NOVA SCOTIA LANDS INC.

Long Term Maintenance and Monitoring 2015 Groundwater Monitoring Event

Open Hearth Park and Harbourside East

Final Report

June 2016 – 14-1360

June 24, 2016

DILLON CONSULTING

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ATTENTION: Mr. Frank Potter
Executive Director

Long Term Maintenance and Monitoring 2015 Groundwater Monitoring Event Open Hearth Park and Harbourside East (FINAL) Report

Dear Mr. Potter:

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

Sincerely,

DILLON CONSULTING LIMITED

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

NJW:kme

Enclosure

Our file: 14-1360-2000

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Executive Summary

Nova Scotia Lands Inc. (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 to conduct the LTMM program, which consists of an annual groundwater sampling program carried out in late fall. The LTMM event completed in 2015 included measurement of hydraulic head levels and sample collection from monitor wells around the shorelines of OHP (i.e., North and South Ponds) and 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., acenaphthylene, anthracene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and naphthalene) and additional general chemistry and metal parameters (i.e., selenium, sulfate, pH and TDS). 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 on select parameters at select monitor well locations indicates that most concentration trends are stable, decreasing or fluctuating. Increasing concentration trends appear at three monitor well locations (i.e., MCES-006-MW, which is located on the southeast portion of OHP in the vicinity of the former cooling pond exhibited two indicator parameters with increasing concentration trends (i.e., pH and SO4); CODT-201-MWA, which is located within HE at the former Domtar site exhibited one indicator parameter with an increasing concentration trend (i.e., benzo(a)pyrene); and CODT-201-MWC, which is located in the former Domtar site, exhibited two indicator parameters with an increasing concentration trend (i.e., acenaphthylene and naphthalene)).

For the OHP, concentrations of analyzed parameters at the majority of the sampling wells were below the applicable standards. Three monitor wells (i.e., MSES-104-MWA/MWB and MSES-008-MW) located along the southeast shoreline and one monitor well located on the southwest shoreline (MCWS-309-MW) contained PAH concentrations above the MOE standards. These four wells are located in the vicinity of the former disposal area on the south shoreline of OHP. It is also noted that one monitor well (i.e., MCES-204-MW), located in an area in-filled with slag and coal, contained elevated concentrations of anthracene and sodium above the MOE standards. Another monitor well located on the eastern shoreline (i.e., MCES-001-MWB) contained a concentration of sodium above the MOE standards.

For HE, concentrations of analyzed parameters at the majority of the sampling wells were also below applicable standards. One monitor well (i.e., CODT-201-MWC), located in the former Domtar site, contained PAH concentration(s) above both the Tier I EQS and MOE standard(s). Three monitor wells (i.e., CODT-008-MWB, CODT-201-MWA and CODT-203-MW), located within HE at the former Domtar site, contained PAH concentrations above their respective MOE standard concentrations. One monitor well (i.e., COSB-002-MWA) located on the east portion of HE (former Coke Ovens site) contained elevated inorganic parameter concentrations above the MOE standards. The exceedances in this

monitor well (i.e., COSB-002-MWA) represent an increase in concentrations at this well from previous monitoring events.

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.

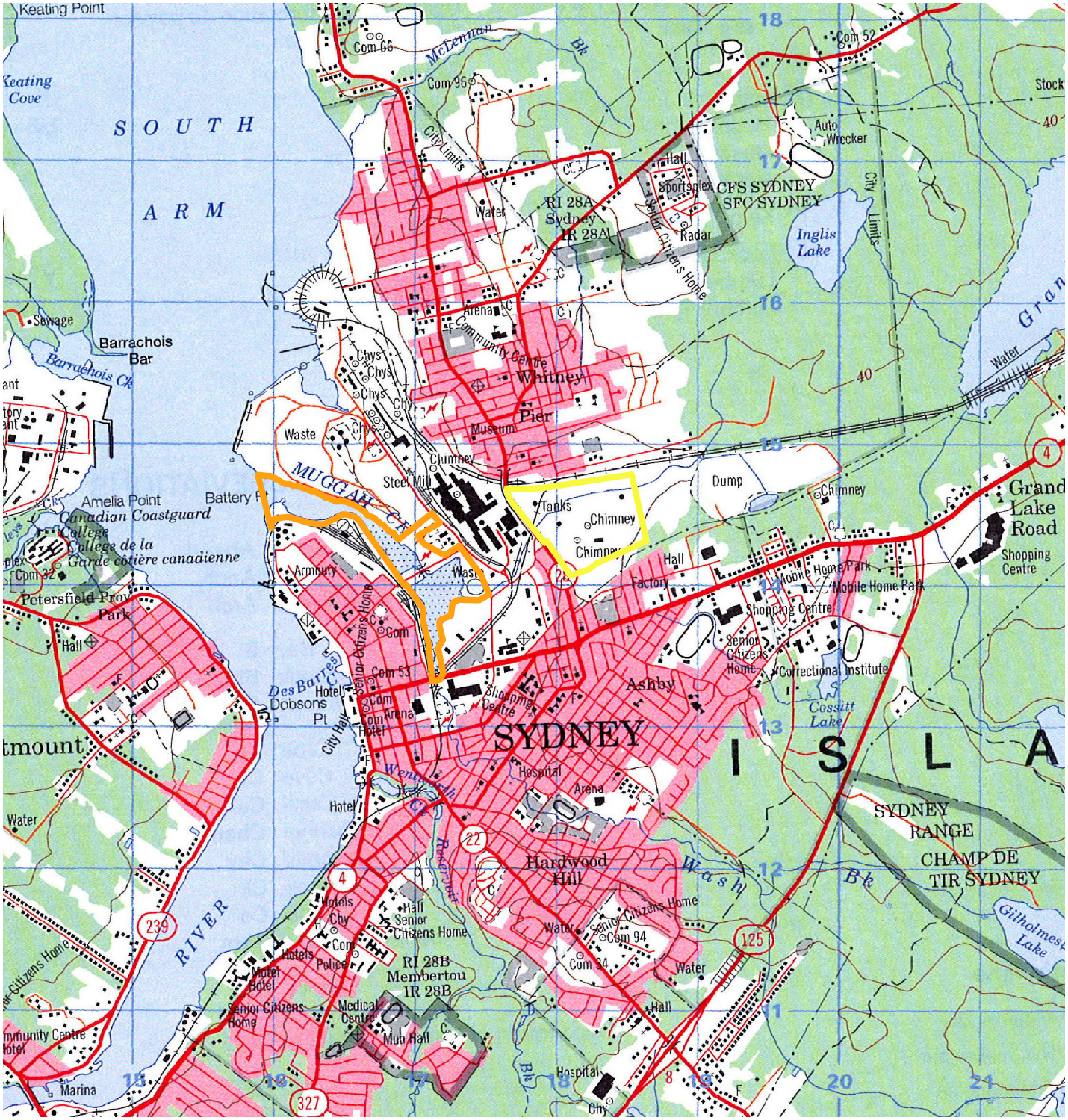
Long term maintenance and monitoring (LTMM) was one of the major components of the proposed remedial strategy designed to be carried out following the completion of the primary remediation project (2009-2014). Nova Scotia Lands Inc. (NS Lands) is a Crown Corporation of the Province of Nova Scotia with 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 1.0-1 and Figure 1.1-1). As such, NS Lands is responsible for the LTMM, which has been implemented at OHP and HE.

This document contains the details of the groundwater monitoring completed at OHP and HE in 2015. Section 1.0 outlines 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 6.0. 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 conducted in late fall to coincide with increased rainfall. 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 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. Additionally, during the 2015 groundwater monitoring program, MCWS-009-MW was found to be damaged beyond repair and was subsequently decommissioned; thereby decreasing the sampling program to 42 monitor wells.

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 included in the 2015 LTMM program to allow for inclusion of bedrock groundwater contours for this area. Additionally, a water level measurement could not be obtained from SCU26-209-MW,which could not be located during the 2014 or 2015 programs and is assumed to be destroyed. Therefore, the number of water level measurements included in the 2015 LTMM program was 69 (i.e., 42 sampling and 27 water level wells).



OPEN HEARTH PARK AND HARBOURSIDE EAST

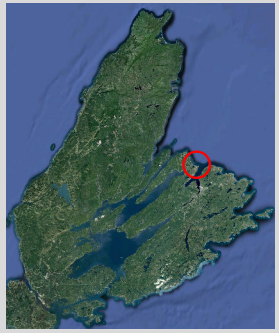
2015 GROUNDWATER MONITORING EVENT

SITE LOCATION

Figure 1.0-1

Harbourside East

Open Hearth Park



0 250 500 1,000 1,500 m

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N W E S

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

Province of Nova Scotia Mapping
MAP CREATED BY: MCL
MAP CHECKED BY: NJW
MAP PROJECTION: NAD 1983 UTM Zone 20N

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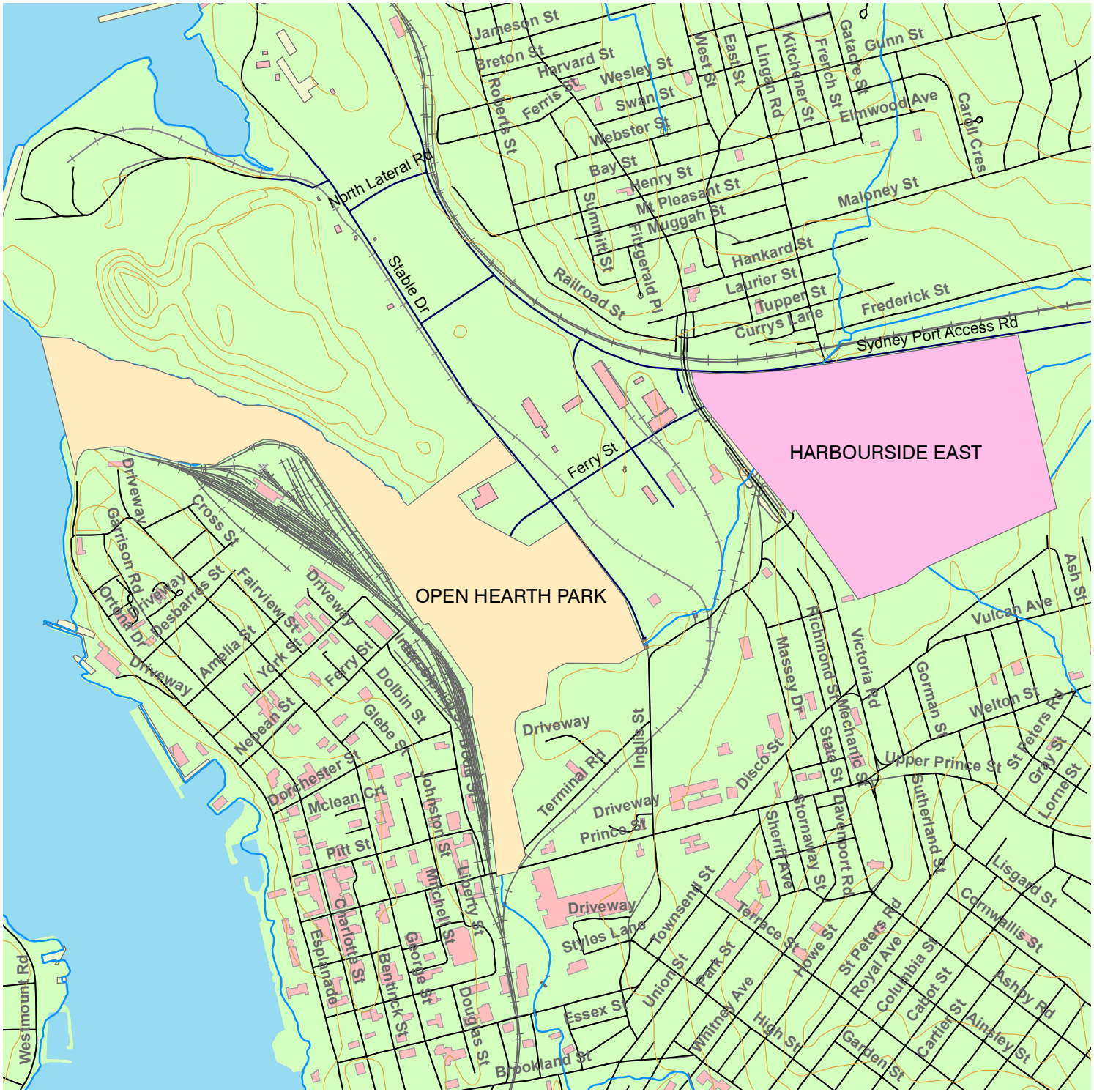

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OPEN HEARTH PARK AND HARBOURSIDE EAST

2015 GROUNDWATER MONITORING EVENT

STUDY AREAS

FIGURE 1.1-1

0 50 100 200 300 m

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As concentrations of petroleum hydrocarbons (PHC) have remained below laboratory detection limits or at concentrations well 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 42 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). Dillon team members also abided by the procedures governing access to the NS Lands sites.

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 five trip blanks were collected during the 2015 monitoring event. Relative percent differences were calculated between sample and associated field duplicate results.

Laboratory QC

Analytical services were contracted by NS Lands to Maxxam Analytics Inc. (Maxxam) in Sydney and Bedford, Nova Scotia (NS). Maxxam is accredited to ISO 17025 by the Standards Council of Canada. Laboratory SOPs are based on accepted (e.g., USEPA, EPS, Atlantic PIRI, MSAMS) standard referenced industry protocols and were validated by Maxxam prior to use. 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 Groundwater Sampling

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 2015 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 69 (i.e., 42 sampling and 27 water level wells) during the 2015 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 removed 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 with an effort made 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 2015 groundwater monitoring program included the sampling of 42 monitor wells. Consistent with the 2014 monitoring event, 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, 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, which is located on the northwest portion of HE in the former Domtar site)), PAHs, metals and general chemistry parameters, as listed in Table 2.3.4-1. 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 2.3.4- 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 (as Ammonic N)	Molybdenum
	Phenanthrene	Total Organic Carbon (TOC)	Nickel
	Pyrene	Orthophosphate	Phosphorus
	1-methylnaphthalene	pH	Selenium
	2-methylnaphthalene	Silica	Silver
		Sulphate	Strontium
		Turbidity	Thallium
		Conductivity	Tin
			Titanium
			Uranium
			Vanadium
			Zinc

Notes:

1. During the 2015 groundwater monitoring event, only CODT-2015-MWC was sampled for PHC.
2. During the 2015 LTMM program, groundwater samples were collected at two monitor wells (i.e., SCU10-002-MW and SCU10-003-MW) for volatile organic chemistry (VOC) analysis. This sampling, although conducted in conjunction with the LTMM program, was scheduled as part of a soil vapour assessment. The results of the groundwater VOC sampling at these monitor well locations are presented separately in the "Soil Vapour Assessment in the Vicinity of Protocase Building No. 2 Harbourside Commercial Park, Sydney, Nova Scotia" report prepared by Dillon in February 2016.

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 2015 monitoring event also include available post-remediation data. The following parameters with concentrations above applicable standards were selected as indicator parameters for OHP and HE:

- PAHs (i.e., acenaphthylene, anthracene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and naphthalene);
- General Chemistry and Metals (i.e., selenium, sulfate, pH and TDS); and,
- Presence/extent of LNAPL or DNAPL.

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 used.

2.4.2 Groundwater Quality Trend Analysis – Mann Kendall

Mann-Kendall analysis as a non-parametric statistic test routinely used to assess the stability of solute plume (i.e., stable, decreasing, or increasing). 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.

Based on a review of the analytical results from the 2015 monitoring event and available post-remediation data, parameters with concentrations above applicable standards were selected for Mann-Kendall analysis. These include PAH indicator parameters acenaphthylene, anthracene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and naphthalene. Additional 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 solidification/stabilization (S/S) area in consideration of monitoring the solidification/stabilization (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 historical recordings at the Sydney A station indicates that precipitation of 1488 millimeters (mm) was recorded for 2015, which is comparable to 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 2015 was 71.4 mm and for December 2015 was 144.0 mm, which is similar to the monthly normal of 167 mm at the Sydney station (i.e., as recorded between 1981-2010).

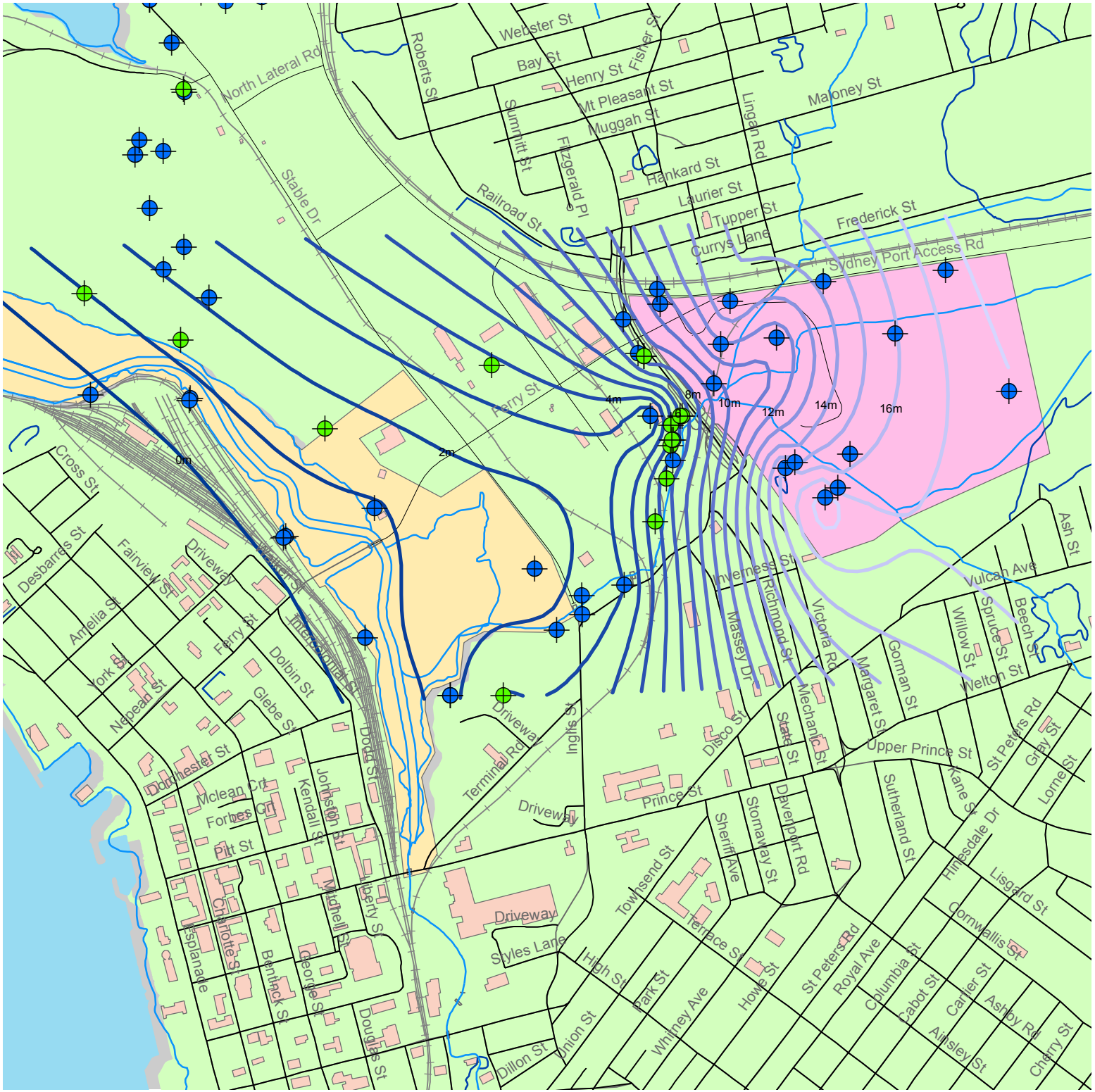
3.2 Groundwater Flow and Hydraulic Head Levels

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 2015 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 3.2-1), the upper fractured shallow bedrock (Figure 3.2-2) and the intermediate/deep bedrock (Figure 3.2-3).

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 2015 event and that observed during 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 2014 groundwater monitoring program, mounding of the groundwater elevation within the fill till unit was identified south of the south cut-off wall around COSCW-002-MWB (located on the southwest portion of HE; former Coke Ovens site). Subsequently in June 2015, transducers were installed in select monitor wells on the OHP site to further evaluate this mounding, as follows: MCES-001-MWA/MWB, MCES-006-MW, SCU27-005-MWA/MWB and MCWS-307-MWA/MWB (noting that MCWS-307-MWA is currently not included in the LTMM program). The transducer data was downloaded in conjunction with the 2015 groundwater monitoring program. Review of the data indicates that the mounding of groundwater within the fill till unit appears south (i.e., downgradient) of the south cut-off wall.



OPEN HEARTH PARK AND
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2015 GROUNDWATER MONITORING EVENT

Equipotential Groundwater Contours Fill TIII
FIGURE 3.2-1

LEGEND

Equipotential Groundwater Contours

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

Open Hearth Park

Harbourside East

Active Water Level

Active Sample

0 50 100 200 300 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

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PROJECT: 14-1360
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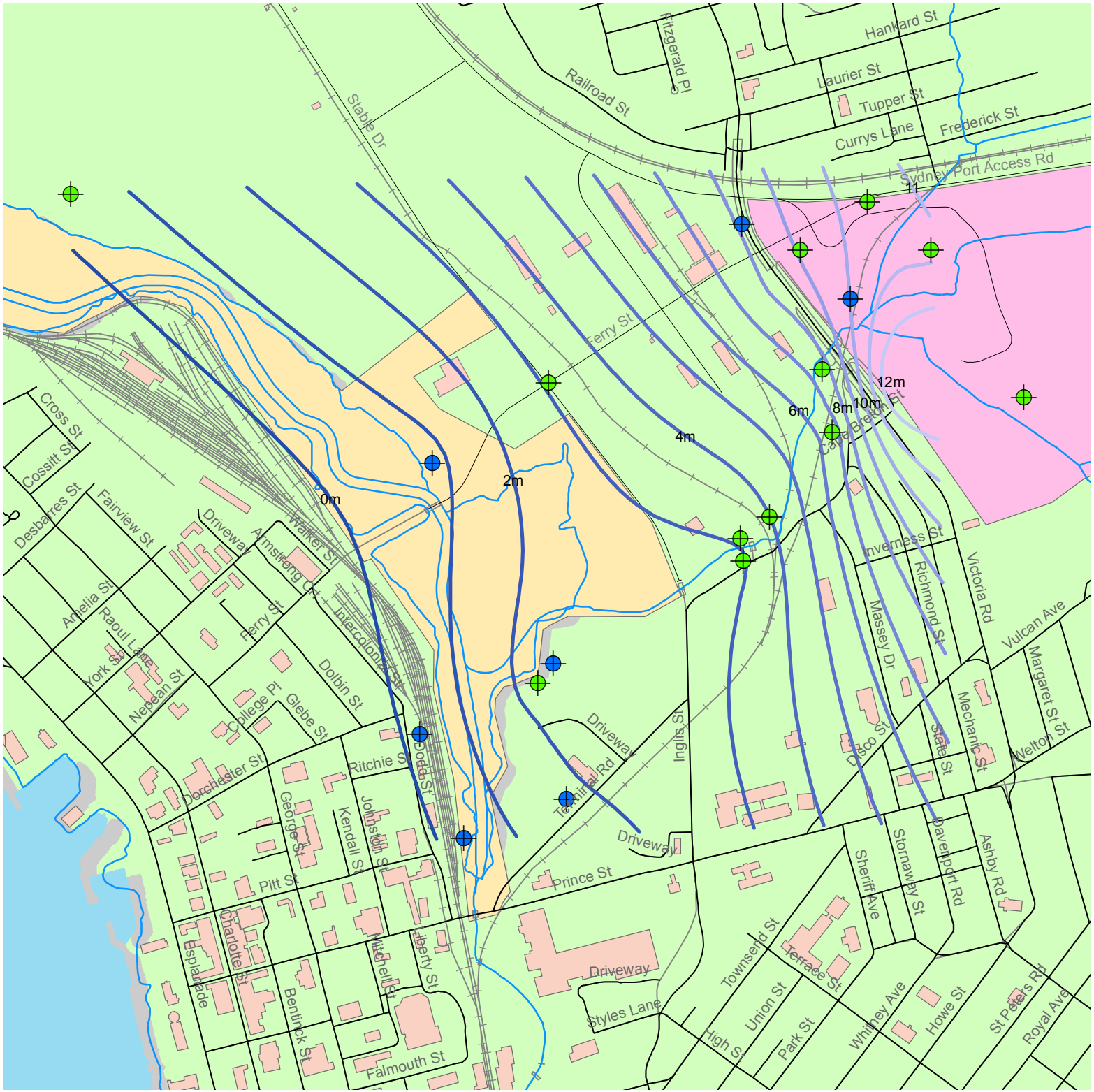
DATE: 06/23/16



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OPEN HEARTH PARK AND
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2015 GROUNDWATER MONITORING EVENT

Equipotential Groundwater Contours Bedrock Aquifer
FIGURE 3.2-2

LEGEND

Equipotential Groundwater Contours

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

Harbourside East

Open Hearth Park

Active Water Level

Active Sample

0 50 100 200 300 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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MAP CHECKED BY: NJW
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FILE LOCATION: \\DILLON.CA\DILLON_DFS\SYDNEY\SYDNEYCAD\GIS\141360

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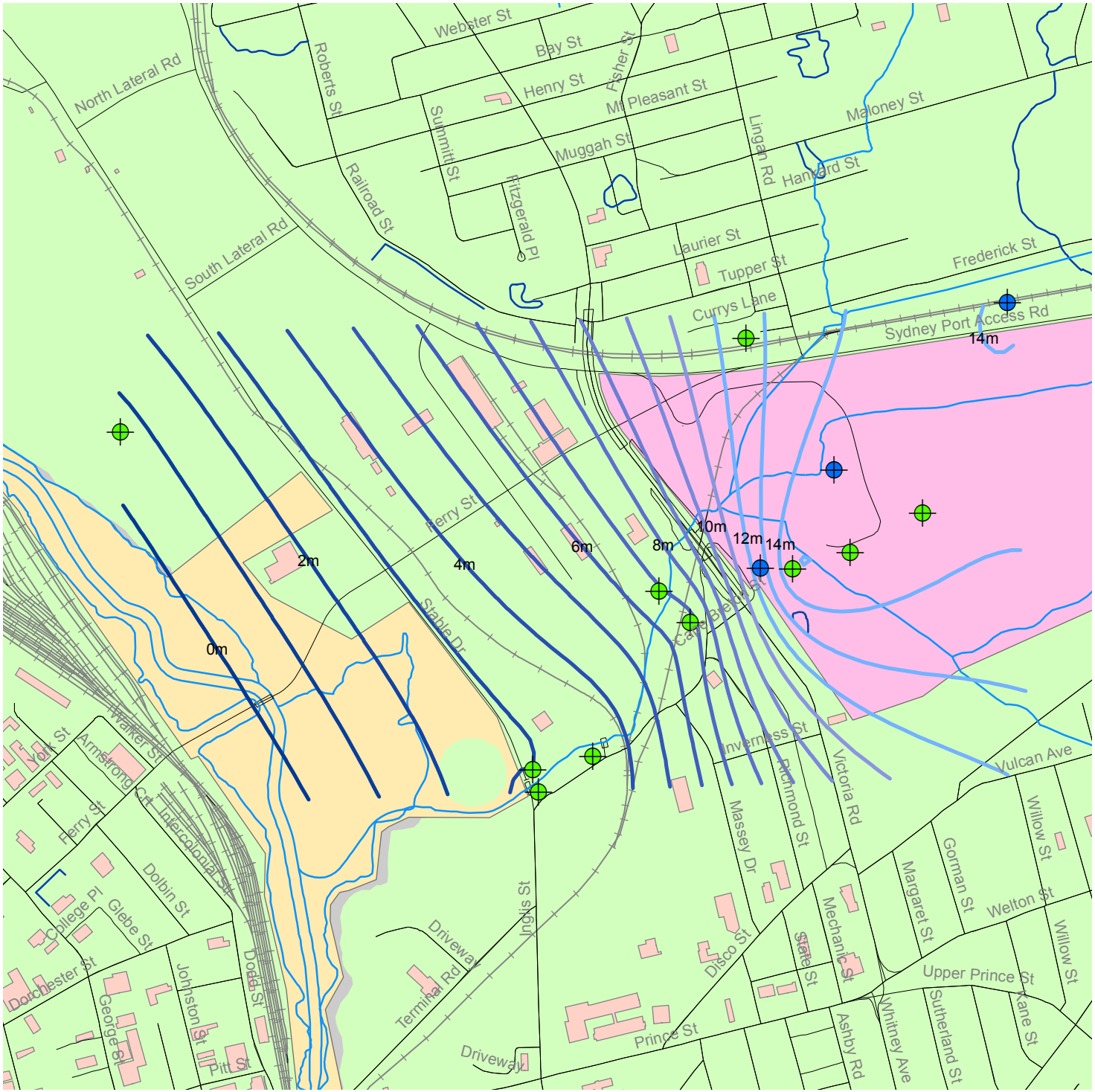
DATE: 06/23/2016



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OPEN HEARTH PARK AND
HARBOURSIDE EAST
2015 GROUNDWATER MONITORING EVENT

Equipotential Groundwater Contours Deep Bedrock Aquifer
FIGURE 3.2-3

LEGEND

Equipotential Groundwater Contours

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

Open Hearth Park

Harbourside East

Active Water Level

Active Sample

0 50 100 200 300 m

MAP DRAWING INFORMATION:
Province of Nova Scotia Mapping

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Based on the transducer data collected during the 2015 sampling program, which suggested that the mounding was not a result of the cut-off walls but typical of seasonal fluctuations, Dillon reviewed available information related to the area and the cut-off walls to confirm this conclusion. Review of historical groundwater elevations indicates that the depth to water measured in the monitor wells is similar to the previous depths measured during the EEM, prior to installation of the cut-off walls. While this location had historically been monitored for water levels, this data had not been included in the development of equipotential contours because the benchmark station had not been surveyed.

Based on a review of available lines of evidence, the observed mounding is most likely due to existing site conditions (e.g., reworked fill from decades of industrial operations and remediation) and topography. Consequently, it is recommended that the transducers within MCES-001-MWA/MWB, MCES-006-MW, SCU27-005-MWA/MWB and MCWS-307-MWA/MWB be removed and no further consideration of this mounding is necessary.

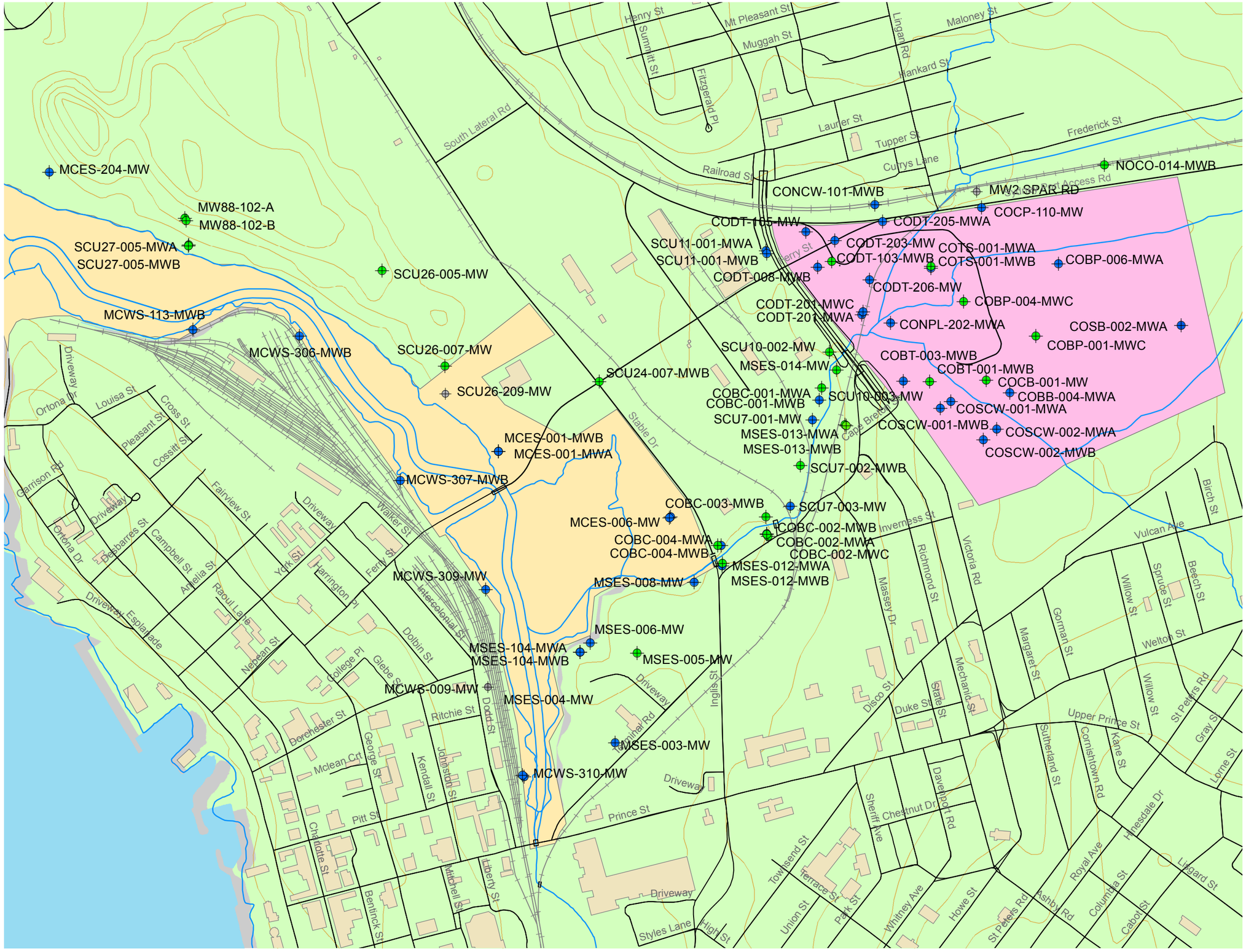
Approximately 0.3 m of DNAPL was measured in monitor well CODT-103-MWB (which is located on the northwest portion of HE in the former Domtar site), which is not currently included in the LTMM program, during maintenance activities (i.e., conversion of the monitor well from a stick up protective casing to a flushmount). Subsequently, the DNAPL was removed from the well and disposed of. Sample analysis of the DNAPL indicated a fuel oil fraction resemblance. No LNAPL was detected on the OHP or HE sites during the 2015 monitoring event. Similar to previous monitoring events, DNAPL was detected in SCU10-002-MW (i.e., the oil/water interface probe did not detect product; however, DNAPL was observed on the interface probe along with a strong hydrocarbon odour). It is noted that SCU10-002-MW is included in the OHP and HE monitoring programs, as well as the Harbourside Commercial Park (HCP) groundwater monitoring program.

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 3.3-1). Results of the 2015 monitoring event are presented and discussed in the following subsections.

In the OHP area, the “high dump”, used for disposal of blast furnace slag from the former steel plant, is located at the north end of the eastern shoreline, which is also part of the HCP site. Historical in-filling of the southeast shoreline 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 area 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 2015 monitoring event at OHP indicate elevated concentrations (i.e., above applicable criteria) of PAHs and/or metals in groundwater. Specifically, three monitor wells (i.e., MSES-104-MWA/MWB and MSES-008-MW) located on the southeast shoreline and one monitor well located on the southwest shoreline (MCWS-309-MW) contained PAH concentrations above the MOE standards. The four wells are located in the vicinity of the former disposal area on the south shoreline of OHP, which could be a contributing source resulting in the elevated PAH concentrations. It is also noted that one monitor well (i.e., MCES-204-MW), located in an area in-filled with slag and coal adjacent the Portside Aggregate Quarry in the north portion of the site, contained elevated concentrations of anthracene and sodium above the MOE standards. Another monitor well located on the eastern shoreline (i.e., MCES-001-MWB) contained an elevated concentration of sodium above the MOE standards.



NS Lands
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OPEN HEARTH PARK AND HARBOURSIDE EAST

2015 GROUNDWATER MONITORING EVENT

AREA FEATURES

Figure 3.3-1

LEGEND

Monitoring Wells

- Sample
- Water Level
- Removed From Program and/or Decommissioned

Harbourside East

Open Hearth Park

NOTE:
MW 2 SPAR RD removed from program,
MCWS-009-MW decomissioned December 2015,
SCU26-209-MW destroyed

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: 06/23/16

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 2015 Groundwater Monitoring Program included the collection of 42 samples for analysis, 16 of which were collected from monitor wells located on the OHP site. Table 3.3.1-1 summarizes indicator parameter concentrations for select monitor wells exhibiting concentrations above applicable criteria or for select monitor wells located in the vicinity of S/S areas.

Table 3.3.1- 1 Summary of Indicator Parameter Concentrations

Well ID	Date	Organic Parameters			Inorganic Parameters			
		Acenaphthylene (ug/L)	Anthracene (ug/L)	Indeno(1,2,3-cd) pyrene (ug/L)	Selenium (ug/L)	Sulphur (mg/L)	TDS (mg/L)	pH
NSE Tier I EQS[1]		750	-	-	-	-	-	-
MOE Table 3[2]		1.8	2.4	0.2	63	-	-	-
MCES-006-MW	Mar 2013	-	-	-	-	34	374	7.50
	Jul 2013	-	-	-	-	28	376	7.57
	Nov 2013	-	-	-	-	34	390	7.61
	Dec 2014	-	-	-	-	70	260	8.91
	Dec 2015	-	-	-	-	88	260	9.44
MCES-204-MW	Mar 2013	1.7	3.6	-	210	-	-	-
	Jul 2013	1.8	3.3	-	120	-	-	-
	Nov 2013	2.5	4.2	-	36	-	-	-
	Dec 2014	1.9	1.9	-	67	-	-	-
	Dec 2015	1.8	2.6	-	<10	-	-	-
MSES-008-MW	Mar 2013	4.2	-	-	-	-	-	-
	Jul 2013	3.2	-	-	-	-	-	-
	Nov 2013	4.1	-	-	-	-	-	-
	Dec 2014	2.7	-	-	-	-	-	-
	Dec 2015	2.4	-	-	-	-	-	-
MSES-104-MWA	Mar 2013	6.9	2.8	1.3	-	1100	1700	7.60
	Dec 2014	5.6	0.38	0.034	-	1400	2100	7.61
	Dec 2015	7.5	0.70	<0.010	-	1200	1600	8.07
MSES-104-MWB	Oct 2008	30	-	-	-	-	-	-
	Dec 2012	36	-	-	-	-	-	-
	Nov 2013	32	-	-	-	-	-	-
	Dec 2014	33	-	-	-	-	-	-
	Dec 2015	31	-	-	-	-	-	-

Notes:
[1]Nova Scotia Tier I Environment Environmental Quality Standards for Groundwater (Coarse Grained Soil, Non- potable Groundwater Commercial/ Industrial Site) 2013
[2]Ontario Ministry of Environment, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011
Underline Exceeds NSE EQS
Bold exceeds MOE Table 3 Standards
- Not assessed or no applicable criteria available

Three of the 16 monitor wells sampled on the OHP site had organic parameter concentrations above the MOE standards, as follows:

- MCES-204-MW: The concentration of 2.6 ug/L for anthracene exceeded the MOE standard of 2.4 ug/L;
- MCWS-309-MW: The concentration of 0.22 ug/L for benzo(g,h,i)perylene exceeded the MOE standard of 0.2 ug/L;
- MSES-008-MW: The concentration of 2.4 ug/L for acenaphthylene exceeded the MOE standard of 1.8 ug/L;
- MSES-104-MWA: The concentration of 7.5 ug/L for acenaphthylene exceeded the MOE standard of 1.8 ug/L; and,
- MSES-104-MWB: The concentration of 31 ug/L for acenaphthylene exceeded the MOE standard of 1.8 ug/L.

Two of the 16 monitor wells sampled on the OHP site had a single inorganic parameter concentration above the MOE standard, as follows:

- MCES-001-MWB: exceeded the MOE standard of 2,300,000 ug/L for sodium with a concentration of 6,300,000 ug/L; and,
- MCES-204-MW: exceeded the MOE standard of 2,300,000 ug/L for sodium with a concentration of 3,900,000.

Concentrations of analyzed parameters at the majority of the sampling wells were below the applicable standards. As noted above, monitor wells MSES-104-MWA/MWB and MSES-008-MW, located on the southeast shoreline, contained PAH concentrations above the MOE standards. These three wells are located in the vicinity of the former disposal area on the south shoreline of OHP, which could be a contributing source resulting in the elevated PAH concentrations. It is also noted that MCES-204-MW, which contained elevated concentrations of PAHs and sodium above the MOE standards, is located in an area in-filled with slag and coal.

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. One monitor well, located on the southeast portion of OHP in the vicinity of the former cooling pond (i.e., MCES-006-MW), exhibited two indicator parameters (i.e., pH and SO4) with increasing concentration trends. Results of Mann-Kendall analysis for OHP are presented in Table 3.3.2-1.

Table 3.3.2- 1 OHP – Trend Analysis Summary

WELL ID	INDICATOR PARAMETER	TREND
MCES-006-MW	pH	Increasing
	TDS	Stable
	SO4	Increasing
MCES-204-MW	Acenaphthylene	Stable
	Anthracene	Stable
	Selenium	Decreasing

Table 3.3.2- 1 OHP – Trend Analysis Summary

WELL ID	INDICATOR PARAMETER	TREND
MSES-008-MW	Acenaphthylene	Decreasing
MSES-104-MWB	Acenaphthylene	Stable

In general, review of trend analysis indicates general plume stability relative to indicator concentrations with isolated parameters in select wells within the plume indicating increasing trends. The groundwater quality trend analysis for the 2015 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. Concentration trends of elevated PAH concentrations at additional wells (e.g., MSES-104-MWA) need to be further determined when sufficient post-remediation data is available.

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 CO1 (Coke Ovens Brook Connector), CO2 (Tar Cell), CO5 (Vertical Cut-Off Walls), CO6 (Surface Cap) and CO7 (Groundwater Collection System) (Figure 3.3-1).

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 2015 monitoring event are presented and discussed in the following subsections.

Results of the 2015 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 (i.e., CODT-201-MWC), located in the former Domtar site, contained PAH concentration(s) above both the Tier I EQS and MOE standard(s). Three monitor wells (i.e., CODT-008-MWB, CODT-201-MWA and CODT-203-MW), located within HE at the former Domtar site, contained PAH concentrations above their respective MOE standard concentrations. One monitor well (i.e., COSB-002-MWA) located on the east portion of HE (former Coke Ovens site) contained elevated inorganic parameter concentrations above the MOE standards. These exceedances represent an increase in concentrations, and the highest concentrations observed to date for these parameters, at this well from previous monitoring events (i.e., exceedance factors of up to7.5 x the applicable standard for some parameters).

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 2015 LTMM Groundwater Monitoring Program included the collection of 42 samples for analysis, 26 of which were collected from monitor wells located on the HE site. Table 3.4.1-1 summarizes indicator parameter concentrations for select monitor wells exhibiting concentrations above applicable criteria.

Table 3.4.1- 1 HE – Summary of Indicator Parameter Concentrations

Well ID	Date	Organic Parameters				
		Acenaphthylene (ug/L)	Anthracene (ug/L)	B(a)P (ug/L)	Indeno(1,2,3-cd) pyrene (ug/L)	Napthalene (ug/L)
NSE Tier I EQS		750	-	-	-	7000
MOE		1.8	2.4	0.81	0.2	1400
CODT-008-MWB	Mar 2013	0.6	15	1.7	0.65	17
	Jul 2013	2.8	140	30	14	29
	Oct 2013	3.4	11	2.6	0.64	2.8
	Dec 2014	0.026	2.0	0.032	0.018	<0.20
	Dec 2015	0.047	0.13	1.2	0.31	<0.20
CODT-201-MWA	Mar 2013	-	0.45	0.73	0.33	-
	Jul 2013	-	2.5	3.6	1.5	-
	Oct 2013	-	1.7	2.5	1.1	-
	Dec 2014	-	2.5	3.7	1.5	-
	Dec 2015	-	2.3	4.7	1.9	-
CODT-201-MWC	Mar 2013	3.8	4.9	-	-	5100
	Jul 2013	8.0	4.5	-	-	4900
	Mar 2013	10	3.3	-	-	6300
	Dec 2014	12	5.9	-	-	7200
	Dec 2015	18	*<10*	-	-	9500
CODT-203-MW	Mar 2013	-	2.1	0.64	0.24	-
	Jul 2013	-	2.6	1.1	0.38	-
	Mar 2013	-	2.5	0.71	0.29	-
	Dec 2014	-	0.55	0.69	0.28	-
	Dec 2015	-	0.42	0.61	0.29	-

NOTES:
[1]Nova Scotia Tier I Environment Environmental Quality Standards for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/ Industrial Site) 2013
[2]Ontario Ministry of Environment, Table 3 Full Depth Generic Site Condition Standards in a Non-potable Groundwater (Coarse Grained Soil) 2011
Underline Exceeds NSE Tier I EQS
Bold exceeds MOE Table 3 Standards
Bold Italics Detection limit elevated above applicable standards.
- Not assessed or no applicable criteria available

During the 2015 monitoring event, three of the 26 monitor wells sampled on the HE site had organic indicator parameter concentrations above the Tier I EQS and/or MOE standards, as follows:

- CODT-008-MWB: Concentrations for benzo(a)pyrene (1.2 ug/L), benzo(b)fluoranthene (0.84 ug/L), benzo(g,h,i)perylene (0.32 ug/L) and indeno(1,2,3-cd)pyrene (0.31 ug/L) exceeded the MOE standards of 0.81 ug/L, 0.75 ug/L, 0.2 ug/L and 0.2 ug/L, respectively;
- CODT-201-MWA: Concentrations for benzo(a)anthracene (4.9 ug/L), benzo(a)pyrene (4.7 ug/L), benzo(b)fluoranthene (3.5 ug/L), benzo(g,h,i)perylene (2.0 ug/L), benzo(k)fluoranthene (2.3 ug/L), chrysene (5.1 ug/L), dibenzo(a,h)anthracene (0.67 ug/L) and indeno(1,2,3-cd)pyrene (1.9

ug/L) exceeded the MOE standards of 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;

- CODT-201-MWC: The naphthalene concentration of 9,500 ug/L exceeds the Tier I EQS standard of 7,000 ug/L and the MOE standard of 1,400 ug/L. This is the highest concentration of naphthalene observed in this well to date. Concentrations for acenaphthylene (18 ug/L) exceeded the MOE standard of 1.8 ug/L. It is noted that the detection limit for anthracene (<10 ug/L) was elevated above the MOE standard of 2.4 ug/L; and,
- CODT-203-MW: Concentrations for benzo(g,h,i)perylene (0.29 ug/L) and indeno(1,2,3-cd)pyrene (0.29 ug/L) exceeded the MOE standards of 0.2 ug/L and 0.2 ug/L, respectively.

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 for cadmium (8.5 ug/L), cobalt (80 ug/L), copper (650 ug/L) and zinc (3,800 ug/L) exceed the MOE standards of 2.7 ug/L, 66 ug/L, 87 ug/L and 1,100 ug/L, respectively. These exceedances represent a significant increase in concentrations at this well from previous monitoring events and the highest concentrations observed in this well to date (i.e., exceedance factors of up to7.5 x the applicable standard for some parameters).

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. Additionally, pumping of the CO2B interceptor line has likely lowered the groundwater levels in this area of the Domtar Site. In particular, the elevated naphthalene concentration and increasing trend for acenaphthylene at CODT-201-MWC (i.e., shallow bedrock well) could indicate that the impacted groundwater continued to migrate from fill/till into the underlying aquifers. The significant increase in metals concentrations at monitor well COSB-002-MWA could be potentially related to the up gradient municipal landfill.

3.4.2 Trend Analysis - HE

Mann-Kendall analysis was conducted based on available post-remediation data. Statistical analysis of available indicator parameter concentration trends of the select indicator parameters indicates that concentration trend analyses are stable, decreasing or fluctuating. Two monitor wells (i.e., CODT-201-MWA (benzo(a)pyrene) and CODT-201-MWC (acenaphthylene and naphthalene)) contained concentrations of indicator parameters with increasing concentration trends above the respective Tier I EQS and/or MOE standards. Results of Mann-Kendall trend analysis for HE are presented in Table 3.4.2-1.

Table 3.4.2- 1 HE – Trend Analysis Summary

WELL ID	INDICATOR PARAMETER	TREND
CODT-008-MWB	Acenaphthylene	Fluctuating
	Anthracene	Decreasing
	Benzo(a)pyrene	Fluctuating
	Indeno(1,2,3-cd)pyrene	Fluctuating
	Naphthalene	Decreasing
CODT-201-MWA	Anthracene	Stable
	Benzo(a)pyrene	Increasing

Table 3.4.2- 1 HE – Trend Analysis Summary

WELL ID	INDICATOR PARAMETER	TREND
	Indeno(1,2,3-cd)pyrene	Stable
CODT-201-MWC	Acenaphthylene	Increasing
	Anthracene	Stable
	Naphthalene	Increasing
CODT-203-MW	Anthracene	Stable
	Indeno(1,2,3-cd)pyrene	Stable

The groundwater quality trend analysis for the 2015 monitoring event was based on the available post-remediation analytical results (i.e., four rounds of sampling events are required) for the select parameters 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 increasing trends.

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 Trip Blanks
- Section 3.5.4 Equipment Blanks
- Section 3.5.5 Holding Times

Four field duplicates and five trip blanks were collected for the OHP and HE sites during the 2015 monitoring event, as presented in Table B-1 (Appendix B).

3.5.1 Relative Percent Difference

Five 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 40% RPD) with the exception of select parameters at FD-014 (field duplicate of CODT-203-MW for: acenaphthene, benzo(g,h,i)perylene, dibenzo(a,h)anthracene, fluorene and indeno(1,2,3-cd)pyrene) whose original sample and field duplicate exhibited RPDs greater than the respective RPD Data Quality Objectives (DQOs), as presented in Tables B-2 and B-3 (Appendix B).

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:

- Matrix Spike results outside acceptable limits for one analyte (i.e., silver) in monitor wells MCES-001-MWA/MWB, MCWS-306-MWB, MCSW-307-MWB and MCWS-113-MWB.
- One analyte (i.e., naphthalene) had a low recovery due to sample matrix resulting in multi-component analysis violation for monitor wells SCU11-001-MWA/MWB and in field duplicate FD-016 and trip blank TB-022. Additionally, a poor RPL due to sample dilution with duplicate results outside of the acceptance limit was also reported for monitor wells SCU11-001-MWA/MWB and in FD-016 and TB-022. It is noted that the naphthalene concentrations in SCU11-001-MWA/MWB and in FD-016 and TB-022 were below the laboratory detection limit; and,
- Poor spike recovery due to sample matrix was reported for one analyte (i.e., mercury) in monitor wells COSB-002-MWA, COCP-110-MW, COBP-006-MWA, CONPL-202-MWA, COBB-004-MWA, COBT-003-MWB, CODT-201-MWA/MWC and COSCW-001-MWB. It is noted that the mercury results at each of these monitor wells, with the exception of COSCW-001-MWB, were below laboratory detection limits. The mercury concentration at COSCW-001-MWB is below applicable criteria.

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

3.5.3 Trip Blanks

As PHCs were not included in the 2015 groundwater monitoring program, with the exception of CODT-201-MWC, trip blanks were analyzed for PAHs. PAHs were not detected in the five trip blanks.

3.5.4 Equipment Blanks

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

- Concentrations of BTEX/TPH were below laboratory detection limits; and,
- Detectable concentrations of fluoranthene (0.21 ug/L), fluorine (0.013 ug/L), phenanthrene (0.029 ug/L), pyrene (0.018 ug/L), calcium (110 ug/L), copper (3.3 ug/L) and zinc (27 ug/L) were reported for the equipment blank.

