2017/12/12	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	5	N/A	2017/12/11	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	5	N/A	2017/12/13	N/A	Auto Calc.
Anion and Cation Sum (1)	3	N/A	2017/12/12	N/A	Auto Calc.
Anion and Cation Sum (1)	2	N/A	2017/12/13	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	2	N/A	2017/12/11	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen Ammonia - water (1)	3	N/A	2017/12/12	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	5	N/A	2017/12/12	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	5	N/A	2017/12/12	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	5	N/A	2017/12/12	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	2	2017/12/11	2017/12/12	ATL SOP 00103	EPA 8270D 2007 m
PAH in Water by GC/MS (SIM) (1)	3	2017/12/11	2017/12/13	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	4	N/A	2017/12/11	ATL SOP 00003	SM 22 4500-H+ B m
pH (1, 2)	1	N/A	2017/12/12	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	5	N/A	2017/12/12	ATL SOP 00021	SM 22 4500-P E m
VPH in Water (PIRI) (1)	1	N/A	2017/12/12	ATL SOP 00118	Atl. RBCA v3.1 m
Sat. pH and Langelier Index (@ 20C) (1)	5	N/A	2017/12/13	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	5	N/A	2017/12/13	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	5	N/A	2017/12/13	ATL SOP 00022	EPA 366.0 m

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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/14
Report #: R4909437
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7R5176
Received: 2017/12/05, 16:50

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Sulphate (1)	5	N/A	2017/12/11	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	5	N/A	2017/12/13	N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	5	N/A	2017/12/13	ATL SOP 00037	SM 22 5310C m
ModTPH (T1) Calc. for Water (1)	1	N/A	2017/12/12	N/A	Atl. RBCA v3 m
Turbidity (1)	5	N/A	2017/12/11	ATL SOP 00011	EPA 180.1 R2 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.

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.

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.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
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
(2) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

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Your Project #: 14-1360
Site#: OH PARK / HARBOURSIDE EAST
Site Location: OH PARK / HARBOURSIDE EAST
Your C.O.C. #: 641599

Attention:Nadine Wambolt

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

Report Date: 2017/12/14
Report #: R4909437
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7R5176
Received: 2017/12/05, 16:50

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Natalie MacAskill, Sr. Project Manager
Email: NMacAskill@maxxam.ca
Phone# (902)567-1255 Ext:17
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Maxxam Job #: B7R5176
Report Date: 2017/12/14

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FRT963		FRT964			FRT965		
Sampling Date		2017/12/05		2017/12/05			2017/12/05		
COC Number		641599		641599			641599		
	UNITS	CODT-206-MW	RDL	CODT-201-MWA	RDL	QC Batch	CODT-201-MWC	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	6.84	N/A	6.36	N/A	5301488	5.85	N/A	5301488
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	230	1.0	230	1.0	5301485	200	1.0	5301485
Calculated TDS	mg/L	400	1.0	350	1.0	5301493	320	1.0	5301493
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	1.1	1.0	5301485	1.2	1.0	5301485
Cation Sum	me/L	6.48	N/A	6.03	N/A	5301488	5.50	N/A	5301488
Hardness (CaCO3)	mg/L	300	1.0	280	1.0	5301486	120	1.0	5301486
Ion Balance (% Difference)	%	2.70	N/A	2.66	N/A	5301487	3.08	N/A	5301487
Langelier Index (@ 20C)	N/A	0.333		0.591		5301491	0.299		5301491
Langelier Index (@ 4C)	N/A	0.0840		0.343		5301492	0.0500		5301492
Nitrate (N)	mg/L	0.16	0.050	4.2	0.25	5301489	<0.050	0.050	5301489
Saturation pH (@ 20C)	N/A	7.05		7.09		5301491	7.51		5301491
Saturation pH (@ 4C)	N/A	7.30		7.34		5301492	7.76		5301492
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	230 (1)	25	230 (1)	25	5308878	210 (1)	25	5308878
Dissolved Chloride (Cl)	mg/L	9.8	1.0	9.4	1.0	5308888	59	1.0	5308888
Colour	TCU	21	5.0	<5.0	5.0	5308911	5.2	5.0	5308911
Nitrate + Nitrite (N)	mg/L	0.16	0.050	4.2	0.25	5308914	<0.050	0.050	5308914
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	5308917	<0.010	0.010	5308917
Nitrogen (Ammonia Nitrogen)	mg/L	1.0	0.050	<0.050	0.050	5311413	0.59	0.050	5309188
Total Organic Carbon (C)	mg/L	13 (2)	5.0	<5.0 (2)	5.0	5313181	5.7 (1)	5.0	5313181
Orthophosphate (P)	mg/L	<0.010	0.010	0.021	0.010	5308913	<0.010	0.010	5308913
pH	pH	7.39	N/A	7.68	N/A	5308709	7.81	N/A	5310581
Reactive Silica (SiO2)	mg/L	21	0.50	15	0.50	5308909	12	0.50	5308909
Dissolved Sulphate (SO4)	mg/L	91 (1)	10	53 (1)	10	5308903	4.0	2.0	5308903
Turbidity	NTU	78	0.10	160	1.0	5308742	0.84	0.10	5308742
Conductivity	uS/cm	630	1.0	580	1.0	5308710	560	1.0	5310582

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.
(2) Reporting limit was increased due to turbidity.

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Maxxam Job #: B7R5176
Report Date: 2017/12/14

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

RESULTS OF ANALYSES OF WATER

Maxxam ID		FRT966			FRT967		
Sampling Date		2017/12/05			2017/12/05		
COC Number		641599			641599		
	UNITS	CODT-205-MWA	RDL	QC Batch	FD-04	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	6.01	N/A	5301488	6.92	N/A	5301488
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	260	1.0	5301485	240	1.0	5301485
Calculated TDS	mg/L	330	1.0	5301493	400	1.0	5301493
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.1	1.0	5301485	<1.0	1.0	5301485
Cation Sum	me/L	5.84	N/A	5301488	6.52	N/A	5301488
Hardness (CaCO3)	mg/L	210	1.0	5301486	300	1.0	5301486
Ion Balance (% Difference)	%	1.43	N/A	5301487	2.98	N/A	5301487
Langelier Index (@ 20C)	N/A	0.775		5301491	0.300		5301491
Langelier Index (@ 4C)	N/A	0.526		5301492	0.0520		5301492
Nitrate (N)	mg/L	<0.050	0.050	5301489	0.12	0.050	5301489
Saturation pH (@ 20C)	N/A	7.17		5301491	7.03		5301491
Saturation pH (@ 4C)	N/A	7.42		5301492	7.28		5301492
Inorganics							
Total Alkalinity (Total as CaCO3)	mg/L	260	25	5308878	240 (1)	25	5308878
Dissolved Chloride (Cl)	mg/L	13	1.0	5308888	10	1.0	5308888
Colour	TCU	11	5.0	5308911	22	5.0	5308911
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	5308914	0.12	0.050	5308914
Nitrite (N)	mg/L	<0.010	0.010	5308917	<0.010	0.010	5308917
Nitrogen (Ammonia Nitrogen)	mg/L	0.20	0.050	5309188	1.1	0.050	5309188
Total Organic Carbon (C)	mg/L	8.0	0.50	5313181	19 (2)	5.0	5313181
Orthophosphate (P)	mg/L	<0.010	0.010	5308913	<0.010	0.010	5308913
pH	pH	7.95	N/A	5308709	7.33	N/A	5308709
Reactive Silica (SiO2)	mg/L	16	0.50	5308909	19	0.50	5308909
Dissolved Sulphate (SO4)	mg/L	24	2.0	5308903	84 (1)	10	5308903
Turbidity	NTU	24	0.10	5308728	95	0.10	5308742
Conductivity	uS/cm	530	1.0	5308710	650	1.0	5308710

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.
(2) Reporting limit was increased due to turbidity.