The detectable concentrations of metals in the equipment blank are considered low and not likely to affect the interpretation of groundwater sample results.

One field blank was collected during the 2015 groundwater monitoring program on the HCP site. The field blank was collected in conjunction with the equipment blank to determine if interference from the ambient atmospheric particles was present. Results are as follows:

- Concentrations of BTEX/TPH and PAHs were below laboratory detection limits; and,
- Detectable concentrations of aluminum (5.4 ug/L), calcium (110 ug/L) and strontium (4.5 ug/L) were reported for the field blank. No guideline criteria are available for these parameters.

3.5.5 Holding Times

There were no holding time exceedences.

4.0 Summary

The OHP and HE 2015 monitoring event was conducted in accordance to RFP NSLAND57 Groundwater Monitoring Services. Findings were compared to July 2013 NS CSR Tier I EQS 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 2015 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 2015 data:

OHP

The majority of samples contained indicator parameters at concentrations below the Tier I EQS and/or applicable MOE standards, and in most instances, concentrations were comparable to historical findings. No exceedances of the Tier I EQS were observed. Concentrations of parameters above their respective MOE standards were observed in the following six wells:

- MCES-204-MW: Concentrations of anthracene and sodium exceeded MOE standards;
- MCWS-309-MW: The concentration of benzo(g,h,i,)perylene exceeded the MOE standard;
- MSES-008-MW: The concentration of acenaphthylene exceeded MOE standard;
- MSES-104-MWA: The concentration of acenaphthylene exceeded MOE standard;
- MSES-104-MWB: The concentration of acenaphthylene exceeded MOE standard; and,
- MCES-001-MWB: The concentration of sodium exceeded MOE standard.

As presented in Figure 4.0-1, trend analysis showed one location exhibiting two indicator parameters with an increasing concentration trend via Mann-Kendall analysis in the OHP area, as follows:

- MCES-006-MW: pH and SO4.

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. Concentrations of organic and indicator parameters above their respective Tier I EQS and/or MOE standards were observed in the following three wells:

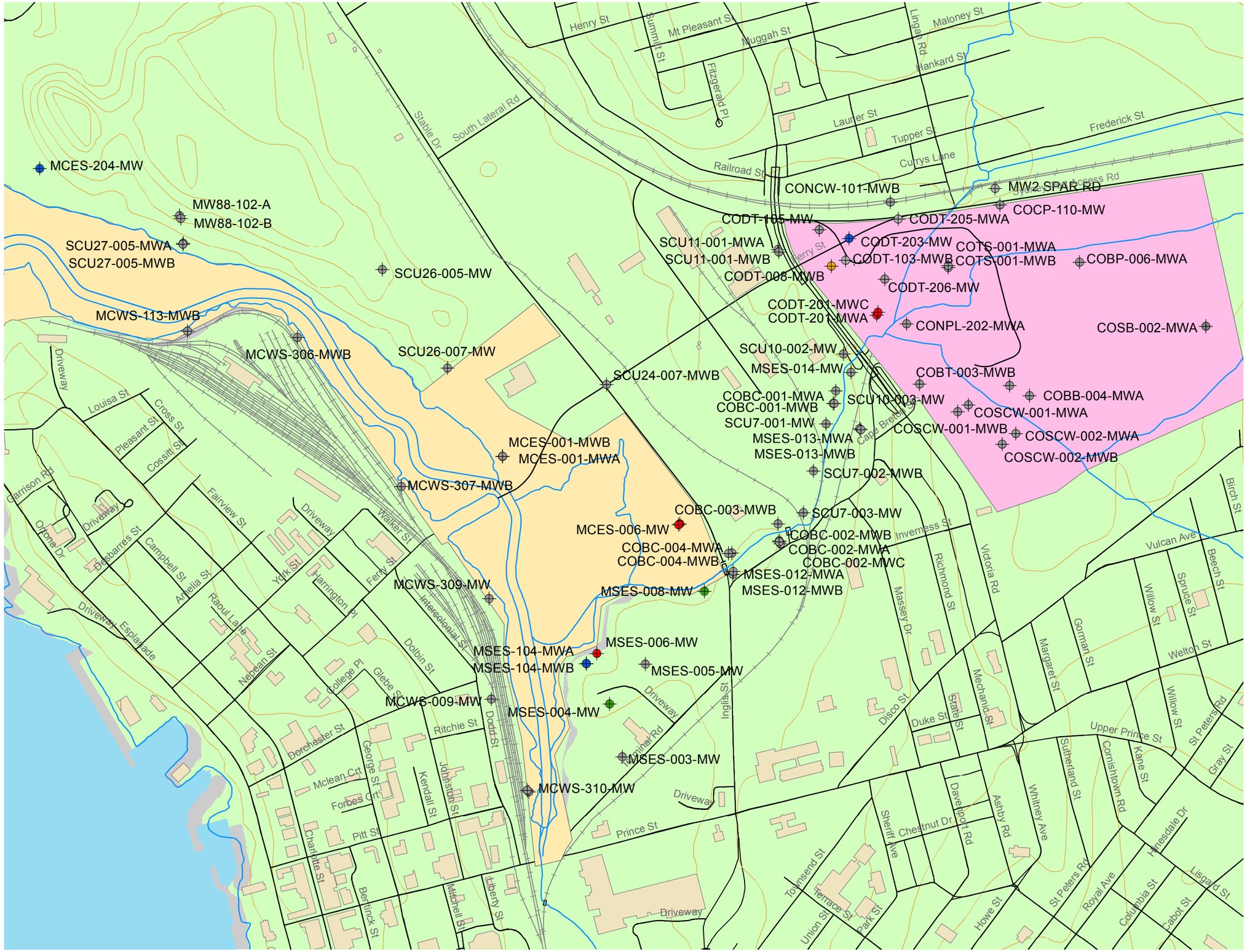
- CODT-008-MWB: Concentrations of benzo(a)pyrene, benzo(b)fluoranthene, benzo (g,h,i)perylene and indeno(1,2,3-cd)pyrene exceeded the MOE standards;
- CODT-201-MWA: Concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene exceeded the MOE standards;
- CODT-201-MWC: The concentration of naphthalene exceeded the Tier I EQS and the MOE standard. This is the highest concentration of naphthalene observed in this area to date. The

concentration for acenaphthylene exceeded the MOE standard. The detection limit for anthracene was elevated above the MOE standard ;

- CODT-203-MW: Concentrations of benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene exceed the MOE standards; and,
- COSB-002-MWA: Concentrations for cadmium, cobalt, copper and zinc exceed the MOE standards. These exceedances represent a significant increase in concentrations at this well from previous monitoring events.

As presented in Figure 4.0-1, trend analysis showed two locations in total exhibiting two indicator parameters with an increasing concentration trend via Mann-Kendall analysis in the HE area, as follows:

- CODT-201-MWA: benzo(a)pyrene
- CODT-201-MWC: acenaphthylene and naphthalene



NS Lands
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OPEN HEARTH PARK AND HARBOURSIDE EAST

2015 GROUNDWATER MONITORING EVENT

INDICATOR PARAMETER CONCENTRATION TREND

Figure 4.0-1

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: 03/28/16

5.0 Recommendations

Review of the 2015 groundwater sampling results, considered in context of historical data associated with OHP and HE sites, suggests that the fall 2016 groundwater monitoring program could include the following:

- The collection of 69 water levels; including the addition of monitor well CODT-103-MWB, which is currently not included in the LTMM, but is recommended to be added for water level/product measurement going forward; and,
- The sampling of 42 monitor wells; reduced from 44 following the removal of MW-2 (Spar Road) from the program and the decommissioning of MCWS-009-MW. As MCWS-009-MW was located in an area of the site where other nearby LTMM monitor wells are situated (i.e., MCWS-309-MW and MCWS-310-MW) and as historical analytical results are below applicable standards, replacement of MCWS-009-MW is not recommended at this time.

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.

Further, as detailed in Section3.2, it is also recommended that the transducers within MCES-001-MWA/MWB, MCES-006-MW, SCU27-005-MWA/MWB and MCWS-307-MWA/MWB be removed.

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 DECEMBER 2015 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	
NSE Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
COBB-004-MWA (5.10 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 (5.52 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 (6.13 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 (5.70 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 (4.95 m)	03/27/13[D]	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 (39.75 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 (3.70 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 (3.10 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 (3.52 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 (5.44 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 (8.455 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
CODT-203-MW (5.739 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 (6.446 m)	03/13/13[D]	<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 (5.745 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 (5.699 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 (9.10 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 (3.00 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 DECEMBER 2015 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	
NSE Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
COSCW-001-MWA (5.48 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 (6.37 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 (5.93 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 (4.37 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[3] (4.11 m)	12/15/14	NM	NM	NM	NM	NM	-	NM	NM	NM	NM	-
MCES-001-MWA (7.36 m)	03/28/13[D]	<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 (19.65 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 (5.70 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 (9.87 m)	03/28/13	0.018	0.0078	<0.001	0.0082	0.028	0.53	-	-	0.16	0.72	Yes
	12/18/14[D]	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[2] (6.63 m)	12/9/14[D]	<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 (3.16 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 (4.77 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 (6.68 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 (4.18 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 (8.49 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)	03/26/13	<0.001	<0.001	<0.001	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/10/14[D]	<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 DECEMBER 2015 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	
NSE Tier 1 EQS[1]		20	20	20	20	-	-	-	-	-	20	-
MSES-004-MW (12.12 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 (11.06 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 (7.59 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 (6.66 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 (1.78 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 (5.42 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	-
	12/16/14[D]	<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 (5.21 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 (11.70 m)	03/29/13	0.0072	<0.001	0.0047	<0.002	<0.01	<0.05	-	-	<0.1	<0.1	-
	12/15/2014[D]	<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 (5.25 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 (3.87 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:

D - 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 Tier 1 Environmental Quality Standards for Groundwater (Coarse Grained Soil, Non-potable Groundwater Commercial/Industrial Site) 2013 (Revised January 2015)

2 - During the 2015 groundwater monitoring program, MCWS-009-MW was found to be damaged beyond repair and was subsquently decommissioned.

3 - COTS-001-MWA could not be sampled during the December 2014 event due to insufficient water.

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

Underline Exceeds NSE EQS

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAH/PCB

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	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
NSE Tier 1 EQS[1]		-	750	-	-	-	-	-	-	-	-	-	-	-	-	38000	38000	7000	-	-	-
MOE Table 3[2]		600	1.8	2.4	4.7	0.81	0.75	0.2	-	0.4	1	0.52	130	400	0.2	1800	1800	1400	-	580	68
COBB-004-MWA (5.10 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
COBC-001-MWA (5.52 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[D]	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
COBC-002-MWA (6.13 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
COBC-004-MWA (5.70 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
COBP-006-MWA (4.95 m)	03/27/13[D]	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	0.091	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[D]	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
COBT-003-MWB (39.75 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	0.03	<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
COCP-110-MW (3.70 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

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAH/PCB

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	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
NSE Tier 1 EQS[1]		-	750	-	-	-	-	-	-	-	-	-	-	-	-	38000	38000	7000	-	-	-
MOE Table 3[2]		600	1.8	2.4	4.7	0.81	0.75	0.2	-	0.4	1	0.52	130	400	0.2	1800	1800	1400	-	580	68
CODT-008-MWB (3.10 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
CODT-105-MW (3.52 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
CODT-201-MWA (5.44 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
CODT-201-MWC (8.455 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[D]	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
CODT-203-MW (5.739 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[D]	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[D]	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
CODT-205-MWA (6.446 m)	03/13/13[D]	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

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAH/PCB

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	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
NSE Tier 1 EQS[1]		-	750	-	-	-	-	-	-	-	-	-	-	-	-	38000	38000	7000	-	-	-
MOE Table 3[2]		600	1.8	2.4	4.7	0.81	0.75	0.2	-	0.4	1	0.52	130	400	0.2	1800	1800	1400	-	580	68
CODT-206-MW (5.745 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
CONCW-101-MWB (5.699 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
CONPL-202-MWA (9.10 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
COSB-002-MWA (3.00 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	0.200	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[D]	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
COSCW-001-MWA (5.48 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	0.050	1.0	<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
COSCW-001-MWB (6.37 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
COSCW-002-MWA (5.93 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

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAH/PCB

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	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
NSE Tier 1 EQS[1]		-	750	-	-	-	-	-	-	-	-	-	-	-	-	38000	38000	7000	-	-	-
MOE Table 3[2]		600	1.8	2.4	4.7	0.81	0.75	0.2	-	0.4	1	0.52	130	400	0.2	1800	1800	1400	-	580	68
COSCW-002-MWB (4.37 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
COTS-001-MWA[3] (4.11 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] (12.198 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
MCES-001-MWA (7.36 m)	03/28/13[D]	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
MCES-001-MWB (19.65 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
MCES-006-MW (5.70 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
MCES-204-MW (9.87 m)	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[D]	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
MCWS-009-MW[4] (6.63 m)	12/9/14[D]	<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 (3.16 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

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAH/PCB

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	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
NSE Tier 1 EQS[1]		-	750	-	-	-	-	-	-	-	-	-	-	-	-	38000	38000	7000	-	-	-
MOE Table 3[2]		600	1.8	2.4	4.7	0.81	0.75	0.2	-	0.4	1	0.52	130	400	0.2	1800	1800	1400	-	580	68
MCWS-306-MWB (4.77 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
MCWS-307-MWB (6.68 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
MCWS-309-MW (4.18 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
MCWS-310-MW (8.49 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[D]	<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
MSES-003-MW (9.10 m)	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[D]	<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[D]	<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 (12.12 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

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAH/PCB

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	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
NSE Tier 1 EQS[1]		-	750	-	-	-	-	-	-	-	-	-	-	-	-	38000	38000	7000	-	-	-
MOE Table 3[2]		600	1.8	2.4	4.7	0.81	0.75	0.2	-	0.4	1	0.52	130	400	0.2	1800	1800	1400	-	580	68
MSES-006-MW (11.06 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
MSES-008-MW (7.59 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[D]	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
MSES-012-MWA (6.66 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[D]	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
MSES-104-MWA (1.78 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
MSES-104-MWB (5.42 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[D]	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
MW2 SPAR RD (2.62 m) *removed from the LTMM program in 2015*	03/19/13[D]	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[D]	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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.024	<0.01	0.15	0.081	1.1	<0.01	0.016	<0.01

TABLE A-2
LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015 OHP AND HE
GROUNDWATER ANALYTICAL RESULTS - PAH/PCB

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	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
NSE Tier 1 EQS[1]		-	750	-	-	-	-	-	-	-	-	-	-	-	-	38000	38000	7000	-	-	-
MOE Table 3[2]		600	1.8	2.4	4.7	0.81	0.75	0.2	-	0.4	1	0.52	130	400	0.2	1800	1800	1400	-	580	68
SCU11-001-MWA (5.21 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
SCU11-001-MWB (11.70 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[D]	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
SCU7-001-MW (5.25 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
SCU7-003-MW (3.87 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

NOTES:

D - Field Duplicate

L - Lab Duplicate

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 Environmental Quality Standards 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 2015 program in place of COTS-001-MWA, which again had insufficient water for sampling.

4 - During the 2015 groundwater monitoring program, MCWS-009-MW was found to be damaged beyond repair and was subsquently decommissioned.

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

Underline Exceeds NSE EQS

Bold exceeds MOE Table 3 Standards

Italics indicates laboratory detection limit elevated above criteria

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 DECEMBER 2015
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	TURB	COND	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@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	unitless	unitless
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COBB-004-MWA (5.10 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	0.065	7.49
	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	0.241	7.31
	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	-0.345	7.75
	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	-0.036	7.35
	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	0.335	7.14
COBC-001-MWA (5.52 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	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	-0.028	7.18
	07/26/13[LD]	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	NM	NM
	07/26/13[D]	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	-0.272	7.29
	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	-0.162	7.24
	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	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	-0.063	7.06
	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	-0.308	7.16
	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	0.002	7.08
COBC-002-MWA (6.13 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	-1.57	7.63
	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	-1.75	7.69
	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	-1.92	7.66
	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	-1.88	7.62
	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	-1.7	7.7
COBC-004-MWA (5.70 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	0.593	6.76
	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	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	0.634	6.92
	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	0.201	7.44
	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	-0.285	7.86
	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	-0.178	7.84
COBP-006-MWA (4.95 m)	03/27/13[DL]	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	NM	NM
	03/27/13[D]	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	-0.341	6.99
	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	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	-0.324	6.98
	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	-0.054	6.97
	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	-0.200	6.96
	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	-0.254	6.96
	12/9/15[D]	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	-0.126	6.99
	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	-0.082	6.97

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		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
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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 (5.10 m)	03/27/13	7.74	<25	<5	<3	44	<2.5	<10	<500	0.12	<5	<5	<10	<500	<5	12	<20	0.013	<20	<15	<5	<0.5	430	<4	<100	<15	1.8	<10	26
	07/26/13	7.56	12.9	<1	3.3	56.1	<1	<2	75	0.096	<1	<0.4	<2	77	<0.5	16	972	NM	19	2.2	<1	<0.1	481	<0.1	<2	<2	2.03	<2	16
	11/06/13	8	10	<1	3.3	37	<1	<2	59	0.1	<1	<0.4	4.4	<50	<0.5	15	390	NM	7.8	2.5	<1	<0.1	360	<0.1	<2	<2	0.6	<2	12
	12/15/14	7.59	27	<1	2.2	57	<1	<2	55	0.46	<1	<0.4	5.7	<50	<0.5	NM	41	<0.013	3.2	<2	1.5	<0.1	600	<0.1	<2	<2	1.6	<2	20
	12/9/15	7.39	23	<1.0	3	76	<1.0	<2.0	65	0.058	<1.0	1.1	<2.0	360	<0.50	NM	2300	<0.013	13	3.5	<1.0	<0.10	600	<0.10	<2.0	<2.0	2.7	<2.0	12
COBC-001-MWA (5.52 m)	03/15/13[L]	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	7.43	16	<1	1.6	33	<0.5	<2.0	<100	0.056	<1.0	<1.0	<2.0	2600	<1.0	9.3	950	<0.013	<4	<3	<1.0	<0.1	3500	<0.8	<20	<3	<0.15	<2.0	37
	07/26/13[LD]	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[D]	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	8.3	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	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	8.1	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
	11/07/13	7.3	21	<1.0	2.7	34	<1.0	<2.0	<50	<0.01	<1.0	0.61	<2.0	4400	<0.5	22	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	7.41	10	<1	2	50	<1	<2	<50	0.058	<1	0.44	<2	3900	<0.5	NM	1200	<0.013	<2	<2	<1	<0.1	3600	<0.1	<2	<2	<0.1	<2	20
	12/10/15	7.32	29	<1.0	2.1	58	<1.0	<2.0	<50	0.095	<1.0	0.48	<2.0	4400	<0.50	NM	1300	<0.013	<2.0	<2.0	<1.0	<0.10	3800	<0.10	<2.0	<2.0	0.12	<2.0	21
COBC-002-MWA (6.13 m)	03/15/13	7.87	47	<1	<0.6	15	<0.5	<2	<100	0.6	<1	<1	30	<100	<1	<1	67	<0.013	<4	6.2	10	<0.1	730	<0.8	<20	<3	<0.15	<2	370
	07/18/13	7.94	40.2	<1	<1	12.7	<1	<2	82	0.203	<1	0.46	40.4	84	0.93	<2	56.1	NM	<2	2.2	8.4	<0.1	547	<0.1	<2	<2	<0.1	<2	189
	11/05/13	7.90	95	<1	<1	14	<1	<2	87	0.26	<1	0.85	46	<50	0.92	<2	80	NM	<2	5.3	7.6	<0.1	610	<0.1	<2	<2	<0.1	<2	240
	12/12/14	7.87	60	<1	<1	11	<1	<2	79	0.47	<1	0.41	7.2	<50	0.57	NM	51	<0.013	<2	<2	8.3	<0.1	500	<0.1	<2	<2	<0.1	<2	110
	12/10/15	7.94	36	<1.0	<1.0	17	<1.0	<2.0	77	0.17	<1.0	<0.40	5.9	57	0.63	NM	62	<0.013	<2.0	<2.0	5.8	<0.10	600	<0.10	<2.0	<2.0	<0.10	<2.0	84
COBC-004-MWA (5.70 m)	03/15/13	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	34	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
	07/18/13	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	40	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	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	20	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	8.11	11	1.5	4.6	3.9	<1	<2	<50	0.12	<1	<0.4	2.9	<50	<0.5	NM	7.6	<0.013	<2	<2	<1	<0.1	210	<0.1	<2	<2	0.14	8.6	18
	12/10/15	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	NM	<2.0	<0.013	<2.0	<2.0	<1.0	<0.10	300	<0.10	<2.0	<2.0	0.17	7.3	17
COBP-006-MWA (4.95 m)	03/27/13[DL]	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[D]	7.24	31	<5	3.1	30	<2.5	<10	<500	<0.085	<5	<5	<10	23000	<5	14	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
	03/27/13	7.22	<25	<5	<3	31	<2.5	<10	<500	<0.085	<5	<5	<10	23000	<5	16	8400	<0.013	<20	<15	<5	<0.5	510	<4	<100	<15	<0.75	<10	32
	07/26/13	7.21	33.9	<1	2.7	32.8	<1	<2	71	0.06	<1	1.53	<2	20700	0.74	16	10500	NM	<2	<2	<1	<0.1	501	<0.1	<2	<2	0.26	<2	35
	11/06/13	7.21	15	<1.0	3.4	30.0	<1.0	<2.0	64	<0.01	<1	0.93	<2	20000	<0.50	15	10000	NM	<2	<2	<1	<0.1	550	<0.1	<2	<2	0.18	<2	35
	12/15/14	7.2	26	<1	1.4	37	<1	<2	61	0.18	<1	<0.4	<2	19000	<0.5	NM	6200	<0.013	<2	<2	<1	<0.1	480	<0.1	<2	<2	<0.1	<2	29
	12/9/15[D]	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	NM	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	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	NM	5800	<0.013	<2.0	<2.0	<1.0	<0.10	440	<0.10	<2.0	<2.0	<0.10	<2.0	28

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
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	TURB	COND	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@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	unitless	unitless
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COBT-003-MWB (39.75 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	NM	NM
	03/13/12[D]	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	0.288	7.17
	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	0.288	7.17
	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	0.161	7.19
	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	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	0.162	7.19
	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	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	0.291	7.16
	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	0.331	7.12
	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	0.013	7.15
	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	-0.07	7.13
	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	-0.025	7.1
	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	0.302	7.09
COCP-110-MW (3.70 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	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	-0.013	7.27
	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	0.105	7.09
	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	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	0.145	6.96
	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	0.254	6.98
	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	0.202	7.05
CODT-008-MWB (3.10 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	1.11	7.74
	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	0.781	7.5
	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	-0.278	7.59
	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	1.79	8.83
	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	1.54	7.96
CODT-105-MW (3.52 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	0.466	7.29
	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	1.86	8.59
	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	0.654	7.99
	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	1.15	7.70
	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	0.654	6.89
	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	0.577	7.82
CODT-201-MWA (5.44 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	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	0.067	7.18
	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	0.053	7.14
	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	0.185	7.28
	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	0.223	7.1
	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	0.353	6.94
CODT-201-MWC (8.455 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	0.278	7.47
	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	0.173	7.49
	10/23/13[D]	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	0.207	7.51
	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	0.152	7.52
	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	0.077	7.54
	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	0.307	7.43

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		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
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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 (39.75 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
	03/13/12[D]	7.41	<5	0.51	3.4	42	<0.5	<2	<100	<0.017	<1	<1	<2	210	<1	9.7	2600	<0.013	<4	<3	<1	<0.1	1300	<0.8	<20	<3	0.45	<2	6.7
	03/13/12	7.41	23	<0.4	3.5	43	<0.5	<2	<100	<0.017	<1	<1	<2	220	<1	10	2700	<0.013	<4	<3	<1	<0.1	1300	<0.8	<20	<3	0.45	<2	7.3
	06/07/12	7.44	<5	<1	4.2	70	<0.5	<2	<100	<0.017	<1	<1	<2	170	<1	12	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
	09/12/12	7.44	<5	<1	3.7	67	<0.5	<2	<100	0.055	<1	<1	<2	170	<1	13	2000	<0.013	<4	<3	<1	<0.1	1500	<0.8	<20	<3	0.24	<2	16
	12/12/12[L]	NM	13	<1	3.5	42	<0.5	<2	<100	0.034	<1	<1	<2	110	<1	10	2300	NM	<4	<3	<1	<0.1	1400	<0.8	<20	<3	0.28	<2	7.9
	12/12/12	7.41	14	<1	3.5	42	<0.5	<2	<100	0.034	<1	<1	<2	110	<1	10	2300	<0.013	<4	<3	<1	<0.1	1500	<0.8	<20	<3	0.29	<2	8.1
	03/19/13	7.37	<5	<1	3	57	<0.5	<2	<100	0.02	<1	<1	<2	140	<1	13	2100	<0.013	<4	<3	<1	<0.1	1700	<0.8	<20	<3	0.3	<2	20
	07/18/13	7.4	5.4	<1	3.7	42.4	<1	<2	62	0.018	<1	0.44	<2	159	<0.5	12	2170	NM	<2	<2	<1	<0.1	1500	<0.1	<2	<2	0.22	<2	21.4
	11/07/13	7.38	20	<1	3.8	43	<1	<2	61	0.02	<1	0.53	<2	190	<0.5	11	2200	NM	<2	<2	<1	<0.1	1400	<0.1	<2	<2	0.27	<2	22
	12/12/14	7.35	20	<1	3.4	56	<1	<2	64	1.7	<1	0.42	<2	240	<0.5	NM	2300	<0.013	<2	<2	<1	<0.1	1500	<0.1	<2	<2	0.26	<2	20
	12/9/15	7.34	<5.0	<1.0	3	43	<1.0	<2.0	64	0.039	<1.0	0.41	<2.0	200	<0.50	NM	2400	<0.013	<2.0	<2.0	<1.0	<0.10	1400	<0.10	<2.0	<2.0	0.28	<2.0	15
COCP-110-MW (3.70 m)	03/27/13[L]	NM	<25	<5	14	60	<2.5	<10	<500	0.1	<5	<5	<10	4200	<5	39	320	NM	<20	<15	<5	<0.5	410	<4	<100	<15	0.92	<10	28
	03/27/13	7.51	<25	<5	14	61	<2.5	<10	<500	0.11	<5	<5	<10	4300	<5	39	330	<0.013	<20	<15	<5	<0.5	420	<4	<100	<15	0.92	<10	29
	07/18/13	7.34	7.8	<1	18.5	60.3	<1	<2	64	<0.017	<1	<0.4	<2	3880	<0.5	56	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
	11/06/13	7.21	14	1.8	19	81	<1	<2	82	0.011	<1	<0.4	<2	3300	<0.5	65	380	NM	5.7	<2	1.9	<0.1	660	<0.1	<2	<2	2.6	4.9	12
	12/15/14	7.23	13	2.5	13	77	<1	<2	76	0.18	<1	<0.4	<2	4400	<0.5	NM	390	0.017	6.6	<2	1.3	<0.1	610	<0.1	<2	<2	3	5.1	9.8
	12/9/15	7.29	15	1.6	17	56	<1.0	<2.0	70	0.067	<1.0	<0.40	<2.0	6600	<0.50	NM	550	<0.013	6.9	<2.0	<1.0	<0.10	490	<0.10	<2.0	<2.0	1	<2.0	55
CODT-008-MWB (3.10 m)	03/29/13	7.99	34	<1	9.7	27	<0.5	<2	<100	<0.017	<1	<1	4.7	<100	<1	3.6	6.9	0.12	<4	<3	2.8	<0.1	250	<0.8	<20	<3	1.2	9.7	<5
	07/16/13	7.75	41.3	<1	41.7	52.7	<1	<2	<50	0.028	2.2	<0.4	<2	134	<0.5	3.3	143	NM	5.9	<2	1.3	<0.1	509	<0.1	<2	<2	1.45	2.9	8
	10/23/13	7.84	45	<1	11	58	<1	<2	<50	<0.01	<1	<0.40	3.2	110	<0.50	8.2	220	NM	3.8	<2	1.6	<0.1	480	<0.1	<2	4.3	1.9	4.9	9.9
	12/15/14	9.08	510	<1	7.2	25	<1	<2	<50	0.085	1.3	<0.4	5.6	<50	<0.5	NM	<2	<0.013	5.1	<2	1.8	<0.1	840	<0.1	<2	<2	0.19	11	<5
	12/10/15	8.21	250	<1.0	21	18	<1.0	<2.0	<50	0.13	<1.0	<0.40	8.2	<50	<0.50	NM	<2.0	0.13	4.4	<2.0	2.1	<0.10	850	<0.10	<2.0	<2.0	0.18	16	<5.0
CODT-105-MW (3.52 m)	01/15/13	7.53	18	2.3	1.7	22	<0.5	<2	<100	0.058	<1	<1	8.5	<100	<1	5.2	17	<0.013	9.5	<3	26	<0.1	480	<0.8	<20	<3	2.1	4.9	46
	03/13/13	8.84	1100	1.8	17	5.7	<0.5	<2	<100	<0.017	<1	<1	11	<100	<1	2.5	<4	0.013	14	<3	37	<0.1	1700	<0.8	<20	<3	<0.15	30	<5
	07/16/13	8.24	798	1.5	3.3	8.6	<1	<2	<50	0.027	1.1	<0.4	8.7	<50	<0.5	3.7	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	7.95	670	1.6	6.2	13	<1	<2	<50	0.053	1.8	<0.4	9.5	<50	<0.5	9.7	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	7.13	20	2.2	2.1	25	<1	<2	62	0.13	<1	<0.4	4.3	<50	<0.5	NM	2.9	<0.013	5.4	<2	15	<0.1	380	<0.1	<2	<2	2.3	2.5	18
	12/10/15	8.07	430	1.7	3.1	11	<1.0	<2.0	<50	0.034	1.1	<0.40	6	<50	6.6	NM	2.6	<0.013	5.8	<2.0	21	<0.10	880	<0.10	<2.0	<2.0	0.82	6.6	11
CODT-201-MWA (5.44 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
	03/13/13	7.43	11	<1	0.73	17	<0.5	<2	<100	0.078	<1	<1	8	<100	<1	<1	14	0.017	<4	<3	1.5	<0.1	310	<0.8	<20	<3	0.43	<2	48
	07/16/13	7.39	268	<1	<1	23.5	<1	<2	52	0.052	<1	<0.4	13	<50	<0.5	<2	11.5	NM	<2	<2	2	<0.1	276	<0.1	<2	<2	0.67	<2	55.8
	10/23/13	7.53	20	<1	<1	25	<1	<2	<50	0.083	<1	<0.4	20	<50	<0.5	<2	4.0	NM	<2	<2	2.3	<0.1	210	<0.1	<2	<2	0.49	<2	58
	12/15/14	7.35	17	<1	<1	27	<1	<2	<50	0.27	<1	<0.4	2.6	<50	<0.5	NM	2.6	0.032	2.2	<2	4.3	<0.1	260	<0.1	<2	<2	0.71	<2	11
	12/9/15	7.18	14	<1.0	<1.0	23	<1.0	<2.0	<50	0.053	<1.0	<0.40	4	<50	<0.50	NM	12	<0.013	<2.0	<2.0	5.2	<0.10	350	<0.10	<2.0	<2.0	0.72	<2.0	26
CODT-201-MWC (8.455 m)	03/13/13	7.72	20	<1	4.1	340	<0.5	<2	<100	0.2	<1	<1	<2	<100	<1	9.5	780	<0.013	<4	<3	<1	<0.1	530	<0.8	<20	<3	<0.15	<2	7.5
	07/16/13	7.74	16.9	<1	4	331	<1	<2	73	<0.017	2.5	<0.4	<2	<50	<0.5	11	766	NM	<2	<2	<1	<0.1	504	<0.1	<2	<2	<0.1	<2	8.8
	10/23/13[D]	7.76	9.7	<1	3.7	340	<1	<2	77	<0.01	<1	<0.4	<2	<50	<0.5	9.7	760	NM	<2	<2	1.6	<0.1	500	<0.1	<2	<2	<0.1	<2	<5
	10/23/13	7.77	10	<1	3.3	330	<1	<2	77	<0.01	<1	<0.4	<2	<50	<0.5	9.5	760	NM	<2	<2	2.7	<0.1	500	<0.1	<2	<2	<0.1	<2	6.1
	12/15/14	7.79	13	<1	4.1	340	<1	<2	77	0.28	<1	<0.4	<2	<50	<0.5	NM	690	<0.013	<2	<2	3.2	<0.1	520	<0.1	<2	<2	<0.1	<2	6
	12/9/15	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	NM	930	<0.013	<2.0	<2.0	<1.0	<0.10	540	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
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	TURB	COND	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@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	unitless	unitless
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CODT-203-MW (5.739 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	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	-0.182	7.14
	07/16/13[D]	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	0.048	7.04
	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	0.071	7.03
	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	-0.0300	7.00
	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	-0.414	7.35
	12/8/15[D]	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	0.14	7.13
	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	0.186	7.12
CODT-205-MWA (6.446 m)	03/13/13[D]	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	0.278	7.07
	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	0.189	7.06
	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	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	0.294	7.1
	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	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	0.343	7.05
	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	0.234	7.03
	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	0.472	7.12
CODT-206-MW (5.745 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	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	-0.11	7.36
	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	-0.29	7.14
	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	-0.535	7.54
	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	-0.144	7.72
	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	0.358	7.57
CONCW-101-MWB (5.699 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	0.67	8.18
	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	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	0.745	8.19
	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	1.34	8.06
	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	1.08	8.22
	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	-0.109	7.88
CONPL-202-MWA (9.10 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	0.446	6.65
	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	0.766	6.69
COSB-002-MWA (3.00 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	-0.173	7.03
	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	-0.321	7.05
	11/6/13[DL]	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	NM
	11/6/13[D]	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	-0.718	7.08
	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	-0.696	7.09
	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	-0.524	7
	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	NC	NC
COSCW-001-MWA (5.48 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	0.257	7.39
	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	0.099	7.36
	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	0.002	7.32
	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	0.085	7.28
	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	0.261	7.29

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		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
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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 (5.739 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
	03/13/13	7.38	13	<1	20	250	<0.5	<2	<100	0.028	<1	1.7	<2	5200	<1	21	7000	<0.013	<4	<3	<1	<0.1	850	<0.8	<20	<3	0.3	<2	41
	07/16/13[D]	7.28	12.4	<1	16.9	230	<1	<2	<50	<0.017	<1	1.44	2.3	5000	<0.5	18	7650	NM	3.2	2.3	<1	<0.1	811	<0.1	<2	<2	0.91	<2	**5360**
	07/16/13	7.28	31.6	<1	17	229	<1	<2	<50	0.026	<1	1.54	2.3	5010	<0.5	17	7700	NM	3.5	<2	<1	<0.1	809	<0.1	<2	<2	0.93	<2	**5210**
	10/23/13	7.25	8.6	<1	30	150	<1	<2	52	0.013	<1	1.4	<2	10000	<0.50	15	5700	NM	3.2	<2	<1	<0.1	580	<0.1	<2	<2	0.76	<2	75
	12/12/14	7.6	15	<1	<1	58	<1	<2	57	0.34	<1	<0.4	3.3	90	<0.5	NM	130	<0.013	<2	<2	1	<0.1	260	0.19	<2	<2	0.72	<2	25
	12/8/15[D]	7.37	7.3	<1.0	2.1	85	<1.0	<2.0	59	0.088	<1.0	0.48	4	720	<0.50	NM	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	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	NM	1800	<0.013	2.7	<2.0	<1.0	<0.10	390	0.17	<2.0	<2.0	1.5	<2.0	46
CODT-205-MWA (6.446 m)	03/13/13[D]	7.32	5.6	<1	1.3	92	<0.5	<2	<100	0.044	<1	<1	<2	490	<1	12	1100	<0.013	5.4	<3	<1	<0.1	3700	<0.8	<20	<3	1.1	<2	31
	03/13/13	7.31	5.9	<1	1.3	93	<0.5	<2	<100	0.062	<1	<1	<2	460	<1	12	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
	07/16/13	7.35	10.6	<1	5	85.8	<1	<2	<50	0.025	<1	<0.4	5.3	2820	<0.5	12	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
	10/23/13	7.30	13	<1	6.8	120	<1	<2	58	0.012	<1	<0.40	<2	3200	<0.50	13	1200	NM	3.3	<2	<1	<0.1	3600	<0.1	<2	<2	1.10	<2	23
	12/15/14	7.28	29	<1	4.1	140	<1	<2	55	0.25	<1	<0.4	<2	2100	<0.5	NM	1300	<0.013	5.7	<2	<1	<0.1	3900	<0.1	<2	<2	1.2	<2	16
	12/8/15	7.37	10	<1.0	4.6	320	<1.0	<2.0	<50	0.019	<1.0	<0.40	<2.0	2200	<0.50	NM	860	<0.013	6.9	<2.0	<1.0	<0.10	3100	<0.10	<2.0	<2.0	0.79	<2.0	19
CODT-206-MW (5.745 m)	03/13/13[L]	NM	17	<1	2.4	41	<0.5	<2	<100	0.041	<1	<1	2.2	1600	<1	1.5	2900	NM	<4	<3	1.1	<0.1	250	<0.8	<20	<3	1.4	<2	36
	03/13/13	7.61	17	<1	2.4	42	<0.5	<2	<100	0.041	<1	<1	2.3	1600	<1	1.6	3000	0.015	<4	<3	1.4	<0.1	260	<0.8	<20	<3	1.4	<2	36
	07/16/13	7.39	29.8	<1	7.3	56.4	<1	<2	58	0.017	<1	0.61	8.5	5670	0.7	<2	7880	NM	<2	2.1	<1	<0.1	250	<0.1	<2	<2	0.3	<2	137
	10/23/13	7.79	71	<1.0	2.1	36	<1.0	<2.0	<50	0.17	<1.0	<0.4	19	580	0.61	<2	860	NM	<2	<2	<1	<0.1	150	<0.1	<2	2.6	1.4	2.1	71
	12/15/14	7.97	38	<1	4	33	<1	<2	<50	1.3	<1	<0.4	5.9	<50	<0.5	NM	5.0	<0.013	<2	<2	1.4	<0.1	180	<0.1	<2	<2	2.2	4.9	14
	12/8/15	7.82	12	<1.0	4	46	<1.0	<2.0	<50	1.3	<1.0	<0.40	5.3	<50	<0.50	NM	<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
CONCW-101-MWB (5.699 m)	03/15/13	8.43	43	<1	5.1	56	<0.5	<2	<100	0.041	1.1	<1	<2	<100	<1	9.4	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
	07/17/13	8.44	23.6	<1	8	38.4	<1	<2	<50	<0.017	<1	<0.4	3.2	<50	<0.5	8.4	9.8	NM	9.3	<2	<1	<0.1	438	<0.1	<2	<2	0.91	4.2	7.1
	10/24/13	8.31	38	<1.0	7.8	45	<1.0	<2.0	<50	<0.01	<1.0	<0.4	<2.0	<50	<0.5	7.8	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	8.47	82	<1	8.2	46	<1	<2	<50	0.27	<1	<0.4	<2	<50	<0.5	NM	7.7	<0.013	7.2	<2	3.1	<0.1	540	<0.1	<2	<2	0.68	2.7	<5
	12/8/15	8.13	63	<1.0	6.6	66	<1.0	<2.0	53	0.066	<1.0	<0.40	<2.0	<50	<0.50	NM	250	<0.013	6.2	<2.0	2.8	<0.10	600	<0.10	<2.0	<2.0	1.2	<2.0	<5.0
CONPL-202-MWA (9.10 m)	12/15/14	6.9	17	<1	2.2	43	<1	<2	<50	0.27	<1	0.84	<2	280	<0.5	NM	1100	<0.013	<2	<2	<1	<0.1	720	<0.1	<2	<2	2.7	<2	14
	12/9/15	6.93	12	<1.0	2.2	36	<1.0	<2.0	<50	0.012	<1.0	0.46	<2.0	270	<0.50	NM	830	<0.013	<2.0	<2.0	<1.0	<0.10	540	<0.10	<2.0	<2.0	2.1	<2.0	<5.0
COSB-002-MWA (3.00 m)	03/18/13	7.27	10	2.3	<0.6	20	<0.5	<2	<100	0.098	<1	<1	3.3	220	<1	9.3	42	<0.013	<4	3.6	<1	<0.1	370	<0.8	<20	<3	0.54	<2	110
	07/26/13	7.29	59	<1	<1	40	<1	<2	55	0.273	<1	3.51	<2	3660	<0.5	26	5980	NM	<2	30.7	<1	<0.1	533	<0.1	<2	<2	0.69	<2	466
	11/6/13[DL]	NM	1000	<1	2.2	67	<1	<2	63	0.8	<1	9.2	3.1	17000	<0.5	68	14000	NM	<2	91	<1	<0.1	690	<0.1	<2	<2	0.4	<2	**1200**
	11/6/13[D]	7.33	1000	<1	2.3	68	<1	<2	63	0.81	<1	9.6	3.3	18000	<0.5	68	14000	NM	<2	92	<1	<0.1	690	<0.1	<2	<2	0.42	<2	**1300**
	11/06/13	7.34	1100	<1	2.3	68	<1	<2	61	0.80	<1	9.2	4.0	18000	<0.5	67	14000	NM	<2	91	<1	<0.1	700	<0.1	<2	<2	0.40	<2	**1300**
	12/15/14	7.25	73	<1	<1	19	<1	<2	<50	0.66	<1	0.43	5.1	1700	0.52	NM	480	<0.013	<2	7.3	<1	<0.1	390	<0.1	<2	<2	0.22	<2	92
	12/9/15	NC	180000	<1.0	6.2	76	25	<2.0	120	**8.5**	91	**80**	**650**	32000	7.8	NM	23000	<0.013	<2.0	270	<1.0	<0.10	1200	0.39	<2.0	<2.0	11	<2.0	**3800**
COSCW-001-MWA (5.48 m)	03/19/13	7.64	7.3	<1	<0.6	41	<0.5	<2	<100	<0.017	<1	<1	5.3	280	<1	6.1	16	<0.013	<4	<3	<1	<0.1	560	<0.8	<20	<3	0.55	<2	38
	07/17/13	7.61	7.8	<1	<1	47.1	<1	<2	<50	0.104	<1	<0.4	11.2	<50	<0.5	7.3	1470	NM	<2	<2	<1	<0.1	672	<0.1	<2	<2	0.55	<2	52.5
	10/24/13	7.57	16	<1	<1	53	<1	<2	<50	0.032	<1	<0.4	2.2	<50	<0.5	7.7	620	NM	<2	<2	<1	<0.1	680	<0.1	<2	<2	0.59	<2	21
	12/16/14	7.53	13	<1	<1	48	<1	<2	<50	0.13	<1	<0.4	7.5	<50	<0.5	NM	10	<0.013	<2	<2	<1	<0.1	650	<0.1	<2	<2	0.82	<2	45
	12/8/15	7.54	7.6	<1.0	<1.0	45	<1.0	<2.0	<50	0.061	<1.0	<0.40	12	<50	<0.50	NM	87	0.11	<2.0	<2.0	<1.0	<0.10	600	<0.10	<2.0	<2.0	0.75	<2.0	44

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
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	TURB	COND	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@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	unitless	unitless
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COSCW-001-MWB (6.37 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	0.367	7.38
	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	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	0.234	7.37
	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	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	0.332	7.33
	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	0.338	7.29
	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	0.497	7.1
COSCW-002-MWA (5.93 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	0.482	6.77
	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	0.468	6.77
	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	0.393	6.81
	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	0.205	6.75
	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	0.883	6.75
COSCW-002-MWB (4.37 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	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	0.335	7.32
	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	0.246	7.25
	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	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	0.295	7.21
	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	0.497	7.19
	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	0.36	7.24
COTS-001-MWA[3] (4.11 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	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	-2.17	7.96
	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
	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
COTS-001-MWB[3] (12.198 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	1	7
MCES-001-MWA (7.36 m)	03/28/13[D]	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	NC	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	2.63	8.93
	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	NC	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	1.88	9.78
	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	NC	NC
MCES-001-MWB (19.65)	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	0.948	5.91
	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	1.09	6.1
	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	0.926	6.16
	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	21,000	346	7.51	1.38	1.14	6.03
	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	22,000	399	3.35	1.36	1.12	6.13
MCES-006-MW (5.70 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	0.285	6.97
	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	0.368	6.95
	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	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	0.415	6.95
	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	0.99	7.67
	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	1.41	7.78

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		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
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-001-MWB (6.37 m)	03/19/13	7.63	6.7	<1	1.8	120	<0.5	<2	<100	0.19	<1	<1	<2	640	<1	7.3	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
	07/17/13	7.62	16.2	<1	2.6	107	<1	<2	52	<0.017	<1	<0.4	4.9	181	<0.5	7.8	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
	10/24/13	7.58	18	<1	1.1	120	<1	<2	62	<0.01	<1	<0.4	<2	200	<0.5	8.8	350	NM	2.7	<2	<1	<0.1	1300	<0.1	<2	<2	0.76	<2	14
	12/12/14	7.54	22	<1	<1	130	<1	<2	62	0.22	<1	<0.4	<2	57	1.1	NM	66	<0.013	5.7	<2	<1	<0.1	1400	<0.1	<2	<2	1.2	<2	20
	12/8/15	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	NM	160	0.19	3.4	<2.0	<1.0	<0.10	1400	<0.10	<2.0	<2.0	2.6	<2.0	<5.0
COSCW-002-MWA (5.93 m)	03/26/13	7.02	9.5	<1	<0.6	21	<0.5	<2	<100	0.066	<1	<1	5	<100	<1	5.2	<4	<0.013	<4	<3	<1	<0.1	240	<0.8	<20	<3	3.9	<2	37
	07/17/13	7.01	7.1	<1	<1	21.7	<1	<2	<50	0.298	<1	<0.4	48.1	<50	0.68	6.7	<2	NM	<2	3.2	<1	<0.1	255	<0.1	<2	<2	3.87	<2	216
	10/24/13	7.06	16	<1	<1	24	<1	<2	51	0.36	<1	<0.4	37	<50	0.55	6.7	5.5	NM	<2	2.8	<1	<0.1	240	<0.1	<2	<2	4.6	<2	260
	12/12/14	7	17	<1	<1	22	<1	<2	<50	0.26	<1	<0.4	12	<50	<0.5	NM	5.2	<0.013	<2	<2	<1	<0.1	250	<0.1	<2	<2	4.9	<2	59
	12/8/15	6.99	7.8	<1.0	<1.0	22	<1.0	<2.0	<50	0.14	<1.0	<0.40	65	<50	1	NM	<2.0	<0.013	<2.0	2.9	<1.0	<0.10	240	<0.10	<2.0	<2.0	4.1	<2.0	210
COSCW-002-MWB (4.37 m)	03/19/13[L]	NM	6.1	<1	<0.6	26	<0.5	<2	<100	0.045	<1	<1	<2	<100	<1	2.2	130	NM	<4	<3	<1	<0.1	170	<0.8	<20	<3	2.7	<2	33
	03/19/13	7.57	6.3	<1	<0.6	26	<0.5	<2	<100	0.043	<1	<1	<2	<100	<1	2.3	130	<0.013	<4	<3	<1	<0.1	170	<0.8	<20	<3	2.6	<2	33
	07/17/13	7.49	10.2	<1	2.7	24.1	<1	<2	<50	<0.017	<1	0.44	<2	273	<0.5	3.7	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
	10/24/13	7.46	26	<1	2.3	30	<1	<2	<50	0.15	<1	<0.4	<2	320	<0.5	3.7	460	NM	5.4	<2	<1	<0.1	180	<0.1	<2	<2	2.3	<2	20
	12/12/14	7.43	11	<1	<1	34	<1	<2	<50	0.63	<1	<0.4	4.5	80	<0.5	NM	130	<0.013	7.2	<2	<1	<0.1	190	<0.1	<2	<2	3.2	<2	47
	12/8/15	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	NM	110	<0.013	5.3	<2.0	<1.0	<0.10	150	<0.10	<2.0	<2.0	1.9	<2.0	38
COTS-001-MWA[3] (4.11 m)	11/15/13[L]	NM	230	<1	<1	64	<1	<2	<50	0.59	<1	2.4	47	59	2.8	NM	3200	NM	<2	7.2	<1	<0.1	300	<0.1	<2	<2	0.24	<2	160
	11/15/13	8.21	230	<1	<1	63	<1	<2	<50	0.57	<1	2.5	47	60	2.8	3.4	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
	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
COTS-001-MWB[3] (12.198 m)	12/08/15	7	6	<1.0	<1.0	43	<1.0	<2.0	<50	0	<1.0	<0.40	<2.0	<50	<0.50	NM	22	<0.013	<2.0	<2.0	<1.0	<0.10	1,600	<0.10	<2.0	<2.0	1	<2.0	<5.0
MCES-001-MWA (7.36 m)	03/28/13[D]	NC	18	<1	0.9	150	<0.5	<2	<100	<0.017	<1	<1	4.7	100	3.9	75	<4	0.015	8.1	<3	4	<0.1	1100	<0.8	<20	<3	<0.15	26	12
	03/28/13	9.17	20	<1	<0.6	150	<0.5	<2	<100	<0.017	<1	<1	4.8	110	3.9	72	<4	0.015	8.3	<3	1.8	<0.1	1100	<0.8	<20	<3	<0.15	21	14
	07/24/13	NC	30.8	<1	<1	159	<1	<2	<50	<0.017	<1	<0.4	13.3	<50	1.87	78	3.2	NM	9.4	<2	1.6	<0.1	1180	<0.1	<2	<2	<0.1	23.3	8.7
	12/10/14	10	310	<1	<1	160	<1	<2	<50	0.085	2.6	<0.4	10	<50	0.83	NM	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	53	<1.0	<1.0	150	<1.0	<2.0	<50	<0.010	<1.0	<0.40	2.7	<50	2.9	NM	<2.0	<0.013	8.9	<2.0	1.5	<0.10	1300	<0.10	<2.0	<2.0	<0.10	20	<5.0
MCES-001-MWB (19.65)	03/28/13	6.15	<50	<10	<6	3500	<5	<20	2200	0.19	<10	<10	<20	18000	<10	240	2200	<0.013	<40	<30	32	<1	68000	<8	<200	<30	6.6	49	110
	07/25/13	6.34	<50	<10	<10	5210	<10	<20	3260	<0.17	11	<4	<20	14700	<5	260	1220	NM	<20	<20	<10	<1	51000	<1	<20	<20	5	<20	<50
	11/14/13	6.39	110	<10	<10	7000	<10	<20	3600	<0.1	<10	<4	<20	15000	<5	270	1000	NM	<20	<20	<10	<1	41000	<1	<20	<20	3.7	<20	120
	12/10/14	6.27	86	<1	8.7	7200	<1	<2	3600	0.16	1.5	0.88	<2	14000	<0.5	NM	1400	0.017	<2	<2	<1	<0.1	52000	<0.1	<2	3.3	2.5	2.3	10
	12/2/15	6.37	<50	<10	<10	7000	<10	<20	3500	<0.10	<10	<4.0	<20	11000	<5.0	NM	1300	<0.013	<20	<20	<10	<1.0	54000	<1.0	<20	<20	1.9	<20	<50
MCES-006-MW (5.70 m)	03/28/13	7.22	7.7	<1.0	13	490	<0.5	<2.0	<100	<0.017	<1.0	<1.0	<2.0	2000	<1.0	2.6	4500	<0.013	<4	<3.0	6.3	<0.1	860	<0.8	<20	<3.0	0.84	18	<5
	07/26/13	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	<2.0	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	25	<1.0	12	520	<1.0	<2.0	<50	0.037	<1.0	<0.4	<2.0	2500	<0.5	2.5	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	7.2	27	<1.0	12	520	<1.0	<2.0	<50	0.038	<1.0	<0.4	<2.0	2500	<0.5	2.3	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	7.92	210	1.5	10	130	<1	<2	<50	0.041	<1	<0.4	9.3	110	<0.5	NM	550	<0.013	4.5	<2	2.9	<0.1	730	<0.1	<2	<2	0.21	120	<5
	12/3/15	8.03	300	1.3	11	65	<1.0	<2.0	<50	<0.010	<1.0	0.47	13	<50	<0.50	NM	160	<0.013	4.8	<2.0	3.3	<0.10	580	<0.10	<2.0	<2.0	0.37	140	<5.0