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Maxxam Job #: B7R5176
Report Date: 2017/12/14

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		FRT963	FRT964	FRT965	FRT966	FRT967		
Sampling Date		2017/12/05	2017/12/05	2017/12/05	2017/12/05	2017/12/05		
COC Number		641599	641599	641599	641599	641599		
	UNITS	**CODT-206-MW**	**CODT-201-MWA**	**CODT-201-MWC**	**CODT-205-MWA**	**FD-04**	**RDL**	**QC Batch**
Metals								
Total Mercury (Hg)	ug/L	<0.013	0.047	<0.013	<0.013	<0.013	0.013	5308800

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7R5176
Report Date: 2017/12/14

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FRT963	FRT964	FRT965	FRT966	FRT967		
Sampling Date		2017/12/05	2017/12/05	2017/12/05	2017/12/05	2017/12/05		
COC Number		641599	641599	641599	641599	641599		
	UNITS	CODT-206-MW	CODT-201-MWA	CODT-201-MWC	CODT-205-MWA	FD-04	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	19	15	<5.0	46	20	5.0	5308777
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5308777
Dissolved Arsenic (As)	ug/L	4.8	<1.0	3.5	8.1	4.7	1.0	5308777
Dissolved Barium (Ba)	ug/L	100	20	420	250	100	1.0	5308777
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5308777
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5308777
Dissolved Boron (B)	ug/L	62	56	80	56	60	50	5308777
Dissolved Cadmium (Cd)	ug/L	0.22	0.036	<0.010	0.027	0.090	0.010	5308777
Dissolved Calcium (Ca)	ug/L	110000	94000	40000	70000	110000	100	5308777
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5308777
Dissolved Cobalt (Co)	ug/L	0.87	<0.40	<0.40	<0.40	0.87	0.40	5308777
Dissolved Copper (Cu)	ug/L	2.3	16	<2.0	<2.0	2.6	2.0	5308777
Dissolved Iron (Fe)	ug/L	2300	<50	<50	3000	2400	50	5308777
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5308777
Dissolved Magnesium (Mg)	ug/L	7600	10000	4900	9600	7600	100	5308777
Dissolved Manganese (Mn)	ug/L	6100	<2.0	810	980	6100	2.0	5308777
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	<2.0	3.5	<2.0	2.0	5308777
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5308777
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	<100	<100	100	5308777
Dissolved Potassium (K)	ug/L	4100	3100	2500	4800	4100	100	5308777
Dissolved Selenium (Se)	ug/L	<1.0	3.9	8.5	<1.0	<1.0	1.0	5308777
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5308777
Dissolved Sodium (Na)	ug/L	6600	9400	69000	30000	6700	100	5308777
Dissolved Strontium (Sr)	ug/L	400	290	560	3400	400	2.0	5308777
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5308777
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5308777
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5308777
Dissolved Uranium (U)	ug/L	2.8	0.68	<0.10	0.73	2.8	0.10	5308777
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5308777
Dissolved Zinc (Zn)	ug/L	45	48	<5.0	21	44	5.0	5308777

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B7R5176
Report Date: 2017/12/14

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FRT963		FRT964		FRT965		FRT966		
Sampling Date		2017/12/05		2017/12/05		2017/12/05		2017/12/05		
COC Number		641599		641599		641599		641599		
	UNITS	CODT-206-MW	RDL	CODT-201-MWA	RDL	CODT-201-MWC	RDL	CODT-205-MWA	RDL	QC Batch
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	ug/L	13	0.050	0.12	0.050	560 (1)	5.0	0.099	0.050	5308743
2-Methylnaphthalene	ug/L	1.3	0.050	0.12	0.050	340 (1)	5.0	<0.050	0.050	5308743
Acenaphthene	ug/L	46 (1)	0.10	1.2	0.010	240 (1)	1.0	0.26	0.010	5308743
Acenaphthylene	ug/L	2.3	0.010	0.084	0.010	11	0.010	0.30	0.010	5308743
Anthracene	ug/L	1.2	0.010	3.7	0.010	4.5	0.010	0.018	0.010	5308743
Benzo(a)anthracene	ug/L	0.11	0.010	9.5	0.010	0.054	0.010	<0.010	0.010	5308743
Benzo(a)pyrene	ug/L	0.15	0.010	6.9	0.010	<0.010	0.010	<0.010	0.010	5308743
Benzo(b)fluoranthene	ug/L	0.13	0.010	5.9	0.010	<0.010	0.010	<0.010	0.010	5308743
Benzo(b/j)fluoranthene	ug/L	0.18	0.020	9.3	0.020	<0.020	0.020	<0.020	0.020	5301250
Benzo(g,h,i)perylene	ug/L	0.076	0.010	3.1	0.010	<0.010	0.010	<0.010	0.010	5308743
Benzo(j)fluoranthene	ug/L	0.055	0.010	3.3	0.010	<0.010	0.010	<0.010	0.010	5308743
Benzo(k)fluoranthene	ug/L	0.061	0.010	3.4	0.010	<0.010	0.010	<0.010	0.010	5308743
Chrysene	ug/L	0.13	0.010	8.6	0.010	0.042	0.010	<0.010	0.010	5308743
Dibenz(a,h)anthracene	ug/L	0.022	0.010	1.1	0.010	<0.010	0.010	<0.010	0.010	5308743
Fluoranthene	ug/L	1.8	0.010	18	0.010	3.5	0.010	0.031	0.010	5308743
Fluorene	ug/L	26	0.010	1.2	0.010	96 (1)	1.0	0.26	0.010	5308743
Indeno(1,2,3-cd)pyrene	ug/L	0.066	0.010	2.9	0.010	<0.010	0.010	<0.010	0.010	5308743
Naphthalene	ug/L	36	0.20	<0.20	0.20	6200 (1)	100	<0.20	0.20	5308743
Perylene	ug/L	0.027	0.010	1.5	0.010	<0.010	0.010	<0.010	0.010	5308743
Phenanthrene	ug/L	14	0.010	12	0.010	74 (1)	1.0	0.043	0.010	5308743
Pyrene	ug/L	0.86	0.010	13	0.010	1.4	0.010	0.020	0.010	5308743
Surrogate Recovery (%)										
D10-Anthracene	%	96		80		112		82		5308743
D14-Terphenyl	%	101		97 (2)		73		94		5308743
D8-Acenaphthylene	%	95		83		105		82		5308743

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to sample dilution.
(2) PAH sample contained sediment.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FRT967		
Sampling Date		2017/12/05		
COC Number		641599		
	UNITS	FD-04	RDL	QC Batch
Polyaromatic Hydrocarbons				
1-Methylnaphthalene	ug/L	18	0.050	5308743
2-Methylnaphthalene	ug/L	1.1	0.050	5308743
Acenaphthene	ug/L	63 (1)	0.10	5308743
Acenaphthylene	ug/L	3.0	0.010	5308743
Anthracene	ug/L	2.4	0.010	5308743
Benzo(a)anthracene	ug/L	0.20	0.010	5308743
Benzo(a)pyrene	ug/L	0.25	0.010	5308743
Benzo(b)fluoranthene	ug/L	0.23	0.010	5308743
Benzo(b/j)fluoranthene	ug/L	0.31	0.020	5301250
Benzo(g,h,i)perylene	ug/L	0.096	0.010	5308743
Benzo(j)fluoranthene	ug/L	0.082	0.010	5308743
Benzo(k)fluoranthene	ug/L	0.095	0.010	5308743
Chrysene	ug/L	0.27	0.010	5308743
Dibenz(a,h)anthracene	ug/L	0.033	0.010	5308743
Fluoranthene	ug/L	3.1	0.010	5308743
Fluorene	ug/L	39	0.010	5308743
Indeno(1,2,3-cd)pyrene	ug/L	0.096	0.010	5308743
Naphthalene	ug/L	30	0.20	5308743
Perylene	ug/L	0.043	0.010	5308743
Phenanthrene	ug/L	25	0.010	5308743
Pyrene	ug/L	1.5	0.010	5308743
Surrogate Recovery (%)				
D10-Anthracene	%	88		5308743
D14-Terphenyl	%	97		5308743
D8-Acenaphthylene	%	90		5308743

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to sample dilution.

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Maxxam Job #: B7R5176
Report Date: 2017/12/14

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

ATLANTIC RBCA HYDROCARBONS (WATER)

Maxxam ID		FRT965		
Sampling Date		2017/12/05		
COC Number		641599		
	UNITS	CODT-201-MWC	RDL	QC Batch
Petroleum Hydrocarbons				
Benzene	mg/L	0.072	0.010	5305684
Toluene	mg/L	0.13	0.010	5305684
Ethylbenzene	mg/L	0.13	0.010	5305684
Total Xylenes	mg/L	0.50	0.020	5305684
C6 - C10 (less BTEX)	mg/L	0.87	0.10	5305684
>C10-C16 Hydrocarbons	mg/L	17	0.050	5308748
>C16-C21 Hydrocarbons	mg/L	0.48	0.050	5308748
>C21-<C32 Hydrocarbons	mg/L	0.10	0.10	5308748
Modified TPH (Tier1)	mg/L	19	0.10	5301257
Reached Baseline at C32	mg/L	Yes	N/A	5308748
Hydrocarbon Resemblance	mg/L	COMMENT (1)	N/A	5308748
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	100		5308748
n-Dotriacontane - Extractable	%	95		5308748
Isobutylbenzene - Volatile	%	98 (2)		5305684

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in fuel / lube range.
(2) Elevated VPH RDL(s) due to sample dilution.