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
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	TURB	COND	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@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	unitless	unitless
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MCES-204-MW (9.87 m)	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	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	1.43	7.43
	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	0.838	7.75
	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	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	1.02	7.67
	12/18/14[D]	**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	-0.742	7.78
	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	-0.01	7.77
	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	0.548	7.73
MCWS-009-MW[4] (6.63 m)	12/9/14[D]	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	0.112	6.93
	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	480	8.93	1.02	0.361	0.113	6.94
MCWS-113-MWB (3.16 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	0.076	7.08
	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	0.123	7.11
	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	0.172	7.1
	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	0.106	7.12
	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	0.294	7.11
MCWS-306-MWB (4.77 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	0.216	7.14
	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	0.281	7.08
	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	0.424	7.04
	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	0.184	7.03
	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	0.438	6.97
MCWS-307-MWB (6.68 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	0.404	7.15
	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	0.346	7.18
	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	0.309	7.16
	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	0.336	7.15
	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	0.478	7.15
MCWS-309-MW (4.18 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	-0.831	8.28
	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	-1.03	8.46
	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	-1.17	8.44
	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	-1.72	8.78
	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	-0.99	8.36
MCWS-310-MW (8.49 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	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	0.183	7.17
	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	0.258	7.17
	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	0.405	7.24
	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	-0.796	7.97
	12/10/15[D]	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	-1.67	8.61
	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	-1.63	8.62
MSES-003-MW (9.10 m)	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	0.11	6.95
	07/24/13[D]	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	-0.067	6.97
	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	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	-0.064	6.96
	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	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	-0.334	6.99
	12/10/14[D]	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	-0.135	6.94
	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	-0.157	6.93
	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	-0.069	7.03

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		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
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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
MCES-204-MW (9.87 m)	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
	03/28/13	7.67	62	<10	<6	75	<5.0	<20	1300	<0.17	<10	<10	<20	1600	<10	190	<40	0.028	<40	<30	**210**	<1.0	5400	<8	<200	<30	<1.5	52	<50
	07/24/13	7.98	<50	<10	<10	70	<10	<20	1240	<0.17	<10	<4.0	<20	<500	<5.0	190	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
	11/07/13	7.91	59	<10	<10	71	<10	<20	1200	<0.10	<10	<4.0	<20	<500	<5.0	160	<20	NM	<20	<20	36	<1.0	5100	<1.0	<20	<20	<1.0	<20	<50
	12/18/14[D]	8.02	27	<1	1.5	74	<1	<2	1100	0.43	<1	<0.4	<2	97	<0.5	NM	18	<0.013	<2	<2	39	<0.1	5000	<0.1	<2	<2	<0.1	<2	<5
	12/18/14	8.01	20	<1	1.9	74	<1	<2	1100	0.21	<1	<0.4	<2	65	<0.5	NM	19	<0.013	<2	<2	**67**	<0.1	5000	<0.1	<2	<2	<0.1	<2	<5
	12/10/15	7.97	<50	<10	<10	60	<10	<20	1200	0.43	<10	<4.0	<20	<500	<5.0	NM	<20	<0.013	<20	<20	<10	<1.0	4700	<1.0	<20	<20	<1.0	<20	<50
MCWS-009-MW[4] (6.63 m)	12/9/14[D]	7.18	8.3	<1	<1	74	<1	<2	<50	0.042	<1	<0.4	<2	<50	<0.5	NM	130	<0.013	<2	<2	<1	<0.1	320	<0.1	<2	<2	0.69	<2	<5
	12/9/14	7.19	7.8	<1	<1	73	<1	<2	<50	0.033	<1	<0.4	<2	<50	<0.5	NM	130	<0.013	<2	<2	<1	<0.1	310	<0.1	<2	<2	0.7	<2	<5
MCWS-113-MWB (3.16 m)	03/27/13	7.32	<25	<5	<3	210	<2.5	<10	<500	<0.085	<5	<5	<10	2300	<5	11	4900	0.014	<20	<15	<5	<0.5	340	<4	<100	<15	<0.75	<10	32
	07/24/13	7.36	13.2	<1	<1	218	<1	<2	253	<0.017	<1	<0.4	<2	2570	<0.5	13	4580	NM	<2	<2	<1	<0.1	357	<0.1	<2	<2	<0.1	<2	21.3
	11/15/13	7.35	16	<1	<1	210	<1	<2	330	0.041	<1	<0.4	<2	2200	<0.5	15	4600	NM	<2	<2	<1	<0.1	370	<0.1	<2	<2	<0.1	<2	41
	12/9/14	7.37	13	<1	<1	190	<1	<2	320	1.0	<1	<0.4	4.1	1800	<0.5	NM	4300	<0.013	<2	<2	<1	<0.1	340	<0.1	<2	<2	<0.1	<2	45
	12/2/15	7.36	44	<1.0	<1.0	210	<1.0	<2.0	310	<0.010	<1.0	0.61	<2.0	2200	26	NM	4300	<0.013	<2.0	<2.0	<1.0	<0.10	350	<0.10	<2.0	<2.0	<0.10	<2.0	13
MCWS-306-MWB (4.77 m)	03/27/13	7.38	12	<1	<0.6	17	<0.5	<2	110	0.38	<1	<1	<2	<100	<1	2.6	2600	0.018	5.7	<3	<1	<0.1	290	<0.8	<20	<3	1.7	<2	48
	07/24/13	7.33	8.1	<1	<1	20.2	<1	<2	97	0.108	<1	0.72	<2	<50	<0.5	4.1	2870	NM	3.5	2.2	<1	<0.1	250	<0.1	<2	<2	1.33	<2	33.9
	11/15/13	7.29	24	<1	<1	21	<1	<2	96	0.22	<1	0.95	<2	<50	<0.5	4.3	2800	NM	2.3	<2	<1	<0.1	250	<0.1	<2	<2	1.2	<2	5.3
	12/9/14	7.28	9.4	<1	<1	31	<1	<2	78	0.28	<1	0.85	<2	<50	<0.5	NM	2200	<0.013	<2	<2	<1	<0.1	260	<0.1	<2	<2	0.89	<2	5.6
	12/2/15	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	NM	2900	<0.013	<2.0	2.2	<1.0	<0.10	280	<0.10	<2.0	<2.0	1.1	<2.0	<5.0
MCWS-307-MWB (6.68 m)	03/27/13	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	6.6	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	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	7.2	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	7.41	21	<1.0	5.7	24	<1.0	<2.0	120	<0.01	<1.0	<0.4	<2.0	100	<0.5	7.4	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	7.39	20	<1	1.8	37	<1	<2	130	<0.01	<1	<0.4	<2	83	<0.5	NM	120	<0.013	<2	<2	<1	<0.1	290	<0.1	<2	<2	1.3	<2	5.2
	12/2/15	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	NM	130	<0.013	<2.0	<2.0	<1.0	<0.10	300	<0.10	<2.0	<2.0	1.3	<2.0	<5.0
MCWS-309-MW (4.18 m)	03/29/13	8.53	1800	<1.0	5.1	21	<0.5	<2.0	640	0.17	2.2	<1.0	11	2500	3	3.6	99	NM	5.4	<3.0	<1.0	<0.1	45	<0.8	<20	58	0.33	3.5	11
	07/26/13	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	<2.0	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	8.69	380	<1.0	4.7	13	<1.0	<2.0	390	0.013	<1.0	0.43	<2.0	690	0.61	<2.0	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	9.02	160	<1	2.7	6.3	<1	<2	210	0.023	<1	<0.4	<2	770	0.75	NM	520	0.013	<2	<2	<1	<0.1	14	<0.1	<2	3.3	0.13	<2	10
	12/3/15	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	NM	890	<0.013	2.0	<2.0	<1.0	<0.10	22	<0.10	<2.0	5.3	0.45	<2.0	<5.0
MCWS-310-MW (8.49 m)	03/29/13[L]	NM	<5	<1.0	<0.6	60	<0.5	<2.0	100	<0.017	<1.0	<1.0	3.3	<100	<1.0	12	<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	7.42	<5	<1.0	<0.6	63	<0.5	<2.0	110	<0.017	<1.0	<1.0	3.6	<100	<1.0	13	<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	7.42	12	<1.0	<1.0	76	<1.0	<2.0	122	0.035	<1.0	<0.4	2.8	<50	<0.5	16	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	7.49	8.1	<1.0	<1.0	63	<1.0	<2.0	100	0.061	<1.0	<0.4	14	<50	<0.5	13	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	8.22	84	<1	<1	23	<1	<2	<50	0.038	<1	<0.4	3.0	50	<0.5	NM	4.1	<0.013	<2	<2	<1	<0.1	360	<0.1	<2	2.5	0.37	<2	410
	12/10/15[D]	8.86	81	<1.0	<1.0	15	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	1100	<0.50	NM	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	8.87	78	<1.0	<1.0	15	<1.0	<2.0	<50	<0.010	<1.0	<0.40	<2.0	990	<0.50	NM	36	<0.013	<2.0	<2.0	<1.0	<0.10	100	<0.10	<2.0	2.2	<0.10	<2.0	82
MSES-003-MW (9.10 m)	03/26/13	7.19	<50	<10	49	14	<5	<20	<1000	0.65	14	<10	<20	12000	<10	<10	7900	0.015	<40	<30	<10	<1.0	1300	<8	<200	<30	<1.5	<20	78
	07/24/13[D]	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	7.1	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	7.3	<1.0	57	14.7	<1.0	<2.0	<50	0.194	<1.0	1.7	<2.0	13700	<0.5	6.6	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	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	6.6	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
	11/05/13	7.23	13	<1.0	64	18	<1.0	<2.0	53	0.036	<1.0	1.9	12	19000	<0.5	7.2	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[D]	7.18	13	<1	67	14	<1	<2	64	0.08	<1	1.8	<2	14000	<0.5	NM	8900	<0.013	<2	<2	<1	<0.1	1300	<0.1	<2	<2	0.23	<2	5.7
	12/10/14	7.18	11	<1	69	15	<1	<2	58	0.38	<1	1.7	<2	15000	<0.5	NM	9100	<0.013	<2	<2	<1	<0.1	1300	<0.1	<2	<2	0.21	<2	7.5
	12/03/15	7.27	17	<1.0	65	15	<1.0	<2.0	58	0.013	<1.0	1.8	<2.0	16000	0.76	NM	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 DECEMBER 2015
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	TURB	COND	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@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	unitless	unitless
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MSES-004-MW (12.12 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	-1.26	7.32
	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	-1.22	7.23
	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	-1.31	7.22
	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	-1.01	7.13
	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	-0.826	7.07
MSES-006-MW (11.06 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	0.107	6.55
	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	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	0.037	6.51
	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	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	-0.041	6.54
	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	0.667	6.58
	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	0.662	6.51
MSES-008-MW (7.59 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	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	0.307	6.75
	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	0.228	6.78
	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	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	0.164	6.7
	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	-0.024	6.74
	12/3/15[D]	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	0.432	6.72
	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	0.369	6.71
MSES-012-MWA (6.66 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	-0.129	6.98
	07/25/13[DL]	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	NM	NM
	07/25/13[D]	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	-0.077	6.9
	07/25/13	197000	4170	244000	24500	190	510	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	0.015	6.93
	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	-0.240	6.91
	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	-0.222	6.88
	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	0.194	6.82
MSES-104-MWA (1.78 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	0.165	7.19
	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	0.217	7.15
	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	0.574	7.26
MSES-104-MWB (5.42 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	0.058	6.6
	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	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	0.061	6.56
	11/05/13[D]	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	0.088	6.55
	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	0.000	6.56
	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	-0.13	6.56
	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	0.319	6.44
MW2 SPAR RD (2.62 m) *removed from the LTMM program in 2015*	03/19/13[D]	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	0.39	7.26
	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	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	0.329	7.33
	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	0.171	7.3
	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	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	0.413	7.11
	12/16/14[D]	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	0.391	7.19
	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	1400	7.83	320	180	1.1	820	13.1	1.14	0.631	0.384	7.2

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		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
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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 (12.12 m)	03/26/13	7.56	240	<10	<6	7.4	<5	<20	<1000	<0.17	<10	<10	<20	2500	<10	14	1300	<0.013	<40	<30	<10	<1	320	<8	<200	<30	<1.5	<20	210
	07/26/13	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	12	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	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	11	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	7.38	170	<1	1.9	7.5	<1	<2	85	0.073	<1	0.91	<2	1900	<0.5	NM	1200	<0.013	<2	2.0	<1	<0.1	290	<0.1	<2	<2	<0.1	<2	63
	12/3/15	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	NM	1500	<0.013	<2.0	3.0	<1.0	<0.10	340	<0.10	<2.0	<2.0	0.15	<2.0	97
MSES-006-MW (11.06 m)	03/26/13	6.79	<50	<10	<6	13	<5	<20	<1000	0.24	<10	<10	<20	3000	<10	17	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
	07/24/13	6.75	35.9	<1	1.5	13.9	<1	<2	309	0.083	<1	5.29	<2	1940	<0.5	16	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
	11/05/13	6.78	11	<1	1.8	13	<1	<2	300	0.027	<1	5.4	<2	2200	<0.5	15	60000	NM	<2	14	<1	<0.1	3600	<0.1	<2	<2	4.4	<2	89
	12/10/14	6.83	34	<1	1.1	23	<1	<2	100	0.11	<1	<0.4	<2	160	<0.5	NM	1900	<0.013	<2	<2	<1	<0.1	770	<0.1	<2	<2	4.3	4.4	6.2
	12/3/15	6.76	11	<1.0	<1.0	22	<1.0	<2.0	100	<0.010	<1.0	<0.40	<2.0	<50	<0.50	NM	1800	<0.013	<2.0	<2.0	13	<0.10	810	<0.10	<2.0	<2.0	4.2	4.8	<5.0
MSES-008-MW (7.59 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
	03/26/13	6.99	<50	<10	16	8.1	<5	<20	<1000	<0.17	<10	<10	<20	13000	<10	35	1400	<0.013	<40	<30	<10	<1.0	660	<8	<200	<30	<1.5	<20	69
	07/26/13	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	29	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
	11/15/13	6.95	9.3	<1.0	11	9.9	<1.0	<2.0	66	0.073	<1	<0.40	<2.0	9200	<0.50	30	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	6.98	100	<1	14	7.9	<1	<2	70	0.082	<1	<0.4	<2	15000	<0.5	NM	1200	<0.013	3.1	<2	<1	<0.1	590	<0.1	<2	<2	0.6	<2	41
	12/3/15[D]	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	NM	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	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	NM	650	<0.013	2.4	<2.0	<1.0	<0.10	490	<0.10	<2.0	<2.0	0.55	<2.0	38
MSES-012-MWA (6.66 m)	03/15/13	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	12	110	<0.013	<4	3.3	9.3	<0.1	300	<0.8	<20	<3.0	0.3	2.5	58
	07/25/13[DL]	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[D]	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	14	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	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	14	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	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	14	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	7.13	26	<1	<1	5.3	<1	<2	<50	0.37	<1	<0.4	3.7	1800	<0.5	NM	230	<0.013	<2	<2	6.2	<0.1	320	<0.1	<2	<2	0.33	<2	52
	12/3/15	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	NM	20	<0.013	<2.0	<2.0	3.5	<0.10	410	<0.10	<2.0	<2.0	0.43	<2.0	39
MSES-104-MWA (1.78 m)	03/28/13	7.44	8.9	<1	1.8	12	<0.5	<2	<100	<0.017	<1	<1	<2	1600	<1	22	400	0.28	<4	<3	3.4	<0.1	420	<0.8	<20	<3	<0.15	6.9	<5
	12/10/14	7.4	11	<1	1.8	16	<1	<2	<50	0.065	<1	<0.4	<2	890	<0.5	NM	220	<0.013	5.6	<2	<1	<0.1	540	<0.1	<2	<2	<0.1	<2	<5
	12/3/15	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	NM	190	<0.013	5.7	<2.0	<1.0	<0.10	560	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
MSES-104-MWB (5.42 m)	03/26/13	6.84	400	<10	<6	19	<5	<20	<1000	<0.17	<10	44	<20	13000	<10	15	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
	07/24/13	6.8	239	<1	4.2	17.5	<1	<2	187	0.071	<1	23.8	<2	9590	<0.5	13	75000	NM	<2	33.9	<1	<0.1	2230	<0.1	<2	<2	1.26	<2	45.2
	11/05/13[D]	6.79	110	<1	4.9	16	<1	<2	200	0.085	<1	7.1	<2	7000	<0.5	13	73000	NM	<2	25	<1	<0.1	2100	<0.1	<2	<2	1.3	<2	110
	11/05/13	6.8	150	<1	5.0	16	<1	<2	200	0.07	<1	7.3	<2	7100	<0.5	13	74000	NM	<2	30	<1	<0.1	2100	<0.1	<2	<2	1.3	<2	110
	12/10/14	6.8	550	<1	4.4	17	1.1	<2	200	0.14	<1	50	<2	11000	<0.5	NM	88000	<0.013	<2	62	<1	<0.1	2400	<0.1	<2	<2	1.2	<2	34
	12/3/15	6.68	96	<1.0	4.7	16	<1.0	<2.0	200	0.076	<1.0	8.1	<2.0	5100	<0.50	NM	68000	<0.013	<2.0	25	<1.0	<0.10	2100	<0.10	<2.0	<2.0	1.6	<2.0	<5.0
MW2 SPAR RD (2.62 m) *removed from the LTMM program in 2015*	03/19/13[D]	7.51	9.7	10	13	78	<0.5	<2	<100	0.03	<1	<1	<2	<100	<1	26	<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	<0.013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	03/19/13	7.57	7.3	9.6	11	72	<0.5	<2	<100	0.037	<1	<1	<2	<100	<1	24	<4	<0.013	<4	<3	5.8	<0.1	680	<0.8	<20	<3	3.3	3	9.8
	07/24/13	7.55	11.9	4.2	12.6	57.1	<1	<2	58	0.026	<1	<0.4	<2	<50	<0.5	36	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
	11/06/13	7.36	13	6.7	14	68	<1.0	<2.0	73	0.024	<1	<0.4	3.0	<50	<0.5	38	4.0	NM	<2	<2	1.4	<0.1	690	<0.1	<2.0	<2	4.4	<2.0	22
	12/16/14[D]	7.44	14	12	16	57	<1	<2	65	0.37	<1	<0.4	3.7	<50	<0.5	NM	9.5	<0.013	2.1	<2	1.9	<0.1	560	<0.1	<2	<2	3.3	2	20
	12/16/14	7.44	13	12	16	53	<1	<2	65	0.38	<1	<0.4	<2	<50	<0.5	NM	8.3	<0.013	2.1	<2	1.8	<0.1	560	<0.1	<2	<2	3.3	<2	18

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
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	TURB	COND	pH	HARD	BICARB ALK	CARB ALK	TDS	Anion Sum	Ion Bal_	Langelier Ind_ (@20C)	Langelier Ind_ (@4C)	Sat_ pH (@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	unitless	unitless
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOE Table 3[2]		2300000	-	-	-	-	-	2300000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCU11-001-MWA (5.21 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	0.533	7.32
	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	0.033	7.38
	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	-0.032	7.51
	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	0.044	7.23
	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	-0.227	7.62
SCU11-001-MWB (11.70 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
	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	0.665	7.69
	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	-0.033	7.62
	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	0.130	7.26
	12/15/14[D]	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	-1.69	8.34
	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	-1.55	8.32
	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	-1.73	8.52
SCU7-001-MW (5.25 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	0.142	6.66
	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	0.28	6.81
SCU7-003-MW (3.87 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	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	-0.563	7.02
	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	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	-0.32	7.07
	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	-0.359	7.11
	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	-0.622	7.13
	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	-0.303	7.07

TABLE A-3 LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015
OHP AND HE GROUNDWATER ANALYTICAL RESULTS - INORGANIC CHEMISTRY

Sample Location (Monitor Well Depth)	Sample Date	Sat_ pH (@4C)	Al	Sb	As	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	Ti	U	V	Zn
Units		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
NSE Tier 1 EQS[1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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
SCU11-001-MWA (5.21 m)	03/29/13	7.57	37	<1	0.73	240	<0.5	<2	<100	0.11	<1	<1	<2	<100	<1	37	150	0.021	<4	<3	1.6	<0.1	2700	<0.8	<20	<3	3.6	4.5	14
	07/17/13	7.63	<5	<1	<1	244	<1	<2	<50	0.019	<1	<0.4	<2	<50	<0.5	42	292	NM	3.8	<2	<1	<0.1	3250	<0.1	<2	<2	3.47	<2	<5
	10/24/13	7.75	120	<1	<1	28	<1	<2	160	0.03	<1	<0.40	<2.0	97	<0.50	54	170	NM	7.3	<2	4.6	<0.1	2300	<0.1	<2	4.8	0.60	<2	<5
	12/15/14	7.47	13	<1	<1	230	<1	<2	56	0.59	<1	<0.4	<2	<50	<0.5	NM	440	<0.013	3.7	<2	<1	<0.1	3700	<0.1	<2	<2	3.9	<2	5.3
	12/11/15	7.86	6.6	4	1.3	130	<1.0	<2.0	<50	0.022	<1.0	0.42	<2.0	<50	<0.50	NM	1900	<0.013	<2.0	<2.0	<1.0	<0.10	1000	<0.10	<2.0	<2.0	0.22	<2.0	20
SCU11-001-MWB (11.70 m)	03/29/13[L]	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
	03/29/13	7.94	8.6	<1	<0.6	22	<0.5	<2	140	<0.017	<1	<1	<2	100	<1	45	60	<0.013	28	<3	<1	<0.1	1700	<0.8	<20	<3	2.2	3.3	<5
	07/17/13	7.86	139	<1	<1	27.9	<1	<2	164	<0.017	<1	<0.4	<2	200	<0.5	51	154	NM	37.3	<2	<1	<0.1	2190	<0.1	<2	2.1	0.57	<2	9
	10/24/13	7.51	18	<1	1.6	370	<1	<2	57	<0.01	<1	<0.4	<2	<50	<0.50	47	1000	NM	4.9	<2	<1	<0.1	3500	<0.1	<2	<2	3.9	<2	<5
	12/15/14[D]	8.59	21	<1	<1	36	<1	<2	<50	0.16	<1	<0.4	<2	130	<0.5	NM	500	<0.013	<2	<2	<1	<0.1	530	<0.1	<2	<2	<0.1	<2	8.2
	12/15/14	8.57	18	<1	<1	36	<1	<2	<50	0.12	<1	<0.4	<2	130	<0.5	NM	510	<0.013	<2	<2	<1	<0.1	540	<0.1	<2	<2	<0.1	<2	7.3
	12/11/15	8.77	23	<1.0	<1.0	18	<1.0	<2.0	<50	0.011	<1.0	<0.40	<2.0	1900	<0.50	NM	160	<0.013	<2.0	<2.0	<1.0	<0.10	250	<0.10	<2.0	<2.0	<0.10	<2.0	<5.0
SCU7-001-MW (5.25 m)	12/12/14	6.91	12	<1	<1	51	<1	<2	<50	0.18	<1	<0.4	<2	<50	<0.5	NM	160	<0.013	<2	<2	<1	<0.1	6100	<0.1	<2	<2	6.6	<2	6.7
	12/10/15	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	NM	79	<0.013	<2.0	<2.0	<1.0	<0.10	5200	<0.10	<2.0	<2.0	5.2	<2.0	<5.0
SCU7-003-MW (3.87 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
	03/29/13	7.26	<5	<1.0	0.72	16	<0.5	<2.0	<100	0.26	<1.0	1.1	<2.0	<100	<1.0	3.9	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
	07/17/13	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	2.9	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	7.36	11	<1.0	<1.0	19	<1.0	<2.0	100	0.22	<1.0	0.80	4.3	360	<0.5	2.7	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	7.37	10	<1	<1	17	<1	<2	100	0.31	<1	0.69	<2	190	<0.5	NM	2400	<0.013	<2	<2	<1	<0.1	530	<0.1	<2	<2	0.28	<2	10
	12/10/15	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	NM	3300	<0.013	<2.0	<2.0	<1.0	<0.10	650	<0.10	<2.0	<2.0	0.27	<2.0	6.6

NOTES:

D - 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 - Nova Scotia Environment Environmental Quality Standards 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 2015 program in place of COTS-001-MWA, which again had insufficient water for sampling.
4 - During the 2015 groundwater monitoring program, MCWS-009-MW was found to be damaged beyond repair and was subsequently decommissioned.
Underline Exceeds NSE EQS
Bold exceeds MOE Table 3 Standards
This summary is to used in conjunction with, not as a replacement of, the Laboratory Certificates of Analysis, which contain QA/QC information.

Appendix B

QC Tables

TABLE B-1
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2015 OHP AND HE
SUMMARY OF FIELD DUPLICATES AND TRIP BLANKS

FD	Date Sampled	TB	Date Sampled	PROGRAM
FD-013 - B5O9385	12/3/2015	TB-019 - B5O9385	12/3/2015	GW
FD-014 - B5P2878	12/8/2015	TB-020 - B5P2878	12/8/2015	GW
FD-015 - B5P4159	12/9/2015	TB-021 - B5P5089	12/9/2015	GW
FD-016 - B5P5089	12/10/2015	TB-022 - B4N7361	12/10/2015	GW
		TB-023 - B5P6602	12/11/2015	GW

TABLE B-2
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2015 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																			
MSES-008-MW	FD-013	Field Duplicate	12/3/2015	2.1	2.5	0.23	0.07	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	<0.010	1.5	3.80	<0.010	0.740	<0.050	<0.20	<0.010	1.7	1.1
	FD-013	Regular	12/3/2015	2.1	2.4	0.23	0.07	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	<0.010	1.4	3.80	<0.010	0.690	<0.050	<0.20	<0.010	1.6	1
	FD-013	RPD (%)	12/3/2015	0	4	0	7	NA	NA	NA	NA	NA	2	NA	7	0	NA	7	NA	NA	NA	6	10
CODT-203-MW	FD-014	Field Duplicate	12/8/2015	3	0.094	0.46	0.600	0.460	0.340	0.170	0.210	0.200	0.59	0.063	1.6	0.960	0.17	0.22	<0.050	<0.20	0.089	1.3	1.1
	FD-014	Regular	12/8/2015	0.61	0.026	0.42	0.75	0.610	0.420	0.29	0.270	0.260	0.730	0.11	1.8	0.24	0.29	<0.050	<0.050	<0.20	0.12	1.5	1.3
	FD-014	RPD (%)	12/8/2015	**132**	NA	9	22	28	21	**52**	25	26	21	**54**	12	**120**	**52**	NA	NA	NA	30	14	17
COBP-006-MWA	FD-015	Field Duplicate	12/9/2015	8.3	0.23	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	<0.010	0.024	0.26	<0.010	0.120	<0.050	0.48	<0.010	0.029	0.027
	FD-015	Regular	12/9/2015	8.4	0.25	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.02	0.24	<0.010	0.095	<0.050	0.21	<0.010	0.02	0.024
	FD-015	RPD (%)	12/9/2015	1	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MCWS-310-MW	FD-016	Field Duplicate	12/10/2015	<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
	FD-016	Regular	12/10/2015	<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
	FD-016	RPD (%)	12/10/2015	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.

TABLE B-3
LTMM GROUNDWATER MONITORING EVENT NOVEMBER/DECEMBER 2015 OHP AND HE
RPD FOR FIELD DUPLICATES (GROUNDWATER) - 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
MSES-008-MW	FD-013	Field Duplicate	12/3/2015	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	5.2	<1.0
	FD-013	Regular	12/3/2015	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	5	<1.0
	FD-013	RPD (%)	12/3/2015	1	0	3	0	0	18	0	4	NA	NA	NA	NA	NA	NA	4	NA	7	9	5	1	0	0	NA	13	4	NA
CODT-203-MW	FD-014	Field Duplicate	12/8/2015	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	7.3	<1.0
	FD-014	Regular	12/8/2015	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	6.2	<1.0
	FD-014	RPD (%)	12/8/2015	0	0	0	0	0	0	3	0	NA	NA	NA	NA	NA	4	13	0	12	1	1	0	0	NA	0	16	NA
COBP-006-MWA	FD-015	Field Duplicate	12/9/2015	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	<5.0	<1.0
	FD-015	Regular	12/9/2015	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	6.6	<1.0
	FD-015	RPD (%)	12/9/2015	0	3	8	0	0	15	1	0	NA	NA	NA	NA	NA	0	5	5	12	1	0	3	4	NA	4	17	NA
MCWS-310-MW	FD-016	Field Duplicate	12/10/2015	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	81	<1.0
	FD-016	Regular	12/10/2015	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	110	7.23	32	49	<1.0	71	78	<1.0
	FD-016	RPD (%)	12/10/2015	2	0	0	0	-2	11	1	NA	NA	NA	NA	NA	NA	8	NA	NA	4	9	1	0	2	NA	1	30	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
MSES-008-MW	FD-013	Field Duplicate	12/3/2015	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
	FD-013	Regular	12/3/2015	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
	FD-013	RPD (%)	12/3/2015	0	3	NA	NA	6	NA	NA	NA	NA	0	NA	0	NA	4	NA	NA	NA	0	NA	NA	NA	0	NA	3
CODT-203-MW	FD-014	Field Duplicate	12/8/2015	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
	FD-014	Regular	12/8/2015	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
	FD-014	RPD (%)	12/8/2015	0	0	NA	NA	0	10	NA	2	2	0	NA	5	NA	4	NA	NA	NA	0	0	NA	NA	0	NA	0
COBP-006-MWA	FD-015	Field Duplicate	12/9/2015	<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
	FD-015	Regular	12/9/2015	<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
	FD-015	RPD (%)	12/9/2015	NA	3	NA	NA	10	29	NA	6	NA	0	NA	0	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA
MCWS-310-MW	FD-016	Field Duplicate	12/10/2015	<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
	FD-016	Regular	12/10/2015	<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
	FD-016	RPD (%)	12/10/2015	NA	0	NA	NA	NA	NA	NA	NA	NA	40	NA	8	NA	NA	NA	NA	NA	10	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.

Appendix C

Laboratory Certificates

Maxxam
A Bureau Veritas Group Company

Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/30
Report #: R3835649
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5P6602
Received: 2015/12/11, 17:00

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	2	N/A	2015/12/17	N/A	SM 22 4500-CO2 D
Alkalinity (1)	2	N/A	2015/12/18	ATL SOP 00013	EPA 310.2 R1974 m
Chloride (1)	2	N/A	2015/12/18	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	2	N/A	2015/12/17	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	2	N/A	2015/12/16	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	2	N/A	2015/12/17	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	2	2015/12/16	2015/12/17	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	2	N/A	2015/12/16	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	2	N/A	2015/12/19		Auto Calc.
Anion and Cation Sum (1)	2	N/A	2015/12/18		Auto Calc.
Nitrogen Ammonia - water (1)	2	N/A	2015/12/17	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	2	N/A	2015/12/18	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	2	N/A	2015/12/17	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	2	N/A	2015/12/19	ATL SOP 00018	ASTM D3867
PAH in Water by GC/MS (SIM) (1)	3	2015/12/17	2015/12/19	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	2	N/A	2015/12/16	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	2	N/A	2015/12/18	ATL SOP 00021	EPA 365.2 m
Sat. pH and Langelier Index (@ 20C) (1)	2	N/A	2015/12/19	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	2	N/A	2015/12/19	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	2	N/A	2015/12/17	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	2	N/A	2015/12/17	ATL SOP 00023	EPA 375.4 R1978 m
Total Dissolved Solids (TDS calc) (1)	2	N/A	2015/12/19		Auto Calc.
Turbidity (1)	2	N/A	2015/12/17	ATL SOP 00011	EPA 180.1 R2 m

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.

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

Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/30
Report #: R3835649
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5P6602
Received: 2015/12/11, 17:00

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

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Maxxam Job #: B5P6602
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BND978			BND979		
Sampling Date		2015/12/11			2015/12/11		
COC Number		538951			538951		
	UNITS	SCU11-001-MWA	RDL	QC Batch	SCU11-001-MWB	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	7.04	N/A	4311618	2.28	N/A	4311618
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	110	1.0	4311614	40	1.0	4311614
Calculated TDS	mg/L	350	1.0	4311623	130	1.0	4311623
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	4311614	<1.0	1.0	4311614
Cation Sum	me/L	5.16	N/A	4311618	2.28	N/A	4311618
Hardness (CaCO3)	mg/L	180	1.0	4311616	51	1.0	4311616
Ion Balance (% Difference)	%	15.4	N/A	4311617	0.00	N/A	4311617
Langelier Index (@ 20C)	N/A	0.0220		4311621	-1.48		4311621
Langelier Index (@ 4C)	N/A	-0.227		4311622	-1.73		4311622
Nitrate (N)	mg/L	0.11	0.050	4311619	<0.050	0.050	4311619
Saturation pH (@ 20C)	N/A	7.62		4311621	8.52		4311621
Saturation pH (@ 4C)	N/A	7.86		4311622	8.77		4311622
Inorganics							
Total Alkalinity (Total as CaCO3)	mg/L	110	10	4315935	40	5.0	4315958
Dissolved Chloride (Cl)	mg/L	170	1.0	4315936	48	1.0	4315979
Colour	TCU	6.6	5.0	4315948	30	5.0	4315998
Nitrate + Nitrite (N)	mg/L	0.12	0.050	4315952	<0.050	0.050	4316007
Nitrite (N)	mg/L	0.016	0.010	4315957	<0.010	0.010	4316009
Nitrogen (Ammonia Nitrogen)	mg/L	2.7	0.25	4316384	1.8	0.050	4316422
Orthophosphate (P)	mg/L	0.15	0.010	4315950	0.23	0.010	4316003
pH	pH	7.64	N/A	4315584	7.04	N/A	4315584
Reactive Silica (SiO2)	mg/L	6.2	0.50	4315941	1.6	0.50	4315995
Dissolved Sulphate (SO4)	mg/L	6.1	2.0	4315939	5.5	2.0	4315984
Turbidity	NTU	3.2	0.10	4317964	3.2	0.10	4317964
Conductivity	uS/cm	780	1.0	4315576	240	1.0	4315576

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5P6602
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		BND978	BND979		
Sampling Date		2015/12/11	2015/12/11		
COC Number		538951	538951		
	UNITS	SCU11-001-MWA	SCU11-001-MWB	RDL	QC Batch
Metals					
Total Mercury (Hg)	ug/L	<0.013	<0.013	0.013	4315980

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P6602
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BND978		BND979		
Sampling Date		2015/12/11		2015/12/11		
COC Number		538951		538951		
	UNITS	SCU11-001-MWA	QC Batch	SCU11-001-MWB	RDL	QC Batch
Metals						
Dissolved Aluminum (Al)	ug/L	6.6	4315259	23	5.0	4315257
Dissolved Antimony (Sb)	ug/L	4.0	4315259	<1.0	1.0	4315257
Dissolved Arsenic (As)	ug/L	1.3	4315259	<1.0	1.0	4315257
Dissolved Barium (Ba)	ug/L	130	4315259	18	1.0	4315257
Dissolved Beryllium (Be)	ug/L	<1.0	4315259	<1.0	1.0	4315257
Dissolved Bismuth (Bi)	ug/L	<2.0	4315259	<2.0	2.0	4315257
Dissolved Boron (B)	ug/L	<50	4315259	<50	50	4315257
Dissolved Cadmium (Cd)	ug/L	0.022	4315259	0.011	0.010	4315257
Dissolved Calcium (Ca)	ug/L	62000	4315259	17000	100	4315257
Dissolved Chromium (Cr)	ug/L	<1.0	4315259	<1.0	1.0	4315257
Dissolved Cobalt (Co)	ug/L	0.42	4315259	<0.40	0.40	4315257
Dissolved Copper (Cu)	ug/L	<2.0	4315259	<2.0	2.0	4315257
Dissolved Iron (Fe)	ug/L	<50	4315259	1900	50	4315257
Dissolved Lead (Pb)	ug/L	<0.50	4315259	<0.50	0.50	4315257
Dissolved Magnesium (Mg)	ug/L	6800	4315259	2000	100	4315257
Dissolved Manganese (Mn)	ug/L	1900	4315259	160	2.0	4315257
Dissolved Molybdenum (Mo)	ug/L	<2.0	4315259	<2.0	2.0	4315257
Dissolved Nickel (Ni)	ug/L	<2.0	4315259	<2.0	2.0	4315257
Dissolved Phosphorus (P)	ug/L	240	4315259	510	100	4315257
Dissolved Potassium (K)	ug/L	6100	4315259	4500	100	4315257
Dissolved Selenium (Se)	ug/L	<1.0	4315259	<1.0	1.0	4315257
Dissolved Silver (Ag)	ug/L	<0.10	4315259	<0.10	0.10	4315257
Dissolved Sodium (Na)	ug/L	27000	4315259	22000	100	4315257
Dissolved Strontium (Sr)	ug/L	1000	4315259	250	2.0	4315257
Dissolved Thallium (Tl)	ug/L	<0.10	4315259	<0.10	0.10	4315257
Dissolved Tin (Sn)	ug/L	<2.0	4315259	<2.0	2.0	4315257
Dissolved Titanium (Ti)	ug/L	<2.0	4315259	<2.0	2.0	4315257
Dissolved Uranium (U)	ug/L	0.22	4315259	<0.10	0.10	4315257
Dissolved Vanadium (V)	ug/L	<2.0	4315259	<2.0	2.0	4315257
Dissolved Zinc (Zn)	ug/L	20	4315259	<5.0	5.0	4315257

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BND978	BND979	BND990		
Sampling Date		2015/12/11	2015/12/11	2015/12/11		
COC Number		538951	538951	538951		
	UNITS	SCU11-001-MWA	SCU11-001-MWB	TB-023	RDL	QC Batch
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.050	4317426
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.050	4317426
Acenaphthene	ug/L	<0.010	0.012	<0.010	0.010	4317426
Acenaphthylene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Anthracene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Chrysene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Fluoranthene	ug/L	0.012	0.014	<0.010	0.010	4317426
Fluorene	ug/L	0.010	0.011	<0.010	0.010	4317426
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Naphthalene	ug/L	<0.20	<0.20	<0.20	0.20	4317426
Perylene	ug/L	<0.010	<0.010	<0.010	0.010	4317426
Phenanthrene	ug/L	0.016	0.015	<0.010	0.010	4317426
Pyrene	ug/L	<0.010	0.012	<0.010	0.010	4317426
Surrogate Recovery (%)						
D10-Anthracene	%	68	63	108		4317426
D14-Terphenyl	%	63	65	96		4317426
D8-Acenaphthylene	%	78	67	115		4317426

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P6602
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