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5305684	MS3	Matrix Spike	Isobutylbenzene - Volatile	2017/12/08		95 (1)	%	70 - 130
			Benzene	2017/12/08		105	%	70 - 130
			Toluene	2017/12/08		104	%	70 - 130
			Ethylbenzene	2017/12/08		105	%	70 - 130
			Total Xylenes	2017/12/08		104	%	70 - 130
5305684	MS3	Spiked Blank	Isobutylbenzene - Volatile	2017/12/08		91	%	70 - 130
			Benzene	2017/12/08		104	%	70 - 130
			Toluene	2017/12/08		105	%	70 - 130
			Ethylbenzene	2017/12/08		106	%	70 - 130
			Total Xylenes	2017/12/08		104	%	70 - 130
5305684	MS3	Method Blank	Isobutylbenzene - Volatile	2017/12/08		94	%	70 - 130
			Benzene	2017/12/08	<0.0010		mg/L	
			Toluene	2017/12/08	<0.0010		mg/L	
			Ethylbenzene	2017/12/08	<0.0010		mg/L	
			Total Xylenes	2017/12/08	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2017/12/08	<0.010		mg/L	
5305684	MS3	RPD	Benzene	2017/12/08	NC		%	40
			Toluene	2017/12/08	NC		%	40
			Ethylbenzene	2017/12/08	NC		%	40
			Total Xylenes	2017/12/08	NC		%	40
			C6 - C10 (less BTEX)	2017/12/08	NC		%	40
5308709	JMV	QC Standard	pH	2017/12/11		100	%	97 - 103
5308709	JMV	RPD	pH	2017/12/11	1.5		%	N/A
5308710	JMV	Spiked Blank	Conductivity	2017/12/11		102	%	80 - 120
5308710	JMV	Method Blank	Conductivity	2017/12/11	1.6, RDL=1.0		uS/cm	
5308710	JMV	RPD	Conductivity	2017/12/11	0.17		%	25
5308728	JMV	QC Standard	Turbidity	2017/12/11		95	%	80 - 120
5308728	JMV	Spiked Blank	Turbidity	2017/12/11		93	%	80 - 120
5308728	JMV	Method Blank	Turbidity	2017/12/11	<0.10		NTU	
5308728	JMV	RPD	Turbidity	2017/12/11	NC		%	20
5308742	JMV	QC Standard	Turbidity	2017/12/11		95	%	80 - 120
5308742	JMV	Spiked Blank	Turbidity	2017/12/11		93	%	80 - 120
5308742	JMV	Method Blank	Turbidity	2017/12/11	<0.10		NTU	
5308742	JMV	RPD	Turbidity	2017/12/11	10		%	20
5308743	GTH	Matrix Spike	D10-Anthracene	2017/12/12		92	%	50 - 130
			D14-Terphenyl	2017/12/12		91	%	50 - 130
			D8-Acenaphthylene	2017/12/12		84	%	50 - 130
			1-Methylnaphthalene	2017/12/12		NC	%	30 - 130
			2-Methylnaphthalene	2017/12/12		NC	%	30 - 130
			Acenaphthene	2017/12/12		NC	%	30 - 130
			Acenaphthylene	2017/12/12		NC	%	30 - 130
			Anthracene	2017/12/12		NC	%	30 - 130
			Benzo(a)anthracene	2017/12/12		110	%	30 - 130
			Benzo(a)pyrene	2017/12/12		97	%	30 - 130
			Benzo(b)fluoranthene	2017/12/12		104	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/12		77	%	30 - 130
			Benzo(j)fluoranthene	2017/12/12		92	%	30 - 130
			Benzo(k)fluoranthene	2017/12/12		96	%	30 - 130
			Chrysene	2017/12/12		97	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/12		79	%	30 - 130
			Fluoranthene	2017/12/12		NC	%	30 - 130
			Fluorene	2017/12/12		NC	%	30 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Indeno(1,2,3-cd)pyrene	2017/12/12		76	%	30 - 130
			Naphthalene	2017/12/12		NC	%	30 - 130
			Perylene	2017/12/12		88	%	30 - 130
			Phenanthrene	2017/12/12		NC	%	30 - 130
			Pyrene	2017/12/12		NC	%	30 - 130
5308743	GTH	Spiked Blank	D10-Anthracene	2017/12/12		114	%	50 - 130
			D14-Terphenyl	2017/12/12		100	%	50 - 130
			D8-Acenaphthylene	2017/12/12		93	%	50 - 130
			1-Methylnaphthalene	2017/12/12		88	%	30 - 130
			2-Methylnaphthalene	2017/12/12		92	%	30 - 130
			Acenaphthene	2017/12/12		98	%	30 - 130
			Acenaphthylene	2017/12/12		92	%	30 - 130
			Anthracene	2017/12/12		122	%	30 - 130
			Benzo(a)anthracene	2017/12/12		119	%	30 - 130
			Benzo(a)pyrene	2017/12/12		97	%	30 - 130
			Benzo(b)fluoranthene	2017/12/12		105	%	30 - 130
			Benzo(g,h,i)perylene	2017/12/12		111	%	30 - 130
			Benzo(j)fluoranthene	2017/12/12		97	%	30 - 130
			Benzo(k)fluoranthene	2017/12/12		99	%	30 - 130
			Chrysene	2017/12/12		98	%	30 - 130
			Dibenz(a,h)anthracene	2017/12/12		108	%	30 - 130
			Fluoranthene	2017/12/12		108	%	30 - 130
			Fluorene	2017/12/12		96	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2017/12/12		105	%	30 - 130
			Naphthalene	2017/12/12		91	%	30 - 130
			Perylene	2017/12/12		97	%	30 - 130
			Phenanthrene	2017/12/12		103	%	30 - 130
			Pyrene	2017/12/12		104	%	30 - 130
5308743	GTH	Method Blank	D10-Anthracene	2017/12/11		94	%	50 - 130
			D14-Terphenyl	2017/12/11		97	%	50 - 130
			D8-Acenaphthylene	2017/12/11		93	%	50 - 130
			1-Methylnaphthalene	2017/12/11	<0.050		ug/L	
			2-Methylnaphthalene	2017/12/11	<0.050		ug/L	
			Acenaphthene	2017/12/11	<0.010		ug/L	
			Acenaphthylene	2017/12/11	<0.010		ug/L	
			Anthracene	2017/12/11	<0.010		ug/L	
			Benzo(a)anthracene	2017/12/11	<0.010		ug/L	
			Benzo(a)pyrene	2017/12/11	<0.010		ug/L	
			Benzo(b)fluoranthene	2017/12/11	<0.010		ug/L	
			Benzo(g,h,i)perylene	2017/12/11	<0.010		ug/L	
			Benzo(j)fluoranthene	2017/12/11	<0.010		ug/L	
			Benzo(k)fluoranthene	2017/12/11	<0.010		ug/L	
			Chrysene	2017/12/11	<0.010		ug/L	
			Dibenz(a,h)anthracene	2017/12/11	<0.010		ug/L	
			Fluoranthene	2017/12/11	<0.010		ug/L	
			Fluorene	2017/12/11	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2017/12/11	<0.010		ug/L	
			Naphthalene	2017/12/11	<0.20		ug/L	
			Perylene	2017/12/11	<0.010		ug/L	
			Phenanthrene	2017/12/11	<0.010		ug/L	
			Pyrene	2017/12/11	<0.010		ug/L	
5308743	GTH	RPD	1-Methylnaphthalene	2017/12/12	NC		%	40
			2-Methylnaphthalene	2017/12/12	NC		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acenaphthene	2017/12/12	NC		%	40
			Acenaphthylene	2017/12/12	NC		%	40
			Anthracene	2017/12/12	NC		%	40
			Benzo(a)anthracene	2017/12/12	NC		%	40
			Benzo(a)pyrene	2017/12/12	NC		%	40
			Benzo(b)fluoranthene	2017/12/12	NC		%	40
			Benzo(g,h,i)perylene	2017/12/12	NC		%	40
			Benzo(j)fluoranthene	2017/12/12	NC		%	40
			Benzo(k)fluoranthene	2017/12/12	NC		%	40
			Chrysene	2017/12/12	NC		%	40
			Dibenz(a,h)anthracene	2017/12/12	NC		%	40
			Fluoranthene	2017/12/12	NC		%	40
			Fluorene	2017/12/12	NC		%	40
			Indeno(1,2,3-cd)pyrene	2017/12/12	NC		%	40
			Naphthalene	2017/12/12	NC		%	40
			Perylene	2017/12/12	NC		%	40
			Phenanthrene	2017/12/12	NC		%	40
			Pyrene	2017/12/12	NC		%	40
5308748	BCD	Matrix Spike	Isobutylbenzene - Extractable	2017/12/11		97	%	30 - 130
			n-Dotriacontane - Extractable	2017/12/11		101	%	30 - 130
			>C10-C16 Hydrocarbons	2017/12/11		87	%	70 - 130
			>C16-C21 Hydrocarbons	2017/12/11		87	%	70 - 130
			>C21-<C32 Hydrocarbons	2017/12/11		97	%	70 - 130
5308748	BCD	Spiked Blank	Isobutylbenzene - Extractable	2017/12/11		99	%	30 - 130
			n-Dotriacontane - Extractable	2017/12/11		99	%	30 - 130
			>C10-C16 Hydrocarbons	2017/12/11		84	%	70 - 130
			>C16-C21 Hydrocarbons	2017/12/11		84	%	70 - 130
			>C21-<C32 Hydrocarbons	2017/12/11		94	%	70 - 130
5308748	BCD	Method Blank	Isobutylbenzene - Extractable	2017/12/11		97	%	30 - 130
			n-Dotriacontane - Extractable	2017/12/11		101	%	30 - 130
			>C10-C16 Hydrocarbons	2017/12/11	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2017/12/11	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2017/12/11	<0.10		mg/L	
5308748	BCD	RPD	>C10-C16 Hydrocarbons	2017/12/11	NC		%	40
			>C16-C21 Hydrocarbons	2017/12/11	NC		%	40
			>C21-<C32 Hydrocarbons	2017/12/11	NC		%	40
5308777	BAN	Matrix Spike	Dissolved Aluminum (Al)	2017/12/13		105	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/13		102	%	80 - 120
			Dissolved Arsenic (As)	2017/12/13		100	%	80 - 120
			Dissolved Barium (Ba)	2017/12/13		98	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/13		98	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/13		94	%	80 - 120
			Dissolved Boron (B)	2017/12/13		NC	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/13		100	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/13		NC	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/13		96	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/13		95	%	80 - 120
			Dissolved Copper (Cu)	2017/12/13		94	%	80 - 120
			Dissolved Iron (Fe)	2017/12/13		91	%	80 - 120
			Dissolved Lead (Pb)	2017/12/13		96	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/13		NC	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/13		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/13		106	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Nickel (Ni)	2017/12/13		92	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/13		106	%	80 - 120
			Dissolved Potassium (K)	2017/12/13		NC	%	80 - 120
			Dissolved Selenium (Se)	2017/12/13		103	%	80 - 120
			Dissolved Silver (Ag)	2017/12/13		99	%	80 - 120
			Dissolved Sodium (Na)	2017/12/13		NC	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/13		NC	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/13		102	%	80 - 120
			Dissolved Tin (Sn)	2017/12/13		109	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/13		102	%	80 - 120
			Dissolved Uranium (U)	2017/12/13		100	%	80 - 120
			Dissolved Vanadium (V)	2017/12/13		96	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/13		99	%	80 - 120
5308777	BAN	Spiked Blank	Dissolved Aluminum (Al)	2017/12/11		103	%	80 - 120
			Dissolved Antimony (Sb)	2017/12/11		94	%	80 - 120
			Dissolved Arsenic (As)	2017/12/11		99	%	80 - 120
			Dissolved Barium (Ba)	2017/12/11		98	%	80 - 120
			Dissolved Beryllium (Be)	2017/12/11		100	%	80 - 120
			Dissolved Bismuth (Bi)	2017/12/11		100	%	80 - 120
			Dissolved Boron (B)	2017/12/11		103	%	80 - 120
			Dissolved Cadmium (Cd)	2017/12/11		100	%	80 - 120
			Dissolved Calcium (Ca)	2017/12/11		97	%	80 - 120
			Dissolved Chromium (Cr)	2017/12/11		99	%	80 - 120
			Dissolved Cobalt (Co)	2017/12/11		99	%	80 - 120
			Dissolved Copper (Cu)	2017/12/11		99	%	80 - 120
			Dissolved Iron (Fe)	2017/12/11		103	%	80 - 120
			Dissolved Lead (Pb)	2017/12/11		98	%	80 - 120
			Dissolved Magnesium (Mg)	2017/12/11		103	%	80 - 120
			Dissolved Manganese (Mn)	2017/12/11		99	%	80 - 120
			Dissolved Molybdenum (Mo)	2017/12/11		97	%	80 - 120
			Dissolved Nickel (Ni)	2017/12/11		100	%	80 - 120
			Dissolved Phosphorus (P)	2017/12/11		104	%	80 - 120
			Dissolved Potassium (K)	2017/12/11		107	%	80 - 120
			Dissolved Selenium (Se)	2017/12/11		98	%	80 - 120
			Dissolved Silver (Ag)	2017/12/11		98	%	80 - 120
			Dissolved Sodium (Na)	2017/12/11		104	%	80 - 120
			Dissolved Strontium (Sr)	2017/12/11		100	%	80 - 120
			Dissolved Thallium (Tl)	2017/12/11		100	%	80 - 120
			Dissolved Tin (Sn)	2017/12/11		100	%	80 - 120
			Dissolved Titanium (Ti)	2017/12/11		102	%	80 - 120
			Dissolved Uranium (U)	2017/12/11		104	%	80 - 120
			Dissolved Vanadium (V)	2017/12/11		101	%	80 - 120
			Dissolved Zinc (Zn)	2017/12/11		100	%	80 - 120
5308777	BAN	Method Blank	Dissolved Aluminum (Al)	2017/12/11	<5.0		ug/L	
			Dissolved Antimony (Sb)	2017/12/11	<1.0		ug/L	
			Dissolved Arsenic (As)	2017/12/11	<1.0		ug/L	
			Dissolved Barium (Ba)	2017/12/11	<1.0		ug/L	
			Dissolved Beryllium (Be)	2017/12/11	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2017/12/11	<2.0		ug/L	
			Dissolved Boron (B)	2017/12/11	<50		ug/L	
			Dissolved Cadmium (Cd)	2017/12/11	<0.010		ug/L	
			Dissolved Calcium (Ca)	2017/12/11	<100		ug/L	
			Dissolved Chromium (Cr)	2017/12/11	<1.0		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Cobalt (Co)	2017/12/11	<0.40		ug/L	
			Dissolved Copper (Cu)	2017/12/11	<2.0		ug/L	
			Dissolved Iron (Fe)	2017/12/11	<50		ug/L	
			Dissolved Lead (Pb)	2017/12/11	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2017/12/11	<100		ug/L	
			Dissolved Manganese (Mn)	2017/12/11	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2017/12/11	<2.0		ug/L	
			Dissolved Nickel (Ni)	2017/12/11	<2.0		ug/L	
			Dissolved Phosphorus (P)	2017/12/11	<100		ug/L	
			Dissolved Potassium (K)	2017/12/11	<100		ug/L	
			Dissolved Selenium (Se)	2017/12/11	<1.0		ug/L	
			Dissolved Silver (Ag)	2017/12/11	<0.10		ug/L	
			Dissolved Sodium (Na)	2017/12/11	<100		ug/L	
			Dissolved Strontium (Sr)	2017/12/11	<2.0		ug/L	
			Dissolved Thallium (Tl)	2017/12/11	<0.10		ug/L	
			Dissolved Tin (Sn)	2017/12/11	<2.0		ug/L	
			Dissolved Titanium (Ti)	2017/12/11	<2.0		ug/L	
			Dissolved Uranium (U)	2017/12/11	<0.10		ug/L	
			Dissolved Vanadium (V)	2017/12/11	<2.0		ug/L	
			Dissolved Zinc (Zn)	2017/12/11	<5.0		ug/L	
5308777	BAN	RPD	Dissolved Aluminum (Al)	2017/12/13	NC		%	20
			Dissolved Antimony (Sb)	2017/12/13	NC		%	20
			Dissolved Arsenic (As)	2017/12/13	NC		%	20
			Dissolved Barium (Ba)	2017/12/13	3.3		%	20
			Dissolved Beryllium (Be)	2017/12/13	NC		%	20
			Dissolved Bismuth (Bi)	2017/12/13	NC		%	20
			Dissolved Boron (B)	2017/12/13	1.5		%	20
			Dissolved Cadmium (Cd)	2017/12/13	NC		%	20
			Dissolved Calcium (Ca)	2017/12/13	0.062		%	20
			Dissolved Chromium (Cr)	2017/12/13	NC		%	20
			Dissolved Cobalt (Co)	2017/12/13	NC		%	20
			Dissolved Copper (Cu)	2017/12/13	NC		%	20
			Dissolved Iron (Fe)	2017/12/13	NC		%	20
			Dissolved Lead (Pb)	2017/12/13	NC		%	20
			Dissolved Magnesium (Mg)	2017/12/13	0.71		%	20
			Dissolved Manganese (Mn)	2017/12/13	2.4		%	20
			Dissolved Molybdenum (Mo)	2017/12/13	NC		%	20
			Dissolved Nickel (Ni)	2017/12/13	NC		%	20
			Dissolved Phosphorus (P)	2017/12/13	NC		%	20
			Dissolved Potassium (K)	2017/12/13	2.1		%	20
			Dissolved Selenium (Se)	2017/12/13	NC		%	20
			Dissolved Silver (Ag)	2017/12/13	NC		%	20
			Dissolved Sodium (Na)	2017/12/13	0.35		%	20
			Dissolved Strontium (Sr)	2017/12/13	0.52		%	20
			Dissolved Thallium (Tl)	2017/12/13	NC		%	20
			Dissolved Tin (Sn)	2017/12/13	NC		%	20
			Dissolved Titanium (Ti)	2017/12/13	NC		%	20
			Dissolved Uranium (U)	2017/12/13	NC		%	20
			Dissolved Vanadium (V)	2017/12/13	NC		%	20
			Dissolved Zinc (Zn)	2017/12/13	NC		%	20
5308800	ARS	Matrix Spike	Total Mercury (Hg)	2017/12/12		98	%	80 - 120
5308800	ARS	Spiked Blank	Total Mercury (Hg)	2017/12/12		103	%	80 - 120
5308800	ARS	Method Blank	Total Mercury (Hg)	2017/12/12	<0.013		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5308800	ARS	RPD	Total Mercury (Hg)	2017/12/12	NC		%	20
5308878	NRG	Matrix Spike [FRT963-01]	Total Alkalinity (Total as CaCO3)	2017/12/12		NC	%	80 - 120
5308878	NRG	Spiked Blank	Total Alkalinity (Total as CaCO3)	2017/12/12		114	%	80 - 120
5308878	NRG	Method Blank	Total Alkalinity (Total as CaCO3)	2017/12/12	<5.0		mg/L	
5308878	NRG	RPD [FRT963-01]	Total Alkalinity (Total as CaCO3)	2017/12/12	3.6 (2)		%	25
5308888	NRG	Matrix Spike [FRT963-01]	Dissolved Chloride (Cl)	2017/12/12		98	%	80 - 120
5308888	NRG	QC Standard	Dissolved Chloride (Cl)	2017/12/12		108	%	80 - 120
5308888	NRG	Spiked Blank	Dissolved Chloride (Cl)	2017/12/12		99	%	80 - 120
5308888	NRG	Method Blank	Dissolved Chloride (Cl)	2017/12/12	<1.0		mg/L	
5308888	NRG	RPD [FRT963-01]	Dissolved Chloride (Cl)	2017/12/12	2.0		%	25
5308903	NRG	Matrix Spike [FRT963-01]	Dissolved Sulphate (SO4)	2017/12/11		NC	%	80 - 120
5308903	NRG	Spiked Blank	Dissolved Sulphate (SO4)	2017/12/11		97	%	80 - 120
5308903	NRG	Method Blank	Dissolved Sulphate (SO4)	2017/12/11	<2.0		mg/L	
5308903	NRG	RPD [FRT963-01]	Dissolved Sulphate (SO4)	2017/12/11	0.16 (2)		%	25
5308909	NRG	Matrix Spike [FRT963-01]	Reactive Silica (SiO2)	2017/12/13		NC	%	80 - 120
5308909	NRG	Spiked Blank	Reactive Silica (SiO2)	2017/12/13		101	%	80 - 120
5308909	NRG	Method Blank	Reactive Silica (SiO2)	2017/12/13	<0.50		mg/L	
5308909	NRG	RPD [FRT963-01]	Reactive Silica (SiO2)	2017/12/13	1.4		%	25
5308911	NRG	Spiked Blank	Colour	2017/12/11		91	%	80 - 120
5308911	NRG	Method Blank	Colour	2017/12/11	<5.0		TCU	
5308911	NRG	RPD [FRT963-01]	Colour	2017/12/11	15		%	20
5308913	NRG	Matrix Spike [FRT963-01]	Orthophosphate (P)	2017/12/12		88	%	80 - 120
5308913	NRG	Spiked Blank	Orthophosphate (P)	2017/12/12		92	%	80 - 120
5308913	NRG	Method Blank	Orthophosphate (P)	2017/12/12	<0.010		mg/L	
5308913	NRG	RPD [FRT963-01]	Orthophosphate (P)	2017/12/12	NC		%	25
5308914	NRG	Matrix Spike [FRT963-01]	Nitrate + Nitrite (N)	2017/12/12		98	%	80 - 120
5308914	NRG	Spiked Blank	Nitrate + Nitrite (N)	2017/12/12		101	%	80 - 120
5308914	NRG	Method Blank	Nitrate + Nitrite (N)	2017/12/12	<0.050		mg/L	
5308914	NRG	RPD [FRT963-01]	Nitrate + Nitrite (N)	2017/12/12	8.6		%	25
5308917	NRG	Matrix Spike [FRT963-01]	Nitrite (N)	2017/12/12		98	%	80 - 120
5308917	NRG	Spiked Blank	Nitrite (N)	2017/12/12		100	%	80 - 120
5308917	NRG	Method Blank	Nitrite (N)	2017/12/12	<0.010		mg/L	
5308917	NRG	RPD [FRT963-01]	Nitrite (N)	2017/12/12	NC		%	25
5309188	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/12		109	%	80 - 120
5309188	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/11		107	%	80 - 120
5309188	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/11	<0.050		mg/L	
5309188	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/12	NC		%	20
5310581	JMV	QC Standard	pH	2017/12/12		100	%	97 - 103
5310581	JMV	RPD	pH	2017/12/12	1.6		%	N/A
5310582	JMV	Spiked Blank	Conductivity	2017/12/12		99	%	80 - 120
5310582	JMV	Method Blank	Conductivity	2017/12/12	1.4, RDL=1.0		uS/cm	
5310582	JMV	RPD	Conductivity	2017/12/12	1.1		%	25
5311413	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2017/12/12		87	%	80 - 120
5311413	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2017/12/12		103	%	80 - 120
5311413	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2017/12/12	<0.050		mg/L	
5311413	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2017/12/12	0.80		%	20
5313181	LMP	Matrix Spike	Total Organic Carbon (C)	2017/12/13		95	%	80 - 120
5313181	LMP	Spiked Blank	Total Organic Carbon (C)	2017/12/13		100	%	80 - 120
5313181	LMP	Method Blank	Total Organic Carbon (C)	2017/12/13	<0.50		mg/L	