GENERAL COMMENTS

Sample BND978-01 : 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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Maxxam Job #: B5P6602
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4315257	BAN	Matrix Spike	Dissolved Aluminum (Al)	2015/12/16		101	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/16		103	%	80 - 120
			Dissolved Arsenic (As)	2015/12/16		100	%	80 - 120
			Dissolved Barium (Ba)	2015/12/16		96	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/16		102	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/16		101	%	80 - 120
			Dissolved Boron (B)	2015/12/16		102	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/16		101	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/16		NC	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/16		99	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/16		97	%	80 - 120
			Dissolved Copper (Cu)	2015/12/16		99	%	80 - 120
			Dissolved Iron (Fe)	2015/12/16		103	%	80 - 120
			Dissolved Lead (Pb)	2015/12/16		98	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/16		NC	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/16		103	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/16		104	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/16		100	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/16		107	%	80 - 120
			Dissolved Potassium (K)	2015/12/16		103	%	80 - 120
			Dissolved Selenium (Se)	2015/12/16		100	%	80 - 120
			Dissolved Silver (Ag)	2015/12/16		102	%	80 - 120
			Dissolved Sodium (Na)	2015/12/16		104	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/16		NC	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/16		101	%	80 - 120
			Dissolved Tin (Sn)	2015/12/16		105	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/16		103	%	80 - 120
			Dissolved Uranium (U)	2015/12/16		107	%	80 - 120
			Dissolved Vanadium (V)	2015/12/16		101	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/16		102	%	80 - 120
4315257	BAN	Spiked Blank	Dissolved Aluminum (Al)	2015/12/16		101	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/16		100	%	80 - 120
			Dissolved Arsenic (As)	2015/12/16		97	%	80 - 120
			Dissolved Barium (Ba)	2015/12/16		97	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/16		100	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/16		102	%	80 - 120
			Dissolved Boron (B)	2015/12/16		101	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/16		99	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/16		101	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/16		98	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/16		99	%	80 - 120
			Dissolved Copper (Cu)	2015/12/16		100	%	80 - 120
			Dissolved Iron (Fe)	2015/12/16		103	%	80 - 120
			Dissolved Lead (Pb)	2015/12/16		98	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/16		105	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/16		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/16		102	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/16		101	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/16		105	%	80 - 120
			Dissolved Potassium (K)	2015/12/16		103	%	80 - 120
			Dissolved Selenium (Se)	2015/12/16		99	%	80 - 120
			Dissolved Silver (Ag)	2015/12/16		99	%	80 - 120
			Dissolved Sodium (Na)	2015/12/16		104	%	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)	2015/12/16		102	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/16		101	%	80 - 120
			Dissolved Tin (Sn)	2015/12/16		100	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/16		103	%	80 - 120
			Dissolved Uranium (U)	2015/12/16		106	%	80 - 120
			Dissolved Vanadium (V)	2015/12/16		99	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/16		102	%	80 - 120
4315257	BAN	Method Blank	Dissolved Aluminum (Al)	2015/12/16	<5.0		ug/L	
			Dissolved Antimony (Sb)	2015/12/16	<1.0		ug/L	
			Dissolved Arsenic (As)	2015/12/16	<1.0		ug/L	
			Dissolved Barium (Ba)	2015/12/16	<1.0		ug/L	
			Dissolved Beryllium (Be)	2015/12/16	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2015/12/16	<2.0		ug/L	
			Dissolved Boron (B)	2015/12/16	<50		ug/L	
			Dissolved Cadmium (Cd)	2015/12/16	<0.010		ug/L	
			Dissolved Calcium (Ca)	2015/12/16	<100		ug/L	
			Dissolved Chromium (Cr)	2015/12/16	<1.0		ug/L	
			Dissolved Cobalt (Co)	2015/12/16	<0.40		ug/L	
			Dissolved Copper (Cu)	2015/12/16	<2.0		ug/L	
			Dissolved Iron (Fe)	2015/12/16	<50		ug/L	
			Dissolved Lead (Pb)	2015/12/16	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2015/12/16	<100		ug/L	
			Dissolved Manganese (Mn)	2015/12/16	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2015/12/16	<2.0		ug/L	
			Dissolved Nickel (Ni)	2015/12/16	<2.0		ug/L	
			Dissolved Phosphorus (P)	2015/12/16	<100		ug/L	
			Dissolved Potassium (K)	2015/12/16	<100		ug/L	
			Dissolved Selenium (Se)	2015/12/16	<1.0		ug/L	
			Dissolved Silver (Ag)	2015/12/16	<0.10		ug/L	
			Dissolved Sodium (Na)	2015/12/16	<100		ug/L	
			Dissolved Strontium (Sr)	2015/12/16	<2.0		ug/L	
			Dissolved Thallium (Tl)	2015/12/16	<0.10		ug/L	
			Dissolved Tin (Sn)	2015/12/16	<2.0		ug/L	
			Dissolved Titanium (Ti)	2015/12/16	<2.0		ug/L	
			Dissolved Uranium (U)	2015/12/16	<0.10		ug/L	
			Dissolved Vanadium (V)	2015/12/16	<2.0		ug/L	
			Dissolved Zinc (Zn)	2015/12/16	<5.0		ug/L	
4315257	BAN	RPD	Dissolved Aluminum (Al)	2015/12/16	NC		%	20
			Dissolved Antimony (Sb)	2015/12/16	1.9		%	20
			Dissolved Arsenic (As)	2015/12/16	NC		%	20
			Dissolved Barium (Ba)	2015/12/16	0.66		%	20
			Dissolved Beryllium (Be)	2015/12/16	NC		%	20
			Dissolved Bismuth (Bi)	2015/12/16	NC		%	20
			Dissolved Boron (B)	2015/12/16	NC		%	20
			Dissolved Cadmium (Cd)	2015/12/16	NC		%	20
			Dissolved Calcium (Ca)	2015/12/16	0.93		%	20
			Dissolved Chromium (Cr)	2015/12/16	NC		%	20
			Dissolved Cobalt (Co)	2015/12/16	NC		%	20
			Dissolved Copper (Cu)	2015/12/16	NC		%	20
			Dissolved Iron (Fe)	2015/12/16	NC		%	20
			Dissolved Lead (Pb)	2015/12/16	NC		%	20
			Dissolved Magnesium (Mg)	2015/12/16	0.39		%	20
			Dissolved Manganese (Mn)	2015/12/16	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 Molybdenum (Mo)	2015/12/16	NC		%	20
			Dissolved Nickel (Ni)	2015/12/16	NC		%	20
			Dissolved Phosphorus (P)	2015/12/16	NC		%	20
			Dissolved Potassium (K)	2015/12/16	NC		%	20
			Dissolved Selenium (Se)	2015/12/16	NC		%	20
			Dissolved Silver (Ag)	2015/12/16	NC		%	20
			Dissolved Sodium (Na)	2015/12/16	1.0		%	20
			Dissolved Strontium (Sr)	2015/12/16	0.29		%	20
			Dissolved Thallium (Tl)	2015/12/16	NC		%	20
			Dissolved Tin (Sn)	2015/12/16	NC		%	20
			Dissolved Titanium (Ti)	2015/12/16	NC		%	20
			Dissolved Uranium (U)	2015/12/16	NC		%	20
			Dissolved Vanadium (V)	2015/12/16	NC		%	20
			Dissolved Zinc (Zn)	2015/12/16	NC		%	20
4315259	BAN	Matrix Spike [BND978-02]	Dissolved Aluminum (Al)	2015/12/16		97	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/16		87	%	80 - 120
			Dissolved Arsenic (As)	2015/12/16		99	%	80 - 120
			Dissolved Barium (Ba)	2015/12/16		NC	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/16		104	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/16		99	%	80 - 120
			Dissolved Boron (B)	2015/12/16		104	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/16		104	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/16		NC	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/16		99	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/16		98	%	80 - 120
			Dissolved Copper (Cu)	2015/12/16		95	%	80 - 120
			Dissolved Iron (Fe)	2015/12/16		99	%	80 - 120
			Dissolved Lead (Pb)	2015/12/16		99	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/16		NC	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/16		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/16		103	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/16		98	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/16		107	%	80 - 120
			Dissolved Potassium (K)	2015/12/16		NC	%	80 - 120
			Dissolved Selenium (Se)	2015/12/16		92	%	80 - 120
			Dissolved Silver (Ag)	2015/12/16		63 (1)	%	80 - 120
			Dissolved Sodium (Na)	2015/12/16		NC	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/16		NC	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/16		100	%	80 - 120
			Dissolved Tin (Sn)	2015/12/16		106	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/16		102	%	80 - 120
			Dissolved Uranium (U)	2015/12/16		102	%	80 - 120
			Dissolved Vanadium (V)	2015/12/16		102	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/16		93	%	80 - 120
4315259	BAN	Spiked Blank	Dissolved Aluminum (Al)	2015/12/16		99	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/16		101	%	80 - 120
			Dissolved Arsenic (As)	2015/12/16		99	%	80 - 120
			Dissolved Barium (Ba)	2015/12/16		101	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/16		104	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/16		102	%	80 - 120
			Dissolved Boron (B)	2015/12/16		103	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/16		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 Calcium (Ca)	2015/12/16		102	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/16		100	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/16		100	%	80 - 120
			Dissolved Copper (Cu)	2015/12/16		100	%	80 - 120
			Dissolved Iron (Fe)	2015/12/16		101	%	80 - 120
			Dissolved Lead (Pb)	2015/12/16		101	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/16		104	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/16		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/16		101	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/16		102	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/16		106	%	80 - 120
			Dissolved Potassium (K)	2015/12/16		100	%	80 - 120
			Dissolved Selenium (Se)	2015/12/16		100	%	80 - 120
			Dissolved Silver (Ag)	2015/12/16		99	%	80 - 120
			Dissolved Sodium (Na)	2015/12/16		104	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/16		99	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/16		101	%	80 - 120
			Dissolved Tin (Sn)	2015/12/16		102	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/16		102	%	80 - 120
			Dissolved Uranium (U)	2015/12/16		102	%	80 - 120
			Dissolved Vanadium (V)	2015/12/16		102	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/16		101	%	80 - 120
4315259	BAN	Method Blank	Dissolved Aluminum (Al)	2015/12/16	<5.0		ug/L	
			Dissolved Antimony (Sb)	2015/12/16	<1.0		ug/L	
			Dissolved Arsenic (As)	2015/12/16	<1.0		ug/L	
			Dissolved Barium (Ba)	2015/12/16	<1.0		ug/L	
			Dissolved Beryllium (Be)	2015/12/16	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2015/12/16	<2.0		ug/L	
			Dissolved Boron (B)	2015/12/16	<50		ug/L	
			Dissolved Cadmium (Cd)	2015/12/16	<0.010		ug/L	
			Dissolved Calcium (Ca)	2015/12/16	<100		ug/L	
			Dissolved Chromium (Cr)	2015/12/16	<1.0		ug/L	
			Dissolved Cobalt (Co)	2015/12/16	<0.40		ug/L	
			Dissolved Copper (Cu)	2015/12/16	<2.0		ug/L	
			Dissolved Iron (Fe)	2015/12/16	<50		ug/L	
			Dissolved Lead (Pb)	2015/12/16	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2015/12/16	<100		ug/L	
			Dissolved Manganese (Mn)	2015/12/16	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2015/12/16	<2.0		ug/L	
			Dissolved Nickel (Ni)	2015/12/16	<2.0		ug/L	
			Dissolved Phosphorus (P)	2015/12/16	<100		ug/L	
			Dissolved Potassium (K)	2015/12/16	<100		ug/L	
			Dissolved Selenium (Se)	2015/12/16	<1.0		ug/L	
			Dissolved Silver (Ag)	2015/12/16	<0.10		ug/L	
			Dissolved Sodium (Na)	2015/12/16	<100		ug/L	
			Dissolved Strontium (Sr)	2015/12/16	<2.0		ug/L	
			Dissolved Thallium (Tl)	2015/12/16	<0.10		ug/L	
			Dissolved Tin (Sn)	2015/12/16	<2.0		ug/L	
			Dissolved Titanium (Ti)	2015/12/16	<2.0		ug/L	
			Dissolved Uranium (U)	2015/12/16	<0.10		ug/L	
			Dissolved Vanadium (V)	2015/12/16	<2.0		ug/L	
			Dissolved Zinc (Zn)	2015/12/16	<5.0		ug/L	
4315259	BAN	RPD [BND978-02]	Dissolved Aluminum (Al)	2015/12/16	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 Antimony (Sb)	2015/12/16	NC		%	20
			Dissolved Arsenic (As)	2015/12/16	NC		%	20
			Dissolved Barium (Ba)	2015/12/16	0.52		%	20
			Dissolved Beryllium (Be)	2015/12/16	NC		%	20
			Dissolved Bismuth (Bi)	2015/12/16	NC		%	20
			Dissolved Boron (B)	2015/12/16	NC		%	20
			Dissolved Cadmium (Cd)	2015/12/16	NC		%	20
			Dissolved Calcium (Ca)	2015/12/16	0.82		%	20
			Dissolved Chromium (Cr)	2015/12/16	NC		%	20
			Dissolved Cobalt (Co)	2015/12/16	NC		%	20
			Dissolved Copper (Cu)	2015/12/16	NC		%	20
			Dissolved Iron (Fe)	2015/12/16	NC		%	20
			Dissolved Lead (Pb)	2015/12/16	NC		%	20
			Dissolved Magnesium (Mg)	2015/12/16	1.3		%	20
			Dissolved Manganese (Mn)	2015/12/16	1.2		%	20
			Dissolved Molybdenum (Mo)	2015/12/16	NC		%	20
			Dissolved Nickel (Ni)	2015/12/16	NC		%	20
			Dissolved Phosphorus (P)	2015/12/16	NC		%	20
			Dissolved Potassium (K)	2015/12/16	0.19		%	20
			Dissolved Selenium (Se)	2015/12/16	NC		%	20
			Dissolved Silver (Ag)	2015/12/16	NC		%	20
			Dissolved Sodium (Na)	2015/12/16	1.5		%	20
			Dissolved Strontium (Sr)	2015/12/16	2.3		%	20
			Dissolved Thallium (Tl)	2015/12/16	NC		%	20
			Dissolved Tin (Sn)	2015/12/16	NC		%	20
			Dissolved Titanium (Ti)	2015/12/16	NC		%	20
			Dissolved Uranium (U)	2015/12/16	NC		%	20
			Dissolved Vanadium (V)	2015/12/16	NC		%	20
			Dissolved Zinc (Zn)	2015/12/16	NC		%	20
4315576	TMO	Spiked Blank	Conductivity	2015/12/16		103	%	80 - 120
4315576	TMO	Method Blank	Conductivity	2015/12/16	1.2, RDL=1.0		uS/cm	
4315576	TMO	RPD	Conductivity	2015/12/16	0.47		%	25
4315584	TMO	QC Standard	pH	2015/12/16		100	%	97 - 103
4315584	TMO	RPD	pH	2015/12/16	0.30		%	N/A
4315935	ARS	Matrix Spike	Total Alkalinity (Total as CaCO3)	2015/12/18		NC	%	80 - 120
4315935	ARS	Spiked Blank	Total Alkalinity (Total as CaCO3)	2015/12/18		104	%	80 - 120
4315935	ARS	Method Blank	Total Alkalinity (Total as CaCO3)	2015/12/18	<5.0		mg/L	
4315935	ARS	RPD	Total Alkalinity (Total as CaCO3)	2015/12/18	NC		%	25
4315936	MCN	Matrix Spike	Dissolved Chloride (Cl)	2015/12/18		103	%	80 - 120
4315936	MCN	QC Standard	Dissolved Chloride (Cl)	2015/12/18		102	%	80 - 120
4315936	MCN	Spiked Blank	Dissolved Chloride (Cl)	2015/12/18		104	%	80 - 120
4315936	MCN	Method Blank	Dissolved Chloride (Cl)	2015/12/18	<1.0		mg/L	
4315936	MCN	RPD	Dissolved Chloride (Cl)	2015/12/18	3.9		%	25
4315939	MCN	Matrix Spike	Dissolved Sulphate (SO4)	2015/12/17		NC	%	80 - 120
4315939	MCN	Spiked Blank	Dissolved Sulphate (SO4)	2015/12/17		91	%	80 - 120
4315939	MCN	Method Blank	Dissolved Sulphate (SO4)	2015/12/17	<2.0		mg/L	
4315939	MCN	RPD	Dissolved Sulphate (SO4)	2015/12/17	0.069		%	25
4315941	ARS	Matrix Spike	Reactive Silica (SiO2)	2015/12/17		NC	%	80 - 120
4315941	ARS	Spiked Blank	Reactive Silica (SiO2)	2015/12/17		99	%	80 - 120
4315941	ARS	Method Blank	Reactive Silica (SiO2)	2015/12/17	<0.50		mg/L	
4315941	ARS	RPD	Reactive Silica (SiO2)	2015/12/17	0.22		%	25
4315948	ARS	Spiked Blank	Colour	2015/12/17		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
4315948	ARS	Method Blank	Colour	2015/12/17	<5.0		TCU	
4315948	ARS	RPD	Colour	2015/12/17	NC		%	20
4315950	ARS	Matrix Spike	Orthophosphate (P)	2015/12/18		101	%	80 - 120
4315950	ARS	Spiked Blank	Orthophosphate (P)	2015/12/18		98	%	80 - 120
4315950	ARS	Method Blank	Orthophosphate (P)	2015/12/18	<0.010		mg/L	
4315950	ARS	RPD	Orthophosphate (P)	2015/12/18	NC		%	25
4315952	ARS	Matrix Spike	Nitrate + Nitrite (N)	2015/12/18		103	%	80 - 120
4315952	ARS	Spiked Blank	Nitrate + Nitrite (N)	2015/12/18		102	%	80 - 120
4315952	ARS	Method Blank	Nitrate + Nitrite (N)	2015/12/18	<0.050		mg/L	
4315952	ARS	RPD	Nitrate + Nitrite (N)	2015/12/18	NC		%	25
4315957	ARS	Matrix Spike	Nitrite (N)	2015/12/17		97	%	80 - 120
4315957	ARS	Spiked Blank	Nitrite (N)	2015/12/17		90	%	80 - 120
4315957	ARS	Method Blank	Nitrite (N)	2015/12/17	<0.010		mg/L	
4315957	ARS	RPD	Nitrite (N)	2015/12/17	NC		%	25
4315958	ARS	Matrix Spike [BND979-01]	Total Alkalinity (Total as CaCO3)	2015/12/18		NC	%	80 - 120
4315958	ARS	Spiked Blank	Total Alkalinity (Total as CaCO3)	2015/12/18		112	%	80 - 120
4315958	ARS	Method Blank	Total Alkalinity (Total as CaCO3)	2015/12/18	<5.0		mg/L	
4315958	ARS	RPD [BND979-01]	Total Alkalinity (Total as CaCO3)	2015/12/18	2.6		%	25
4315979	MCN	Matrix Spike [BND979-01]	Dissolved Chloride (Cl)	2015/12/18		97	%	80 - 120
4315979	MCN	QC Standard	Dissolved Chloride (Cl)	2015/12/18		104	%	80 - 120
4315979	MCN	Spiked Blank	Dissolved Chloride (Cl)	2015/12/18		104	%	80 - 120
4315979	MCN	Method Blank	Dissolved Chloride (Cl)	2015/12/18	<1.0		mg/L	
4315979	MCN	RPD [BND979-01]	Dissolved Chloride (Cl)	2015/12/18	3.3		%	25
4315980	VWA	Matrix Spike [BND979-04]	Total Mercury (Hg)	2015/12/17		111	%	80 - 120
4315980	VWA	Spiked Blank	Total Mercury (Hg)	2015/12/17		111	%	80 - 120
4315980	VWA	Method Blank	Total Mercury (Hg)	2015/12/17	<0.013		ug/L	
4315980	VWA	RPD [BND978-04]	Total Mercury (Hg)	2015/12/17	NC		%	20
4315984	MCN	Matrix Spike [BND979-01]	Dissolved Sulphate (SO4)	2015/12/17		89	%	80 - 120
4315984	MCN	Spiked Blank	Dissolved Sulphate (SO4)	2015/12/17		95	%	80 - 120
4315984	MCN	Method Blank	Dissolved Sulphate (SO4)	2015/12/17	<2.0		mg/L	
4315984	MCN	RPD [BND979-01]	Dissolved Sulphate (SO4)	2015/12/17	NC		%	25
4315995	ARS	Matrix Spike [BND979-01]	Reactive Silica (SiO2)	2015/12/17		96	%	80 - 120
4315995	ARS	Spiked Blank	Reactive Silica (SiO2)	2015/12/17		97	%	80 - 120
4315995	ARS	Method Blank	Reactive Silica (SiO2)	2015/12/17	<0.50		mg/L	
4315995	ARS	RPD [BND979-01]	Reactive Silica (SiO2)	2015/12/17	NC		%	25
4315998	ARS	Spiked Blank	Colour	2015/12/17		93	%	80 - 120
4315998	ARS	Method Blank	Colour	2015/12/17	<5.0		TCU	
4315998	ARS	RPD [BND979-01]	Colour	2015/12/17	14		%	20
4316003	ARS	Matrix Spike [BND979-01]	Orthophosphate (P)	2015/12/18		NC	%	80 - 120
4316003	ARS	Spiked Blank	Orthophosphate (P)	2015/12/18		103	%	80 - 120
4316003	ARS	Method Blank	Orthophosphate (P)	2015/12/18	0.020, RDL=0.010		mg/L	
4316003	ARS	RPD [BND979-01]	Orthophosphate (P)	2015/12/18	17		%	25
4316007	ARS	Matrix Spike [BND979-01]	Nitrate + Nitrite (N)	2015/12/18		106	%	80 - 120
4316007	ARS	Spiked Blank	Nitrate + Nitrite (N)	2015/12/18		105	%	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
4316007	ARS	Method Blank	Nitrate + Nitrite (N)	2015/12/18	<0.050		mg/L	
4316007	ARS	RPD [BND979-01]	Nitrate + Nitrite (N)	2015/12/18	NC		%	25
4316009	ARS	Matrix Spike [BND979-01]	Nitrite (N)	2015/12/17		93	%	80 - 120
4316009	ARS	Spiked Blank	Nitrite (N)	2015/12/17		97	%	80 - 120
4316009	ARS	Method Blank	Nitrite (N)	2015/12/17	<0.010		mg/L	
4316009	ARS	RPD [BND979-01]	Nitrite (N)	2015/12/17	NC		%	25
4316384	ARS	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2015/12/17		103	%	80 - 120
4316384	ARS	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2015/12/17		91	%	80 - 120
4316384	ARS	Method Blank	Nitrogen (Ammonia Nitrogen)	2015/12/17	<0.050		mg/L	
4316384	ARS	RPD	Nitrogen (Ammonia Nitrogen)	2015/12/17	NC		%	20
4316422	ARS	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2015/12/17		91	%	80 - 120
4316422	ARS	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2015/12/17		93	%	80 - 120
4316422	ARS	Method Blank	Nitrogen (Ammonia Nitrogen)	2015/12/17	<0.050		mg/L	
4316422	ARS	RPD	Nitrogen (Ammonia Nitrogen)	2015/12/17	NC		%	20
4317426	GTH	Matrix Spike	D10-Anthracene	2015/12/19		75	%	30 - 130
			D14-Terphenyl	2015/12/19		75	%	30 - 130
			D8-Acenaphthylene	2015/12/19		83	%	30 - 130
			1-Methylnaphthalene	2015/12/19		67	%	30 - 130
			2-Methylnaphthalene	2015/12/19		51	%	30 - 130
			Acenaphthene	2015/12/19		73	%	30 - 130
			Acenaphthylene	2015/12/19		72	%	30 - 130
			Anthracene	2015/12/19		72	%	30 - 130
			Benzo(a)anthracene	2015/12/19		66	%	30 - 130
			Benzo(a)pyrene	2015/12/19		76	%	30 - 130
			Benzo(b)fluoranthene	2015/12/19		73	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/19		79	%	30 - 130
			Benzo(j)fluoranthene	2015/12/19		72	%	30 - 130
			Benzo(k)fluoranthene	2015/12/19		76	%	30 - 130
			Chrysene	2015/12/19		64	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/19		75	%	30 - 130
			Fluoranthene	2015/12/19		72	%	30 - 130
			Fluorene	2015/12/19		78	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/19		77	%	30 - 130
			Naphthalene	2015/12/19		46 (2)	%	30 - 130
			Perylene	2015/12/19		73	%	30 - 130
			Phenanthrene	2015/12/19		74	%	30 - 130
			Pyrene	2015/12/19		71	%	30 - 130
4317426	GTH	Spiked Blank	D10-Anthracene	2015/12/19		110	%	30 - 130
			D14-Terphenyl	2015/12/19		118	%	30 - 130
			D8-Acenaphthylene	2015/12/19		111	%	30 - 130
			1-Methylnaphthalene	2015/12/19		96	%	30 - 130
			2-Methylnaphthalene	2015/12/19		102	%	30 - 130
			Acenaphthene	2015/12/19		105	%	30 - 130
			Acenaphthylene	2015/12/19		94	%	30 - 130
			Anthracene	2015/12/19		102	%	30 - 130
			Benzo(a)anthracene	2015/12/19		106	%	30 - 130
			Benzo(a)pyrene	2015/12/19		107	%	30 - 130
			Benzo(b)fluoranthene	2015/12/19		106	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/19		114	%	30 - 130
			Benzo(j)fluoranthene	2015/12/19		102	%	30 - 130
			Benzo(k)fluoranthene	2015/12/19		108	%	30 - 130
			Chrysene	2015/12/19		110	%	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	2015/12/19		105	%	30 - 130
			Fluoranthene	2015/12/19		104	%	30 - 130
			Fluorene	2015/12/19		110	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/19		110	%	30 - 130
			Naphthalene	2015/12/19		95	%	30 - 130
			Perylene	2015/12/19		107	%	30 - 130
			Phenanthrene	2015/12/19		107	%	30 - 130
			Pyrene	2015/12/19		102	%	30 - 130
4317426	GTH	Method Blank	D10-Anthracene	2015/12/21		86	%	30 - 130
			D14-Terphenyl	2015/12/21		89	%	30 - 130
			D8-Acenaphthylene	2015/12/21		92	%	30 - 130
			1-Methylnaphthalene	2015/12/21	<0.050		ug/L	
			2-Methylnaphthalene	2015/12/21	<0.050		ug/L	
			Acenaphthene	2015/12/21	<0.010		ug/L	
			Acenaphthylene	2015/12/21	<0.010		ug/L	
			Anthracene	2015/12/21	<0.010		ug/L	
			Benzo(a)anthracene	2015/12/21	<0.010		ug/L	
			Benzo(a)pyrene	2015/12/21	<0.010		ug/L	
			Benzo(b)fluoranthene	2015/12/21	<0.010		ug/L	
			Benzo(g,h,i)perylene	2015/12/21	<0.010		ug/L	
			Benzo(j)fluoranthene	2015/12/21	<0.010		ug/L	
			Benzo(k)fluoranthene	2015/12/21	<0.010		ug/L	
			Chrysene	2015/12/21	<0.010		ug/L	
			Dibenz(a,h)anthracene	2015/12/21	<0.010		ug/L	
			Fluoranthene	2015/12/21	<0.010		ug/L	
			Fluorene	2015/12/21	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2015/12/21	<0.010		ug/L	
			Naphthalene	2015/12/21	<0.20		ug/L	
			Perylene	2015/12/21	<0.010		ug/L	
			Phenanthrene	2015/12/21	<0.010		ug/L	
			Pyrene	2015/12/21	<0.010		ug/L	
4317426	GTH	RPD	1-Methylnaphthalene	2015/12/19	33 (3)		%	40
			2-Methylnaphthalene	2015/12/19	23		%	40
			Acenaphthene	2015/12/19	2.0		%	40
			Acenaphthylene	2015/12/19	23		%	40
			Anthracene	2015/12/19	21		%	40
			Benzo(a)anthracene	2015/12/19	NC		%	40
			Benzo(a)pyrene	2015/12/19	NC		%	40
			Benzo(b)fluoranthene	2015/12/19	NC		%	40
			Benzo(g,h,i)perylene	2015/12/19	NC		%	40
			Benzo(j)fluoranthene	2015/12/19	NC		%	40
			Benzo(k)fluoranthene	2015/12/19	NC		%	40
			Chrysene	2015/12/19	NC		%	40
			Dibenz(a,h)anthracene	2015/12/19	NC		%	40
			Fluoranthene	2015/12/19	10		%	40
			Fluorene	2015/12/19	20		%	40
			Indeno(1,2,3-cd)pyrene	2015/12/19	NC		%	40
			Naphthalene	2015/12/19	58 (4)		%	40
			Perylene	2015/12/19	NC		%	40
			Phenanthrene	2015/12/19	38		%	40
			Pyrene	2015/12/19	13		%	40
4317964	TMO	QC Standard	Turbidity	2015/12/17		85	%	80 - 120
4317964	TMO	Method Blank	Turbidity	2015/12/17	<0.10		NTU	

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Maxxam Job #: B5P6602
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4317964	TMO	RPD	Turbidity	2015/12/17	5.9		%	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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Low recovery due to sample matrix. Recovery confirmed with repeat analysis.

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

(3) Elevated PAH RDL(s) due to sample dilution.

(4) Elevated PAH RDL(s) due to sample dilution. Duplicate: results are outside acceptance limit. Insufficient sample for repeat analysis.

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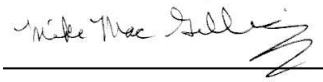
Maxxam Job #: B5P6602
Report Date: 2015/12/30

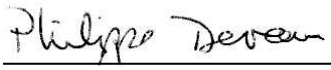
Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

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)



Phil Deveau

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

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Maxxam
A Bureau Veritas Group Company

Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/30
Report #: R3836419
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5P5089
Received: 2015/12/10, 16:45

Sample Matrix: Water
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	9	N/A	2015/12/16	N/A	SM 22 4500-CO2 D
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2015/12/17	N/A	SM 22 4500-CO2 D
Alkalinity (1)	10	N/A	2015/12/17	ATL SOP 00013	EPA 310.2 R1974 m
Chloride (1)	9	N/A	2015/12/17	ATL SOP 00014	SM 22 4500-Cl- E m
Chloride (1)	1	N/A	2015/12/18	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	9	N/A	2015/12/16	ATL SOP 00020	SM 22 2120C m
Colour (1)	1	N/A	2015/12/17	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	10	N/A	2015/12/15	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	10	N/A	2015/12/17	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	10	2015/12/16	2015/12/17	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	10	N/A	2015/12/16	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	9	N/A	2015/12/18		Auto Calc.
Ion Balance (% Difference) (1)	1	N/A	2015/12/19		Auto Calc.
Anion and Cation Sum (1)	10	N/A	2015/12/18		Auto Calc.
Nitrogen Ammonia - water (1)	10	N/A	2015/12/17	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	9	N/A	2015/12/17	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrate + Nitrite (1)	1	N/A	2015/12/18	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	9	N/A	2015/12/16	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrite (1)	1	N/A	2015/12/17	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	9	N/A	2015/12/17	ATL SOP 00018	ASTM D3867
Nitrogen - Nitrate (as N) (1)	1	N/A	2015/12/19	ATL SOP 00018	ASTM D3867
PAH in Water by GC/MS (SIM) (1)	10	2015/12/16	2015/12/18	ATL SOP 00103	EPA 8270D 2007 m
PAH in Water by GC/MS (SIM) (1)	1	2015/12/17	2015/12/19	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	9	N/A	2015/12/15	ATL SOP 00003	SM 22 4500-H+ B m
pH (1, 2)	1	N/A	2015/12/16	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	9	N/A	2015/12/17	ATL SOP 00021	EPA 365.2 m
Phosphorus - ortho (1)	1	N/A	2015/12/18	ATL SOP 00021	EPA 365.2 m
Sat. pH and Langelier Index (@ 20C) (1)	9	N/A	2015/12/18	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 20C) (1)	1	N/A	2015/12/19	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	9	N/A	2015/12/18	ATL SOP 00049	Auto Calc.

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Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/30
Report #: R3836419
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5P5089
Received: 2015/12/10, 16:45

Sample Matrix: Water
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Sat. pH and Langelier Index (@ 4C) (1)	1	N/A	2015/12/19	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	9	N/A	2015/12/16	ATL SOP 00022	EPA 366.0 m
Reactive Silica (1)	1	N/A	2015/12/17	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	9	N/A	2015/12/16	ATL SOP 00023	EPA 375.4 R1978 m
Sulphate (1)	1	N/A	2015/12/17	ATL SOP 00023	EPA 375.4 R1978 m
Total Dissolved Solids (TDS calc) (1)	9	N/A	2015/12/18		Auto Calc.
Total Dissolved Solids (TDS calc) (1)	1	N/A	2015/12/19		Auto Calc.
Turbidity (1)	9	N/A	2015/12/16	ATL SOP 00011	EPA 180.1 R2 m
Turbidity (1)	1	N/A	2015/12/17	ATL SOP 00011	EPA 180.1 R2 m

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.

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

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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BMW152		BMW153		BMW155		
Sampling Date		2015/12/10		2015/12/10		2015/12/10		
COC Number		538951		538951		538951		
	UNITS	COBC-004-MWA	RDL	MCES-204-MW	RDL	CODT-105-MW	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	3.85	N/A	235	N/A	5.09	N/A	4308882
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	100	1.0	28	1.0	60	1.0	4308879
Calculated TDS	mg/L	220	1.0	13000	1.0	350	1.0	4308887
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	<1.0	1.0	2.5	1.0	4308879
Cation Sum	me/L	3.57	N/A	221	N/A	5.79	N/A	4308882
Hardness (CaCO3)	mg/L	110	1.0	2300	1.0	200	1.0	4308880
Ion Balance (% Difference)	%	3.77	N/A	3.17	N/A	6.43	N/A	4308881
Langelier Index (@ 20C)	N/A	0.0720		0.785		0.825		4308885
Langelier Index (@ 4C)	N/A	-0.178		0.548		0.577		4308886
Nitrate (N)	mg/L	0.079	0.050	<0.050	0.050	0.55	0.050	4308883
Saturation pH (@ 20C)	N/A	7.84		7.73		7.82		4308885
Saturation pH (@ 4C)	N/A	8.09		7.97		8.07		4308886
Inorganics								
Total Alkalinity (Total as CaCO3)	mg/L	100	25	29	5.0	62	5.0	4314031
Dissolved Chloride (Cl)	mg/L	49	1.0	7700	50	32	1.0	4314037
Colour	TCU	<5.0	5.0	<5.0	5.0	<5.0	5.0	4314050
Nitrate + Nitrite (N)	mg/L	0.079	0.050	<0.050	0.050	0.74	0.050	4314059
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	0.18	0.010	4314061
Nitrogen (Ammonia Nitrogen)	mg/L	0.050	0.050	2.8	0.25	0.17	0.050	4316334
Orthophosphate (P)	mg/L	0.13	0.010	<0.010	0.010	0.013	0.010	4314051
pH	pH	7.92	N/A	8.51	N/A	8.64	N/A	4313722
Reactive Silica (SiO2)	mg/L	13	0.50	<0.50	0.50	13	0.50	4314048
Dissolved Sulphate (SO4)	mg/L	18	2.0	800	100	140	10	4314038
Turbidity	NTU	1.1	0.10	0.10	0.10	0.65	0.10	4315926
Conductivity	uS/cm	370	1.0	22000	1.0	510	1.0	4313721

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BMW156			BMW157		BMW158		
Sampling Date		2015/12/10			2015/12/10		2015/12/10		
COC Number		538951			538951		538951		
	UNITS	CODT-008-MWB	RDL	QC Batch	MCWS-310-MW	RDL	COBC-002-MWA	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	4.02	N/A	4308882	1.31	N/A	13.9	N/A	4308882
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	47	1.0	4308879	49	1.0	48	1.0	4308879
Calculated TDS	mg/L	260	1.0	4308887	71	1.0	820	1.0	4308887
Carb. Alkalinity (calc. as CaCO3)	mg/L	25	1.0	4308879	<1.0	1.0	<1.0	1.0	4308879
Cation Sum	me/L	3.84	N/A	4308882	1.11	N/A	13.7	N/A	4308882
Hardness (CaCO3)	mg/L	150	1.0	4308880	32	1.0	410	1.0	4308880
Ion Balance (% Difference)	%	2.29	N/A	4308881	8.26	N/A	0.620	N/A	4308881
Langelier Index (@ 20C)	N/A	1.79		4308885	-1.38		-1.45		4308885
Langelier Index (@ 4C)	N/A	1.54		4308886	-1.63		-1.70		4308886
Nitrate (N)	mg/L	0.24	0.050	4308883	<0.050	0.050	0.27	0.050	4308883
Saturation pH (@ 20C)	N/A	7.96		4308885	8.62		7.70		4308885
Saturation pH (@ 4C)	N/A	8.21		4308886	8.87		7.94		4308886
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	74	5.0	4314031	49	5.0	48	5.0	4314031
Dissolved Chloride (Cl)	mg/L	17	1.0	4314037	6.5	1.0	320	5.0	4314037
Colour	TCU	46	5.0	4314050	27	5.0	<5.0	5.0	4314050
Nitrate + Nitrite (N)	mg/L	0.61	0.050	4314059	<0.050	0.050	0.27	0.050	4314059
Nitrite (N)	mg/L	0.37	0.010	4314061	<0.010	0.010	<0.010	0.010	4314061
Nitrogen (Ammonia Nitrogen)	mg/L	0.37	0.050	4316334	0.16	0.050	0.056	0.050	4316334
Orthophosphate (P)	mg/L	0.030	0.010	4314051	<0.010	0.010	<0.010	0.010	4314051
pH	pH	9.75	N/A	4315587	7.23	N/A	6.25	N/A	4313722
Reactive Silica (SiO2)	mg/L	18	0.50	4314048	3.7	0.50	3.2	0.50	4314048
Dissolved Sulphate (SO4)	mg/L	97	10	4314038	6.7	2.0	180	10	4314038
Turbidity	NTU	12	0.10	4315926	8.0	0.10	4.1	0.10	4315926
Conductivity	uS/cm	400	1.0	4313721	110	1.0	1500	1.0	4313721

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BMW159		BMW160		BMW161		
Sampling Date		2015/12/10		2015/12/10		2015/12/10		
COC Number		538951		538951		538951		
	UNITS	SCU7-003-MW	RDL	SCU7-001-MW	RDL	COBC-001-MWA	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	12.7	N/A	16.4	N/A	9.69	N/A	4308882
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	190	1.0	200	1.0	200	1.0	4308879
Calculated TDS	mg/L	740	1.0	1000	1.0	570	1.0	4308887
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	<1.0	1.0	<1.0	1.0	4308879
Cation Sum	me/L	12.3	N/A	16.1	N/A	9.17	N/A	4308882
Hardness (CaCO3)	mg/L	430	1.0	760	1.0	360	1.0	4308880
Ion Balance (% Difference)	%	1.84	N/A	0.860	N/A	2.76	N/A	4308881
Langelier Index (@ 20C)	N/A	-0.0570		0.526		0.249		4308885
Langelier Index (@ 4C)	N/A	-0.303		0.280		0.00200		4308886
Nitrate (N)	mg/L	<0.050	0.050	<0.050	0.050	<0.050	0.050	4308883
Saturation pH (@ 20C)	N/A	7.07		6.81		7.08		4308885
Saturation pH (@ 4C)	N/A	7.32		7.05		7.32		4308886
Inorganics								
Total Alkalinity (Total as CaCO3)	mg/L	190	25	200	25	200	25	4314031
Dissolved Chloride (Cl)	mg/L	180	1.0	35	1.0	77	1.0	4314037
Colour	TCU	11	5.0	<5.0	5.0	6.0	5.0	4314050
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	<0.050	0.050	<0.050	0.050	4314059
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	4314061
Nitrogen (Ammonia Nitrogen)	mg/L	1.2	0.050	0.099	0.050	0.70	0.050	4316334
Orthophosphate (P)	mg/L	<0.010	0.010	0.015	0.010	<0.010	0.010	4314051
pH	pH	7.01	N/A	7.33	N/A	7.32	N/A	4313722
Reactive Silica (SiO2)	mg/L	9.3	0.50	15	0.50	10	0.50	4314048
Dissolved Sulphate (SO4)	mg/L	180	10	550	30	170	10	4314038
Turbidity	NTU	970	1.0	21	0.10	57	0.10	4315926
Conductivity	uS/cm	1200	1.0	1400	1.0	880	1.0	4313721

RDL = Reportable Detection Limit
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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BMW170		
Sampling Date		2015/12/10		
COC Number		538951		
	UNITS	FD-016	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	1.33	N/A	4308882
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	50	1.0	4308879
Calculated TDS	mg/L	72	1.0	4308887
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	4308879
Cation Sum	me/L	1.13	N/A	4308882
Hardness (CaCO3)	mg/L	32	1.0	4308880
Ion Balance (% Difference)	%	8.13	N/A	4308881
Langelier Index (@ 20C)	N/A	-1.42		4308885
Langelier Index (@ 4C)	N/A	-1.67		4308886
Nitrate (N)	mg/L	<0.050	0.050	4308883
Saturation pH (@ 20C)	N/A	8.61		4308885
Saturation pH (@ 4C)	N/A	8.86		4308886
Inorganics				
Total Alkalinity (Total as CaCO3)	mg/L	50	5.0	4315898
Dissolved Chloride (Cl)	mg/L	6.4	1.0	4315902
Colour	TCU	25	5.0	4315909
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	4315911
Nitrite (N)	mg/L	<0.010	0.010	4315914
Nitrogen (Ammonia Nitrogen)	mg/L	0.15	0.050	4316334
Orthophosphate (P)	mg/L	<0.010	0.010	4315910
pH	pH	7.19	N/A	4313722
Reactive Silica (SiO2)	mg/L	3.6	0.50	4315908
Dissolved Sulphate (SO4)	mg/L	7.5	2.0	4315907
Turbidity	NTU	8.3	0.10	4317953
Conductivity	uS/cm	120	1.0	4313721

RDL = Reportable Detection Limit
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N/A = Not Applicable

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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		BMW152	BMW153	BMW155	BMW156	BMW157		
Sampling Date		2015/12/10	2015/12/10	2015/12/10	2015/12/10	2015/12/10		
COC Number		538951	538951	538951	538951	538951		
	UNITS	COBC-004-MWA	MCES-204-MW	CODT-105-MW	CODT-008-MWB	MCWS-310-MW	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	0.13	<0.013	0.013	4315969

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BMW158	BMW159	BMW160	BMW161	BMW170		
Sampling Date		2015/12/10	2015/12/10	2015/12/10	2015/12/10	2015/12/10		
COC Number		538951	538951	538951	538951	538951		
	UNITS	COBC-002-MWA	SCU7-003-MW	SCU7-001-MW	COBC-001-MWA	FD-016	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	4315969

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BMW152		BMW153		BMW155	BMW156		
Sampling Date		2015/12/10		2015/12/10		2015/12/10	2015/12/10		
COC Number		538951		538951		538951	538951		
	UNITS	COBC-004-MWA	RDL	MCES-204-MW	RDL	CODT-105-MW	CODT-008-MWB	RDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	7.7	5.0	<50	50	430	250	5.0	4315257
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	<10	10	1.7	<1.0	1.0	4315257
Dissolved Arsenic (As)	ug/L	3.9	1.0	<10	10	3.1	21	1.0	4315257
Dissolved Barium (Ba)	ug/L	5.1	1.0	60	10	11	18	1.0	4315257
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	<10	10	<1.0	<1.0	1.0	4315257
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	<20	20	<2.0	<2.0	2.0	4315257
Dissolved Boron (B)	ug/L	<50	50	1200	500	<50	<50	50	4315257
Dissolved Cadmium (Cd)	ug/L	0.037	0.010	0.43	0.10	0.034	0.13	0.010	4315257
Dissolved Calcium (Ca)	ug/L	34000	100	530000	1000	69000	60000	100	4315257
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	<10	10	1.1	<1.0	1.0	4315257
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	<4.0	4.0	<0.40	<0.40	0.40	4315257
Dissolved Copper (Cu)	ug/L	2.6	2.0	<20	20	6.0	8.2	2.0	4315257
Dissolved Iron (Fe)	ug/L	<50	50	<500	500	<50	<50	50	4315257
Dissolved Lead (Pb)	ug/L	<0.50	0.50	<5.0	5.0	6.6	<0.50	0.50	4315257
Dissolved Magnesium (Mg)	ug/L	4800	100	250000	1000	6200	190	100	4315257
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	<20	20	2.6	<2.0	2.0	4315257
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	<20	20	5.8	4.4	2.0	4315257
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	<20	20	<2.0	<2.0	2.0	4315257
Dissolved Phosphorus (P)	ug/L	210	100	<1000	1000	<100	110	100	4315257
Dissolved Potassium (K)	ug/L	2300	100	180000	1000	9300	8500	100	4315257
Dissolved Selenium (Se)	ug/L	<1.0	1.0	<10	10	21	2.1	1.0	4315257
Dissolved Silver (Ag)	ug/L	<0.10	0.10	<1.0	1.0	<0.10	<0.10	0.10	4315257
Dissolved Sodium (Na)	ug/L	32000	100	3900000	1000	36000	13000	100	4315257
Dissolved Strontium (Sr)	ug/L	300	2.0	4700	20	880	850	2.0	4315257
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	<1.0	1.0	<0.10	<0.10	0.10	4315257
Dissolved Tin (Sn)	ug/L	<2.0	2.0	<20	20	<2.0	<2.0	2.0	4315257
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	<20	20	<2.0	<2.0	2.0	4315257
Dissolved Uranium (U)	ug/L	0.17	0.10	<1.0	1.0	0.82	0.18	0.10	4315257
Dissolved Vanadium (V)	ug/L	7.3	2.0	<20	20	6.6	16	2.0	4315257
Dissolved Zinc (Zn)	ug/L	17	5.0	<50	50	11	<5.0	5.0	4315257

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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BMW157	BMW158	BMW159		BMW160		
Sampling Date		2015/12/10	2015/12/10	2015/12/10		2015/12/10		
COC Number		538951	538951	538951		538951		
	UNITS	MCWS-310-MW	COBC-002-MWA	SCU7-003-MW	RDL	SCU7-001-MW	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	78	36	7.4	5.0	<5.0	5.0	4315257
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	1.0	<1.0	1.0	4315257
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	<1.0	1.0	<1.0	1.0	4315257
Dissolved Barium (Ba)	ug/L	15	17	19	1.0	69	1.0	4315257
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	1.0	<1.0	1.0	4315257
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	2.0	<2.0	2.0	4315257
Dissolved Boron (B)	ug/L	<50	77	110	50	<50	50	4315257
Dissolved Cadmium (Cd)	ug/L	<0.010	0.17	0.32	0.010	0.078	0.010	4315257
Dissolved Calcium (Ca)	ug/L	10000	140000	150000	100	290000	100	4315257
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	<1.0	1.0	4315257
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	0.96	0.40	<0.40	0.40	4315257
Dissolved Copper (Cu)	ug/L	<2.0	5.9	<2.0	2.0	<2.0	2.0	4315257
Dissolved Iron (Fe)	ug/L	990	57	380	50	<50	50	4315257
Dissolved Lead (Pb)	ug/L	<0.50	0.63	<0.50	0.50	<0.50	0.50	4315257
Dissolved Magnesium (Mg)	ug/L	1400	16000	15000	100	12000	100	4315257
Dissolved Manganese (Mn)	ug/L	36	62	3300	2.0	79	2.0	4315257
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	<2.0	2.0	<2.0	2.0	4315257
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	2.0	<2.0	2.0	4315257
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	100	<100	100	4315257
Dissolved Potassium (K)	ug/L	3200	2500	6500	100	2000	100	4315257
Dissolved Selenium (Se)	ug/L	<1.0	5.8	<1.0	1.0	<1.0	1.0	4315257
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	0.10	<0.10	0.10	4315257
Dissolved Sodium (Na)	ug/L	8000	120000	76000	100	18000	100	4315257
Dissolved Strontium (Sr)	ug/L	100	600	650	2.0	5200	20	4315257
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	0.10	<0.10	0.10	4315257
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	2.0	<2.0	2.0	4315257
Dissolved Titanium (Ti)	ug/L	2.2	<2.0	<2.0	2.0	<2.0	2.0	4315257
Dissolved Uranium (U)	ug/L	<0.10	<0.10	0.27	0.10	5.2	0.10	4315257
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	2.0	<2.0	2.0	4315257
Dissolved Zinc (Zn)	ug/L	82	84	6.6	5.0	<5.0	5.0	4315257

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BMW161	BMW170		
Sampling Date		2015/12/10	2015/12/10		
COC Number		538951	538951		
	UNITS	COBC-001-MWA	FD-016	RDL	QC Batch
Metals					
Dissolved Aluminum (Al)	ug/L	29	81	5.0	4315257
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	1.0	4315257
Dissolved Arsenic (As)	ug/L	2.1	<1.0	1.0	4315257
Dissolved Barium (Ba)	ug/L	58	15	1.0	4315257
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	1.0	4315257
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	2.0	4315257
Dissolved Boron (B)	ug/L	<50	<50	50	4315257
Dissolved Cadmium (Cd)	ug/L	0.095	<0.010	0.010	4315257
Dissolved Calcium (Ca)	ug/L	130000	10000	100	4315257
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	1.0	4315257
Dissolved Cobalt (Co)	ug/L	0.48	<0.40	0.40	4315257
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	2.0	4315257
Dissolved Iron (Fe)	ug/L	4400	1100	50	4315257
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	4315257
Dissolved Magnesium (Mg)	ug/L	7700	1400	100	4315257
Dissolved Manganese (Mn)	ug/L	1300	39	2.0	4315257
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	2.0	4315257
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	2.0	4315257
Dissolved Phosphorus (P)	ug/L	160	<100	100	4315257
Dissolved Potassium (K)	ug/L	2600	3200	100	4315257
Dissolved Selenium (Se)	ug/L	<1.0	<1.0	1.0	4315257
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	0.10	4315257
Dissolved Sodium (Na)	ug/L	40000	8200	100	4315257
Dissolved Strontium (Sr)	ug/L	3800	110	2.0	4315257
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	0.10	4315257
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	2.0	4315257
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	2.0	4315257
Dissolved Uranium (U)	ug/L	0.12	<0.10	0.10	4315257
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	2.0	4315257
Dissolved Zinc (Zn)	ug/L	21	79	5.0	4315257

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BMW152		BMW153		BMW155		BMW156		
Sampling Date		2015/12/10		2015/12/10		2015/12/10		2015/12/10		
COC Number		538951		538951		538951		538951		
	UNITS	COBC-004-MWA	RDL	MCES-204-MW	RDL	CODT-105-MW	RDL	CODT-008-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	ug/L	0.84	0.050	5.0	0.050	0.62	0.050	0.057	0.050	4315263
2-Methylnaphthalene	ug/L	0.63	0.050	7.8	0.050	0.23	0.050	<0.050	0.050	4315263
Acenaphthene	ug/L	0.26	0.010	1.8	0.010	0.26	0.010	0.064	0.010	4315263
Acenaphthylene	ug/L	0.017	0.010	1.8	0.010	0.044	0.010	0.047	0.010	4315263
Anthracene	ug/L	<0.010	0.010	2.6	0.010	<0.030 (1)	0.030	0.13	0.010	4315263
Benzo(a)anthracene	ug/L	<0.010	0.010	0.13	0.010	<0.010	0.010	1.1	0.010	4315263
Benzo(a)pyrene	ug/L	<0.010	0.010	0.018	0.010	<0.010	0.010	1.2	0.010	4315263
Benzo(b)fluoranthene	ug/L	<0.010	0.010	0.014	0.010	<0.010	0.010	0.84	0.010	4315263
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	0.32	0.010	4315263
Benzo(j)fluoranthene	ug/L	<0.010	0.010	0.015	0.010	<0.010	0.010	0.71	0.010	4315263
Benzo(k)fluoranthene	ug/L	<0.010	0.010	0.013	0.010	<0.010	0.010	0.63	0.010	4315263
Chrysene	ug/L	<0.010	0.010	0.12	0.010	<0.010	0.010	0.96	0.010	4315263
Dibenz(a,h)anthracene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	0.097	0.010	4315263
Fluoranthene	ug/L	<0.010	0.010	2.7	0.010	0.070	0.010	2.4	0.010	4315263
Fluorene	ug/L	0.084	0.010	4.6	0.010	0.21	0.010	0.11	0.010	4315263
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	0.31	0.010	4315263
Naphthalene	ug/L	11	0.20	49 (2)	2.0	0.97	0.20	<0.20	0.20	4315263
Perylene	ug/L	<0.010	0.010	<0.010	0.010	<0.010	0.010	0.28	0.010	4315263
Phenanthrene	ug/L	0.053	0.010	11	0.010	0.11	0.010	0.054	0.010	4315263
Pyrene	ug/L	<0.010	0.010	1.6	0.010	0.058	0.010	4.1	0.010	4315263
Surrogate Recovery (%)										
D10-Anthracene	%	95		91		87		36 (3)		4315263
D14-Terphenyl	%	102		100		100		65		4315263
D8-Acenaphthylene	%	92		91		98		35 (3)		4315263

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.
(2) Elevated PAH RDL(s) due to sample dilution.
(3) PAH surrogate(s) not within acceptance limits. Analysis was repeated with similar results.

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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BMW157	BMW158	BMW159	BMW160	BMW161		
Sampling Date		2015/12/10	2015/12/10	2015/12/10	2015/12/10	2015/12/10		
COC Number		538951	538951	538951	538951	538951		
	UNITS	MCWS-310-MW	COBC-002-MWA	SCU7-003-MW	SCU7-001-MW	COBC-001-MWA	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	<0.050	0.78	<0.050	<0.050	0.54	0.050	4315263
2-Methylnaphthalene	ug/L	<0.050	0.59	<0.050	<0.050	0.37	0.050	4315263
Acenaphthene	ug/L	<0.010	0.25	<0.010	<0.010	5.8	0.010	4315263
Acenaphthylene	ug/L	<0.010	0.013	<0.010	0.011	1.6	0.010	4315263
Anthracene	ug/L	<0.010	<0.010	<0.010	0.017	0.030	0.010	4315263
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	0.026	<0.010	0.010	4315263
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	0.025	<0.010	0.010	4315263
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.015	<0.010	0.010	4315263
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	0.017	<0.010	0.010	4315263
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.013	<0.010	0.010	4315263
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.013	<0.010	0.010	4315263
Chrysene	ug/L	<0.010	<0.010	<0.010	0.031	<0.010	0.010	4315263
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	4315263
Fluoranthene	ug/L	<0.010	<0.010	0.015	0.064	0.095	0.010	4315263
Fluorene	ug/L	<0.010	0.079	<0.010	0.012	0.24	0.010	4315263
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	0.013	<0.010	0.010	4315263
Naphthalene	ug/L	<0.20	9.7	<0.20	<0.20	5.4	0.20	4315263
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	4315263
Phenanthrene	ug/L	<0.010	0.048	0.014	0.056	0.049	0.010	4315263
Pyrene	ug/L	<0.010	<0.010	0.018	0.053	0.061	0.010	4315263
Surrogate Recovery (%)								
D10-Anthracene	%	78	90	77	102	74		4315263
D14-Terphenyl	%	84	101	86	106 (1)	77		4315263
D8-Acenaphthylene	%	82	99	86	98	74		4315263

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PAH sample contained sediment.

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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BMW170		BMW179		
Sampling Date		2015/12/10		2015/12/10		
COC Number		538951		538951		
	UNITS	FD-016	QC Batch	TB-022	RDL	QC Batch
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	ug/L	<0.050	4315263	<0.050	0.050	4317426
2-Methylnaphthalene	ug/L	<0.050	4315263	<0.050	0.050	4317426
Acenaphthene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Acenaphthylene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Anthracene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Benzo(a)anthracene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Benzo(a)pyrene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Benzo(b)fluoranthene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Benzo(g,h,i)perylene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Benzo(j)fluoranthene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Benzo(k)fluoranthene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Chrysene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Dibenz(a,h)anthracene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Fluoranthene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Fluorene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Naphthalene	ug/L	<0.20	4315263	<0.20	0.20	4317426
Perylene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Phenanthrene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Pyrene	ug/L	<0.010	4315263	<0.010	0.010	4317426
Surrogate Recovery (%)						
D10-Anthracene	%	70	4315263	113		4317426
D14-Terphenyl	%	70	4315263	95		4317426
D8-Acenaphthylene	%	72	4315263	117		4317426

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P5089
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

GENERAL COMMENTS

Sample BMW153-01 : Elevated reporting limits for trace metals due to sample matrix.

Sample BMW155-01 : Poor RCAp Ion Balance due to sample matrix.

Sample BMW157-01 : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample BMW170-01 : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