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Maxxam Job #: B7R5176
Report Date: 2017/12/14

Dillon Consulting Limited
Client Project #: 14-1360
Site Location: OH PARK / HARBOURSIDE EAST

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5313181	LMP	RPD	Total Organic Carbon (C)	2017/12/13	1.4		%	20

N/A = Not Applicable

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.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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) VPH sample contained sediment.

(2) Elevated reporting limit due to sample matrix.

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VALIDATION SIGNATURE PAGE

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

Alan Stewart, Organics Manager, Bedford

Mike MacGillivray, Scientific Specialist (Inorganics)

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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-006-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
pH	7.61	8.91	9.44	7.95	7.86						
	5-Nov-13	10-Dec-14	3-Dec-15	2-Dec-16	13-Dec-17						
Row 1: Compare to Event 1:		1	1	1	1	0	0	0	0	0	4
Row 2: Compare to Event 2:			1	-1	-1	0	0	0	0	0	-1
Row 3: Compare to Event 3:				-1	-1	0	0	0	0	0	-2
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

Mann-Kendall (S) Statistic = **0**

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0		X					
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
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± 19							
± 20							
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± 22							
± 23							
± 24	Not Physically possible						
± 25							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-006-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
SO4	34	70	88	48	35						
	5-Nov-13	10-Dec-14	3-Dec-15	2-Dec-16	13-Dec-17						
Row 1: Compare to Event 1:		1	1	1	1	0	0	0	0	0	4
Row 2: Compare to Event 2:			1	-1	-1	0	0	0	0	0	-1
Row 3: Compare to Event 3:				-1	-1	0	0	0	0	0	-2
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.001 mg/L

Mann-Kendall (S) Statistic = **0**

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0		X					
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
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± 22							
± 23							
± 24	Not Physically possible						
± 25							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-006-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
TDS	390	260	260	220	200						
	5-Nov-13	10-Dec-14	3-Dec-15	2-Dec-16	13-Dec-17						
Row 1: Compare to Event 1:		-1	-1	-1	-1	0	0	0	0	0	-4
Row 2: Compare to Event 2:			0	-1	-1	0	0	0	0	0	-2
Row 3: Compare to Event 3:				-1	-1	0	0	0	0	0	-2
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.001 mg/L

Mann-Kendall (S) Statistic = **-9**

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9		X					
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
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± 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

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

MANN-KENDALL PLUME STABILITY ANALYSIS

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-006-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Selenium	0.0005	0.0029	0.0033	0.0005	0.0017						
	5-Nov-13	10-Dec-14	3-Dec-15	2-Dec-16	13-Dec-17						
Row 1: Compare to Event 1:		1	1	0	1	0	0	0	0	0	3
Row 2: Compare to Event 2:			1	-1	-1	0	0	0	0	0	-1
Row 3: Compare to Event 3:				-1	-1	0	0	0	0	0	-2
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.001 mg/L

Mann-Kendall (S) Statistic = **1**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1		X					
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
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± 22							
± 23							
± 24	Not Physically possible						
± 25							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-001-MWA										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
pH	11.8	11.9	11.8	11.9	12						
	24-Jul-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17						
Row 1: Compare to Event 1:		1	0	1	1	0	0	0	0	0	3
Row 2: Compare to Event 2:			-1	0	1	0	0	0	0	0	0
Row 3: Compare to Event 3:				1	1	0	0	0	0	0	2
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

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

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	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							
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± 20							
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± 22							
± 23							
± 24	Not Physically possible						
± 25							
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± 32							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-001-MWA										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
SO4	160	120	160	190	160						
	24-Jul-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17						
Row 1: Compare to Event 1:		-1	0	1	0	0	0	0	0	0	0
Row 2: Compare to Event 2:			1	1	1	0	0	0	0	0	3
Row 3: Compare to Event 3:				1	0	0	0	0	0	0	1
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.001 mg/L

Mann-Kendall (S) Statistic = **3**

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3		X					
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
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± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
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± 32							
± 33							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-001-MWA										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
TDS	542	730	540	730	560						
	24-Jul-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17						
Row 1: Compare to Event 1:		1	-1	1	1	0	0	0	0	0	2
Row 2: Compare to Event 2:			-1	0	-1	0	0	0	0	0	-2
Row 3: Compare to Event 3:				1	1	0	0	0	0	0	2
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.001 mg/L