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Report Date: 2015/12/30

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4313721	TMO	Spiked Blank	Conductivity	2015/12/15		101	%	80 - 120
4313721	TMO	Method Blank	Conductivity	2015/12/15	1.1, RDL=1.0		uS/cm	
4313721	TMO	RPD [BMW155-01]	Conductivity	2015/12/15	0.39		%	25
4313722	TMO	QC Standard	pH	2015/12/15		100	%	97 - 103
4313722	TMO	RPD [BMW155-01]	pH	2015/12/15	0.25		%	N/A
4314031	ARS	Matrix Spike [BMW155-01]	Total Alkalinity (Total as CaCO3)	2015/12/17		NC	%	80 - 120
4314031	ARS	Spiked Blank	Total Alkalinity (Total as CaCO3)	2015/12/17		114	%	80 - 120
4314031	ARS	Method Blank	Total Alkalinity (Total as CaCO3)	2015/12/17	<5.0		mg/L	
4314031	ARS	RPD [BMW155-01]	Total Alkalinity (Total as CaCO3)	2015/12/17	0.051		%	25
4314037	ARS	Matrix Spike [BMW155-01]	Dissolved Chloride (Cl)	2015/12/17		NC	%	80 - 120
4314037	ARS	QC Standard	Dissolved Chloride (Cl)	2015/12/17		106	%	80 - 120
4314037	ARS	Spiked Blank	Dissolved Chloride (Cl)	2015/12/17		105	%	80 - 120
4314037	ARS	Method Blank	Dissolved Chloride (Cl)	2015/12/17	<1.0		mg/L	
4314037	ARS	RPD [BMW155-01]	Dissolved Chloride (Cl)	2015/12/17	1.5		%	25
4314038	ARS	Matrix Spike [BMW155-01]	Dissolved Sulphate (SO4)	2015/12/16		NC	%	80 - 120
4314038	ARS	Spiked Blank	Dissolved Sulphate (SO4)	2015/12/16		100	%	80 - 120
4314038	ARS	Method Blank	Dissolved Sulphate (SO4)	2015/12/16	<2.0		mg/L	
4314038	ARS	RPD [BMW155-01]	Dissolved Sulphate (SO4)	2015/12/16	1.8		%	25
4314048	ARS	Matrix Spike [BMW155-01]	Reactive Silica (SiO2)	2015/12/16		NC	%	80 - 120
4314048	ARS	Spiked Blank	Reactive Silica (SiO2)	2015/12/16		97	%	80 - 120
4314048	ARS	Method Blank	Reactive Silica (SiO2)	2015/12/16	<0.50		mg/L	
4314048	ARS	RPD [BMW155-01]	Reactive Silica (SiO2)	2015/12/16	0.0070		%	25
4314050	MCN	Spiked Blank	Colour	2015/12/16		90	%	80 - 120
4314050	MCN	Method Blank	Colour	2015/12/16	<5.0		TCU	
4314050	MCN	RPD [BMW155-01]	Colour	2015/12/16	NC		%	20
4314051	ARS	Matrix Spike [BMW155-01]	Orthophosphate (P)	2015/12/17		84	%	80 - 120
4314051	ARS	Spiked Blank	Orthophosphate (P)	2015/12/17		90	%	80 - 120
4314051	ARS	Method Blank	Orthophosphate (P)	2015/12/17	<0.010		mg/L	
4314051	ARS	RPD [BMW155-01]	Orthophosphate (P)	2015/12/17	NC		%	25
4314059	MCN	Matrix Spike [BMW155-01]	Nitrate + Nitrite (N)	2015/12/17		95	%	80 - 120
4314059	MCN	Spiked Blank	Nitrate + Nitrite (N)	2015/12/17		97	%	80 - 120
4314059	MCN	Method Blank	Nitrate + Nitrite (N)	2015/12/17	<0.050		mg/L	
4314059	MCN	RPD [BMW155-01]	Nitrate + Nitrite (N)	2015/12/17	8.7		%	25
4314061	ARS	Matrix Spike [BMW155-01]	Nitrite (N)	2015/12/16		NC	%	80 - 120
4314061	ARS	Spiked Blank	Nitrite (N)	2015/12/16		101	%	80 - 120
4314061	ARS	Method Blank	Nitrite (N)	2015/12/16	0.011, RDL=0.010		mg/L	
4314061	ARS	RPD [BMW155-01]	Nitrite (N)	2015/12/16	4.9		%	25
4315257	BAN	Matrix Spike	Dissolved Aluminum (Al)	2015/12/16		101	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/16		103	%	80 - 120
			Dissolved Arsenic (As)	2015/12/16		100	%	80 - 120
			Dissolved Barium (Ba)	2015/12/16		96	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/16		102	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/16		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 Boron (B)	2015/12/16		102	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/16		101	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/16		NC	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/16		99	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/16		97	%	80 - 120
			Dissolved Copper (Cu)	2015/12/16		99	%	80 - 120
			Dissolved Iron (Fe)	2015/12/16		103	%	80 - 120
			Dissolved Lead (Pb)	2015/12/16		98	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/16		NC	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/16		103	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/16		104	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/16		100	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/16		107	%	80 - 120
			Dissolved Potassium (K)	2015/12/16		103	%	80 - 120
			Dissolved Selenium (Se)	2015/12/16		100	%	80 - 120
			Dissolved Silver (Ag)	2015/12/16		102	%	80 - 120
			Dissolved Sodium (Na)	2015/12/16		104	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/16		NC	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/16		101	%	80 - 120
			Dissolved Tin (Sn)	2015/12/16		105	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/16		103	%	80 - 120
			Dissolved Uranium (U)	2015/12/16		107	%	80 - 120
			Dissolved Vanadium (V)	2015/12/16		101	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/16		102	%	80 - 120
4315257	BAN	Spiked Blank	Dissolved Aluminum (Al)	2015/12/16		101	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/16		100	%	80 - 120
			Dissolved Arsenic (As)	2015/12/16		97	%	80 - 120
			Dissolved Barium (Ba)	2015/12/16		97	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/16		100	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/16		102	%	80 - 120
			Dissolved Boron (B)	2015/12/16		101	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/16		99	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/16		101	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/16		98	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/16		99	%	80 - 120
			Dissolved Copper (Cu)	2015/12/16		100	%	80 - 120
			Dissolved Iron (Fe)	2015/12/16		103	%	80 - 120
			Dissolved Lead (Pb)	2015/12/16		98	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/16		105	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/16		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/16		102	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/16		101	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/16		105	%	80 - 120
			Dissolved Potassium (K)	2015/12/16		103	%	80 - 120
			Dissolved Selenium (Se)	2015/12/16		99	%	80 - 120
			Dissolved Silver (Ag)	2015/12/16		99	%	80 - 120
			Dissolved Sodium (Na)	2015/12/16		104	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/16		102	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/16		101	%	80 - 120
			Dissolved Tin (Sn)	2015/12/16		100	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/16		103	%	80 - 120
			Dissolved Uranium (U)	2015/12/16		106	%	80 - 120
			Dissolved Vanadium (V)	2015/12/16		99	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Zinc (Zn)	2015/12/16		102	%	80 - 120
4315257	BAN	Method Blank	Dissolved Aluminum (Al)	2015/12/16	<5.0		ug/L	
			Dissolved Antimony (Sb)	2015/12/16	<1.0		ug/L	
			Dissolved Arsenic (As)	2015/12/16	<1.0		ug/L	
			Dissolved Barium (Ba)	2015/12/16	<1.0		ug/L	
			Dissolved Beryllium (Be)	2015/12/16	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2015/12/16	<2.0		ug/L	
			Dissolved Boron (B)	2015/12/16	<50		ug/L	
			Dissolved Cadmium (Cd)	2015/12/16	<0.010		ug/L	
			Dissolved Calcium (Ca)	2015/12/16	<100		ug/L	
			Dissolved Chromium (Cr)	2015/12/16	<1.0		ug/L	
			Dissolved Cobalt (Co)	2015/12/16	<0.40		ug/L	
			Dissolved Copper (Cu)	2015/12/16	<2.0		ug/L	
			Dissolved Iron (Fe)	2015/12/16	<50		ug/L	
			Dissolved Lead (Pb)	2015/12/16	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2015/12/16	<100		ug/L	
			Dissolved Manganese (Mn)	2015/12/16	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2015/12/16	<2.0		ug/L	
			Dissolved Nickel (Ni)	2015/12/16	<2.0		ug/L	
			Dissolved Phosphorus (P)	2015/12/16	<100		ug/L	
			Dissolved Potassium (K)	2015/12/16	<100		ug/L	
			Dissolved Selenium (Se)	2015/12/16	<1.0		ug/L	
			Dissolved Silver (Ag)	2015/12/16	<0.10		ug/L	
			Dissolved Sodium (Na)	2015/12/16	<100		ug/L	
			Dissolved Strontium (Sr)	2015/12/16	<2.0		ug/L	
			Dissolved Thallium (Tl)	2015/12/16	<0.10		ug/L	
			Dissolved Tin (Sn)	2015/12/16	<2.0		ug/L	
			Dissolved Titanium (Ti)	2015/12/16	<2.0		ug/L	
			Dissolved Uranium (U)	2015/12/16	<0.10		ug/L	
			Dissolved Vanadium (V)	2015/12/16	<2.0		ug/L	
			Dissolved Zinc (Zn)	2015/12/16	<5.0		ug/L	
4315257	BAN	RPD	Dissolved Aluminum (Al)	2015/12/16	NC		%	20
			Dissolved Antimony (Sb)	2015/12/16	1.9		%	20
			Dissolved Arsenic (As)	2015/12/16	NC		%	20
			Dissolved Barium (Ba)	2015/12/16	0.66		%	20
			Dissolved Beryllium (Be)	2015/12/16	NC		%	20
			Dissolved Bismuth (Bi)	2015/12/16	NC		%	20
			Dissolved Boron (B)	2015/12/16	NC		%	20
			Dissolved Cadmium (Cd)	2015/12/16	NC		%	20
			Dissolved Calcium (Ca)	2015/12/16	0.93		%	20
			Dissolved Chromium (Cr)	2015/12/16	NC		%	20
			Dissolved Cobalt (Co)	2015/12/16	NC		%	20
			Dissolved Copper (Cu)	2015/12/16	NC		%	20
			Dissolved Iron (Fe)	2015/12/16	NC		%	20
			Dissolved Lead (Pb)	2015/12/16	NC		%	20
			Dissolved Magnesium (Mg)	2015/12/16	0.39		%	20
			Dissolved Manganese (Mn)	2015/12/16	NC		%	20
			Dissolved Molybdenum (Mo)	2015/12/16	NC		%	20
			Dissolved Nickel (Ni)	2015/12/16	NC		%	20
			Dissolved Phosphorus (P)	2015/12/16	NC		%	20
			Dissolved Potassium (K)	2015/12/16	NC		%	20
			Dissolved Selenium (Se)	2015/12/16	NC		%	20
			Dissolved Silver (Ag)	2015/12/16	NC		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Sodium (Na)	2015/12/16	1.0		%	20
			Dissolved Strontium (Sr)	2015/12/16	0.29		%	20
			Dissolved Thallium (Tl)	2015/12/16	NC		%	20
			Dissolved Tin (Sn)	2015/12/16	NC		%	20
			Dissolved Titanium (Ti)	2015/12/16	NC		%	20
			Dissolved Uranium (U)	2015/12/16	NC		%	20
			Dissolved Vanadium (V)	2015/12/16	NC		%	20
			Dissolved Zinc (Zn)	2015/12/16	NC		%	20
4315263	GTH	Matrix Spike [BMW153-05]	D10-Anthracene	2015/12/18		98	%	30 - 130
			D14-Terphenyl	2015/12/18		104	%	30 - 130
			D8-Acenaphthylene	2015/12/18		95	%	30 - 130
			1-Methylnaphthalene	2015/12/18		NC	%	30 - 130
			2-Methylnaphthalene	2015/12/18		NC	%	30 - 130
			Acenaphthene	2015/12/18		NC	%	30 - 130
			Acenaphthylene	2015/12/18		NC	%	30 - 130
			Anthracene	2015/12/18		NC	%	30 - 130
			Benzo(a)anthracene	2015/12/18		104	%	30 - 130
			Benzo(a)pyrene	2015/12/18		109	%	30 - 130
			Benzo(b)fluoranthene	2015/12/18		106	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/18		109	%	30 - 130
			Benzo(j)fluoranthene	2015/12/18		102	%	30 - 130
			Benzo(k)fluoranthene	2015/12/18		109	%	30 - 130
			Chrysene	2015/12/18		105	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/18		101	%	30 - 130
			Fluoranthene	2015/12/18		NC	%	30 - 130
			Fluorene	2015/12/18		NC	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/18		105	%	30 - 130
			Naphthalene	2015/12/18		NC	%	30 - 130
			Perylene	2015/12/18		106	%	30 - 130
			Phenanthrene	2015/12/18		NC	%	30 - 130
			Pyrene	2015/12/18		NC	%	30 - 130
4315263	GTH	Spiked Blank	D10-Anthracene	2015/12/18		99	%	30 - 130
			D14-Terphenyl	2015/12/18		103	%	30 - 130
			D8-Acenaphthylene	2015/12/18		95	%	30 - 130
			1-Methylnaphthalene	2015/12/18		108	%	30 - 130
			2-Methylnaphthalene	2015/12/18		113	%	30 - 130
			Acenaphthene	2015/12/18		112	%	30 - 130
			Acenaphthylene	2015/12/18		102	%	30 - 130
			Anthracene	2015/12/18		107	%	30 - 130
			Benzo(a)anthracene	2015/12/18		91	%	30 - 130
			Benzo(a)pyrene	2015/12/18		108	%	30 - 130
			Benzo(b)fluoranthene	2015/12/18		104	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/18		106	%	30 - 130
			Benzo(j)fluoranthene	2015/12/18		105	%	30 - 130
			Benzo(k)fluoranthene	2015/12/18		112	%	30 - 130
			Chrysene	2015/12/18		92	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/18		96	%	30 - 130
			Fluoranthene	2015/12/18		102	%	30 - 130
			Fluorene	2015/12/18		109	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/18		102	%	30 - 130
			Naphthalene	2015/12/18		115	%	30 - 130
			Perylene	2015/12/18		104	%	30 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Phenanthrene	2015/12/18		109	%	30 - 130
			Pyrene	2015/12/18		100	%	30 - 130
4315263	GTH	Method Blank	D10-Anthracene	2015/12/18		104	%	30 - 130
			D14-Terphenyl	2015/12/18		104	%	30 - 130
			D8-Acenaphthylene	2015/12/18		97	%	30 - 130
			1-Methylnaphthalene	2015/12/18	<0.050		ug/L	
			2-Methylnaphthalene	2015/12/18	<0.050		ug/L	
			Acenaphthene	2015/12/18	<0.010		ug/L	
			Acenaphthylene	2015/12/18	<0.010		ug/L	
			Anthracene	2015/12/18	<0.010		ug/L	
			Benzo(a)anthracene	2015/12/18	<0.010		ug/L	
			Benzo(a)pyrene	2015/12/18	<0.010		ug/L	
			Benzo(b)fluoranthene	2015/12/18	<0.010		ug/L	
			Benzo(g,h,i)perylene	2015/12/18	<0.010		ug/L	
			Benzo(j)fluoranthene	2015/12/18	<0.010		ug/L	
			Benzo(k)fluoranthene	2015/12/18	<0.010		ug/L	
			Chrysene	2015/12/18	<0.010		ug/L	
			Dibenz(a,h)anthracene	2015/12/18	<0.010		ug/L	
			Fluoranthene	2015/12/18	<0.010		ug/L	
			Fluorene	2015/12/18	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2015/12/18	<0.010		ug/L	
			Naphthalene	2015/12/18	<0.20		ug/L	
			Perylene	2015/12/18	<0.010		ug/L	
			Phenanthrene	2015/12/18	<0.010		ug/L	
			Pyrene	2015/12/18	<0.010		ug/L	
4315263	GTH	RPD [BMW152-05]	1-Methylnaphthalene	2015/12/18	11		%	40
			2-Methylnaphthalene	2015/12/18	12		%	40
			Acenaphthene	2015/12/18	11		%	40
			Acenaphthylene	2015/12/18	NC		%	40
			Anthracene	2015/12/18	NC		%	40
			Benzo(a)anthracene	2015/12/18	NC		%	40
			Benzo(a)pyrene	2015/12/18	NC		%	40
			Benzo(b)fluoranthene	2015/12/18	NC		%	40
			Benzo(g,h,i)perylene	2015/12/18	NC		%	40
			Benzo(j)fluoranthene	2015/12/18	NC		%	40
			Benzo(k)fluoranthene	2015/12/18	NC		%	40
			Chrysene	2015/12/18	NC		%	40
			Dibenz(a,h)anthracene	2015/12/18	NC		%	40
			Fluoranthene	2015/12/18	NC		%	40
			Fluorene	2015/12/18	24		%	40
			Indeno(1,2,3-cd)pyrene	2015/12/18	NC		%	40
			Naphthalene	2015/12/18	12		%	40
			Perylene	2015/12/18	NC		%	40
			Phenanthrene	2015/12/18	14		%	40
			Pyrene	2015/12/18	NC		%	40
4315587	TMO	QC Standard	pH	2015/12/16		100	%	97 - 103
4315587	TMO	RPD	pH	2015/12/16	1.8		%	N/A
4315898	ARS	Matrix Spike [BMW170-01]	Total Alkalinity (Total as CaCO3)	2015/12/17		NC	%	80 - 120
4315898	ARS	Spiked Blank	Total Alkalinity (Total as CaCO3)	2015/12/17		118	%	80 - 120
4315898	ARS	Method Blank	Total Alkalinity (Total as CaCO3)	2015/12/17	<5.0		mg/L	
4315898	ARS	RPD [BMW170-01]	Total Alkalinity (Total as CaCO3)	2015/12/17	11		%	25

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4315902	MCN	Matrix Spike [BMW170-01]	Dissolved Chloride (Cl)	2015/12/18		100	%	80 - 120
4315902	MCN	QC Standard	Dissolved Chloride (Cl)	2015/12/18		102	%	80 - 120
4315902	MCN	Spiked Blank	Dissolved Chloride (Cl)	2015/12/18		103	%	80 - 120
4315902	MCN	Method Blank	Dissolved Chloride (Cl)	2015/12/18	<1.0		mg/L	
4315902	MCN	RPD [BMW170-01]	Dissolved Chloride (Cl)	2015/12/18	4.4		%	25
4315907	MCN	Matrix Spike [BMW170-01]	Dissolved Sulphate (SO4)	2015/12/17		96	%	80 - 120
4315907	MCN	Spiked Blank	Dissolved Sulphate (SO4)	2015/12/17		100	%	80 - 120
4315907	MCN	Method Blank	Dissolved Sulphate (SO4)	2015/12/17	<2.0		mg/L	
4315907	MCN	RPD [BMW170-01]	Dissolved Sulphate (SO4)	2015/12/17	NC		%	25
4315908	ARS	Matrix Spike [BMW170-01]	Reactive Silica (SiO2)	2015/12/17		95	%	80 - 120
4315908	ARS	Spiked Blank	Reactive Silica (SiO2)	2015/12/17		97	%	80 - 120
4315908	ARS	Method Blank	Reactive Silica (SiO2)	2015/12/17	<0.50		mg/L	
4315908	ARS	RPD [BMW170-01]	Reactive Silica (SiO2)	2015/12/17	0.31		%	25
4315909	ARS	Spiked Blank	Colour	2015/12/17		102	%	80 - 120
4315909	ARS	Method Blank	Colour	2015/12/17	<5.0		TCU	
4315909	ARS	RPD [BMW170-01]	Colour	2015/12/17	NC		%	20
4315910	ARS	Matrix Spike [BMW170-01]	Orthophosphate (P)	2015/12/18		100	%	80 - 120
4315910	ARS	Spiked Blank	Orthophosphate (P)	2015/12/18		105	%	80 - 120
4315910	ARS	Method Blank	Orthophosphate (P)	2015/12/18	<0.010		mg/L	
4315910	ARS	RPD [BMW170-01]	Orthophosphate (P)	2015/12/18	NC		%	25
4315911	ARS	Matrix Spike [BMW170-01]	Nitrate + Nitrite (N)	2015/12/18		111	%	80 - 120
4315911	ARS	Spiked Blank	Nitrate + Nitrite (N)	2015/12/18		108	%	80 - 120
4315911	ARS	Method Blank	Nitrate + Nitrite (N)	2015/12/18	<0.050		mg/L	
4315911	ARS	RPD [BMW170-01]	Nitrate + Nitrite (N)	2015/12/18	NC		%	25
4315914	ARS	Matrix Spike [BMW170-01]	Nitrite (N)	2015/12/17		98	%	80 - 120
4315914	ARS	Spiked Blank	Nitrite (N)	2015/12/17		103	%	80 - 120
4315914	ARS	Method Blank	Nitrite (N)	2015/12/17	<0.010		mg/L	
4315914	ARS	RPD [BMW170-01]	Nitrite (N)	2015/12/17	NC		%	25
4315926	TMO	QC Standard	Turbidity	2015/12/16		89	%	80 - 120
4315926	TMO	Method Blank	Turbidity	2015/12/16	<0.10		NTU	
4315926	TMO	RPD [BMW158-01]	Turbidity	2015/12/16	7.6		%	20
4315969	VWA	Matrix Spike [BMW153-04]	Total Mercury (Hg)	2015/12/17		109	%	80 - 120
4315969	VWA	Spiked Blank	Total Mercury (Hg)	2015/12/17		102	%	80 - 120
4315969	VWA	Method Blank	Total Mercury (Hg)	2015/12/17	<0.013		ug/L	
4315969	VWA	RPD [BMW152-04]	Total Mercury (Hg)	2015/12/17	NC		%	20
4316334	ARS	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2015/12/17		NC	%	80 - 120
4316334	ARS	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2015/12/17		93	%	80 - 120
4316334	ARS	Method Blank	Nitrogen (Ammonia Nitrogen)	2015/12/17	<0.050		mg/L	
4316334	ARS	RPD	Nitrogen (Ammonia Nitrogen)	2015/12/17	2.5		%	20
4317426	GTH	Matrix Spike	D10-Anthracene	2015/12/19		75	%	30 - 130
			D14-Terphenyl	2015/12/19		75	%	30 - 130
			D8-Acenaphthylene	2015/12/19		83	%	30 - 130
			1-Methylnaphthalene	2015/12/19		67	%	30 - 130
			2-Methylnaphthalene	2015/12/19		51	%	30 - 130
			Acenaphthene	2015/12/19		73	%	30 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acenaphthylene	2015/12/19		72	%	30 - 130
			Anthracene	2015/12/19		72	%	30 - 130
			Benzo(a)anthracene	2015/12/19		66	%	30 - 130
			Benzo(a)pyrene	2015/12/19		76	%	30 - 130
			Benzo(b)fluoranthene	2015/12/19		73	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/19		79	%	30 - 130
			Benzo(j)fluoranthene	2015/12/19		72	%	30 - 130
			Benzo(k)fluoranthene	2015/12/19		76	%	30 - 130
			Chrysene	2015/12/19		64	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/19		75	%	30 - 130
			Fluoranthene	2015/12/19		72	%	30 - 130
			Fluorene	2015/12/19		78	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/19		77	%	30 - 130
			Naphthalene	2015/12/19		46 (1)	%	30 - 130
			Perylene	2015/12/19		73	%	30 - 130
			Phenanthrene	2015/12/19		74	%	30 - 130
			Pyrene	2015/12/19		71	%	30 - 130
4317426	GTH	Spiked Blank	D10-Anthracene	2015/12/19		110	%	30 - 130
			D14-Terphenyl	2015/12/19		118	%	30 - 130
			D8-Acenaphthylene	2015/12/19		111	%	30 - 130
			1-Methylnaphthalene	2015/12/19		96	%	30 - 130
			2-Methylnaphthalene	2015/12/19		102	%	30 - 130
			Acenaphthene	2015/12/19		105	%	30 - 130
			Acenaphthylene	2015/12/19		94	%	30 - 130
			Anthracene	2015/12/19		102	%	30 - 130
			Benzo(a)anthracene	2015/12/19		106	%	30 - 130
			Benzo(a)pyrene	2015/12/19		107	%	30 - 130
			Benzo(b)fluoranthene	2015/12/19		106	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/19		114	%	30 - 130
			Benzo(j)fluoranthene	2015/12/19		102	%	30 - 130
			Benzo(k)fluoranthene	2015/12/19		108	%	30 - 130
			Chrysene	2015/12/19		110	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/19		105	%	30 - 130
			Fluoranthene	2015/12/19		104	%	30 - 130
			Fluorene	2015/12/19		110	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/19		110	%	30 - 130
			Naphthalene	2015/12/19		95	%	30 - 130
			Perylene	2015/12/19		107	%	30 - 130
			Phenanthrene	2015/12/19		107	%	30 - 130
			Pyrene	2015/12/19		102	%	30 - 130
4317426	GTH	Method Blank	D10-Anthracene	2015/12/21		86	%	30 - 130
			D14-Terphenyl	2015/12/21		89	%	30 - 130
			D8-Acenaphthylene	2015/12/21		92	%	30 - 130
			1-Methylnaphthalene	2015/12/21	<0.050		ug/L	
			2-Methylnaphthalene	2015/12/21	<0.050		ug/L	
			Acenaphthene	2015/12/21	<0.010		ug/L	
			Acenaphthylene	2015/12/21	<0.010		ug/L	
			Anthracene	2015/12/21	<0.010		ug/L	
			Benzo(a)anthracene	2015/12/21	<0.010		ug/L	
			Benzo(a)pyrene	2015/12/21	<0.010		ug/L	
			Benzo(b)fluoranthene	2015/12/21	<0.010		ug/L	
			Benzo(g,h,i)perylene	2015/12/21	<0.010		ug/L	
			Benzo(j)fluoranthene	2015/12/21	<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
			Benzo(k)fluoranthene	2015/12/21	<0.010		ug/L	
			Chrysene	2015/12/21	<0.010		ug/L	
			Dibenz(a,h)anthracene	2015/12/21	<0.010		ug/L	
			Fluoranthene	2015/12/21	<0.010		ug/L	
			Fluorene	2015/12/21	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2015/12/21	<0.010		ug/L	
			Naphthalene	2015/12/21	<0.20		ug/L	
			Perylene	2015/12/21	<0.010		ug/L	
			Phenanthrene	2015/12/21	<0.010		ug/L	
			Pyrene	2015/12/21	<0.010		ug/L	
4317426	GTH	RPD	1-Methylnaphthalene	2015/12/19	33 (2)		%	40
			2-Methylnaphthalene	2015/12/19	23		%	40
			Acenaphthene	2015/12/19	2.0		%	40
			Acenaphthylene	2015/12/19	23		%	40
			Anthracene	2015/12/19	21		%	40
			Benzo(a)anthracene	2015/12/19	NC		%	40
			Benzo(a)pyrene	2015/12/19	NC		%	40
			Benzo(b)fluoranthene	2015/12/19	NC		%	40
			Benzo(g,h,i)perylene	2015/12/19	NC		%	40
			Benzo(j)fluoranthene	2015/12/19	NC		%	40
			Benzo(k)fluoranthene	2015/12/19	NC		%	40
			Chrysene	2015/12/19	NC		%	40
			Dibenz(a,h)anthracene	2015/12/19	NC		%	40
			Fluoranthene	2015/12/19	10		%	40
			Fluorene	2015/12/19	20		%	40
			Indeno(1,2,3-cd)pyrene	2015/12/19	NC		%	40
			Naphthalene	2015/12/19	58 (3)		%	40
			Perylene	2015/12/19	NC		%	40
			Phenanthrene	2015/12/19	38		%	40
			Pyrene	2015/12/19	13		%	40
4317953	TMO	QC Standard	Turbidity	2015/12/17		88	%	80 - 120
4317953	TMO	Method Blank	Turbidity	2015/12/17	<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
4317953	TMO	RPD	Turbidity	2015/12/17	3.5		%	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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

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

(2) Elevated PAH RDL(s) due to sample dilution.

(3) Elevated PAH RDL(s) due to sample dilution. Duplicate: results are outside acceptance limit. Insufficient sample for repeat analysis.

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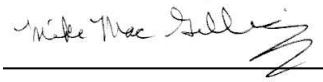
Maxxam Job #: B5P5089
Report Date: 2015/12/30

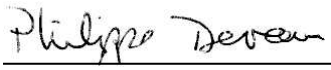
Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

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)



Phil Deveau

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Maxxam
A Bureau Veritas Group Company

Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/30
Report #: R3835537
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5P4159
Received: 2015/12/10, 16:35

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	9	N/A	2015/12/16	N/A	SM 22 4500-CO2 D
Alkalinity (1)	9	N/A	2015/12/17	ATL SOP 00013	EPA 310.2 R1974 m
Chloride (1)	8	N/A	2015/12/17	ATL SOP 00014	SM 22 4500-Cl- E m
Chloride (1)	1	N/A	2015/12/18	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	9	N/A	2015/12/16	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	9	N/A	2015/12/15	ATL SOP 00004	SM 22 2510B m
TEH in Water (PIRI) (1)	1	2015/12/14	2015/12/15	ATL SOP 00113	Atl. RBCA v3 m
Hardness (calculated as CaCO3) (1)	8	N/A	2015/12/16	ATL SOP 00048	SM 22 2340 B
Hardness (calculated as CaCO3) (1)	1	N/A	2015/12/17	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	9	2015/12/14	2015/12/15	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	8	N/A	2015/12/15	ATL SOP 00058	EPA 6020A R1 m
Metals Water Diss. MS (as rec'd) (1)	1	N/A	2015/12/16	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	7	N/A	2015/12/17		Auto Calc.
Ion Balance (% Difference) (1)	2	N/A	2015/12/18		Auto Calc.
Anion and Cation Sum (1)	8	N/A	2015/12/17		Auto Calc.
Anion and Cation Sum (1)	1	N/A	2015/12/18		Auto Calc.
Nitrogen Ammonia - water (1)	8	N/A	2015/12/16	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen Ammonia - water (1)	1	N/A	2015/12/17	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	9	N/A	2015/12/17	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	9	N/A	2015/12/16	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	9	N/A	2015/12/17	ATL SOP 00018	ASTM D3867
PAH in Water by GC/MS (SIM) (1)	9	2015/12/16	2015/12/18	ATL SOP 00103	EPA 8270D 2007 m
PAH in Water by GC/MS (SIM) (1)	1	2015/12/16	2015/12/21	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	9	N/A	2015/12/15	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	9	N/A	2015/12/17	ATL SOP 00021	EPA 365.2 m
VPH in Water (PIRI) (1)	1	N/A	2015/12/14	ATL SOP 00118	Atl. RBCA v3 m
Sat. pH and Langelier Index (@ 20C) (1)	7	N/A	2015/12/17	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 20C) (1)	2	N/A	2015/12/18	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	7	N/A	2015/12/17	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	2	N/A	2015/12/18	ATL SOP 00049	Auto Calc.

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Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/30
Report #: R3835537
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5P4159
Received: 2015/12/10, 16:35

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Reactive Silica (1)	9	N/A	2015/12/16	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	9	N/A	2015/12/16	ATL SOP 00023	EPA 375.4 R1978 m
Total Dissolved Solids (TDS calc) (1)	7	N/A	2015/12/17		Auto Calc.
Total Dissolved Solids (TDS calc) (1)	2	N/A	2015/12/18		Auto Calc.
ModTPH (T1) Calc. for Water (1)	1	N/A	2015/12/16	N/A	Atl. RBCA v3 m
Turbidity (1)	9	N/A	2015/12/16	ATL SOP 00011	EPA 180.1 R2 m

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.

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

==========

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 #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BMR618		BMR619		BMR620		BMR621		
Sampling Date		2015/12/09		2015/12/09		2015/12/09		2015/12/09		
COC Number		538951		538951		538951		538951		
	UNITS	COSB-002-MWA	RDL	COCP-110-MW	RDL	COBP-006-MWA	RDL	CONPL-202-MWA	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	31.3	N/A	10.2	N/A	8.65	N/A	11.9	N/A	4307927
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	190	1.0	260	1.0	390	1.0	4307924
Calculated TDS	mg/L	2100	1.0	640	1.0	510	1.0	650	1.0	4307930
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	<1.0	1.0	<1.0	1.0	1.9	1.0	4307924
Cation Sum	me/L	23.5	N/A	10.1	N/A	9.13	N/A	11.0	N/A	4307927
Hardness (CaCO3)	mg/L	1100	1.0	410	1.0	370	1.0	510	1.0	4307925
Ion Balance (% Difference)	%	14.3	N/A	0.390	N/A	2.70	N/A	3.92	N/A	4307926
Langelier Index (@ 20C)	N/A	NC		0.450		0.166		1.01		4307928
Langelier Index (@ 4C)	N/A	NC		0.202		-0.0820		0.766		4307929
Nitrate (N)	mg/L	0.18	0.050	0.17	0.050	<0.050	0.050	<0.050	0.050	4308034
Saturation pH (@ 20C)	N/A	NC		7.05		6.97		6.69		4307928
Saturation pH (@ 4C)	N/A	NC		7.29		7.22		6.93		4307929
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	<5.0	5.0	190	25	260	25	390	25	4314031
Dissolved Chloride (Cl)	mg/L	12	1.0	61	1.0	35	1.0	17	1.0	4314037
Colour	TCU	28	5.0	7.4	5.0	11	5.0	<5.0	5.0	4314050
Nitrate + Nitrite (N)	mg/L	0.18	0.050	0.18	0.050	<0.050	0.050	<0.050	0.050	4314059
Nitrite (N)	mg/L	<0.010	0.010	0.011	0.010	<0.010	0.010	<0.010	0.010	4314061
Nitrogen (Ammonia Nitrogen)	mg/L	1.6	0.050	2.3	0.25	1.1	0.050	<0.050	0.050	4315390
Orthophosphate (P)	mg/L	0.066	0.010	0.019	0.010	0.013	0.010	0.013	0.010	4314051
pH	pH	3.66 (1)	N/A	7.50	N/A	7.13	N/A	7.70	N/A	4313722
Reactive Silica (SiO2)	mg/L	150	5.0	34	1.0	16	0.50	11	0.50	4314048
Dissolved Sulphate (SO4)	mg/L	1500	100	220	30	120	10	170	10	4314038
Turbidity	NTU	250	1.0	70	0.10	270	1.0	2.2	0.10	4315926
Conductivity	uS/cm	2600	1.0	980	1.0	790	1.0	950	1.0	4313721

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) pH value is beyond linear range, extended linearity has been confirmed.

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Maxxam Job #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BMR622			BMR623			BMR624		
Sampling Date		2015/12/09			2015/12/09			2015/12/09		
COC Number		538951			538951			538951		
	UNITS	COBB-004-MWA	RDL	QC Batch	COBT-003-MWB	RDL	QC Batch	CODT-201-MWA	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	7.86	N/A	4307927	11.9	N/A	4307927	7.96	N/A	4307927
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	150	1.0	4307924	230	1.0	4307924	280	1.0	4307924
Calculated TDS	mg/L	500	1.0	4307930	670	1.0	4307930	450	1.0	4307930
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	4307924	<1.0	1.0	4307924	<1.0	1.0	4307924
Cation Sum	me/L	7.81	N/A	4307927	11.4	N/A	4307927	7.48	N/A	4307927
Hardness (CaCO3)	mg/L	370	1.0	4307925	320	1.0	4307925	350	1.0	4309252
Ion Balance (% Difference)	%	0.320	N/A	4307926	2.11	N/A	4307926	3.11	N/A	4307926
Langelier Index (@ 20C)	N/A	0.583		4307928	0.549		4307928	0.601		4307928
Langelier Index (@ 4C)	N/A	0.335		4307929	0.302		4307929	0.353		4307929
Nitrate (N)	mg/L	<0.050	0.050	4308034	<0.050	0.050	4308034	7.0	0.25	4308034
Saturation pH (@ 20C)	N/A	7.14		4307928	7.09		4307928	6.94		4307928
Saturation pH (@ 4C)	N/A	7.39		4307929	7.34		4307929	7.18		4307929
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	160	25	4314031	230	25	4314031	280	25	4314031
Dissolved Chloride (Cl)	mg/L	14	1.0	4314037	200	2.0	4315979	11	1.0	4314037
Colour	TCU	5.0	5.0	4314050	<5.0	5.0	4314050	<5.0	5.0	4314050
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	4314059	<0.050	0.050	4314059	7.0	0.25	4314059
Nitrite (N)	mg/L	<0.010	0.010	4314061	<0.010	0.010	4314061	<0.010	0.010	4314061
Nitrogen (Ammonia Nitrogen)	mg/L	0.094	0.050	4315390	0.14	0.050	4315390	0.11	0.050	4315390
Orthophosphate (P)	mg/L	0.020	0.010	4314051	0.012	0.010	4314051	0.022	0.010	4314051
pH	pH	7.72	N/A	4313722	7.64	N/A	4313722	7.54	N/A	4313722
Reactive Silica (SiO2)	mg/L	24	0.50	4314048	13	0.50	4314048	15	0.50	4314048
Dissolved Sulphate (SO4)	mg/L	210	30	4314038	76	10	4314038	79	10	4314038
Turbidity	NTU	2.2	0.10	4315926	1.3	0.10	4315926	160	1.0	4315926
Conductivity	uS/cm	720	1.0	4313721	1200	1.0	4313721	680	1.0	4313721

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BMR625			BMR627		
Sampling Date		2015/12/09			2015/12/09		
COC Number		538951			538951		
	UNITS	CODT-201-MWC	RDL	QC Batch	FD-015	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	5.87	N/A	4307927	8.85	N/A	4309254
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	220	1.0	4307924	250	1.0	4309251
Calculated TDS	mg/L	310	1.0	4307930	530	1.0	4309258
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.0	1.0	4307924	<1.0	1.0	4309251
Cation Sum	me/L	5.41	N/A	4307927	9.19	N/A	4309254
Hardness (CaCO3)	mg/L	130	1.0	4309252	380	1.0	4309252
Ion Balance (% Difference)	%	4.08	N/A	4307926	1.88	N/A	4309253
Langelier Index (@ 20C)	N/A	0.556		4307928	0.122		4309256
Langelier Index (@ 4C)	N/A	0.307		4307929	-0.126		4309257
Nitrate (N)	mg/L	<0.050	0.050	4308034	<0.050	0.050	4308034
Saturation pH (@ 20C)	N/A	7.43		4307928	6.99		4309256
Saturation pH (@ 4C)	N/A	7.68		4307929	7.23		4309257
Inorganics							
Total Alkalinity (Total as CaCO3)	mg/L	220	25	4314031	250	25	4314031
Dissolved Chloride (Cl)	mg/L	45	1.0	4314037	36	1.0	4314037
Colour	TCU	<5.0	5.0	4314050	<5.0	5.0	4314050
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	4314059	<0.050	0.050	4314059
Nitrite (N)	mg/L	<0.010	0.010	4314061	<0.010	0.010	4314061
Nitrogen (Ammonia Nitrogen)	mg/L	0.91	0.050	4315390	1.1	0.050	4316334
Orthophosphate (P)	mg/L	0.019	0.010	4314051	0.012	0.010	4314051
pH	pH	7.99	N/A	4313722	7.11	N/A	4313722
Reactive Silica (SiO2)	mg/L	11	0.50	4314048	16	0.50	4314048
Dissolved Sulphate (SO4)	mg/L	11	2.0	4314038	140	10	4314038
Turbidity	NTU	1.2	0.10	4315926	240	1.0	4315926
Conductivity	uS/cm	530	1.0	4313721	800	1.0	4313721

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		BMR618	BMR619	BMR620	BMR621	BMR622		
Sampling Date		2015/12/09	2015/12/09	2015/12/09	2015/12/09	2015/12/09		
COC Number		538951	538951	538951	538951	538951		
	UNITS	COSB-002-MWA	COCP-110-MW	COBP-006-MWA	CONPL-202-MWA	COBB-004-MWA	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	4311946

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BMR623	BMR624	BMR625	BMR627		
Sampling Date		2015/12/09	2015/12/09	2015/12/09	2015/12/09		
COC Number		538951	538951	538951	538951		
	UNITS	COBT-003-MWB	CODT-201-MWA	CODT-201-MWC	FD-015	RDL	QC Batch
Metals							
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	0.013	4311946

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BMR618		BMR619	BMR620		BMR621		
Sampling Date		2015/12/09		2015/12/09	2015/12/09		2015/12/09		
COC Number		538951		538951	538951		538951		
	UNITS	COSB-002-MWA	RDL	COCP-110-MW	COBP-006-MWA	QC Batch	CONPL-202-MWA	RDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	180000	50	15	6.6	4313307	12	5.0	4313322
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	1.6	<1.0	4313307	<1.0	1.0	4313322
Dissolved Arsenic (As)	ug/L	6.2	1.0	17	<1.0	4313307	2.2	1.0	4313322
Dissolved Barium (Ba)	ug/L	76	1.0	56	36	4313307	36	1.0	4313322
Dissolved Beryllium (Be)	ug/L	25	1.0	<1.0	<1.0	4313307	<1.0	1.0	4313322
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	<2.0	<2.0	4313307	<2.0	2.0	4313322
Dissolved Boron (B)	ug/L	120	50	70	61	4313307	<50	50	4313322
Dissolved Cadmium (Cd)	ug/L	8.5	0.010	0.067	0.016	4313307	0.012	0.010	4313322
Dissolved Calcium (Ca)	ug/L	340000	100	150000	120000	4313307	160000	100	4313322
Dissolved Chromium (Cr)	ug/L	91	1.0	<1.0	<1.0	4313307	<1.0	1.0	4313322
Dissolved Cobalt (Co)	ug/L	80	0.40	<0.40	<0.40	4313307	0.46	0.40	4313322
Dissolved Copper (Cu)	ug/L	650	2.0	<2.0	<2.0	4313307	<2.0	2.0	4313322
Dissolved Iron (Fe)	ug/L	32000	50	6600	19000	4313307	270	50	4313322
Dissolved Lead (Pb)	ug/L	7.8	0.50	<0.50	<0.50	4313307	<0.50	0.50	4313322
Dissolved Magnesium (Mg)	ug/L	53000	100	10000	15000	4313307	25000	100	4313322
Dissolved Manganese (Mn)	ug/L	23000	2.0	550	5800	4313307	830	2.0	4313322
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	6.9	<2.0	4313307	<2.0	2.0	4313322
Dissolved Nickel (Ni)	ug/L	270	2.0	<2.0	<2.0	4313307	<2.0	2.0	4313322
Dissolved Phosphorus (P)	ug/L	240	100	<100	120	4313307	<100	100	4313322
Dissolved Potassium (K)	ug/L	7100	100	11000	3800	4313307	1600	100	4313322
Dissolved Selenium (Se)	ug/L	<1.0	1.0	<1.0	<1.0	4313307	<1.0	1.0	4313322
Dissolved Silver (Ag)	ug/L	<0.10	0.10	<0.10	<0.10	4313307	<0.10	0.10	4313322
Dissolved Sodium (Na)	ug/L	11000	100	29000	19000	4313307	17000	100	4313322
Dissolved Strontium (Sr)	ug/L	1200	2.0	490	440	4313307	540	2.0	4313322
Dissolved Thallium (Tl)	ug/L	0.39	0.10	<0.10	<0.10	4313307	<0.10	0.10	4313322
Dissolved Tin (Sn)	ug/L	<2.0	2.0	<2.0	<2.0	4313307	<2.0	2.0	4313322
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	<2.0	<2.0	4313307	<2.0	2.0	4313322
Dissolved Uranium (U)	ug/L	11	0.10	1.0	<0.10	4313307	2.1	0.10	4313322
Dissolved Vanadium (V)	ug/L	<2.0	2.0	<2.0	<2.0	4313307	<2.0	2.0	4313322
Dissolved Zinc (Zn)	ug/L	3800	5.0	55	28	4313307	<5.0	5.0	4313322

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BMR622	BMR623	BMR624	BMR625	BMR627		
Sampling Date		2015/12/09	2015/12/09	2015/12/09	2015/12/09	2015/12/09		
COC Number		538951	538951	538951	538951	538951		
	UNITS	COBB-004-MWA	COBT-003-MWB	CODT-201-MWA	CODT-201-MWC	FD-015	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	23	<5.0	14	6.3	<5.0	5.0	4313307
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4313307
Dissolved Arsenic (As)	ug/L	3.0	3.0	<1.0	4.2	<1.0	1.0	4313307
Dissolved Barium (Ba)	ug/L	76	43	23	420	37	1.0	4313307
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4313307
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4313307
Dissolved Boron (B)	ug/L	65	64	<50	73	59	50	4313307
Dissolved Cadmium (Cd)	ug/L	0.058	0.039	0.053	<0.010	0.012	0.010	4313307
Dissolved Calcium (Ca)	ug/L	140000	110000	120000	45000	130000	100	4313307
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4313307
Dissolved Cobalt (Co)	ug/L	1.1	0.41	<0.40	<0.40	<0.40	0.40	4313307
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	4.0	<2.0	<2.0	2.0	4313307
Dissolved Iron (Fe)	ug/L	360	200	<50	<50	19000	50	4313307
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4313307
Dissolved Magnesium (Mg)	ug/L	5900	12000	12000	5100	15000	100	4313307
Dissolved Manganese (Mn)	ug/L	2300	2400	12	930	5800	2.0	4313307
Dissolved Molybdenum (Mo)	ug/L	13	<2.0	<2.0	<2.0	<2.0	2.0	4313307
Dissolved Nickel (Ni)	ug/L	3.5	<2.0	<2.0	<2.0	<2.0	2.0	4313307
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	<100	120	100	4313307
Dissolved Potassium (K)	ug/L	3700	2800	2900	2300	3900	100	4313307
Dissolved Selenium (Se)	ug/L	<1.0	<1.0	5.2	<1.0	<1.0	1.0	4313307
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4313307
Dissolved Sodium (Na)	ug/L	8000	110000	9800	60000	19000	100	4313307
Dissolved Strontium (Sr)	ug/L	600	1400	350	540	440	2.0	4313307
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4313307
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4313307
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4313307
Dissolved Uranium (U)	ug/L	2.7	0.28	0.72	<0.10	<0.10	0.10	4313307
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4313307
Dissolved Zinc (Zn)	ug/L	12	15	26	<5.0	27	5.0	4313307

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BMR618	BMR619	BMR620	BMR621	BMR622		
Sampling Date		2015/12/09	2015/12/09	2015/12/09	2015/12/09	2015/12/09		
COC Number		538951	538951	538951	538951	538951		
	UNITS	COSB-002-MWA	COCP-110-MW	COBP-006-MWA	CONPL-202-MWA	COBB-004-MWA	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	<0.050	0.065	0.095	<0.050	<0.050	0.050	4315263
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4315263
Acenaphthene	ug/L	0.014	0.17	8.4	<0.010	0.040	0.010	4315263
Acenaphthylene	ug/L	0.019	0.017	0.25	<0.010	<0.010	0.010	4315263
Anthracene	ug/L	<0.010	0.041	<0.010	<0.010	0.014	0.010	4315263
Benzo(a)anthracene	ug/L	<0.010	0.063	<0.010	<0.010	0.021	0.010	4315263
Benzo(a)pyrene	ug/L	<0.010	0.044	<0.010	<0.010	0.015	0.010	4315263
Benzo(b)fluoranthene	ug/L	<0.010	0.037	<0.010	<0.010	<0.010	0.010	4315263
Benzo(g,h,i)perylene	ug/L	<0.010	0.027	<0.010	<0.010	<0.010	0.010	4315263
Benzo(j)fluoranthene	ug/L	<0.010	0.025	<0.010	<0.010	<0.010	0.010	4315263
Benzo(k)fluoranthene	ug/L	<0.010	0.023	<0.010	<0.010	<0.010	0.010	4315263
Chrysene	ug/L	<0.010	0.080	<0.010	<0.010	0.022	0.010	4315263
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	4315263
Fluoranthene	ug/L	<0.010	0.16	0.020	0.011	0.055	0.010	4315263
Fluorene	ug/L	0.012	0.037	0.24	<0.010	0.010	0.010	4315263
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.022	<0.010	<0.010	<0.010	0.010	4315263
Naphthalene	ug/L	<0.20	<0.20	0.21	<0.20	<0.20	0.20	4315263
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	4315263
Phenanthrene	ug/L	0.010	0.11	0.020	<0.010	0.054	0.010	4315263
Pyrene	ug/L	0.012	0.21	0.024	<0.010	0.038	0.010	4315263
Surrogate Recovery (%)								
D10-Anthracene	%	81	83	99	88	100		4315263
D14-Terphenyl	%	102 (1)	91	97 (1)	103	108		4315263
D8-Acenaphthylene	%	96	87	100	99	101		4315263

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PAH sample contained sediment.

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Maxxam Job #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BMR623	BMR624		BMR625		BMR627	BMR628		
Sampling Date		2015/12/09	2015/12/09		2015/12/09		2015/12/09	2015/12/09		
COC Number		538951	538951		538951		538951	538951		
	UNITS	COBT-003-MWB	CODT-201-MWA	RDL	CODT-201-MWC	RDL	FD-015	TB-021	RDL	QC Batch
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	ug/L	<0.050	0.12	0.050	750	50	0.12	<0.050	0.050	4315263
2-Methylnaphthalene	ug/L	<0.050	0.12	0.050	610	50	<0.050	<0.050	0.050	4315263
Acenaphthene	ug/L	0.053	0.96	0.010	300	10	8.3	<0.010	0.010	4315263
Acenaphthylene	ug/L	<0.010	0.078	0.010	18	10	0.23	<0.010	0.010	4315263
Anthracene	ug/L	0.012	2.3	0.010	<10	10	0.013	<0.010	0.010	4315263
Benzo(a)anthracene	ug/L	0.020	4.9	0.010	<10	10	<0.010	<0.010	0.010	4315263
Benzo(a)pyrene	ug/L	0.019	4.7	0.010	<10	10	<0.010	<0.010	0.010	4315263
Benzo(b)fluoranthene	ug/L	0.016	3.5	0.010	<10	10	<0.010	<0.010	0.010	4315263
Benzo(g,h,i)perylene	ug/L	0.012	2.0	0.010	<10	10	<0.010	<0.010	0.010	4315263
Benzo(j)fluoranthene	ug/L	<0.010	2.4	0.010	<10	10	<0.010	<0.010	0.010	4315263
Benzo(k)fluoranthene	ug/L	0.010	2.3	0.010	<10	10	<0.010	<0.010	0.010	4315263
Chrysene	ug/L	0.018	5.1	0.010	<10	10	0.012	<0.010	0.010	4315263
Dibenz(a,h)anthracene	ug/L	<0.010	0.67	0.010	<10	10	<0.010	<0.010	0.010	4315263
Fluoranthene	ug/L	0.052	12	0.010	<10	10	0.024	<0.010	0.010	4315263
Fluorene	ug/L	0.010	0.95	0.010	120	10	0.26	<0.010	0.010	4315263
Indeno(1,2,3-cd)pyrene	ug/L	0.010	1.9	0.010	<10	10	<0.010	<0.010	0.010	4315263
Naphthalene	ug/L	<0.20	<0.20	0.20	9500	200	0.48	<0.20	0.20	4315263
Perylene	ug/L	<0.010	1.0	0.010	<10	10	<0.010	<0.010	0.010	4315263
Phenanthrene	ug/L	0.044	9.0	0.010	89	10	0.029	<0.010	0.010	4315263
Pyrene	ug/L	0.042	9.3	0.010	<10	10	0.027	<0.010	0.010	4315263
Surrogate Recovery (%)										
D10-Anthracene	%	97	85		2190 (1)		97	99		4315263
D14-Terphenyl	%	103	101 (2)		219 (3)		100 (2)	103		4315263
D8-Acenaphthylene	%	94	86		2030 (1)		102	99		4315263

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PAH surrogate(s) not within acceptance limits due to sample dilution / product interference.
(2) PAH sample contained sediment.
(3) PAH surrogate(s) not within acceptance limits due to sample dilution / product interference. Elevated PAH RDL(s) due to sample dilution.

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Maxxam Job #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ATLANTIC RBCA HYDROCARBONS (WATER)

Maxxam ID		BMR625		
Sampling Date		2015/12/09		
COC Number		538951		
	UNITS	CODT-201-MWC	RDL	QC Batch
Petroleum Hydrocarbons				
Benzene	mg/L	0.11	0.010	4311597
Toluene	mg/L	0.26	0.010	4311597
Ethylbenzene	mg/L	0.17	0.010	4311597
Total Xylenes	mg/L	0.71	0.020	4311597
C6 - C10 (less BTEX)	mg/L	1.4	0.10	4311597
>C10-C16 Hydrocarbons	mg/L	14	0.050	4312046
>C16-C21 Hydrocarbons	mg/L	0.38	0.050	4312046
>C21-<C32 Hydrocarbons	mg/L	0.10	0.10	4312046
Modified TPH (Tier1)	mg/L	16	0.10	4307156
Reached Baseline at C32	mg/L	Yes	N/A	4312046
Hydrocarbon Resemblance	mg/L	COMMENT (1)	N/A	4312046
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	90		4312046
n-Dotriacontane - Extractable	%	89		4312046
Isobutylbenzene - Volatile	%	105		4311597

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) One product in the gas/fuel oil range.