Mann-Kendall (S) Statistic = **1**

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1		X					
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
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± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MCES-001-MWA							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Selenium	0.0016	0.0018	0.0015	0.0019	0.0018						
	24-Jul-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17						
Row 1: Compare to Event 1:		1	-1	1	1	0	0	0	0	0	2
Row 2: Compare to Event 2:			-1	1	0	0	0	0	0	0	0
Row 3: Compare to Event 3:				1	1	0	0	0	0	0	2
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.001 mg/L

Mann-Kendall (S) Statistic = **3**

Confidence Level Chart

S / Value	Total No. of Sampling Events: 4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3		X					
± 4							
± 5							
± 6							
± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MCES-001-MWB							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
pH	7.32	7.4	7.49	7.42	7.47						
	14-Nov-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17						
Row 1: Compare to Event 1:		1	1	1	1	0	0	0	0	0	4
Row 2: Compare to Event 2:			1	1	1	0	0	0	0	0	3
Row 3: Compare to Event 3:				-1	-1	0	0	0	0	0	-2
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

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

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: MCES-001-MWB							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
SO4	10	6.7	1	1	1						
	14-Nov-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17						
Row 1: Compare to Event 1:		-1	-1	-1	-1	0	0	0	0	0	-4
Row 2: Compare to Event 2:			-1	-1	-1	0	0	0	0	0	-3
Row 3: Compare to Event 3:				0	0	0	0	0	0	0	0
Row 4: Compare to Event 4:					0	0	0	0	0	0	0
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.001 mg/L

Mann-Kendall (S) Statistic = **-7**

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7		X					
±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

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

MANN-KENDALL PLUME STABILITY ANALYSIS

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Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-001-MWB										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
TDS	22000	21000	22000	19000	21000						
	14-Nov-13	10-Dec-14	2-Dec-15	25-Nov-16	12-Dec-17						
Row 1: Compare to Event 1:		-1	0	-1	-1	0	0	0	0	0	-3
Row 2: Compare to Event 2:			1	-1	0	0	0	0	0	0	0
Row 3: Compare to Event 3:				-1	-1	0	0	0	0	0	-2
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.001 mg/L

Mann-Kendall (S) Statistic = **-4**

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4		X					
± 5							
± 6							
± 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

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Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-008-MWB						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.011	0.002	0.00013	0.043	0.00019						
	23-Oct-13	15-Dec-14	10-Dec-15	30-Nov-16	7-Dec-17						
Row 1: Compare to Event 1:		-1	-1	1	-1	0	0	0	0	0	-2
Row 2: Compare to Event 2:			-1	1	-1	0	0	0	0	0	-1
Row 3: Compare to Event 3:				1	1	0	0	0	0	0	2
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **-2**

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2		X					
± 3							
± 4							
± 5							
± 6							
± 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: CODT-008-MWB							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Benzo(a)pyrene	0.0026	0.000032	0.0012	0.0025	0.00022						
	23-Oct-13	15-Dec-14	10-Dec-15	30-Nov-16	7-Dec-17						
Row 1: Compare to Event 1:		-1	-1	-1	-1	0	0	0	0	0	-4
Row 2: Compare to Event 2:			1	1	1	0	0	0	0	0	3
Row 3: Compare to Event 3:				1	-1	0	0	0	0	0	0
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **-2**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2		X					
± 3							
± 4							
± 5							
± 6							
± 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							
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± 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-008-MWB						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Chrysene	0.0046	0.000058	0.00096	0.006	0.00029						
	23-Oct-13	15-Dec-14	10-Dec-15	30-Nov-16	7-Dec-17						
Row 1: Compare to Event 1:		-1	-1	1	-1	0	0	0	0	0	-2
Row 2: Compare to Event 2:			1	1	1	0	0	0	0	0	3
Row 3: Compare to Event 3:				1	-1	0	0	0	0	0	0
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **0**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0		X					
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-008-MWB						
	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	0.00064	0.000018	0.00031	0.0025	0.0001						
	23-Oct-13	15-Dec-14	10-Dec-15	30-Nov-16	7-Dec-17						
Row 1: Compare to Event 1:		-1	-1	1	-1	0	0	0	0	0	-2
Row 2: Compare to Event 2:			1	1	1	0	0	0	0	0	3
Row 3: Compare to Event 3:				1	-1	0	0	0	0	0	0
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **0**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0		X					
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 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

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Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: CODT-008-MWB							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Naphthalene	0.0028	0.0001	0.0001	4.1	0.0001						
	23-Oct-13	15-Dec-14	10-Dec-15	30-Nov-16	7-Dec-17						
Row 1: Compare to Event 1:		-1	-1	1	-1	0	0	0	0	0	-2
Row 2: Compare to Event 2:			0	1	0	0	0	0	0	0	1
Row 3: Compare to Event 3:				1	0	0	0	0	0	0	1
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.0.00020 mg/L

Mann-Kendall (S) Statistic = **-1**

Confidence Level Chart							
S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1		X					
± 2							
± 3							
± 4							
± 5							
± 6							
± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWA						
	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	0.0025	0.0023	0.00085	0.0037						
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17						
Row 1: Compare to Event 1:		1	1	-1	1	0	0	0	0	0	2
Row 2: Compare to Event 2:			-1	-1	1	0	0	0	0	0	-1
Row 3: Compare to Event 3:				-1	1	0	0	0	0	0	0
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **2**

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2		X					
± 3							
± 4							
± 5							
± 6							
± 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							
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± 31							
± 32							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: CODT-201-MWA										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Benzo(a)pyrene	0.0025	0.0037	0.0047	0.0018	0.0069						
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17						
Row 1: Compare to Event 1:		1	1	-1	1	0	0	0	0	0	2
Row 2: Compare to Event 2:			1	-1	1	0	0	0	0	0	1
Row 3: Compare to Event 3:				-1	1	0	0	0	0	0	0
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **4**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4		X					
± 5							
± 6							
± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWA					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Chrysene	0.0029	0.0045	0.0051	0.0021	0.0086						
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17						
Row 1: Compare to Event 1:		1	1	-1	1	0	0	0	0	0	2
Row 2: Compare to Event 2:			1	-1	1	0	0	0	0	0	1
Row 3: Compare to Event 3:				-1	1	0	0	0	0	0	0
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **4**

Confidence Level Chart

S / Value	Total No. of Sampling Events: 4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4		X					
± 5							
± 6							
± 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

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Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWA						
	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	0.0011	0.0015	0.0019	0.00078	0.0029						
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17						
Row 1: Compare to Event 1:		1	1	-1	1	0	0	0	0	0	2
Row 2: Compare to Event 2:			1	-1	1	0	0	0	0	0	1
Row 3: Compare to Event 3:				-1	1	0	0	0	0	0	0
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **4**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4		X					
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: CODT-201-MWC							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.0033	0.0059	0.005	0.0033	0.0045						
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17						
Row 1: Compare to Event 1:		1	1	0	1	0	0	0	0	0	3
Row 2: Compare to Event 2:			-1	-1	-1	0	0	0	0	0	-3
Row 3: Compare to Event 3:				-1	-1	0	0	0	0	0	-2
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **-1**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1		X					
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
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± 14							
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± 21							
± 22							
± 23							
± 24	Not Physically possible						
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± 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