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GENERAL COMMENTS

Sample BMR618-01 : 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
4311597	MS3	Matrix Spike	Isobutylbenzene - Volatile	2015/12/14		100	%	70 - 130
			Benzene	2015/12/14		105	%	70 - 130
			Toluene	2015/12/14		103	%	70 - 130
			Ethylbenzene	2015/12/14		103	%	70 - 130
			Total Xylenes	2015/12/14		103	%	70 - 130
4311597	MS3	Spiked Blank	Isobutylbenzene - Volatile	2015/12/14		99	%	70 - 130
			Benzene	2015/12/14		103	%	70 - 130
			Toluene	2015/12/14		103	%	70 - 130
			Ethylbenzene	2015/12/14		105	%	70 - 130
			Total Xylenes	2015/12/14		103	%	70 - 130
4311597	MS3	Method Blank	Isobutylbenzene - Volatile	2015/12/14		99	%	70 - 130
			Benzene	2015/12/14	<0.0010		mg/L	
			Toluene	2015/12/14	<0.0010		mg/L	
			Ethylbenzene	2015/12/14	<0.0010		mg/L	
			Total Xylenes	2015/12/14	<0.0020		mg/L	
			C6 - C10 (less BTEX)	2015/12/14	<0.010		mg/L	
4311597	MS3	RPD	Benzene	2015/12/14	NC		%	40
			Toluene	2015/12/14	NC		%	40
			Ethylbenzene	2015/12/14	NC		%	40
			Total Xylenes	2015/12/14	NC		%	40
			C6 - C10 (less BTEX)	2015/12/14	NC		%	40
4311946	VWA	Matrix Spike	Total Mercury (Hg)	2015/12/15		78 (1)	%	80 - 120
4311946	VWA	Spiked Blank	Total Mercury (Hg)	2015/12/15		90	%	80 - 120
4311946	VWA	Method Blank	Total Mercury (Hg)	2015/12/15	<0.013		ug/L	
4311946	VWA	RPD	Total Mercury (Hg)	2015/12/15	NC		%	20
4312046	KCR	Matrix Spike	Isobutylbenzene - Extractable	2015/12/15		102	%	30 - 130
			n-Dotriacontane - Extractable	2015/12/15		96	%	30 - 130
			>C10-C16 Hydrocarbons	2015/12/15		97	%	70 - 130
			>C16-C21 Hydrocarbons	2015/12/15		93	%	70 - 130
			>C21-<C32 Hydrocarbons	2015/12/15		109	%	70 - 130
4312046	KCR	Spiked Blank	Isobutylbenzene - Extractable	2015/12/15		95	%	30 - 130
			n-Dotriacontane - Extractable	2015/12/15		95	%	30 - 130
			>C10-C16 Hydrocarbons	2015/12/15		89	%	70 - 130
			>C16-C21 Hydrocarbons	2015/12/15		82	%	70 - 130
			>C21-<C32 Hydrocarbons	2015/12/15		98	%	70 - 130
4312046	KCR	Method Blank	Isobutylbenzene - Extractable	2015/12/15		93	%	30 - 130
			n-Dotriacontane - Extractable	2015/12/15		90	%	30 - 130
			>C10-C16 Hydrocarbons	2015/12/15	<0.050		mg/L	
			>C16-C21 Hydrocarbons	2015/12/15	<0.050		mg/L	
			>C21-<C32 Hydrocarbons	2015/12/15	<0.10		mg/L	
4312046	KCR	RPD	>C10-C16 Hydrocarbons	2015/12/15	2.5		%	40
			>C16-C21 Hydrocarbons	2015/12/15	NC		%	40
			>C21-<C32 Hydrocarbons	2015/12/15	NC		%	40
4313307	MLB	Matrix Spike	Dissolved Aluminum (Al)	2015/12/15		103	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/15		104	%	80 - 120
			Dissolved Arsenic (As)	2015/12/15		102	%	80 - 120
			Dissolved Barium (Ba)	2015/12/15		NC	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/15		101	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/15		103	%	80 - 120
			Dissolved Boron (B)	2015/12/15		100	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/15		99	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/15		NC	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/15		96	%	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 Cobalt (Co)	2015/12/15		97	%	80 - 120
			Dissolved Copper (Cu)	2015/12/15		97	%	80 - 120
			Dissolved Iron (Fe)	2015/12/15		104	%	80 - 120
			Dissolved Lead (Pb)	2015/12/15		94	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/15		NC	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/15		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/15		106	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/15		100	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/15		110	%	80 - 120
			Dissolved Potassium (K)	2015/12/15		NC	%	80 - 120
			Dissolved Selenium (Se)	2015/12/15		101	%	80 - 120
			Dissolved Silver (Ag)	2015/12/15		97	%	80 - 120
			Dissolved Sodium (Na)	2015/12/15		NC	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/15		NC	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/15		103	%	80 - 120
			Dissolved Tin (Sn)	2015/12/15		106	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/15		104	%	80 - 120
			Dissolved Uranium (U)	2015/12/15		109	%	80 - 120
			Dissolved Vanadium (V)	2015/12/15		99	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/15		101	%	80 - 120
4313307	MLB	Spiked Blank	Dissolved Aluminum (Al)	2015/12/15		101	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/15		102	%	80 - 120
			Dissolved Arsenic (As)	2015/12/15		100	%	80 - 120
			Dissolved Barium (Ba)	2015/12/15		95	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/15		101	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/15		105	%	80 - 120
			Dissolved Boron (B)	2015/12/15		101	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/15		98	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/15		104	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/15		97	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/15		97	%	80 - 120
			Dissolved Copper (Cu)	2015/12/15		98	%	80 - 120
			Dissolved Iron (Fe)	2015/12/15		104	%	80 - 120
			Dissolved Lead (Pb)	2015/12/15		95	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/15		103	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/15		103	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/15		102	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/15		103	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/15		109	%	80 - 120
			Dissolved Potassium (K)	2015/12/15		103	%	80 - 120
			Dissolved Selenium (Se)	2015/12/15		102	%	80 - 120
			Dissolved Silver (Ag)	2015/12/15		101	%	80 - 120
			Dissolved Sodium (Na)	2015/12/15		100	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/15		102	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/15		102	%	80 - 120
			Dissolved Tin (Sn)	2015/12/15		104	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/15		103	%	80 - 120
			Dissolved Uranium (U)	2015/12/15		107	%	80 - 120
			Dissolved Vanadium (V)	2015/12/15		98	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/15		101	%	80 - 120
4313307	MLB	Method Blank	Dissolved Aluminum (Al)	2015/12/15	<5.0		ug/L	
			Dissolved Antimony (Sb)	2015/12/15	<1.0		ug/L	
			Dissolved Arsenic (As)	2015/12/15	<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 Barium (Ba)	2015/12/15	<1.0		ug/L	
			Dissolved Beryllium (Be)	2015/12/15	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2015/12/15	<2.0		ug/L	
			Dissolved Boron (B)	2015/12/15	<50		ug/L	
			Dissolved Cadmium (Cd)	2015/12/15	<0.010		ug/L	
			Dissolved Calcium (Ca)	2015/12/15	<100		ug/L	
			Dissolved Chromium (Cr)	2015/12/15	<1.0		ug/L	
			Dissolved Cobalt (Co)	2015/12/15	<0.40		ug/L	
			Dissolved Copper (Cu)	2015/12/15	<2.0		ug/L	
			Dissolved Iron (Fe)	2015/12/15	<50		ug/L	
			Dissolved Lead (Pb)	2015/12/15	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2015/12/15	<100		ug/L	
			Dissolved Manganese (Mn)	2015/12/15	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2015/12/15	<2.0		ug/L	
			Dissolved Nickel (Ni)	2015/12/15	<2.0		ug/L	
			Dissolved Phosphorus (P)	2015/12/15	<100		ug/L	
			Dissolved Potassium (K)	2015/12/15	<100		ug/L	
			Dissolved Selenium (Se)	2015/12/15	<1.0		ug/L	
			Dissolved Silver (Ag)	2015/12/15	<0.10		ug/L	
			Dissolved Sodium (Na)	2015/12/15	<100		ug/L	
			Dissolved Strontium (Sr)	2015/12/15	<2.0		ug/L	
			Dissolved Thallium (Tl)	2015/12/15	<0.10		ug/L	
			Dissolved Tin (Sn)	2015/12/15	<2.0		ug/L	
			Dissolved Titanium (Ti)	2015/12/15	<2.0		ug/L	
			Dissolved Uranium (U)	2015/12/15	<0.10		ug/L	
			Dissolved Vanadium (V)	2015/12/15	<2.0		ug/L	
			Dissolved Zinc (Zn)	2015/12/15	<5.0		ug/L	
4313307	MLB	RPD	Dissolved Aluminum (Al)	2015/12/15	NC		%	20
			Dissolved Antimony (Sb)	2015/12/15	NC		%	20
			Dissolved Arsenic (As)	2015/12/15	NC		%	20
			Dissolved Barium (Ba)	2015/12/15	0.64		%	20
			Dissolved Beryllium (Be)	2015/12/15	NC		%	20
			Dissolved Bismuth (Bi)	2015/12/15	NC		%	20
			Dissolved Boron (B)	2015/12/15	NC		%	20
			Dissolved Cadmium (Cd)	2015/12/15	NC		%	20
			Dissolved Calcium (Ca)	2015/12/15	0.043		%	20
			Dissolved Chromium (Cr)	2015/12/15	NC		%	20
			Dissolved Cobalt (Co)	2015/12/15	NC		%	20
			Dissolved Copper (Cu)	2015/12/15	NC		%	20
			Dissolved Iron (Fe)	2015/12/15	NC		%	20
			Dissolved Lead (Pb)	2015/12/15	NC		%	20
			Dissolved Magnesium (Mg)	2015/12/15	1.2		%	20
			Dissolved Manganese (Mn)	2015/12/15	0.35		%	20
			Dissolved Molybdenum (Mo)	2015/12/15	NC		%	20
			Dissolved Nickel (Ni)	2015/12/15	NC		%	20
			Dissolved Phosphorus (P)	2015/12/15	NC		%	20
			Dissolved Potassium (K)	2015/12/15	1.1		%	20
			Dissolved Selenium (Se)	2015/12/15	NC		%	20
			Dissolved Silver (Ag)	2015/12/15	NC		%	20
			Dissolved Sodium (Na)	2015/12/15	0.55		%	20
			Dissolved Strontium (Sr)	2015/12/15	0.28		%	20
			Dissolved Thallium (Tl)	2015/12/15	NC		%	20
			Dissolved Tin (Sn)	2015/12/15	NC		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Titanium (Ti)	2015/12/15	NC		%	20
			Dissolved Uranium (U)	2015/12/15	NC		%	20
			Dissolved Vanadium (V)	2015/12/15	NC		%	20
			Dissolved Zinc (Zn)	2015/12/15	NC		%	20
4313322	MLB	Matrix Spike [BMR621-02]	Dissolved Aluminum (Al)	2015/12/15		102	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/15		102	%	80 - 120
			Dissolved Arsenic (As)	2015/12/15		101	%	80 - 120
			Dissolved Barium (Ba)	2015/12/15		93	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/15		102	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/15		101	%	80 - 120
			Dissolved Boron (B)	2015/12/15		102	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/15		100	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/15		NC	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/15		96	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/15		95	%	80 - 120
			Dissolved Copper (Cu)	2015/12/15		95	%	80 - 120
			Dissolved Iron (Fe)	2015/12/15		102	%	80 - 120
			Dissolved Lead (Pb)	2015/12/15		93	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/15		NC	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/15		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/15		104	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/15		99	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/15		109	%	80 - 120
			Dissolved Potassium (K)	2015/12/15		100	%	80 - 120
			Dissolved Selenium (Se)	2015/12/15		102	%	80 - 120
			Dissolved Silver (Ag)	2015/12/15		85	%	80 - 120
			Dissolved Sodium (Na)	2015/12/15		NC	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/15		NC	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/15		102	%	80 - 120
			Dissolved Tin (Sn)	2015/12/15		106	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/15		101	%	80 - 120
			Dissolved Uranium (U)	2015/12/15		107	%	80 - 120
			Dissolved Vanadium (V)	2015/12/15		99	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/15		98	%	80 - 120
4313322	MLB	Spiked Blank	Dissolved Aluminum (Al)	2015/12/15		102	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/15		100	%	80 - 120
			Dissolved Arsenic (As)	2015/12/15		101	%	80 - 120
			Dissolved Barium (Ba)	2015/12/15		94	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/15		98	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/15		104	%	80 - 120
			Dissolved Boron (B)	2015/12/15		97	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/15		99	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/15		104	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/15		98	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/15		98	%	80 - 120
			Dissolved Copper (Cu)	2015/12/15		99	%	80 - 120
			Dissolved Iron (Fe)	2015/12/15		105	%	80 - 120
			Dissolved Lead (Pb)	2015/12/15		95	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/15		104	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/15		104	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/15		98	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/15		104	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Phosphorus (P)	2015/12/15		109	%	80 - 120
			Dissolved Potassium (K)	2015/12/15		103	%	80 - 120
			Dissolved Selenium (Se)	2015/12/15		101	%	80 - 120
			Dissolved Silver (Ag)	2015/12/15		102	%	80 - 120
			Dissolved Sodium (Na)	2015/12/15		103	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/15		102	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/15		102	%	80 - 120
			Dissolved Tin (Sn)	2015/12/15		104	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/15		105	%	80 - 120
			Dissolved Uranium (U)	2015/12/15		106	%	80 - 120
			Dissolved Vanadium (V)	2015/12/15		99	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/15		102	%	80 - 120
4313322	MLB	Method Blank	Dissolved Aluminum (Al)	2015/12/15	<5.0		ug/L	
			Dissolved Antimony (Sb)	2015/12/15	<1.0		ug/L	
			Dissolved Arsenic (As)	2015/12/15	<1.0		ug/L	
			Dissolved Barium (Ba)	2015/12/15	<1.0		ug/L	
			Dissolved Beryllium (Be)	2015/12/15	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2015/12/15	<2.0		ug/L	
			Dissolved Boron (B)	2015/12/15	<50		ug/L	
			Dissolved Cadmium (Cd)	2015/12/15	<0.010		ug/L	
			Dissolved Calcium (Ca)	2015/12/15	<100		ug/L	
			Dissolved Chromium (Cr)	2015/12/15	<1.0		ug/L	
			Dissolved Cobalt (Co)	2015/12/15	<0.40		ug/L	
			Dissolved Copper (Cu)	2015/12/15	<2.0		ug/L	
			Dissolved Iron (Fe)	2015/12/15	<50		ug/L	
			Dissolved Lead (Pb)	2015/12/15	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2015/12/15	<100		ug/L	
			Dissolved Manganese (Mn)	2015/12/15	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2015/12/15	<2.0		ug/L	
			Dissolved Nickel (Ni)	2015/12/15	<2.0		ug/L	
			Dissolved Phosphorus (P)	2015/12/15	<100		ug/L	
			Dissolved Potassium (K)	2015/12/15	<100		ug/L	
			Dissolved Selenium (Se)	2015/12/15	<1.0		ug/L	
			Dissolved Silver (Ag)	2015/12/15	<0.10		ug/L	
			Dissolved Sodium (Na)	2015/12/15	<100		ug/L	
			Dissolved Strontium (Sr)	2015/12/15	<2.0		ug/L	
			Dissolved Thallium (Tl)	2015/12/15	<0.10		ug/L	
			Dissolved Tin (Sn)	2015/12/15	<2.0		ug/L	
			Dissolved Titanium (Ti)	2015/12/15	<2.0		ug/L	
			Dissolved Uranium (U)	2015/12/15	<0.10		ug/L	
			Dissolved Vanadium (V)	2015/12/15	<2.0		ug/L	
			Dissolved Zinc (Zn)	2015/12/15	<5.0		ug/L	
4313322	MLB	RPD [BMR621-02]	Dissolved Aluminum (Al)	2015/12/15	NC		%	20
			Dissolved Antimony (Sb)	2015/12/15	NC		%	20
			Dissolved Arsenic (As)	2015/12/15	NC		%	20
			Dissolved Barium (Ba)	2015/12/15	2.6		%	20
			Dissolved Beryllium (Be)	2015/12/15	NC		%	20
			Dissolved Bismuth (Bi)	2015/12/15	NC		%	20
			Dissolved Boron (B)	2015/12/15	NC		%	20
			Dissolved Cadmium (Cd)	2015/12/15	NC		%	20
			Dissolved Calcium (Ca)	2015/12/15	0.66		%	20
			Dissolved Chromium (Cr)	2015/12/15	NC		%	20
			Dissolved Cobalt (Co)	2015/12/15	NC		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Copper (Cu)	2015/12/15	NC		%	20
			Dissolved Iron (Fe)	2015/12/15	2.0		%	20
			Dissolved Lead (Pb)	2015/12/15	NC		%	20
			Dissolved Magnesium (Mg)	2015/12/15	0.78		%	20
			Dissolved Manganese (Mn)	2015/12/15	1.0		%	20
			Dissolved Molybdenum (Mo)	2015/12/15	NC		%	20
			Dissolved Nickel (Ni)	2015/12/15	NC		%	20
			Dissolved Phosphorus (P)	2015/12/15	NC		%	20
			Dissolved Potassium (K)	2015/12/15	0.33		%	20
			Dissolved Selenium (Se)	2015/12/15	NC		%	20
			Dissolved Silver (Ag)	2015/12/15	NC		%	20
			Dissolved Sodium (Na)	2015/12/15	0.63		%	20
			Dissolved Strontium (Sr)	2015/12/15	1.3		%	20
			Dissolved Thallium (Tl)	2015/12/15	NC		%	20
			Dissolved Tin (Sn)	2015/12/15	NC		%	20
			Dissolved Titanium (Ti)	2015/12/15	NC		%	20
			Dissolved Uranium (U)	2015/12/15	1.6		%	20
			Dissolved Vanadium (V)	2015/12/15	NC		%	20
			Dissolved Zinc (Zn)	2015/12/15	NC		%	20
4313721	TMO	Spiked Blank	Conductivity	2015/12/15		101	%	80 - 120
4313721	TMO	Method Blank	Conductivity	2015/12/15	1.1, RDL=1.0		uS/cm	
4313721	TMO	RPD	Conductivity	2015/12/15	0.39		%	25
4313722	TMO	QC Standard	pH	2015/12/15		100	%	97 - 103
4313722	TMO	RPD	pH	2015/12/15	0.25		%	N/A
4314031	ARS	Matrix Spike	Total Alkalinity (Total as CaCO3)	2015/12/17		NC	%	80 - 120
4314031	ARS	Spiked Blank	Total Alkalinity (Total as CaCO3)	2015/12/17		114	%	80 - 120
4314031	ARS	Method Blank	Total Alkalinity (Total as CaCO3)	2015/12/17	<5.0		mg/L	
4314031	ARS	RPD	Total Alkalinity (Total as CaCO3)	2015/12/17	0.051		%	25
4314037	ARS	Matrix Spike	Dissolved Chloride (Cl)	2015/12/17		NC	%	80 - 120
4314037	ARS	QC Standard	Dissolved Chloride (Cl)	2015/12/17		106	%	80 - 120
4314037	ARS	Spiked Blank	Dissolved Chloride (Cl)	2015/12/17		105	%	80 - 120
4314037	ARS	Method Blank	Dissolved Chloride (Cl)	2015/12/17	<1.0		mg/L	
4314037	ARS	RPD	Dissolved Chloride (Cl)	2015/12/17	1.5		%	25
4314038	ARS	Matrix Spike	Dissolved Sulphate (SO4)	2015/12/16		NC	%	80 - 120
4314038	ARS	Spiked Blank	Dissolved Sulphate (SO4)	2015/12/16		100	%	80 - 120
4314038	ARS	Method Blank	Dissolved Sulphate (SO4)	2015/12/16	<2.0		mg/L	
4314038	ARS	RPD	Dissolved Sulphate (SO4)	2015/12/16	1.8		%	25
4314048	ARS	Matrix Spike	Reactive Silica (SiO2)	2015/12/16		NC	%	80 - 120
4314048	ARS	Spiked Blank	Reactive Silica (SiO2)	2015/12/16		97	%	80 - 120
4314048	ARS	Method Blank	Reactive Silica (SiO2)	2015/12/16	<0.50		mg/L	
4314048	ARS	RPD	Reactive Silica (SiO2)	2015/12/16	0.0070		%	25
4314050	MCN	Spiked Blank	Colour	2015/12/16		90	%	80 - 120
4314050	MCN	Method Blank	Colour	2015/12/16	<5.0		TCU	
4314050	MCN	RPD	Colour	2015/12/16	NC		%	20
4314051	ARS	Matrix Spike	Orthophosphate (P)	2015/12/17		84	%	80 - 120
4314051	ARS	Spiked Blank	Orthophosphate (P)	2015/12/17		90	%	80 - 120
4314051	ARS	Method Blank	Orthophosphate (P)	2015/12/17	<0.010		mg/L	
4314051	ARS	RPD	Orthophosphate (P)	2015/12/17	NC		%	25
4314059	MCN	Matrix Spike	Nitrate + Nitrite (N)	2015/12/17		95	%	80 - 120
4314059	MCN	Spiked Blank	Nitrate + Nitrite (N)	2015/12/17		97	%	80 - 120
4314059	MCN	Method Blank	Nitrate + Nitrite (N)	2015/12/17	<0.050		mg/L	
4314059	MCN	RPD	Nitrate + Nitrite (N)	2015/12/17	8.7		%	25

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4314061	ARS	Matrix Spike	Nitrite (N)	2015/12/16		NC	%	80 - 120
4314061	ARS	Spiked Blank	Nitrite (N)	2015/12/16		101	%	80 - 120
4314061	ARS	Method Blank	Nitrite (N)	2015/12/16	0.011, RDL=0.010		mg/L	
4314061	ARS	RPD	Nitrite (N)	2015/12/16	4.9		%	25
4315263	GTH	Matrix Spike	D10-Anthracene	2015/12/18		98	%	30 - 130
			D14-Terphenyl	2015/12/18		104	%	30 - 130
			D8-Acenaphthylene	2015/12/18		95	%	30 - 130
			1-Methylnaphthalene	2015/12/18		NC	%	30 - 130
			2-Methylnaphthalene	2015/12/18		NC	%	30 - 130
			Acenaphthene	2015/12/18		NC	%	30 - 130
			Acenaphthylene	2015/12/18		NC	%	30 - 130
			Anthracene	2015/12/18		NC	%	30 - 130
			Benzo(a)anthracene	2015/12/18		104	%	30 - 130
			Benzo(a)pyrene	2015/12/18		109	%	30 - 130
			Benzo(b)fluoranthene	2015/12/18		106	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/18		109	%	30 - 130
			Benzo(j)fluoranthene	2015/12/18		102	%	30 - 130
			Benzo(k)fluoranthene	2015/12/18		109	%	30 - 130
			Chrysene	2015/12/18		105	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/18		101	%	30 - 130
			Fluoranthene	2015/12/18		NC	%	30 - 130
			Fluorene	2015/12/18		NC	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/18		105	%	30 - 130
			Naphthalene	2015/12/18		NC	%	30 - 130
			Perylene	2015/12/18		106	%	30 - 130
			Phenanthrene	2015/12/18		NC	%	30 - 130
			Pyrene	2015/12/18		NC	%	30 - 130
4315263	GTH	Spiked Blank	D10-Anthracene	2015/12/18		99	%	30 - 130
			D14-Terphenyl	2015/12/18		103	%	30 - 130
			D8-Acenaphthylene	2015/12/18		95	%	30 - 130
			1-Methylnaphthalene	2015/12/18		108	%	30 - 130
			2-Methylnaphthalene	2015/12/18		113	%	30 - 130
			Acenaphthene	2015/12/18		112	%	30 - 130
			Acenaphthylene	2015/12/18		102	%	30 - 130
			Anthracene	2015/12/18		107	%	30 - 130
			Benzo(a)anthracene	2015/12/18		91	%	30 - 130
			Benzo(a)pyrene	2015/12/18		108	%	30 - 130
			Benzo(b)fluoranthene	2015/12/18		104	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/18		106	%	30 - 130
			Benzo(j)fluoranthene	2015/12/18		105	%	30 - 130
			Benzo(k)fluoranthene	2015/12/18		112	%	30 - 130
			Chrysene	2015/12/18		92	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/18		96	%	30 - 130
			Fluoranthene	2015/12/18		102	%	30 - 130
			Fluorene	2015/12/18		109	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/18		102	%	30 - 130
			Naphthalene	2015/12/18		115	%	30 - 130
			Perylene	2015/12/18		104	%	30 - 130
			Phenanthrene	2015/12/18		109	%	30 - 130
			Pyrene	2015/12/18		100	%	30 - 130
4315263	GTH	Method Blank	D10-Anthracene	2015/12/18		104	%	30 - 130
			D14-Terphenyl	2015/12/18		104	%	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
			D8-Acenaphthylene	2015/12/18		97	%	30 - 130
			1-Methylnaphthalene	2015/12/18	<0.050		ug/L	
			2-Methylnaphthalene	2015/12/18	<0.050		ug/L	
			Acenaphthene	2015/12/18	<0.010		ug/L	
			Acenaphthylene	2015/12/18	<0.010		ug/L	
			Anthracene	2015/12/18	<0.010		ug/L	
			Benzo(a)anthracene	2015/12/18	<0.010		ug/L	
			Benzo(a)pyrene	2015/12/18	<0.010		ug/L	
			Benzo(b)fluoranthene	2015/12/18	<0.010		ug/L	
			Benzo(g,h,i)perylene	2015/12/18	<0.010		ug/L	
			Benzo(j)fluoranthene	2015/12/18	<0.010		ug/L	
			Benzo(k)fluoranthene	2015/12/18	<0.010		ug/L	
			Chrysene	2015/12/18	<0.010		ug/L	
			Dibenz(a,h)anthracene	2015/12/18	<0.010		ug/L	
			Fluoranthene	2015/12/18	<0.010		ug/L	
			Fluorene	2015/12/18	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2015/12/18	<0.010		ug/L	
			Naphthalene	2015/12/18	<0.20		ug/L	
			Perylene	2015/12/18	<0.010		ug/L	
			Phenanthrene	2015/12/18	<0.010		ug/L	
			Pyrene	2015/12/18	<0.010		ug/L	
4315263	GTH	RPD	1-Methylnaphthalene	2015/12/18	11		%	40
			2-Methylnaphthalene	2015/12/18	12		%	40
			Acenaphthene	2015/12/18	11		%	40
			Acenaphthylene	2015/12/18	NC		%	40
			Anthracene	2015/12/18	NC		%	40
			Benzo(a)anthracene	2015/12/18	NC		%	40
			Benzo(a)pyrene	2015/12/18	NC		%	40
			Benzo(b)fluoranthene	2015/12/18	NC		%	40
			Benzo(g,h,i)perylene	2015/12/18	NC		%	40
			Benzo(j)fluoranthene	2015/12/18	NC		%	40
			Benzo(k)fluoranthene	2015/12/18	NC		%	40
			Chrysene	2015/12/18	NC		%	40
			Dibenz(a,h)anthracene	2015/12/18	NC		%	40
			Fluoranthene	2015/12/18	NC		%	40
			Fluorene	2015/12/18	24		%	40
			Indeno(1,2,3-cd)pyrene	2015/12/18	NC		%	40
			Naphthalene	2015/12/18	12		%	40
			Perylene	2015/12/18	NC		%	40
			Phenanthrene	2015/12/18	14		%	40
			Pyrene	2015/12/18	NC		%	40
4315390	ARS	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2015/12/16		NC	%	80 - 120
4315390	ARS	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2015/12/16		95	%	80 - 120
4315390	ARS	Method Blank	Nitrogen (Ammonia Nitrogen)	2015/12/16	<0.050		mg/L	
4315390	ARS	RPD	Nitrogen (Ammonia Nitrogen)	2015/12/16	1.5		%	20
4315926	TMO	QC Standard	Turbidity	2015/12/16		89	%	80 - 120
4315926	TMO	Method Blank	Turbidity	2015/12/16	<0.10		NTU	
4315926	TMO	RPD	Turbidity	2015/12/16	7.6		%	20
4315979	MCN	Matrix Spike	Dissolved Chloride (Cl)	2015/12/18		97	%	80 - 120
4315979	MCN	QC Standard	Dissolved Chloride (Cl)	2015/12/18		104	%	80 - 120
4315979	MCN	Spiked Blank	Dissolved Chloride (Cl)	2015/12/18		104	%	80 - 120
4315979	MCN	Method Blank	Dissolved Chloride (Cl)	2015/12/18	<1.0		mg/L	
4315979	MCN	RPD	Dissolved Chloride (Cl)	2015/12/18	3.3		%	25

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Maxxam Job #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4316334	ARS	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2015/12/17		NC	%	80 - 120
4316334	ARS	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2015/12/17		93	%	80 - 120
4316334	ARS	Method Blank	Nitrogen (Ammonia Nitrogen)	2015/12/17	<0.050		mg/L	
4316334	ARS	RPD	Nitrogen (Ammonia Nitrogen)	2015/12/17	2.5		%	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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Poor spike recovery due to sample matrix.

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Maxxam Job #: B5P4159
Report Date: 2015/12/30

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

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)

Phil Deveau

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Maxxam
A Bureau Veritas Group Company

Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/17
Report #: R3811191
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5P2878
Received: 2015/12/08, 16:30

Sample Matrix: Water
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	10	N/A	2015/12/16	N/A	SM 22 4500-CO2 D
Alkalinity (1)	10	N/A	2015/12/15	ATL SOP 00013	EPA 310.2 R1974 m
Chloride (1)	10	N/A	2015/12/16	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	10	N/A	2015/12/15	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	10	N/A	2015/12/15	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	10	N/A	2015/12/15	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	10	2015/12/14	2015/12/15	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	10	N/A	2015/12/15	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	10	N/A	2015/12/16		Auto Calc.
Anion and Cation Sum (1)	10	N/A	2015/12/16		Auto Calc.
Nitrogen Ammonia - water (1)	10	N/A	2015/12/15	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	10	N/A	2015/12/16	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	10	N/A	2015/12/15	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	10	N/A	2015/12/16	ATL SOP 00018	ASTM D3867
PAH in Water by GC/MS (SIM) (1)	2	2015/12/14	2015/12/15	ATL SOP 00103	EPA 8270D 2007 m
PAH in Water by GC/MS (SIM) (1)	9	2015/12/14	2015/12/16	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	10	N/A	2015/12/15	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	10	N/A	2015/12/16	ATL SOP 00021	EPA 365.2 m
Sat. pH and Langelier Index (@ 20C) (1)	10	N/A	2015/12/16	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	10	N/A	2015/12/16	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	10	N/A	2015/12/15	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	10	N/A	2015/12/15	ATL SOP 00023	EPA 375.4 R1978 m
Total Dissolved Solids (TDS calc) (1)	10	N/A	2015/12/16		Auto Calc.
Organic carbon - Total (TOC) (1, 3)	10	N/A	2015/12/16	ATL SOP 00037	SM 22 5310C m
Turbidity (1)	10	N/A	2015/12/15	ATL SOP 00011	EPA 180.1 R2 m

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 #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/17
Report #: R3811191
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5P2878
Received: 2015/12/08, 16:30

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 #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BML270		BML271			BML272		
Sampling Date		2015/12/08		2015/12/08			2015/12/08		
COC Number		538951		538951			538951		
	UNITS	COSCW-001-MWA	RDL	COSCW-001-MWB	RDL	QC Batch	COSCW-002-MWA	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	5.04	N/A	6.39	N/A	4304917	10.2	N/A	4304917
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	180	1.0	270	1.0	4304913	340	1.0	4304913
Calculated TDS	mg/L	280	1.0	330	1.0	4304922	560	1.0	4304922
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.1	1.0	1.8	1.0	4304913	2.4	1.0	4304913
Cation Sum	me/L	5.01	N/A	5.96	N/A	4304917	9.75	N/A	4304917
Hardness (CaCO3)	mg/L	220	1.0	260	1.0	4304915	470	1.0	4304915
Ion Balance (% Difference)	%	0.300	N/A	3.48	N/A	4304916	2.30	N/A	4304916
Langelier Index (@ 20C)	N/A	0.510		0.746		4304920	1.13		4304920
Langelier Index (@ 4C)	N/A	0.261		0.497		4304921	0.883		4304921
Nitrate (N)	mg/L	0.058	0.050	<0.050	0.050	4304918	0.077	0.050	4306717
Saturation pH (@ 20C)	N/A	7.29		7.10		4304920	6.75		4304920
Saturation pH (@ 4C)	N/A	7.54		7.35		4304921	6.99		4304921
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	180	25	270	25	4312318	350	25	4312318
Dissolved Chloride (Cl)	mg/L	14	1.0	12	1.0	4312337	8.2	1.0	4312337
Colour	TCU	<5.0	5.0	<5.0	5.0	4312353	<5.0	5.0	4312353
Nitrate + Nitrite (N)	mg/L	0.058	0.050	<0.050	0.050	4312362	0.077	0.050	4312362
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	4312363	<0.010	0.010	4312363
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	<0.050	0.050	4312181	<0.050	0.050	4312181
Total Organic Carbon (C)	mg/L	0.78	0.50	2.8	0.50	4314076	1.1	0.50	4314076
Orthophosphate (P)	mg/L	0.011	0.010	0.011	0.010	4312355	0.012	0.010	4312355
pH	pH	7.80	N/A	7.84	N/A	4313382	7.88	N/A	4313382
Reactive Silica (SiO2)	mg/L	11	0.50	12	0.50	4312351	13	0.50	4312351
Dissolved Sulphate (SO4)	mg/L	51	10	30	2.0	4312341	150	10	4312341
Turbidity	NTU	43	0.10	2.1	0.10	4315543	4.2	0.10	4315543
Conductivity	uS/cm	460	1.0	540	1.0	4313378	830	1.0	4313378

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BML273		BML274		BML275		BML276		
Sampling Date		2015/12/08		2015/12/08		2015/12/08		2015/12/08		
COC Number		538951		538951		538951		538951		
	UNITS	COSCW-002-MWB	RDL	CODT-203-MW	RDL	CODT-206-MW	RDL	CODT-205-MWA	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	6.59	N/A	8.94	N/A	4.06	N/A	6.14	N/A	4304917
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	180	1.0	180	1.0	96	1.0	270	1.0	4304913
Calculated TDS	mg/L	380	1.0	550	1.0	280	1.0	330	1.0	4304922
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.2	1.0	<1.0	1.0	1.4	1.0	1.7	1.0	4304913
Cation Sum	me/L	6.43	N/A	8.69	N/A	4.09	N/A	6.13	N/A	4304917
Hardness (CaCO3)	mg/L	270	1.0	350	1.0	190	1.0	240	1.0	4304915
Ion Balance (% Difference)	%	1.23	N/A	1.42	N/A	0.370	N/A	0.0800	N/A	4304916
Langelier Index (@ 20C)	N/A	0.609		0.434		0.608		0.721		4304920
Langelier Index (@ 4C)	N/A	0.360		0.186		0.358		0.472		4304921
Nitrate (N)	mg/L	0.15	0.050	<0.050	0.050	0.48	0.050	0.052	0.050	4306717
Saturation pH (@ 20C)	N/A	7.24		7.12		7.57		7.12		4304920
Saturation pH (@ 4C)	N/A	7.49		7.37		7.82		7.37		4304921
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	180	25	180	25	98	10	270	25	4312318
Dissolved Chloride (Cl)	mg/L	10	1.0	35	1.0	10	1.0	15	1.0	4312337
Colour	TCU	<5.0	5.0	5.9	5.0	14	5.0	12	5.0	4312353
Nitrate + Nitrite (N)	mg/L	0.15	0.050	0.084	0.050	0.48	0.050	0.052	0.050	4312362
Nitrite (N)	mg/L	<0.010	0.010	0.038	0.010	<0.010	0.010	<0.010	0.010	4312363
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	0.28	0.050	0.085	0.050	0.28	0.050	4312181
Total Organic Carbon (C)	mg/L	0.63	0.50	3.6	0.50	5.0	0.50	9.2	0.50	4314076
Orthophosphate (P)	mg/L	<0.010	0.010	0.014	0.010	0.048	0.010	0.013	0.010	4312355
pH	pH	7.85	N/A	7.56	N/A	8.18	N/A	7.84	N/A	4313382
Reactive Silica (SiO2)	mg/L	8.4	0.50	18	0.50	41	2.5	16	0.50	4312351
Dissolved Sulphate (SO4)	mg/L	130	10	210	20	86	10	18	2.0	4312341
Turbidity	NTU	1.5	0.10	23	0.10	8.0	0.10	35	0.10	4315543
Conductivity	uS/cm	600	1.0	830	1.0	400	1.0	530	1.0	4313378

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BML277		BML278		BML279		
Sampling Date		2015/12/08		2015/12/08		2015/12/08		
COC Number		538951		538951		538951		
	UNITS	COTS-001-MWB	RDL	CONCW-101-MWB	RDL	FD-014	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	9.31	N/A	5.93	N/A	8.87	N/A	4306715
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	260	1.0	39	1.0	180	1.0	4306711
Calculated TDS	mg/L	520	1.0	420	1.0	550	1.0	4306720
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.5	1.0	<1.0	1.0	<1.0	1.0	4306711
Cation Sum	me/L	8.84	N/A	7.90	N/A	8.73	N/A	4306715
Hardness (CaCO3)	mg/L	360	1.0	260	1.0	350	1.0	4306713
Ion Balance (% Difference)	%	2.59	N/A	14.2	N/A	0.800	N/A	4306714
Langelier Index (@ 20C)	N/A	0.804		0.139		0.388		4306718
Langelier Index (@ 4C)	N/A	0.557		-0.109		0.140		4306719
Nitrate (N)	mg/L	1.8	0.050	0.21	0.050	<0.050	0.050	4306717
Saturation pH (@ 20C)	N/A	6.97		7.88		7.13		4306718
Saturation pH (@ 4C)	N/A	7.22		8.13		7.37		4306719
Inorganics								
Total Alkalinity (Total as CaCO3)	mg/L	260	25	39	5.0	180	25	4312318
Dissolved Chloride (Cl)	mg/L	48	1.0	82	1.0	34	1.0	4312337
Colour	TCU	<5.0	5.0	5.1	5.0	6.7	5.0	4312353
Nitrate + Nitrite (N)	mg/L	1.8	0.050	0.22	0.050	0.083	0.050	4312362
Nitrite (N)	mg/L	<0.010	0.010	0.017	0.010	0.041	0.010	4312363
Nitrogen (Ammonia Nitrogen)	mg/L	0.074	0.050	0.41	0.050	0.29	0.050	4312181
Total Organic Carbon (C)	mg/L	1.6	0.50	3.4	0.50	3.6	0.50	4314076
Orthophosphate (P)	mg/L	0.016	0.010	0.015	0.010	0.016	0.010	4312355
pH	pH	7.78	N/A	8.02	N/A	7.51	N/A	4313382
Reactive Silica (SiO2)	mg/L	13	0.50	17	0.50	18	0.50	4312351
Dissolved Sulphate (SO4)	mg/L	120	10	130	10	210	20	4312341
Turbidity	NTU	4.4	0.10	11	0.10	26	0.10	4315543
Conductivity	uS/cm	810	1.0	620	1.0	820	1.0	4313378

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		BML270		BML271		BML272		
Sampling Date		2015/12/08		2015/12/08		2015/12/08		
COC Number		538951		538951		538951		
	UNITS	COSCW-001-MWA	QC Batch	COSCW-001-MWB	QC Batch	COSCW-002-MWA	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	0.11	4311923	0.19	4311946	<0.013	0.013	4311923

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BML273	BML274	BML275	BML276	BML277		
Sampling Date		2015/12/08	2015/12/08	2015/12/08	2015/12/08	2015/12/08		
COC Number		538951	538951	538951	538951	538951		
	UNITS	COSCW-002-MWB	CODT-203-MW	CODT-206-MW	CODT-205-MWA	COTS-001-MWB	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	4311923

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BML278	BML279		
Sampling Date		2015/12/08	2015/12/08		
COC Number		538951	538951		
	UNITS	CONCW-101-MWB	FD-014	RDL	QC Batch
Metals					
Total Mercury (Hg)	ug/L	<0.013	0.057	0.013	4311923

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BML270	BML271	BML272	BML273		
Sampling Date		2015/12/08	2015/12/08	2015/12/08	2015/12/08		
COC Number		538951	538951	538951	538951		
	UNITS	COSCW-001-MWA	COSCW-001-MWB	COSCW-002-MWA	COSCW-002-MWB	RDL	QC Batch
Metals							
Dissolved Aluminum (Al)	ug/L	7.6	5.2	7.8	7.5	5.0	4313303
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	4313303
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	4313303
Dissolved Barium (Ba)	ug/L	45	150	22	31	1.0	4313303
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	4313303
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	4313303
Dissolved Boron (B)	ug/L	<50	62	<50	<50	50	4313303
Dissolved Cadmium (Cd)	ug/L	0.061	0.051	0.14	0.038	0.010	4313303
Dissolved Calcium (Ca)	ug/L	74000	80000	160000	88000	100	4313303
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	4313303
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	4313303
Dissolved Copper (Cu)	ug/L	12	<2.0	65	6.3	2.0	4313303
Dissolved Iron (Fe)	ug/L	<50	110	<50	61	50	4313303
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	1.0	0.65	0.50	4313303
Dissolved Magnesium (Mg)	ug/L	8400	15000	18000	11000	100	4313303
Dissolved Manganese (Mn)	ug/L	87	160	<2.0	110	2.0	4313303
Dissolved Molybdenum (Mo)	ug/L	<2.0	3.4	<2.0	5.3	2.0	4313303
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	2.9	<2.0	2.0	4313303
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	<100	100	4313303
Dissolved Potassium (K)	ug/L	1600	3200	1500	1700	100	4313303
Dissolved Selenium (Se)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	4313303
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	4313303
Dissolved Sodium (Na)	ug/L	13000	16000	8700	24000	100	4313303
Dissolved Strontium (Sr)	ug/L	600	1400	240	150	2.0	4313303
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	4313303
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	4313303
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	4313303
Dissolved Uranium (U)	ug/L	0.75	2.6	4.1	1.9	0.10	4313303
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	4313303
Dissolved Zinc (Zn)	ug/L	44	<5.0	210	38	5.0	4313303

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BML274	BML275	BML276	BML277	BML278		
Sampling Date		2015/12/08	2015/12/08	2015/12/08	2015/12/08	2015/12/08		
COC Number		538951	538951	538951	538951	538951		
	UNITS	CODT-203-MW	CODT-206-MW	CODT-205-MWA	COTS-001-MWB	CONCW-101-MWB	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	6.2	12	10	6.3	63	5.0	4313303
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4313303
Dissolved Arsenic (As)	ug/L	2.1	4.0	4.6	<1.0	6.6	1.0	4313303
Dissolved Barium (Ba)	ug/L	85	46	320	43	66	1.0	4313303
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4313303
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4313303
Dissolved Boron (B)	ug/L	59	<50	<50	<50	53	50	4313303
Dissolved Cadmium (Cd)	ug/L	0.080	1.3	0.019	0.029	0.066	0.010	4313303
Dissolved Calcium (Ca)	ug/L	130000	73000	77000	120000	96000	100	4313303
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4313303
Dissolved Cobalt (Co)	ug/L	0.47	<0.40	<0.40	<0.40	<0.40	0.40	4313303
Dissolved Copper (Cu)	ug/L	4.1	5.3	<2.0	<2.0	<2.0	2.0	4313303
Dissolved Iron (Fe)	ug/L	720	<50	2200	<50	<50	50	4313303
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4313303
Dissolved Magnesium (Mg)	ug/L	8600	2400	11000	14000	5900	100	4313303
Dissolved Manganese (Mn)	ug/L	1800	<2.0	860	22	250	2.0	4313303
Dissolved Molybdenum (Mo)	ug/L	2.7	<2.0	6.9	<2.0	6.2	2.0	4313303
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4313303
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	<100	<100	100	4313303
Dissolved Potassium (K)	ug/L	4100	3000	4800	2800	6500	100	4313303
Dissolved Selenium (Se)	ug/L	<1.0	1.9	<1.0	<1.0	2.8	1.0	4313303
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4313303
Dissolved Sodium (Na)	ug/L	36000	4400	27000	37000	56000	100	4313303
Dissolved Strontium (Sr)	ug/L	390	340	3100	1600	600	2.0	4313303
Dissolved Thallium (Tl)	ug/L	0.17	<0.10	<0.10	<0.10	<0.10	0.10	4313303
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4313303
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4313303
Dissolved Uranium (U)	ug/L	1.5	2.6	0.79	0.75	1.2	0.10	4313303
Dissolved Vanadium (V)	ug/L	<2.0	7.5	<2.0	<2.0	<2.0	2.0	4313303
Dissolved Zinc (Zn)	ug/L	46	6.3	19	<5.0	<5.0	5.0	4313303

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BML279		
Sampling Date		2015/12/08		
COC Number		538951		
	UNITS	FD-014	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	7.3	5.0	4313303
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	4313303
Dissolved Arsenic (As)	ug/L	2.1	1.0	4313303
Dissolved Barium (Ba)	ug/L	85	1.0	4313303
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	4313303
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	4313303
Dissolved Boron (B)	ug/L	59	50	4313303
Dissolved Cadmium (Cd)	ug/L	0.088	0.010	4313303
Dissolved Calcium (Ca)	ug/L	130000	100	4313303
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	4313303
Dissolved Cobalt (Co)	ug/L	0.48	0.40	4313303
Dissolved Copper (Cu)	ug/L	4.0	2.0	4313303
Dissolved Iron (Fe)	ug/L	720	50	4313303
Dissolved Lead (Pb)	ug/L	<0.50	0.50	4313303
Dissolved Magnesium (Mg)	ug/L	8600	100	4313303
Dissolved Manganese (Mn)	ug/L	1900	2.0	4313303
Dissolved Molybdenum (Mo)	ug/L	2.6	2.0	4313303
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	4313303
Dissolved Phosphorus (P)	ug/L	<100	100	4313303
Dissolved Potassium (K)	ug/L	4100	100	4313303
Dissolved Selenium (Se)	ug/L	<1.0	1.0	4313303
Dissolved Silver (Ag)	ug/L	<0.10	0.10	4313303
Dissolved Sodium (Na)	ug/L	36000	100	4313303
Dissolved Strontium (Sr)	ug/L	390	2.0	4313303
Dissolved Thallium (Tl)	ug/L	0.17	0.10	4313303
Dissolved Tin (Sn)	ug/L	<2.0	2.0	4313303
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	4313303
Dissolved Uranium (U)	ug/L	1.5	0.10	4313303
Dissolved Vanadium (V)	ug/L	<2.0	2.0	4313303
Dissolved Zinc (Zn)	ug/L	46	5.0	4313303

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BML270	BML271		BML272	BML273		
Sampling Date		2015/12/08	2015/12/08		2015/12/08	2015/12/08		
COC Number		538951	538951		538951	538951		
	UNITS	COSCW-001-MWA	COSCW-001-MWB	QC Batch	COSCW-002-MWA	COSCW-002-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	<0.050	<0.050	4311636	<0.050	<0.050	0.050	4316205
2-Methylnaphthalene	ug/L	<0.050	<0.050	4311636	<0.050	<0.050	0.050	4316205
Acenaphthene	ug/L	<0.010	<0.010	4311636	0.015	<0.010	0.010	4316205
Acenaphthylene	ug/L	<0.010	<0.010	4311636	<0.010	<0.010	0.010	4316205
Anthracene	ug/L	<0.010	<0.010	4311636	0.011	<0.010	0.010	4316205
Benzo(a)anthracene	ug/L	<0.010	<0.010	4311636	<0.010	<0.010	0.010	4316205
Benzo(a)pyrene	ug/L	<0.010	<0.010	4311636	<0.010	<0.010	0.010	4316205
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	4311636	<0.010	<0.010	0.010	4316205
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	4311636	<0.010	<0.010	0.010	4316205
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	4311636	<0.010	<0.010	0.010	4316205
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	4311636	<0.010	<0.010	0.010	4316205
Chrysene	ug/L	<0.010	<0.010	4311636	0.010	<0.010	0.010	4316205
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	4311636	<0.010	<0.010	0.010	4316205
Fluoranthene	ug/L	0.013	0.017	4311636	0.030	<0.010	0.010	4316205
Fluorene	ug/L	0.013	<0.010	4311636	0.019	<0.010	0.010	4316205
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	4311636	<0.010	<0.010	0.010	4316205
Naphthalene	ug/L	<0.20	<0.20	4311636	<0.20	<0.20	0.20	4316205
Perylene	ug/L	<0.010	<0.010	4311636	<0.010	<0.010	0.010	4316205
Phenanthrene	ug/L	0.022	0.023	4311636	0.046	0.014	0.010	4316205
Pyrene	ug/L	0.010	0.015	4311636	0.024	<0.010	0.010	4316205
Surrogate Recovery (%)								
D10-Anthracene	%	107	99	4311636	91	90		4316205
D14-Terphenyl	%	100 (1)	95	4311636	97	88		4316205
D8-Acenaphthylene	%	114	110	4311636	97	91		4316205

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PAH sample contained sediment.

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BML274	BML275	BML276	BML277	BML278		
Sampling Date		2015/12/08	2015/12/08	2015/12/08	2015/12/08	2015/12/08		
COC Number		538951	538951	538951	538951	538951		
	UNITS	CODT-203-MW	CODT-206-MW	CODT-205-MWA	COTS-001-MWB	CONCW-101-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	0.065	0.050	4316205
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	0.060	0.050	4316205
Acenaphthene	ug/L	0.61	0.034	0.019	<0.010	0.064	0.010	4316205
Acenaphthylene	ug/L	0.026	<0.010	<0.010	<0.010	0.027	0.010	4316205
Anthracene	ug/L	0.42	0.023	<0.010	<0.010	0.033	0.010	4316205
Benzo(a)anthracene	ug/L	0.75	0.040	<0.010	0.011	<0.010	0.010	4316205
Benzo(a)pyrene	ug/L	0.61	0.072	<0.010	0.011	<0.010	0.010	4316205
Benzo(b)fluoranthene	ug/L	0.42	0.052	<0.010	<0.010	<0.010	0.010	4316205
Benzo(g,h,i)perylene	ug/L	0.29	0.038	<0.010	<0.010	<0.010	0.010	4316205
Benzo(j)fluoranthene	ug/L	0.27	0.029	<0.010	<0.010	<0.010	0.010	4316205
Benzo(k)fluoranthene	ug/L	0.26	0.028	<0.010	<0.010	<0.010	0.010	4316205
Chrysene	ug/L	0.73	0.059	<0.010	0.012	<0.010	0.010	4316205
Dibenz(a,h)anthracene	ug/L	0.11	0.011	<0.010	<0.010	<0.010	0.010	4316205
Fluoranthene	ug/L	1.8	0.089	0.022	0.029	0.080	0.010	4316205
Fluorene	ug/L	0.24	0.018	<0.010	<0.010	0.070	0.010	4316205
Indeno(1,2,3-cd)pyrene	ug/L	0.29	0.032	<0.010	<0.010	<0.010	0.010	4316205
Naphthalene	ug/L	<0.20	<0.20	<0.20	<0.20	0.29	0.20	4316205
Perylene	ug/L	0.12	0.015	<0.010	<0.010	<0.010	0.010	4316205
Phenanthrene	ug/L	1.5	0.059	<0.010	0.023	0.21	0.010	4316205
Pyrene	ug/L	1.3	0.064	0.017	0.023	0.052	0.010	4316205
Surrogate Recovery (%)								
D10-Anthracene	%	16 (1)	58	55	40 (1)	83		4316205
D14-Terphenyl	%	87	85	76	43 (1)	103		4316205
D8-Acenaphthylene	%	39 (1)	62	66	43 (1)	95		4316205

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PAH surrogate(s) not within acceptance limits. Insufficient sample to repeat.

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BML279	BML280		
Sampling Date		2015/12/08	2015/12/08		
COC Number		538951	538951		
	UNITS	FD-014	TB-020	RDL	QC Batch
Polyaromatic Hydrocarbons					
1-Methylnaphthalene	ug/L	0.22	<0.050	0.050	4316205
2-Methylnaphthalene	ug/L	<0.050	<0.050	0.050	4316205
Acenaphthene	ug/L	3.0	<0.010	0.010	4316205
Acenaphthylene	ug/L	0.094	<0.010	0.010	4316205
Anthracene	ug/L	0.46	<0.010	0.010	4316205
Benzo(a)anthracene	ug/L	0.60	<0.010	0.010	4316205
Benzo(a)pyrene	ug/L	0.46	<0.010	0.010	4316205
Benzo(b)fluoranthene	ug/L	0.34	<0.010	0.010	4316205
Benzo(g,h,i)perylene	ug/L	0.17	<0.010	0.010	4316205
Benzo(j)fluoranthene	ug/L	0.21	<0.010	0.010	4316205
Benzo(k)fluoranthene	ug/L	0.20	<0.010	0.010	4316205
Chrysene	ug/L	0.59	<0.010	0.010	4316205
Dibenz(a,h)anthracene	ug/L	0.063	<0.010	0.010	4316205
Fluoranthene	ug/L	1.6	<0.010	0.010	4316205
Fluorene	ug/L	0.96	<0.010	0.010	4316205
Indeno(1,2,3-cd)pyrene	ug/L	0.17	<0.010	0.010	4316205
Naphthalene	ug/L	<0.20	<0.20	0.20	4316205
Perylene	ug/L	0.089	<0.010	0.010	4316205
Phenanthrene	ug/L	1.3	<0.010	0.010	4316205
Pyrene	ug/L	1.1	<0.010	0.010	4316205
Surrogate Recovery (%)					
D10-Anthracene	%	66	98		4316205
D14-Terphenyl	%	101	86		4316205
D8-Acenaphthylene	%	87	104		4316205

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

GENERAL COMMENTS

Sample BML278-01 : Poor RCAp Ion Balance due to sample matrix.

Results relate only to the items tested.

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4311636	GTH	Matrix Spike [BML271-05]	D10-Anthracene	2015/12/15		97	%	30 - 130
			D14-Terphenyl	2015/12/15		94	%	30 - 130
			D8-Acenaphthylene	2015/12/15		107	%	30 - 130
			1-Methylnaphthalene	2015/12/15		96	%	30 - 130
			2-Methylnaphthalene	2015/12/15		99	%	30 - 130
			Acenaphthene	2015/12/15		101	%	30 - 130
			Acenaphthylene	2015/12/15		99	%	30 - 130
			Anthracene	2015/12/15		98	%	30 - 130
			Benzo(a)anthracene	2015/12/15		93	%	30 - 130
			Benzo(a)pyrene	2015/12/15		97	%	30 - 130
			Benzo(b)fluoranthene	2015/12/15		95	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/15		102	%	30 - 130
			Benzo(j)fluoranthene	2015/12/15		92	%	30 - 130
			Benzo(k)fluoranthene	2015/12/15		90	%	30 - 130
			Chrysene	2015/12/15		92	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/15		97	%	30 - 130
			Fluoranthene	2015/12/15		96	%	30 - 130
			Fluorene	2015/12/15		102	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/15		98	%	30 - 130
			Naphthalene	2015/12/15		94	%	30 - 130
			Perylene	2015/12/15		95	%	30 - 130
			Phenanthrene	2015/12/15		96	%	30 - 130
			Pyrene	2015/12/15		94	%	30 - 130
4311636	GTH	Spiked Blank	D10-Anthracene	2015/12/15		16 (1)	%	30 - 130
			D14-Terphenyl	2015/12/15		13 (1)	%	30 - 130
			D8-Acenaphthylene	2015/12/15		16 (1)	%	30 - 130
			1-Methylnaphthalene	2015/12/15		112	%	30 - 130
			2-Methylnaphthalene	2015/12/15		115	%	30 - 130
			Acenaphthene	2015/12/15		120	%	30 - 130
			Acenaphthylene	2015/12/15		116	%	30 - 130
			Anthracene	2015/12/15		120	%	30 - 130
			Benzo(a)anthracene	2015/12/15		109	%	30 - 130
			Benzo(a)pyrene	2015/12/15		115	%	30 - 130
			Benzo(b)fluoranthene	2015/12/15		106	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/15		119	%	30 - 130
			Benzo(j)fluoranthene	2015/12/15		112	%	30 - 130
			Benzo(k)fluoranthene	2015/12/15		119	%	30 - 130
			Chrysene	2015/12/15		107	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/15		109	%	30 - 130
			Fluoranthene	2015/12/15		116	%	30 - 130
			Fluorene	2015/12/15		120	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/15		115	%	30 - 130
			Naphthalene	2015/12/15		118	%	30 - 130
			Perylene	2015/12/15		116	%	30 - 130
			Phenanthrene	2015/12/15		115	%	30 - 130
			Pyrene	2015/12/15		116	%	30 - 130
4311636	GTH	Method Blank	D10-Anthracene	2015/12/15		30 (1)		30 - 130
			D14-Terphenyl	2015/12/15		26 (1)		30 - 130
			D8-Acenaphthylene	2015/12/15		32 (1)		30 - 130
			1-Methylnaphthalene	2015/12/15	<0.050		ug/L	
			2-Methylnaphthalene	2015/12/15	<0.050		ug/L	
			Acenaphthene	2015/12/15	<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
			Acenaphthylene	2015/12/15	<0.010		ug/L	
			Anthracene	2015/12/15	<0.010		ug/L	
			Benzo(a)anthracene	2015/12/15	<0.010		ug/L	
			Benzo(a)pyrene	2015/12/15	<0.010		ug/L	
			Benzo(b)fluoranthene	2015/12/15	<0.010		ug/L	
			Benzo(g,h,i)perylene	2015/12/15	<0.010		ug/L	
			Benzo(j)fluoranthene	2015/12/15	<0.010		ug/L	
			Benzo(k)fluoranthene	2015/12/15	<0.010		ug/L	
			Chrysene	2015/12/15	<0.010		ug/L	
			Dibenz(a,h)anthracene	2015/12/15	<0.010		ug/L	
			Fluoranthene	2015/12/15	<0.010		ug/L	
			Fluorene	2015/12/15	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2015/12/15	<0.010		ug/L	
			Naphthalene	2015/12/15	<0.20		ug/L	
			Perylene	2015/12/15	<0.010		ug/L	
			Phenanthrene	2015/12/15	<0.010		ug/L	
			Pyrene	2015/12/15	<0.010		ug/L	
4311636	GTH	RPD [BML270-05]	1-Methylnaphthalene	2015/12/15	NC		%	40
			2-Methylnaphthalene	2015/12/15	NC		%	40
			Acenaphthene	2015/12/15	NC		%	40
			Acenaphthylene	2015/12/15	NC		%	40
			Anthracene	2015/12/15	NC		%	40
			Benzo(a)anthracene	2015/12/15	NC		%	40
			Benzo(a)pyrene	2015/12/15	NC		%	40
			Benzo(b)fluoranthene	2015/12/15	NC		%	40
			Benzo(g,h,i)perylene	2015/12/15	NC		%	40
			Benzo(j)fluoranthene	2015/12/15	NC		%	40
			Benzo(k)fluoranthene	2015/12/15	NC		%	40
			Chrysene	2015/12/15	NC		%	40
			Dibenz(a,h)anthracene	2015/12/15	NC		%	40
			Fluoranthene	2015/12/15	NC		%	40
			Fluorene	2015/12/15	NC		%	40
			Indeno(1,2,3-cd)pyrene	2015/12/15	NC		%	40
			Naphthalene	2015/12/15	NC		%	40
			Perylene	2015/12/15	NC		%	40
			Phenanthrene	2015/12/15	NC		%	40
			Pyrene	2015/12/15	NC		%	40
4311923	VWA	Matrix Spike	Total Mercury (Hg)	2015/12/15		87	%	80 - 120
4311923	VWA	Spiked Blank	Total Mercury (Hg)	2015/12/15		101	%	80 - 120
4311923	VWA	Method Blank	Total Mercury (Hg)	2015/12/15	<0.013		ug/L	
4311923	VWA	RPD [BML270-04]	Total Mercury (Hg)	2015/12/15	0		%	20
4311946	VWA	Matrix Spike [BML271-04]	Total Mercury (Hg)	2015/12/15		78 (2)	%	80 - 120
4311946	VWA	Spiked Blank	Total Mercury (Hg)	2015/12/15		90	%	80 - 120
4311946	VWA	Method Blank	Total Mercury (Hg)	2015/12/15	<0.013		ug/L	
4311946	VWA	RPD	Total Mercury (Hg)	2015/12/15	NC		%	20
4312181	ARS	Matrix Spike [BML270-03]	Nitrogen (Ammonia Nitrogen)	2015/12/15		91	%	80 - 120
4312181	ARS	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2015/12/15		92	%	80 - 120
4312181	ARS	Method Blank	Nitrogen (Ammonia Nitrogen)	2015/12/15	<0.050		mg/L	
4312181	ARS	RPD [BML270-03]	Nitrogen (Ammonia Nitrogen)	2015/12/15	NC		%	20
4312318	ARS	Matrix Spike	Total Alkalinity (Total as CaCO3)	2015/12/15		99	%	80 - 120
4312318	ARS	Spiked Blank	Total Alkalinity (Total as CaCO3)	2015/12/15		116	%	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
4312318	ARS	Method Blank	Total Alkalinity (Total as CaCO3)	2015/12/15	<5.0		mg/L	
4312318	ARS	RPD	Total Alkalinity (Total as CaCO3)	2015/12/15	NC		%	25
4312337	MCN	Matrix Spike	Dissolved Chloride (Cl)	2015/12/16		100	%	80 - 120
4312337	MCN	QC Standard	Dissolved Chloride (Cl)	2015/12/16		106	%	80 - 120
4312337	MCN	Spiked Blank	Dissolved Chloride (Cl)	2015/12/16		102	%	80 - 120
4312337	MCN	Method Blank	Dissolved Chloride (Cl)	2015/12/16	<1.0		mg/L	
4312337	MCN	RPD	Dissolved Chloride (Cl)	2015/12/16	0.17		%	25
4312341	ARS	Matrix Spike	Dissolved Sulphate (SO4)	2015/12/15		105	%	80 - 120
4312341	ARS	Spiked Blank	Dissolved Sulphate (SO4)	2015/12/15		104	%	80 - 120
4312341	ARS	Method Blank	Dissolved Sulphate (SO4)	2015/12/15	<2.0		mg/L	
4312341	ARS	RPD	Dissolved Sulphate (SO4)	2015/12/15	NC		%	25
4312351	ARS	Matrix Spike	Reactive Silica (SiO2)	2015/12/15		NC	%	80 - 120
4312351	ARS	Spiked Blank	Reactive Silica (SiO2)	2015/12/15		98	%	80 - 120
4312351	ARS	Method Blank	Reactive Silica (SiO2)	2015/12/15	<0.50		mg/L	
4312351	ARS	RPD	Reactive Silica (SiO2)	2015/12/15	0.20		%	25
4312353	ARS	Spiked Blank	Colour	2015/12/15		104	%	80 - 120
4312353	ARS	Method Blank	Colour	2015/12/15	<5.0		TCU	
4312353	ARS	RPD	Colour	2015/12/15	NC		%	20
4312355	ARS	Matrix Spike	Orthophosphate (P)	2015/12/16		95	%	80 - 120
4312355	ARS	Spiked Blank	Orthophosphate (P)	2015/12/16		96	%	80 - 120
4312355	ARS	Method Blank	Orthophosphate (P)	2015/12/16	<0.010		mg/L	
4312355	ARS	RPD	Orthophosphate (P)	2015/12/16	NC		%	25
4312362	MCN	Matrix Spike	Nitrate + Nitrite (N)	2015/12/16		105	%	80 - 120
4312362	MCN	Spiked Blank	Nitrate + Nitrite (N)	2015/12/16		105	%	80 - 120
4312362	MCN	Method Blank	Nitrate + Nitrite (N)	2015/12/16	<0.050		mg/L	
4312362	MCN	RPD	Nitrate + Nitrite (N)	2015/12/16	NC		%	25
4312363	ARS	Matrix Spike	Nitrite (N)	2015/12/15		100	%	80 - 120
4312363	ARS	Spiked Blank	Nitrite (N)	2015/12/15		95	%	80 - 120
4312363	ARS	Method Blank	Nitrite (N)	2015/12/15	<0.010		mg/L	
4312363	ARS	RPD	Nitrite (N)	2015/12/15	NC		%	25
4313303	BAN	Matrix Spike	Dissolved Aluminum (Al)	2015/12/15		102	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/15		104	%	80 - 120
			Dissolved Arsenic (As)	2015/12/15		100	%	80 - 120
			Dissolved Barium (Ba)	2015/12/15		98	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/15		103	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/15		99	%	80 - 120
			Dissolved Boron (B)	2015/12/15		106	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/15		101	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/15		NC	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/15		100	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/15		100	%	80 - 120
			Dissolved Copper (Cu)	2015/12/15		96	%	80 - 120
			Dissolved Iron (Fe)	2015/12/15		NC	%	80 - 120
			Dissolved Lead (Pb)	2015/12/15		100	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/15		NC	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/15		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/15		104	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/15		98	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/15		110	%	80 - 120
			Dissolved Potassium (K)	2015/12/15		NC	%	80 - 120
			Dissolved Selenium (Se)	2015/12/15		104	%	80 - 120
			Dissolved Silver (Ag)	2015/12/15		46 (3)	%	80 - 120
			Dissolved Sodium (Na)	2015/12/15		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 Strontium (Sr)	2015/12/15		NC	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/15		100	%	80 - 120
			Dissolved Tin (Sn)	2015/12/15		104	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/15		106	%	80 - 120
			Dissolved Uranium (U)	2015/12/15		103	%	80 - 120
			Dissolved Vanadium (V)	2015/12/15		102	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/15		97	%	80 - 120
4313303	BAN	Spiked Blank	Dissolved Aluminum (Al)	2015/12/15		102	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/15		101	%	80 - 120
			Dissolved Arsenic (As)	2015/12/15		98	%	80 - 120
			Dissolved Barium (Ba)	2015/12/15		100	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/15		100	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/15		102	%	80 - 120
			Dissolved Boron (B)	2015/12/15		101	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/15		100	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/15		102	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/15		100	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/15		100	%	80 - 120
			Dissolved Copper (Cu)	2015/12/15		99	%	80 - 120
			Dissolved Iron (Fe)	2015/12/15		103	%	80 - 120
			Dissolved Lead (Pb)	2015/12/15		102	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/15		108	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/15		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/15		102	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/15		100	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/15		108	%	80 - 120
			Dissolved Potassium (K)	2015/12/15		101	%	80 - 120
			Dissolved Selenium (Se)	2015/12/15		103	%	80 - 120
			Dissolved Silver (Ag)	2015/12/15		99	%	80 - 120
			Dissolved Sodium (Na)	2015/12/15		107	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/15		101	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/15		101	%	80 - 120
			Dissolved Tin (Sn)	2015/12/15		102	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/15		103	%	80 - 120
			Dissolved Uranium (U)	2015/12/15		103	%	80 - 120
			Dissolved Vanadium (V)	2015/12/15		101	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/15		98	%	80 - 120
4313303	BAN	Method Blank	Dissolved Aluminum (Al)	2015/12/15	<5.0		ug/L	
			Dissolved Antimony (Sb)	2015/12/15	<1.0		ug/L	
			Dissolved Arsenic (As)	2015/12/15	<1.0		ug/L	
			Dissolved Barium (Ba)	2015/12/15	<1.0		ug/L	
			Dissolved Beryllium (Be)	2015/12/15	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2015/12/15	<2.0		ug/L	
			Dissolved Boron (B)	2015/12/15	<50		ug/L	
			Dissolved Cadmium (Cd)	2015/12/15	<0.010		ug/L	
			Dissolved Calcium (Ca)	2015/12/15	<100		ug/L	
			Dissolved Chromium (Cr)	2015/12/15	<1.0		ug/L	
			Dissolved Cobalt (Co)	2015/12/15	<0.40		ug/L	
			Dissolved Copper (Cu)	2015/12/15	<2.0		ug/L	
			Dissolved Iron (Fe)	2015/12/15	<50		ug/L	
			Dissolved Lead (Pb)	2015/12/15	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2015/12/15	<100		ug/L	
			Dissolved Manganese (Mn)	2015/12/15	<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)	2015/12/15	<2.0		ug/L	
			Dissolved Nickel (Ni)	2015/12/15	<2.0		ug/L	
			Dissolved Phosphorus (P)	2015/12/15	<100		ug/L	
			Dissolved Potassium (K)	2015/12/15	<100		ug/L	
			Dissolved Selenium (Se)	2015/12/15	<1.0		ug/L	
			Dissolved Silver (Ag)	2015/12/15	<0.10		ug/L	
			Dissolved Sodium (Na)	2015/12/15	<100		ug/L	
			Dissolved Strontium (Sr)	2015/12/15	<2.0		ug/L	
			Dissolved Thallium (Tl)	2015/12/15	<0.10		ug/L	
			Dissolved Tin (Sn)	2015/12/15	<2.0		ug/L	
			Dissolved Titanium (Ti)	2015/12/15	<2.0		ug/L	
			Dissolved Uranium (U)	2015/12/15	<0.10		ug/L	
			Dissolved Vanadium (V)	2015/12/15	<2.0		ug/L	
			Dissolved Zinc (Zn)	2015/12/15	<5.0		ug/L	
4313303	BAN	RPD	Dissolved Arsenic (As)	2015/12/15	NC		%	20
			Dissolved Barium (Ba)	2015/12/15	0.66		%	20
			Dissolved Chromium (Cr)	2015/12/15	NC		%	20
			Dissolved Copper (Cu)	2015/12/15	NC		%	20
			Dissolved Lead (Pb)	2015/12/15	NC		%	20
			Dissolved Zinc (Zn)	2015/12/15	NC		%	20
4313378	TMO	Spiked Blank	Conductivity	2015/12/15		104	%	80 - 120
4313378	TMO	Method Blank	Conductivity	2015/12/15	1.2, RDL=1.0		uS/cm	
4313378	TMO	RPD [BML278-01]	Conductivity	2015/12/15	0.16		%	25
4313382	TMO	QC Standard	pH	2015/12/15		100	%	97 - 103
4313382	TMO	RPD [BML278-01]	pH	2015/12/15	0.0012		%	N/A
4314076	SMT	Matrix Spike [BML273-03]	Total Organic Carbon (C)	2015/12/16		113	%	80 - 120
4314076	SMT	Spiked Blank	Total Organic Carbon (C)	2015/12/16		109	%	80 - 120
4314076	SMT	Method Blank	Total Organic Carbon (C)	2015/12/16	<0.50		mg/L	
4314076	SMT	RPD [BML273-03]	Total Organic Carbon (C)	2015/12/16	NC		%	20
4315543	TMO	QC Standard	Turbidity	2015/12/15		88	%	80 - 120
4315543	TMO	Method Blank	Turbidity	2015/12/15	<0.10		NTU	
4315543	TMO	RPD [BML277-01]	Turbidity	2015/12/15	8.4		%	20
4316205	GTH	Spiked Blank	D10-Anthracene	2015/12/16		104	%	30 - 130
			D14-Terphenyl	2015/12/16		105	%	30 - 130
			D8-Acenaphthylene	2015/12/16		105	%	30 - 130
			1-Methylnaphthalene	2015/12/16		103	%	30 - 130
			2-Methylnaphthalene	2015/12/16		107	%	30 - 130
			Acenaphthene	2015/12/16		109	%	30 - 130
			Acenaphthylene	2015/12/16		105	%	30 - 130
			Anthracene	2015/12/16		108	%	30 - 130
			Benzo(a)anthracene	2015/12/16		96	%	30 - 130
			Benzo(a)pyrene	2015/12/16		105	%	30 - 130
			Benzo(b)fluoranthene	2015/12/16		98	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/16		101	%	30 - 130
			Benzo(j)fluoranthene	2015/12/16		102	%	30 - 130
			Benzo(k)fluoranthene	2015/12/16		103	%	30 - 130
			Chrysene	2015/12/16		92	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/16		94	%	30 - 130
			Fluoranthene	2015/12/16		104	%	30 - 130
			Fluorene	2015/12/16		108	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/16		97	%	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
			Naphthalene	2015/12/16		106	%	30 - 130
			Perylene	2015/12/16		99	%	30 - 130
			Phenanthrene	2015/12/16		101	%	30 - 130
			Pyrene	2015/12/16		101	%	30 - 130
4316205	GTH	Method Blank	D10-Anthracene	2015/12/16		99	%	30 - 130
			D14-Terphenyl	2015/12/16		105	%	30 - 130
			D8-Acenaphthylene	2015/12/16		107	%	30 - 130
			1-Methylnaphthalene	2015/12/16	<0.050		ug/L	
			2-Methylnaphthalene	2015/12/16	<0.050		ug/L	
			Acenaphthene	2015/12/16	<0.010		ug/L	
			Acenaphthylene	2015/12/16	<0.010		ug/L	
			Anthracene	2015/12/16	<0.010		ug/L	
			Benzo(a)anthracene	2015/12/16	<0.010		ug/L	
			Benzo(a)pyrene	2015/12/16	<0.010		ug/L	
			Benzo(b)fluoranthene	2015/12/16	<0.010		ug/L	
			Benzo(g,h,i)perylene	2015/12/16	<0.010		ug/L	
			Benzo(j)fluoranthene	2015/12/16	<0.010		ug/L	
			Benzo(k)fluoranthene	2015/12/16	<0.010		ug/L	
			Chrysene	2015/12/16	<0.010		ug/L	
			Dibenz(a,h)anthracene	2015/12/16	<0.010		ug/L	
			Fluoranthene	2015/12/16	<0.010		ug/L	
			Fluorene	2015/12/16	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2015/12/16	<0.010		ug/L	
			Naphthalene	2015/12/16	<0.20		ug/L	
			Perylene	2015/12/16	<0.010		ug/L	
			Phenanthrene	2015/12/16	<0.010		ug/L	
			Pyrene	2015/12/16	<0.010		ug/L	

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) PAH surrogate(s) not within acceptance limits. Samples tested had insufficient volume to repeat the analytical run.

(2) Poor spike recovery due to sample matrix.

(3) Violation is not applicable. Parameter not requested in the sample.

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Maxxam Job #: B5P2878
Report Date: 2015/12/17

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

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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Maxxam
A Bureau Veritas Group Company

Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/14
Report #: R3805546
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5O9385
Received: 2015/12/03, 16:45

Sample Matrix: Water
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	1	N/A	2015/12/08	N/A	SM 22 4500-CO2 D
Carbonate, Bicarbonate and Hydroxide (1)	9	N/A	2015/12/09	N/A	SM 22 4500-CO2 D
Alkalinity (1)	9	N/A	2015/12/10	ATL SOP 00013	EPA 310.2 R1974 m
Alkalinity (1)	1	N/A	2015/12/11	ATL SOP 00013	EPA 310.2 R1974 m
Chloride (1)	10	N/A	2015/12/11	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	10	N/A	2015/12/11	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	10	N/A	2015/12/08	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	10	N/A	2015/12/09	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	10	2015/12/08	2015/12/09	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	9	N/A	2015/12/08	ATL SOP 00058	EPA 6020A R1 m
Metals Water Diss. MS (as rec'd) (1)	1	N/A	2015/12/09	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	10	N/A	2015/12/11		Auto Calc.
Anion and Cation Sum (1)	10	N/A	2015/12/10		Auto Calc.
Nitrogen Ammonia - water (1)	10	N/A	2015/12/09	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	10	N/A	2015/12/11	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	10	N/A	2015/12/10	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	10	N/A	2015/12/11	ATL SOP 00018	ASTM D3867
PAH in Water by GC/MS (SIM) (1)	10	2015/12/10	2015/12/12	ATL SOP 00103	EPA 8270D 2007 m
PAH in Water by GC/MS (SIM) (1)	1	2015/12/10	2015/12/13	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	10	N/A	2015/12/08	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	10	N/A	2015/12/10	ATL SOP 00021	EPA 365.2 m
Sat. pH and Langelier Index (@ 20C) (1)	10	N/A	2015/12/11	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	10	N/A	2015/12/11	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	10	N/A	2015/12/09	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	10	N/A	2015/12/10	ATL SOP 00023	EPA 375.4 R1978 m
Total Dissolved Solids (TDS calc) (1)	10	N/A	2015/12/11		Auto Calc.
Organic carbon - Total (TOC) (1, 3)	10	N/A	2015/12/10	ATL SOP 00037	SM 22 5310C m
Turbidity (1)	10	N/A	2015/12/10	ATL SOP 00011	EPA 180.1 R2 m

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.

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Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/14
Report #: R3805546
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5O9385

Received: 2015/12/03, 16:45

(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 #: B5O9385
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BLT719			BLT720			BLT721		
Sampling Date		2015/12/03			2015/12/03			2015/12/03		
COC Number		538951			538951			538951		
	UNITS	MSES-003-MW	RDL	QC Batch	MSES-006-MW	RDL	QC Batch	MCES-006-MW	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	15.5	N/A	4299268	25.1	N/A	4299973	4.20	N/A	4299973
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	150	1.0	4299265	310	1.0	4299970	66	1.0	4299970
Calculated TDS	mg/L	1000	1.0	4299272	1600	1.0	4299976	260	1.0	4299976
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	4299265	<1.0	1.0	4299970	17	1.0	4299970
Cation Sum	me/L	17.4	N/A	4299268	26.9	N/A	4299973	3.86	N/A	4299973
Hardness (CaCO3)	mg/L	670	1.0	4299266	1300	1.0	4299971	170	1.0	4299971
Ion Balance (% Difference)	%	5.87	N/A	4299267	3.40	N/A	4299972	4.22	N/A	4299972
Langelier Index (@ 20C)	N/A	0.177		4299270	0.906		4299974	1.66		4299974
Langelier Index (@ 4C)	N/A	-0.0690		4299271	0.662		4299975	1.41		4299975
Nitrate (N)	mg/L	<0.050	0.050	4299934	<0.050	0.050	4299934	1.3	0.050	4299934
Saturation pH (@ 20C)	N/A	7.03		4299270	6.51		4299974	7.78		4299974
Saturation pH (@ 4C)	N/A	7.27		4299271	6.76		4299975	8.03		4299975
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	150	25	4304967	310	25	4304967	84	5.0	4305011
Dissolved Chloride (Cl)	mg/L	92	1.0	4304977	62	1.0	4304977	21	1.0	4305022
Colour	TCU	15	5.0	4304998	<5.0	5.0	4304998	12	5.0	4305037
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	4305004	<0.050	0.050	4305004	1.4	0.050	4305044
Nitrite (N)	mg/L	0.012	0.010	4305007	0.015	0.010	4305007	0.12	0.010	4305046
Nitrogen (Ammonia Nitrogen)	mg/L	0.23	0.050	4305098	0.45	0.050	4305098	0.14	0.050	4305098
Total Organic Carbon (C)	mg/L	6.5	0.50	4307200	2.4	0.50	4307200	3.8	0.50	4307200
Orthophosphate (P)	mg/L	0.015	0.010	4305000	0.049	0.010	4305000	0.045	0.010	4305039
pH	pH	7.20	N/A	4303105	7.42	N/A	4303116	9.44	N/A	4303116
Reactive Silica (SiO2)	mg/L	14	0.50	4304993	23	0.50	4304993	11	0.50	4305028
Dissolved Sulphate (SO4)	mg/L	480	100	4304984	820	100	4304984	88	10	4305025
Turbidity	NTU	200	1.0	4308833	1.3	0.10	4308833	3.2	0.10	4308833
Conductivity	uS/cm	1500	1.0	4303104	2100	1.0	4303107	370	1.0	4303107

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5O9385
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BLT722		BLT723		BLT724		BLT725		
Sampling Date		2015/12/03		2015/12/03		2015/12/03		2015/12/03		
COC Number		538951		538951		538951		538951		
	UNITS	MSES-104-MWA	RDL	MSES-104-MWB	RDL	MSES-004-MW	RDL	MCWS-309-MW	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	27.7	N/A	31.5	N/A	18.1	N/A	8.41	N/A	4299973
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	47	1.0	430	1.0	98	1.0	250	1.0	4299970
Calculated TDS	mg/L	1900	1.0	2200	1.0	1200	1.0	480	1.0	4299976
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	4299970
Cation Sum	me/L	30.7	N/A	43.7	N/A	21.4	N/A	7.74	N/A	4299973
Hardness (CaCO3)	mg/L	1500	1.0	1800	1.0	1000	1.0	20	1.0	4299971
Ion Balance (% Difference)	%	5.16	N/A	16.2	N/A	8.41	N/A	4.15	N/A	4299972
Langelier Index (@ 20C)	N/A	0.818		0.562		-0.581		-0.742		4299974
Langelier Index (@ 4C)	N/A	0.574		0.319		-0.826		-0.990		4299975
Nitrate (N)	mg/L	<0.050	0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	4299934
Saturation pH (@ 20C)	N/A	7.26		6.44		7.07		8.36		4299974
Saturation pH (@ 4C)	N/A	7.50		6.68		7.32		8.61		4299975
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	48	5.0	430	25	98	10	250	25	4305011
Dissolved Chloride (Cl)	mg/L	62	1.0	77	1.0	26	1.0	48	1.0	4305022
Colour	TCU	<5.0	5.0	18	5.0	25	5.0	18	5.0	4305037
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	4305044
Nitrite (N)	mg/L	0.010	0.010	0.014	0.010	0.013	0.010	0.011	0.010	4305046
Nitrogen (Ammonia Nitrogen)	mg/L	0.62	0.050	0.59	0.050	0.28	0.050	0.13	0.050	4305098
Total Organic Carbon (C)	mg/L	1.3	0.50	4.0	0.50	1.9	0.50	9.4 (1)	5.0	4307200
Orthophosphate (P)	mg/L	0.012	0.010	0.016	0.010	0.010	0.010	0.095	0.010	4305039
pH	pH	8.07	N/A	7.00	N/A	6.49	N/A	7.62	N/A	4303116
Reactive Silica (SiO2)	mg/L	4.6	0.50	13	0.50	5.7	0.50	7.0	0.50	4305028
Dissolved Sulphate (SO4)	mg/L	1200	100	1000	200	740	100	95	10	4305025
Turbidity	NTU	1.9	0.10	58	0.10	7.5	0.10	910	1.0	4308833
Conductivity	uS/cm	2300	1.0	3400	1.0	1700	1.0	750	1.0	4303107

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

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Maxxam Job #: B5O9385
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BLT726		BLT727		BLT728		
Sampling Date		2015/12/03		2015/12/03		2015/12/03		
COC Number		538951		538951		538951		
	UNITS	MSES-008-MW	RDL	MSES-012-MWA	RDL	FD-013	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	21.2	N/A	25.2	N/A	23.6	N/A	4299973
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	200	1.0	180	1.0	200	1.0	4299970
Calculated TDS	mg/L	1400	1.0	1600	1.0	1600	1.0	4299976
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	<1.0	1.0	<1.0	1.0	4299970
Cation Sum	me/L	26.0	N/A	27.7	N/A	25.9	N/A	4299973
Hardness (CaCO3)	mg/L	1100	1.0	980	1.0	1100	1.0	4299971
Ion Balance (% Difference)	%	10.3	N/A	4.65	N/A	4.69	N/A	4299972
Langelier Index (@ 20C)	N/A	0.614		0.438		0.676		4299974
Langelier Index (@ 4C)	N/A	0.369		0.194		0.432		4299975
Nitrate (N)	mg/L	<0.050	0.050	0.14	0.050	<0.050	0.050	4299934
Saturation pH (@ 20C)	N/A	6.71		6.82		6.72		4299974
Saturation pH (@ 4C)	N/A	6.96		7.06		6.96		4299975
Inorganics								
Total Alkalinity (Total as CaCO3)	mg/L	200	25	180	25	200	25	4305011
Dissolved Chloride (Cl)	mg/L	150	1.0	320	5.0	150	1.0	4305022
Colour	TCU	<5.0	5.0	<5.0	5.0	24	5.0	4305037
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	0.16	0.050	<0.050	0.050	4305044
Nitrite (N)	mg/L	<0.010	0.010	0.014	0.010	0.011	0.010	4305046
Nitrogen (Ammonia Nitrogen)	mg/L	0.096	0.050	0.12	0.050	0.092	0.050	4305098
Total Organic Carbon (C)	mg/L	1.5	0.50	0.88	0.50	1.4	0.50	4307200
Orthophosphate (P)	mg/L	0.025	0.010	0.035	0.010	0.026	0.010	4305039
pH	pH	7.32	N/A	7.26	N/A	7.40	N/A	4303116
Reactive Silica (SiO2)	mg/L	28	1.0	47	2.5	27	1.0	4305028
Dissolved Sulphate (SO4)	mg/L	620	100	600	100	740	100	4305025
Turbidity	NTU	110	1.0	3.5	0.10	120	1.0	4308833
Conductivity	uS/cm	2100	1.0	2500	1.0	2200	1.0	4303107

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5O9385
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		BLT719	BLT720	BLT721	BLT722	BLT723		
Sampling Date		2015/12/03	2015/12/03	2015/12/03	2015/12/03	2015/12/03		
COC Number		538951	538951	538951	538951	538951		
	UNITS	MSES-003-MW	MSES-006-MW	MCES-006-MW	MSES-104-MWA	MSES-104-MWB	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	4303926

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BLT724	BLT725	BLT726	BLT727	BLT728		
Sampling Date		2015/12/03	2015/12/03	2015/12/03	2015/12/03	2015/12/03		
COC Number		538951	538951	538951	538951	538951		
	UNITS	MSES-004-MW	MCWS-309-MW	MSES-008-MW	MSES-012-MWA	FD-013	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	<0.013	<0.013	<0.013	<0.013	0.013	4303926

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5O9385
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BLT719	BLT720	BLT721	BLT722		BLT723		
Sampling Date		2015/12/03	2015/12/03	2015/12/03	2015/12/03		2015/12/03		
COC Number		538951	538951	538951	538951		538951		
	UNITS	MSES-003-MW	MSES-006-MW	MCES-006-MW	MSES-104-MWA	RDL	MSES-104-MWB	RDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	17	11	300	<5.0	5.0	96	5.0	4303050
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	1.3	<1.0	1.0	<1.0	1.0	4303050
Dissolved Arsenic (As)	ug/L	65	<1.0	11	1.5	1.0	4.7	1.0	4303050
Dissolved Barium (Ba)	ug/L	15	22	65	20	1.0	16	1.0	4303050
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	1.0	4303050
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	4303050
Dissolved Boron (B)	ug/L	58	100	<50	<50	50	200	50	4303050
Dissolved Cadmium (Cd)	ug/L	0.013	<0.010	<0.010	<0.010	0.010	0.076	0.010	4303050
Dissolved Calcium (Ca)	ug/L	220000	410000	65000	510000	100	390000	100	4303050
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	1.0	4303050
Dissolved Cobalt (Co)	ug/L	1.8	<0.40	0.47	<0.40	0.40	8.1	0.40	4303050
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	13	<2.0	2.0	<2.0	2.0	4303050
Dissolved Iron (Fe)	ug/L	16000	<50	<50	580	50	5100	50	4303050
Dissolved Lead (Pb)	ug/L	0.76	<0.50	<0.50	<0.50	0.50	<0.50	0.50	4303050
Dissolved Magnesium (Mg)	ug/L	27000	64000	1700	42000	100	190000	1000	4303050
Dissolved Manganese (Mn)	ug/L	9700	1800	160	190	2.0	68000	20	4303050
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	4.8	5.7	2.0	<2.0	2.0	4303050
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	25	2.0	4303050
Dissolved Phosphorus (P)	ug/L	<100	<100	110	110	100	<100	100	4303050
Dissolved Potassium (K)	ug/L	1700	7100	5500	8500	100	13000	100	4303050
Dissolved Selenium (Se)	ug/L	<1.0	13	3.3	<1.0	1.0	<1.0	1.0	4303050
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	<0.10	0.10	4303050
Dissolved Sodium (Na)	ug/L	78000	26000	7800	30000	100	180000	100	4303050
Dissolved Strontium (Sr)	ug/L	1200	810	580	560	2.0	2100	2.0	4303050
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	<0.10	0.10	4303050
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	4303050
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.0	4303050
Dissolved Uranium (U)	ug/L	0.23	4.2	0.37	<0.10	0.10	1.6	0.10	4303050
Dissolved Vanadium (V)	ug/L	<2.0	4.8	140	<2.0	2.0	<2.0	2.0	4303050
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	<5.0	5.0	4303050

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5O9385
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BLT724	BLT725	BLT726	BLT727	BLT728		
Sampling Date		2015/12/03	2015/12/03	2015/12/03	2015/12/03	2015/12/03		
COC Number		538951	538951	538951	538951	538951		
	UNITS	MSES-004-MW	MCWS-309-MW	MSES-008-MW	MSES-012-MWA	FD-013	RDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	130	120	5.0	5.7	5.2	5.0	4303050
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4303050
Dissolved Arsenic (As)	ug/L	1.9	2.3	10	<1.0	10	1.0	4303050
Dissolved Barium (Ba)	ug/L	7.5	9.3	7.7	5.7	7.5	1.0	4303050
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4303050
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4303050
Dissolved Boron (B)	ug/L	83	370	67	<50	63	50	4303050
Dissolved Cadmium (Cd)	ug/L	0.051	0.072	0.016	0.042	0.010	0.010	4303050
Dissolved Calcium (Ca)	ug/L	320000	5000	400000	350000	390000	100	4303050
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	4303050
Dissolved Cobalt (Co)	ug/L	1.1	0.43	<0.40	<0.40	<0.40	0.40	4303050
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4303050
Dissolved Iron (Fe)	ug/L	2000	190	9200	90	9200	50	4303050
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	4303050
Dissolved Magnesium (Mg)	ug/L	55000	1800	24000	29000	24000	100	4303050
Dissolved Manganese (Mn)	ug/L	1500	890	650	20	650	2.0	4303050
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	2.4	<2.0	2.3	2.0	4303050
Dissolved Nickel (Ni)	ug/L	3.0	<2.0	<2.0	<2.0	<2.0	2.0	4303050
Dissolved Phosphorus (P)	ug/L	<100	180	<100	<100	<100	100	4303050
Dissolved Potassium (K)	ug/L	2300	7700	4500	3700	4500	100	4303050
Dissolved Selenium (Se)	ug/L	<1.0	<1.0	<1.0	3.5	<1.0	1.0	4303050
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4303050
Dissolved Sodium (Na)	ug/L	13000	160000	89000	180000	90000	100	4303050
Dissolved Strontium (Sr)	ug/L	340	22	490	410	490	2.0	4303050
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4303050
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4303050
Dissolved Titanium (Ti)	ug/L	<2.0	5.3	<2.0	<2.0	<2.0	2.0	4303050
Dissolved Uranium (U)	ug/L	0.15	0.45	0.55	0.43	0.55	0.10	4303050
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	4303050
Dissolved Zinc (Zn)	ug/L	97	<5.0	38	39	39	5.0	4303050

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5O9385
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BLT719	BLT720	BLT721	BLT722		BLT723		
Sampling Date		2015/12/03	2015/12/03	2015/12/03	2015/12/03		2015/12/03		
COC Number		538951	538951	538951	538951		538951		
	UNITS	MSES-003-MW	MSES-006-MW	MCES-006-MW	MSES-104-MWA	RDL	MSES-104-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	ug/L	<0.050	0.82	<0.050	0.73	0.050	52 (1)	0.50	4306848
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.29	0.050	<0.050	0.050	4306848
Acenaphthene	ug/L	<0.010	0.89	1.7	8.1	0.010	18	0.010	4306848
Acenaphthylene	ug/L	<0.010	1.2	0.031	7.5	0.010	31	0.010	4306848
Anthracene	ug/L	<0.010	0.015	0.027	0.70	0.010	1.4	0.010	4306848
Benzo(a)anthracene	ug/L	<0.010	0.013	0.010	0.24	0.010	0.038	0.010	4306848
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	0.035	0.010	<0.010	0.010	4306848
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.028	0.010	<0.010	0.010	4306848
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	<0.010	0.010	4306848
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.023	0.010	<0.010	0.010	4306848
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	0.018	0.010	<0.010	0.010	4306848
Chrysene	ug/L	<0.010	0.013	0.011	0.20	0.010	0.024	0.010	4306848
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	<0.010	0.010	4306848
Fluoranthene	ug/L	0.010	0.046	0.059	4.2	0.010	0.83	0.010	4306848
Fluorene	ug/L	<0.010	0.27	0.061	1.6	0.010	13	0.010	4306848
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	<0.010	0.010	4306848
Naphthalene	ug/L	<0.20	1.4	<0.20	4.6	0.20	9.1	0.20	4306848
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	<0.010	0.010	4306848
Phenanthrene	ug/L	0.011	0.049	0.029	0.55	0.010	8.6	0.010	4306848
Pyrene	ug/L	<0.010	0.035	0.048	2.6	0.010	0.47	0.010	4306848
Surrogate Recovery (%)									
D10-Anthracene	%	86	83	74	88		90		4306848
D14-Terphenyl	%	84	86	77	95		81		4306848
D8-Acenaphthylene	%	86	77	73	88		86		4306848

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

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Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BLT724	BLT725	BLT726	BLT727	BLT728	BLT736		
Sampling Date		2015/12/03	2015/12/03	2015/12/03	2015/12/03	2015/12/03	2015/12/03		
COC Number		538951	538951	538951	538951	538951	538951		
	UNITS	MSES-004-MW	MCWS-309-MW	MSES-008-MW	MSES-012-MWA	FD-013	TB-019	RDL	QC Batch
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	ug/L	<0.050	0.099	0.69	<0.050	0.74	<0.050	0.050	4306848
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	4306848
Acenaphthene	ug/L	<0.010	0.049	2.1	0.014	2.1	<0.010	0.010	4306848
Acenaphthylene	ug/L	<0.010	0.15	2.4	0.017	2.5	<0.010	0.010	4306848
Anthracene	ug/L	0.024	0.18	0.23	0.014	0.23	<0.010	0.010	4306848
Benzo(a)anthracene	ug/L	0.046	0.44	0.065	0.018	0.070	<0.010	0.010	4306848
Benzo(a)pyrene	ug/L	0.034	0.36	<0.010	0.010	<0.010	<0.010	0.010	4306848
Benzo(b)fluoranthene	ug/L	0.025	0.26	<0.010	<0.010	<0.010	<0.010	0.010	4306848
Benzo(g,h,i)perylene	ug/L	0.019	0.22	<0.010	<0.010	<0.010	<0.010	0.010	4306848
Benzo(j)fluoranthene	ug/L	0.017	0.18	<0.010	<0.010	<0.010	<0.010	0.010	4306848
Benzo(k)fluoranthene	ug/L	0.016	0.16	<0.010	<0.010	<0.010	<0.010	0.010	4306848
Chrysene	ug/L	0.053	0.41	0.051	0.015	0.050	<0.010	0.010	4306848
Dibenz(a,h)anthracene	ug/L	<0.010	0.061	<0.010	<0.010	<0.010	<0.010	0.010	4306848
Fluoranthene	ug/L	0.12	1.0	1.4	0.059	1.5	<0.010	0.010	4306848
Fluorene	ug/L	0.015	0.13	3.8	0.033	3.8	<0.010	0.010	4306848
Indeno(1,2,3-cd)pyrene	ug/L	0.015	0.20	<0.010	<0.010	<0.010	<0.010	0.010	4306848
Naphthalene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	4306848
Perylene	ug/L	<0.010	0.096	<0.010	<0.010	<0.010	<0.010	0.010	4306848
Phenanthrene	ug/L	0.10	0.56	1.6	0.037	1.7	<0.010	0.010	4306848
Pyrene	ug/L	0.10	0.79	1.0	0.042	1.1	<0.010	0.010	4306848
Surrogate Recovery (%)									
D10-Anthracene	%	95	83	93	95	88	96		4306848
D14-Terphenyl	%	100	91 (1)	97	110	95	92		4306848
D8-Acenaphthylene	%	97	84	94	92	86	91		4306848

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PAH sample contained sediment.

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Site Location: OHP / HE SITE

GENERAL COMMENTS

Sample BLT719-01 : Poor RCAp Ion Balance due to sample matrix. Possibly due to fine particulate matter.

Sample BLT722-01 : Poor RCAp Ion Balance due to sample matrix.

Sample BLT723-01 : Poor RCAp Ion Balance due to sample matrix. Possibly due to fine particulate matter.

Sample BLT724-01 : Poor RCAp Ion Balance due to sample matrix. Possibly due to fine particulate matter.

Sample BLT726-01 : Poor RCAp Ion Balance due to sample matrix. Possibly due to fine particulate matter.

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
4303050	MLB	Matrix Spike	Dissolved Aluminum (Al)	2015/12/08		115	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/08		107	%	80 - 120
			Dissolved Arsenic (As)	2015/12/08		99	%	80 - 120
			Dissolved Barium (Ba)	2015/12/08		NC	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/08		104	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/08		94	%	80 - 120
			Dissolved Boron (B)	2015/12/08		NC	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/08		98	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/08		NC	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/08		101	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/08		96	%	80 - 120
			Dissolved Copper (Cu)	2015/12/08		91	%	80 - 120
			Dissolved Iron (Fe)	2015/12/08		108	%	80 - 120
			Dissolved Lead (Pb)	2015/12/08		95	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/08		NC	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/08		103	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/08		110	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/08		94	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/08		111	%	80 - 120
			Dissolved Potassium (K)	2015/12/08		NC	%	80 - 120
			Dissolved Selenium (Se)	2015/12/08		98	%	80 - 120
			Dissolved Silver (Ag)	2015/12/08		98	%	80 - 120
			Dissolved Sodium (Na)	2015/12/08		NC	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/08		NC	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/08		97	%	80 - 120
			Dissolved Tin (Sn)	2015/12/08		104	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/08		109	%	80 - 120
			Dissolved Uranium (U)	2015/12/08		102	%	80 - 120
			Dissolved Vanadium (V)	2015/12/08		106	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/08		95	%	80 - 120
4303050	MLB	Spiked Blank	Dissolved Aluminum (Al)	2015/12/08		108	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/08		100	%	80 - 120
			Dissolved Arsenic (As)	2015/12/08		98	%	80 - 120
			Dissolved Barium (Ba)	2015/12/08		96	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/08		98	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/08		102	%	80 - 120
			Dissolved Boron (B)	2015/12/08		99	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/08		100	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/08		106	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/08		100	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/08		100	%	80 - 120
			Dissolved Copper (Cu)	2015/12/08		100	%	80 - 120
			Dissolved Iron (Fe)	2015/12/08		108	%	80 - 120
			Dissolved Lead (Pb)	2015/12/08		100	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/08		110	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/08		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/08		100	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/08		101	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/08		111	%	80 - 120
			Dissolved Potassium (K)	2015/12/08		109	%	80 - 120
			Dissolved Selenium (Se)	2015/12/08		99	%	80 - 120
			Dissolved Silver (Ag)	2015/12/08		100	%	80 - 120
			Dissolved Sodium (Na)	2015/12/08		108	%	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)	2015/12/08		100	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/08		100	%	80 - 120
			Dissolved Tin (Sn)	2015/12/08		102	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/08		102	%	80 - 120
			Dissolved Uranium (U)	2015/12/08		108	%	80 - 120
			Dissolved Vanadium (V)	2015/12/08		101	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/08		101	%	80 - 120
4303050	MLB	Method Blank	Dissolved Aluminum (Al)	2015/12/08	<5.0		ug/L	
			Dissolved Antimony (Sb)	2015/12/08	<1.0		ug/L	
			Dissolved Arsenic (As)	2015/12/08	<1.0		ug/L	
			Dissolved Barium (Ba)	2015/12/08	<1.0		ug/L	
			Dissolved Beryllium (Be)	2015/12/08	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2015/12/08	<2.0		ug/L	
			Dissolved Boron (B)	2015/12/08	<50		ug/L	
			Dissolved Cadmium (Cd)	2015/12/08	<0.010		ug/L	
			Dissolved Calcium (Ca)	2015/12/08	<100		ug/L	
			Dissolved Chromium (Cr)	2015/12/08	<1.0		ug/L	
			Dissolved Cobalt (Co)	2015/12/08	<0.40		ug/L	
			Dissolved Copper (Cu)	2015/12/08	<2.0		ug/L	
			Dissolved Iron (Fe)	2015/12/08	<50		ug/L	
			Dissolved Lead (Pb)	2015/12/08	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2015/12/08	<100		ug/L	
			Dissolved Manganese (Mn)	2015/12/08	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2015/12/08	<2.0		ug/L	
			Dissolved Nickel (Ni)	2015/12/08	<2.0		ug/L	
			Dissolved Phosphorus (P)	2015/12/08	<100		ug/L	
			Dissolved Potassium (K)	2015/12/08	<100		ug/L	
			Dissolved Selenium (Se)	2015/12/08	<1.0		ug/L	
			Dissolved Silver (Ag)	2015/12/08	<0.10		ug/L	
			Dissolved Sodium (Na)	2015/12/08	<100		ug/L	
			Dissolved Strontium (Sr)	2015/12/08	<2.0		ug/L	
			Dissolved Thallium (Tl)	2015/12/08	<0.10		ug/L	
			Dissolved Tin (Sn)	2015/12/08	<2.0		ug/L	
			Dissolved Titanium (Ti)	2015/12/08	<2.0		ug/L	
			Dissolved Uranium (U)	2015/12/08	<0.10		ug/L	
			Dissolved Vanadium (V)	2015/12/08	<2.0		ug/L	
			Dissolved Zinc (Zn)	2015/12/08	<5.0		ug/L	
4303050	MLB	RPD	Dissolved Aluminum (Al)	2015/12/08	NC		%	20
			Dissolved Antimony (Sb)	2015/12/08	NC		%	20
			Dissolved Arsenic (As)	2015/12/08	NC		%	20
			Dissolved Barium (Ba)	2015/12/08	0.14		%	20
			Dissolved Beryllium (Be)	2015/12/08	NC		%	20
			Dissolved Bismuth (Bi)	2015/12/08	NC		%	20
			Dissolved Boron (B)	2015/12/08	1.2		%	20
			Dissolved Cadmium (Cd)	2015/12/08	4.9		%	20
			Dissolved Calcium (Ca)	2015/12/08	0.51		%	20
			Dissolved Chromium (Cr)	2015/12/08	NC		%	20
			Dissolved Cobalt (Co)	2015/12/08	NC		%	20
			Dissolved Copper (Cu)	2015/12/08	NC		%	20
			Dissolved Iron (Fe)	2015/12/08	NC		%	20
			Dissolved Lead (Pb)	2015/12/08	NC		%	20
			Dissolved Magnesium (Mg)	2015/12/08	0.48		%	20
			Dissolved Manganese (Mn)	2015/12/08	NC		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Molybdenum (Mo)	2015/12/08	NC		%	20
			Dissolved Nickel (Ni)	2015/12/08	NC		%	20
			Dissolved Phosphorus (P)	2015/12/08	NC		%	20
			Dissolved Potassium (K)	2015/12/08	1.2		%	20
			Dissolved Selenium (Se)	2015/12/08	NC		%	20
			Dissolved Silver (Ag)	2015/12/08	NC		%	20
			Dissolved Sodium (Na)	2015/12/08	0.60		%	20
			Dissolved Strontium (Sr)	2015/12/08	0.57		%	20
			Dissolved Thallium (Tl)	2015/12/08	NC		%	20
			Dissolved Tin (Sn)	2015/12/08	NC		%	20
			Dissolved Titanium (Ti)	2015/12/08	NC		%	20
			Dissolved Uranium (U)	2015/12/08	NC		%	20
			Dissolved Vanadium (V)	2015/12/08	NC		%	20
			Dissolved Zinc (Zn)	2015/12/08	NC		%	20
4303104	TMO	Spiked Blank	Conductivity	2015/12/08		100	%	80 - 120
4303104	TMO	Method Blank	Conductivity	2015/12/08	1.0, RDL=1.0		uS/cm	
4303104	TMO	RPD	Conductivity	2015/12/08	0.67		%	25
4303105	TMO	QC Standard	pH	2015/12/08		100	%	97 - 103
4303105	TMO	RPD	pH	2015/12/08	3.6		%	N/A
4303107	TMO	Spiked Blank	Conductivity	2015/12/08		102	%	80 - 120
4303107	TMO	Method Blank	Conductivity	2015/12/08	1.1, RDL=1.0		uS/cm	
4303107	TMO	RPD	Conductivity	2015/12/08	NC		%	25
4303116	TMO	QC Standard	pH	2015/12/08		100	%	97 - 103
4303116	TMO	RPD	pH	2015/12/08	2.6		%	N/A
4303926	VWA	Matrix Spike	Total Mercury (Hg)	2015/12/09		106	%	80 - 120
4303926	VWA	Spiked Blank	Total Mercury (Hg)	2015/12/09		103	%	80 - 120
4303926	VWA	Method Blank	Total Mercury (Hg)	2015/12/09	<0.013		ug/L	
4303926	VWA	RPD	Total Mercury (Hg)	2015/12/09	NC		%	20
4304967	ARS	Matrix Spike	Total Alkalinity (Total as CaCO3)	2015/12/10		49 (1)	%	80 - 120
4304967	ARS	Spiked Blank	Total Alkalinity (Total as CaCO3)	2015/12/10		112	%	80 - 120
4304967	ARS	Method Blank	Total Alkalinity (Total as CaCO3)	2015/12/10	<5.0		mg/L	
4304967	ARS	RPD	Total Alkalinity (Total as CaCO3)	2015/12/10	NC		%	25
4304977	ARS	Matrix Spike	Dissolved Chloride (Cl)	2015/12/11		NC	%	80 - 120
4304977	ARS	QC Standard	Dissolved Chloride (Cl)	2015/12/11		106	%	80 - 120
4304977	ARS	Spiked Blank	Dissolved Chloride (Cl)	2015/12/11		103	%	80 - 120
4304977	ARS	Method Blank	Dissolved Chloride (Cl)	2015/12/11	1.2, RDL=1.0		mg/L	
4304977	ARS	RPD	Dissolved Chloride (Cl)	2015/12/11	6.6		%	25
4304984	ARS	Matrix Spike	Dissolved Sulphate (SO4)	2015/12/10		NC	%	80 - 120
4304984	ARS	Spiked Blank	Dissolved Sulphate (SO4)	2015/12/10		101	%	80 - 120
4304984	ARS	Method Blank	Dissolved Sulphate (SO4)	2015/12/10	<2.0		mg/L	
4304984	ARS	RPD	Dissolved Sulphate (SO4)	2015/12/10	2.5		%	25
4304993	ARS	Matrix Spike	Reactive Silica (SiO2)	2015/12/09		NC	%	80 - 120
4304993	ARS	Spiked Blank	Reactive Silica (SiO2)	2015/12/09		100	%	80 - 120
4304993	ARS	Method Blank	Reactive Silica (SiO2)	2015/12/09	<0.50		mg/L	
4304993	ARS	RPD	Reactive Silica (SiO2)	2015/12/09	0.52		%	25
4304998	MCN	Spiked Blank	Colour	2015/12/11		101	%	80 - 120
4304998	MCN	Method Blank	Colour	2015/12/11	<5.0		TCU	
4304998	MCN	RPD	Colour	2015/12/11	3.9		%	20
4305000	ARS	Matrix Spike	Orthophosphate (P)	2015/12/10		93	%	80 - 120
4305000	ARS	Spiked Blank	Orthophosphate (P)	2015/12/10		97	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4305000	ARS	Method Blank	Orthophosphate (P)	2015/12/10	<0.010		mg/L	
4305000	ARS	RPD	Orthophosphate (P)	2015/12/10	NC		%	25
4305004	ARS	Matrix Spike	Nitrate + Nitrite (N)	2015/12/11		101	%	80 - 120
4305004	ARS	Spiked Blank	Nitrate + Nitrite (N)	2015/12/11		100	%	80 - 120
4305004	ARS	Method Blank	Nitrate + Nitrite (N)	2015/12/11	<0.050		mg/L	
4305004	ARS	RPD	Nitrate + Nitrite (N)	2015/12/11	NC		%	25
4305007	ARS	Matrix Spike	Nitrite (N)	2015/12/10		106	%	80 - 120
4305007	ARS	Spiked Blank	Nitrite (N)	2015/12/10		107	%	80 - 120
4305007	ARS	Method Blank	Nitrite (N)	2015/12/10	<0.010		mg/L	
4305007	ARS	RPD	Nitrite (N)	2015/12/10	NC		%	25
4305011	ARS	Matrix Spike [BLT726-01]	Total Alkalinity (Total as CaCO3)	2015/12/10		NC	%	80 - 120
4305011	ARS	Spiked Blank	Total Alkalinity (Total as CaCO3)	2015/12/10		107	%	80 - 120
4305011	ARS	Method Blank	Total Alkalinity (Total as CaCO3)	2015/12/10	<5.0		mg/L	
4305011	ARS	RPD [BLT726-01]	Total Alkalinity (Total as CaCO3)	2015/12/10	3.2		%	25
4305022	ARS	Matrix Spike [BLT726-01]	Dissolved Chloride (Cl)	2015/12/11		NC	%	80 - 120
4305022	ARS	QC Standard	Dissolved Chloride (Cl)	2015/12/11		107	%	80 - 120
4305022	ARS	Spiked Blank	Dissolved Chloride (Cl)	2015/12/11		102	%	80 - 120
4305022	ARS	Method Blank	Dissolved Chloride (Cl)	2015/12/11	<1.0		mg/L	
4305022	ARS	RPD [BLT726-01]	Dissolved Chloride (Cl)	2015/12/11	0.40		%	25
4305025	ARS	Matrix Spike [BLT726-01]	Dissolved Sulphate (SO4)	2015/12/10		NC	%	80 - 120
4305025	ARS	Spiked Blank	Dissolved Sulphate (SO4)	2015/12/10		106	%	80 - 120
4305025	ARS	Method Blank	Dissolved Sulphate (SO4)	2015/12/10	<2.0		mg/L	
4305025	ARS	RPD [BLT726-01]	Dissolved Sulphate (SO4)	2015/12/10	5.6		%	25
4305028	ARS	Matrix Spike [BLT726-01]	Reactive Silica (SiO2)	2015/12/09		NC	%	80 - 120
4305028	ARS	Spiked Blank	Reactive Silica (SiO2)	2015/12/09		99	%	80 - 120
4305028	ARS	Method Blank	Reactive Silica (SiO2)	2015/12/09	<0.50		mg/L	
4305028	ARS	RPD [BLT726-01]	Reactive Silica (SiO2)	2015/12/09	5.2		%	25
4305037	MCN	Spiked Blank	Colour	2015/12/11		102	%	80 - 120
4305037	MCN	Method Blank	Colour	2015/12/11	<5.0		TCU	
4305037	MCN	RPD [BLT726-01]	Colour	2015/12/11	NC		%	20
4305039	ARS	Matrix Spike [BLT726-01]	Orthophosphate (P)	2015/12/10		86	%	80 - 120
4305039	ARS	Spiked Blank	Orthophosphate (P)	2015/12/10		98	%	80 - 120
4305039	ARS	Method Blank	Orthophosphate (P)	2015/12/10	<0.010		mg/L	
4305039	ARS	RPD [BLT726-01]	Orthophosphate (P)	2015/12/10	NC		%	25
4305044	ARS	Matrix Spike [BLT726-01]	Nitrate + Nitrite (N)	2015/12/11		100	%	80 - 120
4305044	ARS	Spiked Blank	Nitrate + Nitrite (N)	2015/12/11		98	%	80 - 120
4305044	ARS	Method Blank	Nitrate + Nitrite (N)	2015/12/11	<0.050		mg/L	
4305044	ARS	RPD [BLT726-01]	Nitrate + Nitrite (N)	2015/12/11	NC		%	25
4305046	ARS	Matrix Spike [BLT726-01]	Nitrite (N)	2015/12/10		101	%	80 - 120
4305046	ARS	Spiked Blank	Nitrite (N)	2015/12/10		108	%	80 - 120
4305046	ARS	Method Blank	Nitrite (N)	2015/12/10	<0.010		mg/L	
4305046	ARS	RPD [BLT726-01]	Nitrite (N)	2015/12/10	NC		%	25
4305098	ARS	Matrix Spike [BLT720-03]	Nitrogen (Ammonia Nitrogen)	2015/12/09		101	%	80 - 120
4305098	ARS	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2015/12/09		98	%	80 - 120
4305098	ARS	Method Blank	Nitrogen (Ammonia Nitrogen)	2015/12/09	<0.050		mg/L	
4305098	ARS	RPD [BLT720-03]	Nitrogen (Ammonia Nitrogen)	2015/12/09	0.44		%	20
4306848	KBT	Matrix Spike	D10-Anthracene	2015/12/12		81	%	30 - 130
			D14-Terphenyl	2015/12/12		88	%	30 - 130
			D8-Acenaphthylene	2015/12/12		76	%	30 - 130
			1-Methylnaphthalene	2015/12/12		72	%	30 - 130
			2-Methylnaphthalene	2015/12/12		80	%	30 - 130
			Acenaphthene	2015/12/12		84	%	30 - 130
			Acenaphthylene	2015/12/12		85	%	30 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Anthracene	2015/12/12		92	%	30 - 130
			Benzo(a)anthracene	2015/12/12		95	%	30 - 130
			Benzo(a)pyrene	2015/12/12		75	%	30 - 130
			Benzo(b)fluoranthene	2015/12/12		75	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/12		78	%	30 - 130
			Benzo(j)fluoranthene	2015/12/12		76	%	30 - 130
			Benzo(k)fluoranthene	2015/12/12		72	%	30 - 130
			Chrysene	2015/12/12		92	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/12		71	%	30 - 130
			Fluoranthene	2015/12/12		95	%	30 - 130
			Fluorene	2015/12/12		86	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/12		75	%	30 - 130
			Naphthalene	2015/12/12		66	%	30 - 130
			Perylene	2015/12/12		75	%	30 - 130
			Phenanthrene	2015/12/12		93	%	30 - 130
			Pyrene	2015/12/12		97	%	30 - 130
4306848	KBT	Spiked Blank	D10-Anthracene	2015/12/12		95	%	30 - 130
			D14-Terphenyl	2015/12/12		99	%	30 - 130
			D8-Acenaphthylene	2015/12/12		94	%	30 - 130
			1-Methylnaphthalene	2015/12/12		102	%	30 - 130
			2-Methylnaphthalene	2015/12/12		104	%	30 - 130
			Acenaphthene	2015/12/12		113	%	30 - 130
			Acenaphthylene	2015/12/12		116	%	30 - 130
			Anthracene	2015/12/12		109	%	30 - 130
			Benzo(a)anthracene	2015/12/12		123	%	30 - 130
			Benzo(a)pyrene	2015/12/12		102	%	30 - 130
			Benzo(b)fluoranthene	2015/12/12		96	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/12		104	%	30 - 130
			Benzo(j)fluoranthene	2015/12/12		103	%	30 - 130
			Benzo(k)fluoranthene	2015/12/12		102	%	30 - 130
			Chrysene	2015/12/12		123	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/12		96	%	30 - 130
			Fluoranthene	2015/12/12		127	%	30 - 130
			Fluorene	2015/12/12		118	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/12		100	%	30 - 130
			Naphthalene	2015/12/12		104	%	30 - 130
			Perylene	2015/12/12		102	%	30 - 130
			Phenanthrene	2015/12/12		115	%	30 - 130
			Pyrene	2015/12/12		128	%	30 - 130
4306848	KBT	Method Blank	D10-Anthracene	2015/12/12		96	%	30 - 130
			D14-Terphenyl	2015/12/12		95	%	30 - 130
			D8-Acenaphthylene	2015/12/12		93	%	30 - 130
			1-Methylnaphthalene	2015/12/12	<0.050		ug/L	
			2-Methylnaphthalene	2015/12/12	<0.050		ug/L	
			Acenaphthene	2015/12/12	<0.010		ug/L	
			Acenaphthylene	2015/12/12	<0.010		ug/L	
			Anthracene	2015/12/12	<0.010		ug/L	
			Benzo(a)anthracene	2015/12/12	<0.010		ug/L	
			Benzo(a)pyrene	2015/12/12	<0.010		ug/L	
			Benzo(b)fluoranthene	2015/12/12	<0.010		ug/L	
			Benzo(g,h,i)perylene	2015/12/12	<0.010		ug/L	
			Benzo(j)fluoranthene	2015/12/12	<0.010		ug/L	
			Benzo(k)fluoranthene	2015/12/12	<0.010		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chrysene	2015/12/12	<0.010		ug/L	
			Dibenz(a,h)anthracene	2015/12/12	<0.010		ug/L	
			Fluoranthene	2015/12/12	<0.010		ug/L	
			Fluorene	2015/12/12	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2015/12/12	<0.010		ug/L	
			Naphthalene	2015/12/12	<0.20		ug/L	
			Perylene	2015/12/12	<0.010		ug/L	
			Phenanthrene	2015/12/12	<0.010		ug/L	
			Pyrene	2015/12/12	<0.010		ug/L	
4306848	KBT	RPD	1-Methylnaphthalene	2015/12/14	1.1 (2)		%	40
			2-Methylnaphthalene	2015/12/14	10 (2)		%	40
			Acenaphthene	2015/12/14	6.7 (2)		%	40
			Acenaphthylene	2015/12/14	0.22		%	40
			Anthracene	2015/12/14	12		%	40
			Benzo(a)anthracene	2015/12/14	7.2		%	40
			Benzo(a)pyrene	2015/12/14	NC		%	40
			Benzo(b)fluoranthene	2015/12/14	NC		%	40
			Benzo(g,h,i)perylene	2015/12/14	NC		%	40
			Benzo(j)fluoranthene	2015/12/14	NC		%	40
			Benzo(k)fluoranthene	2015/12/14	NC		%	40
			Chrysene	2015/12/14	10		%	40
			Dibenz(a,h)anthracene	2015/12/14	NC		%	40
			Fluoranthene	2015/12/14	2.9		%	40
			Fluorene	2015/12/14	3.0		%	40
			Indeno(1,2,3-cd)pyrene	2015/12/14	NC		%	40
			Naphthalene	2015/12/14	4.4 (2)		%	40
			Perylene	2015/12/14	NC		%	40
			Phenanthrene	2015/12/14	4.5		%	40
			Pyrene	2015/12/14	2.6		%	40
4307200	SMT	Matrix Spike [BLT728-03]	Total Organic Carbon (C)	2015/12/10		99	%	80 - 120
4307200	SMT	Spiked Blank	Total Organic Carbon (C)	2015/12/10		103	%	80 - 120
4307200	SMT	Method Blank	Total Organic Carbon (C)	2015/12/10	<0.50		mg/L	
4307200	SMT	RPD [BLT728-03]	Total Organic Carbon (C)	2015/12/10	NC		%	20
4308833	TMO	QC Standard	Turbidity	2015/12/10		92	%	80 - 120
4308833	TMO	Method Blank	Turbidity	2015/12/10	<0.10		NTU	