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Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWC					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Chrysene	0.000032	0.000048	0.005	0.000036	0.000042						
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17						
Row 1: Compare to Event 1:		1	1	1	1	0	0	0	0	0	4
Row 2: Compare to Event 2:			1	-1	-1	0	0	0	0	0	-1
Row 3: Compare to Event 3:				-1	-1	0	0	0	0	0	-2
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **2**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2		X					
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
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± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
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± 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

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Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-201-MWC					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Naphthalene	6.3	7.2	9.5	7.5	6.2						
	23-Oct-13	15-Dec-14	9-Dec-15	28-Nov-16	5-Dec-17						
Row 1: Compare to Event 1:		1	1	1	-1	0	0	0	0	0	2
Row 2: Compare to Event 2:			1	1	-1	0	0	0	0	0	1
Row 3: Compare to Event 3:				-1	-1	0	0	0	0	0	-2
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **0**

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	4	5	6	7	8	9	10
0		X					
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
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± 29							
± 30							
± 31							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-203-MW					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.0025	0.00055	0.00046	0.00079	0.00027						
	23-Oct-13	12-Dec-14	8-Dec-15	23-Nov-16	7-Dec-17						
Row 1: Compare to Event 1:		-1	-1	-1	-1	0	0	0	0	0	-4
Row 2: Compare to Event 2:			-1	1	-1	0	0	0	0	0	-1
Row 3: Compare to Event 3:				1	-1	0	0	0	0	0	0
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

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

Confidence Level Chart							
S	**Total No. of Sampling Events**						
Value	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							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: CODT-203-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Benzo(a)pyrene	0.0011	0.00069	0.00061	0.0015	0.00024						
	23-Oct-13	12-Dec-14	8-Dec-15	23-Nov-16	7-Dec-17						
Row 1: Compare to Event 1:		-1	-1	1	-1	0	0	0	0	0	-2
Row 2: Compare to Event 2:			-1	1	-1	0	0	0	0	0	-1
Row 3: Compare to Event 3:				1	-1	0	0	0	0	0	0
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **-4**

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4		X					
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
± 13							
± 14							
± 15							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO:	CODT-203-MW						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Chrysene	0.0012	0.00083	0.00073	0.0016	0.00035						
	23-Oct-13	12-Dec-14	8-Dec-15	23-Nov-16	7-Dec-17						
Row 1: Compare to Event 1:		-1	-1	1	-1	0	0	0	0	0	-2
Row 2: Compare to Event 2:			-1	1	-1	0	0	0	0	0	-1
Row 3: Compare to Event 3:				1	-1	0	0	0	0	0	0
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **-4**

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4		X					
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
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± 14							
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± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
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± 30							
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± 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

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141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: CODT-203-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	0.00029	0.00028	0.00029	0.00064	0.0001						
	23-Oct-13	12-Dec-14	8-Dec-15	23-Nov-16	7-Dec-17						
Row 1: Compare to Event 1:		-1	0	1	-1	0	0	0	0	0	-1
Row 2: Compare to Event 2:			1	1	-1	0	0	0	0	0	1
Row 3: Compare to Event 3:				1	-1	0	0	0	0	0	0
Row 4: Compare to Event 4:					-1	0	0	0	0	0	-1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = -1

Confidence Level Chart

S / Value	Total No. of Sampling Events: 4	5	6	7	8	9	10
0							
± 1		X					
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10							
± 11							
± 12							
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± 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

OHP & HE

Nova Scotia Lands

141360 - LTMM GROUNDWATER MONITORING EVENT NOVEMBER AND DECEMBER 2017

MANN-KENDALL ANALYSIS OF PLUME				MONITORING WELL NO: CODT-203-MW							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Naphthalene	0.0015	0.0001	0.0001	0.0001	0.00052						
	23-Oct-13	12-Dec-14	8-Dec-15	23-Nov-16	7-Dec-17						
Row 1: Compare to Event 1:		-1	-1	-1	-1	0	0	0	0	0	-4
Row 2: Compare to Event 2:			0	0	1	0	0	0	0	0	1
Row 3: Compare to Event 3:				0	1	0	0	0	0	0	1
Row 4: Compare to Event 4:					1	0	0	0	0	0	1
Row 5: Compare to Event 5:						0	0	0	0	0	0
Row 6: Compare to Event 6:							0	0	0	0	0
Row 7: Compare to Event 7:								0	0	0	0
Row 8: Compare to Event 8:									0	0	0
Row 9: Compare to Event 9:										0	0

1/2 detection limit used for nd, historical data assumed EQL of 0.00001 mg/L

Mann-Kendall (S) Statistic = **-1**

Confidence Level Chart

S	Total No. of Sampling Events						
Value	4	5	6	7	8	9	10
0							
± 1		X					
± 2							
± 3							
± 4							
± 5							
± 6							
± 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

- Year 1 Construction/Remediation 1st Quarter Groundwater Monitoring Event, Final Report, Dillon Consulting Limited, August 2010.
- Year 1 Construction/Remediation 2nd Quarter Groundwater Monitoring Event, Final Report, Dillon Consulting Limited, October 2010.
- Year 1 Construction/Remediation 3rd Quarter Groundwater Monitoring Event, Final Report, Dillon Consulting Limited, February 2011.
- Year 1 Construction/Remediation 4th Quarter Groundwater Monitoring Event, Final Report, Dillon Consulting Limited, February 2011.
- Year 2 Construction/Remediation 1st Quarter Groundwater Monitoring Event, Final Report, Dillon Consulting Limited. May 2011.
- Year 2 Construction/Remediation 2nd Quarter Groundwater Monitoring Event, Final Report, Dillon Consulting Limited, September 2011.
- Year 2 Construction/Remediation 3rd Quarter Groundwater Monitoring Event, Final Report, Dillon Consulting Limited, April 2012.
- Year 2 Construction/Remediation 4th Quarter Groundwater Monitoring Event, Final Report, Dillon Consulting Limited, June 2012.
- Year 3 Construction/Remediation 1st Quarter Groundwater Monitoring Event, Final Report, Dillon Consulting Limited, August 2012.
- Year 3 Construction/Remediation 2nd Quarter Groundwater Monitoring Event, Report, Dillon Consulting Limited, September 2012.
- Year 3 Construction/Remediation 3rd Quarter Groundwater Monitoring Event, Report Dillon Consulting Limited, November 2012.
- Year 3 Construction/Remediation 4th Quarter Groundwater Monitoring Event, Report, Dillon Consulting Limited, February 2013.
- Year 4Construction/Remediation 1st Quarter Groundwater Monitoring Event, Report, Dillon Consulting Limited, July 2013.
- Year 4 Construction/Remediation 2nd Quarter Groundwater Monitoring Event, Report, Dillon Consulting Limited, July 2013.
- Year 4 Construction/Remediation 3rd Quarter Groundwater Monitoring Event, Report, Dillon Consulting Limited, October 2013.
- Year 4 Construction/Remediation 4th Quarter Groundwater Monitoring Event, Report, Dillon Consulting Limited, February 2014.
- July 2013 Groundwater Monitoring Event, Report, Dillon Consulting Limited, March 2014.
- Fall 2013 Groundwater Monitoring Event, Final Report, Dillon Consulting Limited, November 2014.
- Long Term Maintenance and Monitoring 2014 Groundwater Monitoring Event, Open Hearth Park and Harbourside East, Final Report, Dillon Consulting Limited, March 2015.
- Long Term Maintenance and Monitoring 2015 Groundwater Monitoring Event, Open Hearth Park and Harbourside East, Final Report, Dillon Consulting Limited, June 2016.
- Nova Scotia Environment Tier I Environmental Quality Standards for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013 (R. 2015).
- Ontario Ministry of Environment, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011.