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Maxxam Job #: B5O9385
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4308833	TMO	RPD	Turbidity	2015/12/10	NC		%	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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Por spike recovery due to sample matrix.

(2) Elevated PAH RDL(s) due to sample dilution.

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Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

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)

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Maxxam
A Bureau Veritas Group Company

Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/14
Report #: R3805542
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5O8252
Received: 2015/12/02, 17:00

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	5	N/A	2015/12/10	N/A	SM 22 4500-CO2 D
Alkalinity (1)	5	N/A	2015/12/10	ATL SOP 00013	EPA 310.2 R1974 m
Chloride (1)	5	N/A	2015/12/09	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	5	N/A	2015/12/09	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	5	N/A	2015/12/09	ATL SOP 00004	SM 22 2510B m
Hardness (calculated as CaCO3) (1)	5	N/A	2015/12/10	ATL SOP 00048	SM 22 2340 B
Mercury - Total (CVAA,LL) (1)	5	2015/12/08	2015/12/09	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Diss. MS (as rec'd) (1)	5	N/A	2015/12/09	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	5	N/A	2015/12/10		Auto Calc.
Anion and Cation Sum (1)	5	N/A	2015/12/10		Auto Calc.
Nitrogen Ammonia - water (1)	3	N/A	2015/12/08	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen Ammonia - water (1)	2	N/A	2015/12/09	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	5	N/A	2015/12/09	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	5	N/A	2015/12/09	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	5	N/A	2015/12/09	ATL SOP 00018	ASTM D3867
PAH in Water by GC/MS (SIM) (1)	2	2015/12/09	2015/12/12	ATL SOP 00103	EPA 8270D 2007 m
PAH in Water by GC/MS (SIM) (1)	4	2015/12/09	2015/12/13	ATL SOP 00103	EPA 8270D 2007 m
pH (1, 2)	5	N/A	2015/12/09	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	5	N/A	2015/12/09	ATL SOP 00021	EPA 365.2 m
Sat. pH and Langelier Index (@ 20C) (1)	5	N/A	2015/12/10	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	5	N/A	2015/12/10	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	5	N/A	2015/12/08	ATL SOP 00022	EPA 366.0 m
Sulphate (1)	5	N/A	2015/12/08	ATL SOP 00023	EPA 375.4 R1978 m
Total Dissolved Solids (TDS calc) (1)	5	N/A	2015/12/10		Auto Calc.
Organic carbon - Total (TOC) (1, 3)	5	N/A	2015/12/10	ATL SOP 00037	SM 22 5310C m
Turbidity (1)	5	N/A	2015/12/09	ATL SOP 00011	EPA 180.1 R2 m

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.

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Your Project #: 4104251070
Site#: OHP / HE SITE
Site Location: OHP / HE SITE
Your C.O.C. #: 538951

Attention:Nadine Wambolt

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

Report Date: 2015/12/14
Report #: R3805542
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5O8252
Received: 2015/12/02, 17:00

(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 #: B5O8252
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BLO090		BLO108	BLO109		
Sampling Date		2015/12/02		2015/12/02	2015/12/02		
COC Number		538951		538951	538951		
	UNITS	MCWS-113-MWB	RDL	MCWS-306-MWB	MCWS-307-MWB	RDL	QC Batch
Calculated Parameters							
Anion Sum	me/L	8.69	N/A	9.03	14.0	N/A	4297313
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	300	1.0	280	340	1.0	4297310
Calculated TDS	mg/L	460	1.0	490	770	1.0	4297317
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.3	1.0	1.2	2.4	1.0	4297310
Cation Sum	me/L	8.10	N/A	7.93	12.6	N/A	4297313
Hardness (CaCO3)	mg/L	230	1.0	360	210	1.0	4297311
Ion Balance (% Difference)	%	3.51	N/A	6.49	5.23	N/A	4297312
Langelier Index (@ 20C)	N/A	0.542		0.686	0.725		4297315
Langelier Index (@ 4C)	N/A	0.294		0.438	0.478		4297316
Nitrate (N)	mg/L	<0.050	0.050	<0.050	<0.050	0.050	4297314
Saturation pH (@ 20C)	N/A	7.11		6.97	7.15		4297315
Saturation pH (@ 4C)	N/A	7.36		7.22	7.40		4297316
Inorganics							
Total Alkalinity (Total as CaCO3)	mg/L	310	25	290	350	25	4303163
Dissolved Chloride (Cl)	mg/L	91	1.0	16	180	1.0	4303164
Colour	TCU	7.8	5.0	<5.0	<5.0	5.0	4303171
Nitrate + Nitrite (N)	mg/L	0.052	0.050	<0.050	0.052	0.050	4303173
Nitrite (N)	mg/L	0.012	0.010	0.010	0.011	0.010	4303174
Nitrogen (Ammonia Nitrogen)	mg/L	1.7	0.050	<0.050	0.11	0.050	4303249
Total Organic Carbon (C)	mg/L	<5.0 (1)	5.0	1.2	0.93	0.50	4305422
Orthophosphate (P)	mg/L	0.017	0.010	0.018	0.017	0.010	4303172
pH	pH	7.65	N/A	7.66	7.87	N/A	4304910
Reactive Silica (SiO2)	mg/L	10	0.50	13	10	0.50	4303170
Dissolved Sulphate (SO4)	mg/L	<2.0	2.0	140	96	10	4303169
Turbidity	NTU	20	0.10	2.6	3.0	0.10	4305564
Conductivity	uS/cm	760	1.0	720	1300	1.0	4304904

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 #: B5O8252
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

RESULTS OF ANALYSES OF WATER

Maxxam ID		BLO110		BLO121		
Sampling Date		2015/12/02		2015/12/02		
COC Number		538951		538951		
	UNITS	MCES-001-MWA	RDL	MCES-001-MWB	RDL	QC Batch
Calculated Parameters						
Anion Sum	me/L	5.89	N/A	399	N/A	4297313
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	1200	1.0	4297310
Calculated TDS	mg/L	540	1.0	22000	1.0	4297317
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	3.4	1.0	4297310
Cation Sum	me/L	14.1	N/A	373	N/A	4297313
Hardness (CaCO3)	mg/L	590	1.0	4600	1.0	4297311
Ion Balance (% Difference)	%	40.9	N/A	3.35	N/A	4297312
Langelier Index (@ 20C)	N/A	NC		1.36		4297315
Langelier Index (@ 4C)	N/A	NC		1.12		4297316
Nitrate (N)	mg/L	<0.050	0.050	<0.050	0.050	4297314
Saturation pH (@ 20C)	N/A	NC		6.13		4297315
Saturation pH (@ 4C)	N/A	NC		6.37		4297316
Inorganics						
Total Alkalinity (Total as CaCO3)	mg/L	66	5.0	1200	130	4303163
Dissolved Chloride (Cl)	mg/L	44	1.0	13000	100	4303164
Colour	TCU	<5.0	5.0	41	5.0	4303171
Nitrate + Nitrite (N)	mg/L	0.31	0.050	<0.050	0.050	4303173
Nitrite (N)	mg/L	0.29	0.010	0.013	0.010	4303174
Nitrogen (Ammonia Nitrogen)	mg/L	1.3	0.050	41	2.5	4303251
Total Organic Carbon (C)	mg/L	2.2	0.50	17 (1)	5.0	4305422
Orthophosphate (P)	mg/L	<0.010	0.010	0.054	0.010	4303172
pH	pH	11.8 (2)	N/A	7.49	N/A	4304910
Reactive Silica (SiO2)	mg/L	2.7	0.50	28	1.0	4303170
Dissolved Sulphate (SO4)	mg/L	160	10	<2.0	2.0	4303169
Turbidity	NTU	3.5	0.10	150	1.0	4305564
Conductivity	uS/cm	2100	1.0	34000	1.0	4304904

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to sample matrix.
(2) pH value is beyond linear range, extended linearity has been confirmed.

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Maxxam Job #: B5O8252
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

MERCURY BY COLD VAPOUR AA (WATER)

Maxxam ID		BLO090		BLO108	BLO109	BLO110		
Sampling Date		2015/12/02		2015/12/02	2015/12/02	2015/12/02		
COC Number		538951		538951	538951	538951		
	UNITS	MCWS-113-MWB	QC Batch	MCWS-306-MWB	MCWS-307-MWB	MCES-001-MWA	RDL	QC Batch
Metals								
Total Mercury (Hg)	ug/L	<0.013	4303929	<0.013	<0.013	<0.013	0.013	4303926

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		BLO121		
Sampling Date		2015/12/02		
COC Number		538951		
	UNITS	MCES-001-MWB	RDL	QC Batch
Metals				
Total Mercury (Hg)	ug/L	<0.013	0.013	4303926

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BLO090	BLO108	BLO109	BLO110		
Sampling Date		2015/12/02	2015/12/02	2015/12/02	2015/12/02		
COC Number		538951	538951	538951	538951		
	UNITS	MCWS-113-MWB	MCWS-306-MWB	MCWS-307-MWB	MCES-001-MWA	RDL	QC Batch
Metals							
Dissolved Aluminum (Al)	ug/L	44	9.7	7.1	53	5.0	4304858
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	4304858
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	1.4	<1.0	1.0	4304858
Dissolved Barium (Ba)	ug/L	210	46	33	150	1.0	4304858
Dissolved Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	4304858
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	4304858
Dissolved Boron (B)	ug/L	310	73	140	<50	50	4304858
Dissolved Cadmium (Cd)	ug/L	<0.010	0.12	<0.010	<0.010	0.010	4304858
Dissolved Calcium (Ca)	ug/L	73000	110000	68000	240000	100	4304858
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	4304858
Dissolved Cobalt (Co)	ug/L	0.61	1.1	<0.40	<0.40	0.40	4304858
Dissolved Copper (Cu)	ug/L	<2.0	<2.0	<2.0	2.7	2.0	4304858
Dissolved Iron (Fe)	ug/L	2200	150	95	<50	50	4304858
Dissolved Lead (Pb)	ug/L	26	<0.50	<0.50	2.9	0.50	4304858
Dissolved Magnesium (Mg)	ug/L	12000	21000	10000	<100	100	4304858
Dissolved Manganese (Mn)	ug/L	4300	2900	130	<2.0	2.0	4304858
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	<2.0	8.9	2.0	4304858
Dissolved Nickel (Ni)	ug/L	<2.0	2.2	<2.0	<2.0	2.0	4304858
Dissolved Phosphorus (P)	ug/L	310	<100	<100	<100	100	4304858
Dissolved Potassium (K)	ug/L	6800	3000	2000	17000	100	4304858
Dissolved Selenium (Se)	ug/L	<1.0	<1.0	<1.0	1.5	1.0	4304858
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	4304858
Dissolved Sodium (Na)	ug/L	71000	16000	190000	39000	100	4304858
Dissolved Strontium (Sr)	ug/L	350	280	300	1300	2.0	4304858
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	4304858
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	4304858
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	4304858
Dissolved Uranium (U)	ug/L	<0.10	1.1	1.3	<0.10	0.10	4304858
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	20	2.0	4304858
Dissolved Zinc (Zn)	ug/L	13	<5.0	<5.0	<5.0	5.0	4304858

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5O8252
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		BLO121		
Sampling Date		2015/12/02		
COC Number		538951		
	UNITS	MCES-001-MWB	RDL	QC Batch
Metals				
Dissolved Aluminum (Al)	ug/L	<50	50	4304858
Dissolved Antimony (Sb)	ug/L	<10	10	4304858
Dissolved Arsenic (As)	ug/L	<10	10	4304858
Dissolved Barium (Ba)	ug/L	7000	10	4304858
Dissolved Beryllium (Be)	ug/L	<10	10	4304858
Dissolved Bismuth (Bi)	ug/L	<20	20	4304858
Dissolved Boron (B)	ug/L	3500	500	4304858
Dissolved Cadmium (Cd)	ug/L	<0.10	0.10	4304858
Dissolved Calcium (Ca)	ug/L	480000	1000	4304858
Dissolved Chromium (Cr)	ug/L	<10	10	4304858
Dissolved Cobalt (Co)	ug/L	<4.0	4.0	4304858
Dissolved Copper (Cu)	ug/L	<20	20	4304858
Dissolved Iron (Fe)	ug/L	11000	500	4304858
Dissolved Lead (Pb)	ug/L	<5.0	5.0	4304858
Dissolved Magnesium (Mg)	ug/L	820000	1000	4304858
Dissolved Manganese (Mn)	ug/L	1300	20	4304858
Dissolved Molybdenum (Mo)	ug/L	<20	20	4304858
Dissolved Nickel (Ni)	ug/L	<20	20	4304858
Dissolved Phosphorus (P)	ug/L	<1000	1000	4304858
Dissolved Potassium (K)	ug/L	150000	1000	4304858
Dissolved Selenium (Se)	ug/L	<10	10	4304858
Dissolved Silver (Ag)	ug/L	<1.0	1.0	4304858
Dissolved Sodium (Na)	ug/L	6300000	1000	4304858
Dissolved Strontium (Sr)	ug/L	54000	200	4304858
Dissolved Thallium (Tl)	ug/L	<1.0	1.0	4304858
Dissolved Tin (Sn)	ug/L	<20	20	4304858
Dissolved Titanium (Ti)	ug/L	<20	20	4304858
Dissolved Uranium (U)	ug/L	1.9	1.0	4304858
Dissolved Vanadium (V)	ug/L	<20	20	4304858
Dissolved Zinc (Zn)	ug/L	<50	50	4304858

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5O8252
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BLO089	BLO090	BLO108	BLO109		
Sampling Date		2015/12/02	2015/12/02	2015/12/02	2015/12/02		
COC Number		538951	538951	538951	538951		
	UNITS	TB-018	MCWS-113-MWB	MCWS-306-MWB	MCWS-307-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons							
1-Methylnaphthalene	ug/L	<0.050	19	<0.050	<0.050	0.050	4304994
2-Methylnaphthalene	ug/L	<0.050	3.5	<0.050	<0.050	0.050	4304994
Acenaphthene	ug/L	<0.010	0.97	<0.010	<0.010	0.010	4304994
Acenaphthylene	ug/L	<0.010	0.035	<0.010	<0.010	0.010	4304994
Anthracene	ug/L	<0.010	0.12	<0.010	<0.010	0.010	4304994
Benzo(a)anthracene	ug/L	<0.010	0.031	<0.010	<0.010	0.010	4304994
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	4304994
Benzo(b)fluoranthene	ug/L	<0.010	0.012	<0.010	<0.010	0.010	4304994
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	4304994
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	4304994
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	4304994
Chrysene	ug/L	<0.010	0.033	<0.010	<0.010	0.010	4304994
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	4304994
Fluoranthene	ug/L	<0.010	0.24	0.023	<0.010	0.010	4304994
Fluorene	ug/L	<0.010	0.52	<0.010	<0.010	0.010	4304994
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	4304994
Naphthalene	ug/L	<0.20	0.33	<0.20	<0.20	0.20	4304994
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	4304994
Phenanthrene	ug/L	<0.010	0.35	0.021	<0.010	0.010	4304994
Pyrene	ug/L	<0.010	0.14	0.021	<0.010	0.010	4304994
Surrogate Recovery (%)							
D10-Anthracene	%	96	94	79	82		4304994
D14-Terphenyl	%	104	95	81	88		4304994
D8-Acenaphthylene	%	98	90	81	83		4304994

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5O8252
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BLO110	BLO121		
Sampling Date		2015/12/02	2015/12/02		
COC Number		538951	538951		
	UNITS	MCES-001-MWA	MCES-001-MWB	RDL	QC Batch
Polyaromatic Hydrocarbons					
1-Methylnaphthalene	ug/L	0.28	<0.050	0.050	4306848
2-Methylnaphthalene	ug/L	0.10	<0.050	0.050	4306848
Acenaphthene	ug/L	0.10	<0.010	0.010	4306848
Acenaphthylene	ug/L	0.16	<0.010	0.010	4306848
Anthracene	ug/L	0.070	<0.010	0.010	4306848
Benzo(a)anthracene	ug/L	0.048	0.020	0.010	4306848
Benzo(a)pyrene	ug/L	<0.010	0.012	0.010	4306848
Benzo(b)fluoranthene	ug/L	<0.010	0.010	0.010	4306848
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	0.010	4306848
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	0.010	4306848
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	0.010	4306848
Chrysene	ug/L	0.046	0.019	0.010	4306848
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	0.010	4306848
Fluoranthene	ug/L	0.44	0.045	0.010	4306848
Fluorene	ug/L	0.18	<0.010	0.010	4306848
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	0.010	4306848
Naphthalene	ug/L	<0.20	<0.20	0.20	4306848
Perylene	ug/L	<0.010	<0.010	0.010	4306848
Phenanthrene	ug/L	0.21	0.036	0.010	4306848
Pyrene	ug/L	0.70	0.037	0.010	4306848
Surrogate Recovery (%)					
D10-Anthracene	%	94	85		4306848
D14-Terphenyl	%	104	97		4306848
D8-Acenaphthylene	%	95	82		4306848

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Sample BLO108-01 : Poor RCAp Ion Balance due to sample matrix. Cation sum does not include contribution from Mn.

Sample BLO109-01 : Poor RCAp Ion Balance due to sample matrix.

Sample BLO110-01 : Poor RCAp Ion Balance due to sample matrix.

Sample BLO121-01 : Elevated reporting limits for trace metals due to sample matrix.

Results relate only to the items tested.

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Maxxam Job #: B5O8252
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4303163	ARS	Matrix Spike	Total Alkalinity (Total as CaCO3)	2015/12/10		102	%	80 - 120
4303163	ARS	Spiked Blank	Total Alkalinity (Total as CaCO3)	2015/12/10		109	%	80 - 120
4303163	ARS	Method Blank	Total Alkalinity (Total as CaCO3)	2015/12/10	<5.0		mg/L	
4303163	ARS	RPD	Total Alkalinity (Total as CaCO3)	2015/12/10	NC		%	25
4303164	ARS	Matrix Spike	Dissolved Chloride (Cl)	2015/12/09		106	%	80 - 120
4303164	ARS	QC Standard	Dissolved Chloride (Cl)	2015/12/09		108	%	80 - 120
4303164	ARS	Spiked Blank	Dissolved Chloride (Cl)	2015/12/09		106	%	80 - 120
4303164	ARS	Method Blank	Dissolved Chloride (Cl)	2015/12/09	<1.0		mg/L	
4303164	ARS	RPD	Dissolved Chloride (Cl)	2015/12/09	1.3		%	25
4303169	ARS	Matrix Spike	Dissolved Sulphate (SO4)	2015/12/08		104	%	80 - 120
4303169	ARS	Spiked Blank	Dissolved Sulphate (SO4)	2015/12/08		105	%	80 - 120
4303169	ARS	Method Blank	Dissolved Sulphate (SO4)	2015/12/08	<2.0		mg/L	
4303169	ARS	RPD	Dissolved Sulphate (SO4)	2015/12/08	NC		%	25
4303170	ARS	Matrix Spike	Reactive Silica (SiO2)	2015/12/08		98	%	80 - 120
4303170	ARS	Spiked Blank	Reactive Silica (SiO2)	2015/12/08		98	%	80 - 120
4303170	ARS	Method Blank	Reactive Silica (SiO2)	2015/12/08	<0.50		mg/L	
4303170	ARS	RPD	Reactive Silica (SiO2)	2015/12/08	0.88		%	25
4303171	ARS	Spiked Blank	Colour	2015/12/09		91	%	80 - 120
4303171	ARS	Method Blank	Colour	2015/12/09	<5.0		TCU	
4303171	ARS	RPD	Colour	2015/12/09	NC		%	20
4303172	ARS	Matrix Spike	Orthophosphate (P)	2015/12/09		93	%	80 - 120
4303172	ARS	Spiked Blank	Orthophosphate (P)	2015/12/09		98	%	80 - 120
4303172	ARS	Method Blank	Orthophosphate (P)	2015/12/09	<0.010		mg/L	
4303172	ARS	RPD	Orthophosphate (P)	2015/12/09	NC		%	25
4303173	ARS	Matrix Spike	Nitrate + Nitrite (N)	2015/12/09		94	%	80 - 120
4303173	ARS	Spiked Blank	Nitrate + Nitrite (N)	2015/12/09		106	%	80 - 120
4303173	ARS	Method Blank	Nitrate + Nitrite (N)	2015/12/09	<0.050		mg/L	
4303173	ARS	RPD	Nitrate + Nitrite (N)	2015/12/09	NC		%	25
4303174	ARS	Matrix Spike	Nitrite (N)	2015/12/09		106	%	80 - 120
4303174	ARS	Spiked Blank	Nitrite (N)	2015/12/09		98	%	80 - 120
4303174	ARS	Method Blank	Nitrite (N)	2015/12/09	0.011, RDL=0.010		mg/L	
4303174	ARS	RPD	Nitrite (N)	2015/12/09	NC		%	25
4303249	ARS	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2015/12/08		101	%	80 - 120
4303249	ARS	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2015/12/08		97	%	80 - 120
4303249	ARS	Method Blank	Nitrogen (Ammonia Nitrogen)	2015/12/08	<0.050		mg/L	
4303249	ARS	RPD	Nitrogen (Ammonia Nitrogen)	2015/12/08	NC		%	20
4303251	ARS	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2015/12/08		96	%	80 - 120
4303251	ARS	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2015/12/08		100	%	80 - 120
4303251	ARS	Method Blank	Nitrogen (Ammonia Nitrogen)	2015/12/08	<0.050		mg/L	
4303251	ARS	RPD	Nitrogen (Ammonia Nitrogen)	2015/12/08	NC		%	20
4303926	VWA	Matrix Spike	Total Mercury (Hg)	2015/12/09		106	%	80 - 120
4303926	VWA	Spiked Blank	Total Mercury (Hg)	2015/12/09		103	%	80 - 120
4303926	VWA	Method Blank	Total Mercury (Hg)	2015/12/09	<0.013		ug/L	
4303926	VWA	RPD	Total Mercury (Hg)	2015/12/09	NC		%	20
4303929	VWA	Matrix Spike	Total Mercury (Hg)	2015/12/09		102	%	80 - 120
4303929	VWA	Spiked Blank	Total Mercury (Hg)	2015/12/09		103	%	80 - 120
4303929	VWA	Method Blank	Total Mercury (Hg)	2015/12/09	<0.013		ug/L	
4303929	VWA	RPD	Total Mercury (Hg)	2015/12/09	NC		%	20
4304858	BAN	Matrix Spike	Dissolved Aluminum (Al)	2015/12/09		102	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/09		102	%	80 - 120
			Dissolved Arsenic (As)	2015/12/09		98	%	80 - 120
			Dissolved Barium (Ba)	2015/12/09		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 Beryllium (Be)	2015/12/09		102	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/09		100	%	80 - 120
			Dissolved Boron (B)	2015/12/09		100	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/09		101	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/09		NC	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/09		97	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/09		99	%	80 - 120
			Dissolved Copper (Cu)	2015/12/09		97	%	80 - 120
			Dissolved Iron (Fe)	2015/12/09		NC	%	80 - 120
			Dissolved Lead (Pb)	2015/12/09		100	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/09		NC	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/09		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/09		103	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/09		99	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/09		107	%	80 - 120
			Dissolved Potassium (K)	2015/12/09		99	%	80 - 120
			Dissolved Selenium (Se)	2015/12/09		99	%	80 - 120
			Dissolved Silver (Ag)	2015/12/09		70 (1)	%	80 - 120
			Dissolved Sodium (Na)	2015/12/09		102	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/09		NC	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/09		100	%	80 - 120
			Dissolved Tin (Sn)	2015/12/09		103	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/09		100	%	80 - 120
			Dissolved Uranium (U)	2015/12/09		104	%	80 - 120
			Dissolved Vanadium (V)	2015/12/09		100	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/09		99	%	80 - 120
4304858	BAN	Spiked Blank	Dissolved Aluminum (Al)	2015/12/09		103	%	80 - 120
			Dissolved Antimony (Sb)	2015/12/09		99	%	80 - 120
			Dissolved Arsenic (As)	2015/12/09		96	%	80 - 120
			Dissolved Barium (Ba)	2015/12/09		97	%	80 - 120
			Dissolved Beryllium (Be)	2015/12/09		99	%	80 - 120
			Dissolved Bismuth (Bi)	2015/12/09		99	%	80 - 120
			Dissolved Boron (B)	2015/12/09		100	%	80 - 120
			Dissolved Cadmium (Cd)	2015/12/09		100	%	80 - 120
			Dissolved Calcium (Ca)	2015/12/09		101	%	80 - 120
			Dissolved Chromium (Cr)	2015/12/09		97	%	80 - 120
			Dissolved Cobalt (Co)	2015/12/09		99	%	80 - 120
			Dissolved Copper (Cu)	2015/12/09		98	%	80 - 120
			Dissolved Iron (Fe)	2015/12/09		102	%	80 - 120
			Dissolved Lead (Pb)	2015/12/09		100	%	80 - 120
			Dissolved Magnesium (Mg)	2015/12/09		104	%	80 - 120
			Dissolved Manganese (Mn)	2015/12/09		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/12/09		99	%	80 - 120
			Dissolved Nickel (Ni)	2015/12/09		100	%	80 - 120
			Dissolved Phosphorus (P)	2015/12/09		106	%	80 - 120
			Dissolved Potassium (K)	2015/12/09		100	%	80 - 120
			Dissolved Selenium (Se)	2015/12/09		100	%	80 - 120
			Dissolved Silver (Ag)	2015/12/09		98	%	80 - 120
			Dissolved Sodium (Na)	2015/12/09		103	%	80 - 120
			Dissolved Strontium (Sr)	2015/12/09		99	%	80 - 120
			Dissolved Thallium (Tl)	2015/12/09		99	%	80 - 120
			Dissolved Tin (Sn)	2015/12/09		99	%	80 - 120
			Dissolved Titanium (Ti)	2015/12/09		99	%	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 Uranium (U)	2015/12/09		103	%	80 - 120
			Dissolved Vanadium (V)	2015/12/09		98	%	80 - 120
			Dissolved Zinc (Zn)	2015/12/09		99	%	80 - 120
4304858	BAN	Method Blank	Dissolved Aluminum (Al)	2015/12/09	<5.0		ug/L	
			Dissolved Antimony (Sb)	2015/12/09	<1.0		ug/L	
			Dissolved Arsenic (As)	2015/12/09	<1.0		ug/L	
			Dissolved Barium (Ba)	2015/12/09	<1.0		ug/L	
			Dissolved Beryllium (Be)	2015/12/09	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2015/12/09	<2.0		ug/L	
			Dissolved Boron (B)	2015/12/09	<50		ug/L	
			Dissolved Cadmium (Cd)	2015/12/09	<0.010		ug/L	
			Dissolved Calcium (Ca)	2015/12/09	<100		ug/L	
			Dissolved Chromium (Cr)	2015/12/09	<1.0		ug/L	
			Dissolved Cobalt (Co)	2015/12/09	<0.40		ug/L	
			Dissolved Copper (Cu)	2015/12/09	<2.0		ug/L	
			Dissolved Iron (Fe)	2015/12/09	<50		ug/L	
			Dissolved Lead (Pb)	2015/12/09	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2015/12/09	<100		ug/L	
			Dissolved Manganese (Mn)	2015/12/09	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2015/12/09	<2.0		ug/L	
			Dissolved Nickel (Ni)	2015/12/09	<2.0		ug/L	
			Dissolved Phosphorus (P)	2015/12/09	<100		ug/L	
			Dissolved Potassium (K)	2015/12/09	<100		ug/L	
			Dissolved Selenium (Se)	2015/12/09	<1.0		ug/L	
			Dissolved Silver (Ag)	2015/12/09	<0.10		ug/L	
			Dissolved Sodium (Na)	2015/12/09	<100		ug/L	
			Dissolved Strontium (Sr)	2015/12/09	<2.0		ug/L	
			Dissolved Thallium (Tl)	2015/12/09	<0.10		ug/L	
			Dissolved Tin (Sn)	2015/12/09	<2.0		ug/L	
			Dissolved Titanium (Ti)	2015/12/09	<2.0		ug/L	
			Dissolved Uranium (U)	2015/12/09	<0.10		ug/L	
			Dissolved Vanadium (V)	2015/12/09	<2.0		ug/L	
			Dissolved Zinc (Zn)	2015/12/09	<5.0		ug/L	
4304858	BAN	RPD	Dissolved Aluminum (Al)	2015/12/09	NC		%	20
			Dissolved Antimony (Sb)	2015/12/09	NC		%	20
			Dissolved Arsenic (As)	2015/12/09	NC		%	20
			Dissolved Barium (Ba)	2015/12/09	0.50		%	20
			Dissolved Beryllium (Be)	2015/12/09	NC		%	20
			Dissolved Bismuth (Bi)	2015/12/09	NC		%	20
			Dissolved Boron (B)	2015/12/09	NC		%	20
			Dissolved Cadmium (Cd)	2015/12/09	NC		%	20
			Dissolved Calcium (Ca)	2015/12/09	0.63		%	20
			Dissolved Chromium (Cr)	2015/12/09	NC		%	20
			Dissolved Cobalt (Co)	2015/12/09	5.9		%	20
			Dissolved Copper (Cu)	2015/12/09	NC		%	20
			Dissolved Iron (Fe)	2015/12/09	0.072		%	20
			Dissolved Lead (Pb)	2015/12/09	NC		%	20
			Dissolved Magnesium (Mg)	2015/12/09	0.51		%	20
			Dissolved Manganese (Mn)	2015/12/09	1.1		%	20
			Dissolved Molybdenum (Mo)	2015/12/09	NC		%	20
			Dissolved Nickel (Ni)	2015/12/09	NC		%	20
			Dissolved Phosphorus (P)	2015/12/09	NC		%	20
			Dissolved Potassium (K)	2015/12/09	2.3		%	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 Selenium (Se)	2015/12/09	NC		%	20
			Dissolved Silver (Ag)	2015/12/09	NC		%	20
			Dissolved Sodium (Na)	2015/12/09	0.88		%	20
			Dissolved Strontium (Sr)	2015/12/09	0.44		%	20
			Dissolved Thallium (Tl)	2015/12/09	NC		%	20
			Dissolved Tin (Sn)	2015/12/09	NC		%	20
			Dissolved Titanium (Ti)	2015/12/09	NC		%	20
			Dissolved Uranium (U)	2015/12/09	NC		%	20
			Dissolved Vanadium (V)	2015/12/09	NC		%	20
			Dissolved Zinc (Zn)	2015/12/09	NC		%	20
4304904	TMO	Spiked Blank	Conductivity	2015/12/09		99	%	80 - 120
4304904	TMO	Method Blank	Conductivity	2015/12/09	1.3, RDL=1.0		uS/cm	
4304904	TMO	RPD	Conductivity	2015/12/09	1.1		%	25
4304910	TMO	QC Standard	pH	2015/12/09		100	%	97 - 103
4304910	TMO	RPD	pH	2015/12/09	0.29		%	N/A
4304994	GTH	Matrix Spike	D10-Anthracene	2015/12/13		93	%	30 - 130
			D14-Terphenyl	2015/12/13		96	%	30 - 130
			D8-Acenaphthylene	2015/12/13		94	%	30 - 130
			1-Methylnaphthalene	2015/12/13		102	%	30 - 130
			2-Methylnaphthalene	2015/12/13		104	%	30 - 130
			Acenaphthene	2015/12/13		112	%	30 - 130
			Acenaphthylene	2015/12/13		118	%	30 - 130
			Anthracene	2015/12/13		111	%	30 - 130
			Benzo(a)anthracene	2015/12/13		112	%	30 - 130
			Benzo(a)pyrene	2015/12/13		106	%	30 - 130
			Benzo(b)fluoranthene	2015/12/13		107	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/13		111	%	30 - 130
			Benzo(j)fluoranthene	2015/12/13		105	%	30 - 130
			Benzo(k)fluoranthene	2015/12/13		116	%	30 - 130
			Chrysene	2015/12/13		114	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/13		108	%	30 - 130
			Fluoranthene	2015/12/13		111	%	30 - 130
			Fluorene	2015/12/13		118	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/13		115	%	30 - 130
			Naphthalene	2015/12/13		102	%	30 - 130
			Perylene	2015/12/13		105	%	30 - 130
			Phenanthrene	2015/12/13		115	%	30 - 130
			Pyrene	2015/12/13		108	%	30 - 130
4304994	GTH	Spiked Blank	D10-Anthracene	2015/12/13		92	%	30 - 130
			D14-Terphenyl	2015/12/13		102	%	30 - 130
			D8-Acenaphthylene	2015/12/13		97	%	30 - 130
			1-Methylnaphthalene	2015/12/13		103	%	30 - 130
			2-Methylnaphthalene	2015/12/13		106	%	30 - 130
			Acenaphthene	2015/12/13		110	%	30 - 130
			Acenaphthylene	2015/12/13		119	%	30 - 130
			Anthracene	2015/12/13		102	%	30 - 130
			Benzo(a)anthracene	2015/12/13		113	%	30 - 130
			Benzo(a)pyrene	2015/12/13		105	%	30 - 130
			Benzo(b)fluoranthene	2015/12/13		105	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/13		110	%	30 - 130
			Benzo(j)fluoranthene	2015/12/13		108	%	30 - 130
			Benzo(k)fluoranthene	2015/12/13		118	%	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
			Chrysene	2015/12/13		109	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/13		107	%	30 - 130
			Fluoranthene	2015/12/13		115	%	30 - 130
			Fluorene	2015/12/13		117	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/13		116	%	30 - 130
			Naphthalene	2015/12/13		104	%	30 - 130
			Perylene	2015/12/13		107	%	30 - 130
			Phenanthrene	2015/12/13		110	%	30 - 130
			Pyrene	2015/12/13		113	%	30 - 130
4304994	GTH	Method Blank	D10-Anthracene	2015/12/13		91	%	30 - 130
			D14-Terphenyl	2015/12/13		100	%	30 - 130
			D8-Acenaphthylene	2015/12/13		96	%	30 - 130
			1-Methylnaphthalene	2015/12/13	<0.050		ug/L	
			2-Methylnaphthalene	2015/12/13	<0.050		ug/L	
			Acenaphthene	2015/12/13	<0.010		ug/L	
			Acenaphthylene	2015/12/13	<0.010		ug/L	
			Anthracene	2015/12/13	<0.010		ug/L	
			Benzo(a)anthracene	2015/12/13	<0.010		ug/L	
			Benzo(a)pyrene	2015/12/13	<0.010		ug/L	
			Benzo(b)fluoranthene	2015/12/13	<0.010		ug/L	
			Benzo(g,h,i)perylene	2015/12/13	<0.010		ug/L	
			Benzo(j)fluoranthene	2015/12/13	<0.010		ug/L	
			Benzo(k)fluoranthene	2015/12/13	<0.010		ug/L	
			Chrysene	2015/12/13	<0.010		ug/L	
			Dibenz(a,h)anthracene	2015/12/13	<0.010		ug/L	
			Fluoranthene	2015/12/13	<0.010		ug/L	
			Fluorene	2015/12/13	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2015/12/13	<0.010		ug/L	
			Naphthalene	2015/12/13	<0.20		ug/L	
			Perylene	2015/12/13	<0.010		ug/L	
			Phenanthrene	2015/12/13	<0.010		ug/L	
			Pyrene	2015/12/13	<0.010		ug/L	
4304994	GTH	RPD	1-Methylnaphthalene	2015/12/13	8.8		%	40
			2-Methylnaphthalene	2015/12/13	NC		%	40
			Acenaphthene	2015/12/13	5.8		%	40
			Acenaphthylene	2015/12/13	9.8		%	40
			Anthracene	2015/12/13	6.6		%	40
			Benzo(a)anthracene	2015/12/13	NC		%	40
			Benzo(a)pyrene	2015/12/13	NC		%	40
			Benzo(b)fluoranthene	2015/12/13	NC		%	40
			Benzo(g,h,i)perylene	2015/12/13	NC		%	40
			Benzo(j)fluoranthene	2015/12/13	NC		%	40
			Benzo(k)fluoranthene	2015/12/13	NC		%	40
			Chrysene	2015/12/13	NC		%	40
			Dibenz(a,h)anthracene	2015/12/13	NC		%	40
			Fluoranthene	2015/12/13	3.5		%	40
			Fluorene	2015/12/13	7.7		%	40
			Indeno(1,2,3-cd)pyrene	2015/12/13	NC		%	40
			Naphthalene	2015/12/13	11		%	40
			Perylene	2015/12/13	NC		%	40
			Phenanthrene	2015/12/13	4.0		%	40
			Pyrene	2015/12/13	0.99		%	40
4305422	SMT	Matrix Spike	Total Organic Carbon (C)	2015/12/10		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
4305422	SMT	Spiked Blank	Total Organic Carbon (C)	2015/12/10		104	%	80 - 120
4305422	SMT	Method Blank	Total Organic Carbon (C)	2015/12/10	<0.50		mg/L	
4305422	SMT	RPD	Total Organic Carbon (C)	2015/12/10	NC		%	20
4305564	TMO	QC Standard	Turbidity	2015/12/09		89	%	80 - 120
4305564	TMO	Method Blank	Turbidity	2015/12/09	<0.10		NTU	
4305564	TMO	RPD	Turbidity	2015/12/09	2.6		%	20
4306848	KBT	Matrix Spike	D10-Anthracene	2015/12/12		81	%	30 - 130
			D14-Terphenyl	2015/12/12		88	%	30 - 130
			D8-Acenaphthylene	2015/12/12		76	%	30 - 130
			1-Methylnaphthalene	2015/12/12		72	%	30 - 130
			2-Methylnaphthalene	2015/12/12		80	%	30 - 130
			Acenaphthene	2015/12/12		84	%	30 - 130
			Acenaphthylene	2015/12/12		85	%	30 - 130
			Anthracene	2015/12/12		92	%	30 - 130
			Benzo(a)anthracene	2015/12/12		95	%	30 - 130
			Benzo(a)pyrene	2015/12/12		75	%	30 - 130
			Benzo(b)fluoranthene	2015/12/12		75	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/12		78	%	30 - 130
			Benzo(j)fluoranthene	2015/12/12		76	%	30 - 130
			Benzo(k)fluoranthene	2015/12/12		72	%	30 - 130
			Chrysene	2015/12/12		92	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/12		71	%	30 - 130
			Fluoranthene	2015/12/12		95	%	30 - 130
			Fluorene	2015/12/12		86	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/12		75	%	30 - 130
			Naphthalene	2015/12/12		66	%	30 - 130
			Perylene	2015/12/12		75	%	30 - 130
			Phenanthrene	2015/12/12		93	%	30 - 130
			Pyrene	2015/12/12		97	%	30 - 130
4306848	KBT	Spiked Blank	D10-Anthracene	2015/12/12		95	%	30 - 130
			D14-Terphenyl	2015/12/12		99	%	30 - 130
			D8-Acenaphthylene	2015/12/12		94	%	30 - 130
			1-Methylnaphthalene	2015/12/12		102	%	30 - 130
			2-Methylnaphthalene	2015/12/12		104	%	30 - 130
			Acenaphthene	2015/12/12		113	%	30 - 130
			Acenaphthylene	2015/12/12		116	%	30 - 130
			Anthracene	2015/12/12		109	%	30 - 130
			Benzo(a)anthracene	2015/12/12		123	%	30 - 130
			Benzo(a)pyrene	2015/12/12		102	%	30 - 130
			Benzo(b)fluoranthene	2015/12/12		96	%	30 - 130
			Benzo(g,h,i)perylene	2015/12/12		104	%	30 - 130
			Benzo(j)fluoranthene	2015/12/12		103	%	30 - 130
			Benzo(k)fluoranthene	2015/12/12		102	%	30 - 130
			Chrysene	2015/12/12		123	%	30 - 130
			Dibenz(a,h)anthracene	2015/12/12		96	%	30 - 130
			Fluoranthene	2015/12/12		127	%	30 - 130
			Fluorene	2015/12/12		118	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/12/12		100	%	30 - 130
			Naphthalene	2015/12/12		104	%	30 - 130
			Perylene	2015/12/12		102	%	30 - 130
			Phenanthrene	2015/12/12		115	%	30 - 130
			Pyrene	2015/12/12		128	%	30 - 130
4306848	KBT	Method Blank	D10-Anthracene	2015/12/12		96	%	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
			D14-Terphenyl	2015/12/12		95	%	30 - 130
			D8-Acenaphthylene	2015/12/12		93	%	30 - 130
			1-Methylnaphthalene	2015/12/12	<0.050		ug/L	
			2-Methylnaphthalene	2015/12/12	<0.050		ug/L	
			Acenaphthene	2015/12/12	<0.010		ug/L	
			Acenaphthylene	2015/12/12	<0.010		ug/L	
			Anthracene	2015/12/12	<0.010		ug/L	
			Benzo(a)anthracene	2015/12/12	<0.010		ug/L	
			Benzo(a)pyrene	2015/12/12	<0.010		ug/L	
			Benzo(b)fluoranthene	2015/12/12	<0.010		ug/L	
			Benzo(g,h,i)perylene	2015/12/12	<0.010		ug/L	
			Benzo(j)fluoranthene	2015/12/12	<0.010		ug/L	
			Benzo(k)fluoranthene	2015/12/12	<0.010		ug/L	
			Chrysene	2015/12/12	<0.010		ug/L	
			Dibenz(a,h)anthracene	2015/12/12	<0.010		ug/L	
			Fluoranthene	2015/12/12	<0.010		ug/L	
			Fluorene	2015/12/12	<0.010		ug/L	
			Indeno(1,2,3-cd)pyrene	2015/12/12	<0.010		ug/L	
			Naphthalene	2015/12/12	<0.20		ug/L	
			Perylene	2015/12/12	<0.010		ug/L	
			Phenanthrene	2015/12/12	<0.010		ug/L	
			Pyrene	2015/12/12	<0.010		ug/L	
4306848	KBT	RPD	1-Methylnaphthalene	2015/12/14	1.1 (2)		%	40
			2-Methylnaphthalene	2015/12/14	10 (2)		%	40
			Acenaphthene	2015/12/14	6.7 (2)		%	40
			Acenaphthylene	2015/12/14	0.22		%	40
			Anthracene	2015/12/14	12		%	40
			Benzo(a)anthracene	2015/12/14	7.2		%	40
			Benzo(a)pyrene	2015/12/14	NC		%	40
			Benzo(b)fluoranthene	2015/12/14	NC		%	40
			Benzo(g,h,i)perylene	2015/12/14	NC		%	40
			Benzo(j)fluoranthene	2015/12/14	NC		%	40
			Benzo(k)fluoranthene	2015/12/14	NC		%	40
			Chrysene	2015/12/14	10		%	40
			Dibenz(a,h)anthracene	2015/12/14	NC		%	40
			Fluoranthene	2015/12/14	2.9		%	40
			Fluorene	2015/12/14	3.0		%	40
			Indeno(1,2,3-cd)pyrene	2015/12/14	NC		%	40
			Naphthalene	2015/12/14	4.4 (2)		%	40
			Perylene	2015/12/14	NC		%	40
			Phenanthrene	2015/12/14	4.5		%	40

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Maxxam Job #: B5O8252
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Pyrene	2015/12/14	2.6		%	40

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

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

(2) Elevated PAH RDL(s) due to sample dilution.

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Maxxam Job #: B5O8252
Report Date: 2015/12/14

Dillon Consulting Limited
Client Project #: 4104251070
Site Location: OHP / HE SITE

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 P.O. #: 4104251070
Your C.O.C. #: 533409

Attention:Nadine Wambolt

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

Report Date: 2015/10/30
Report #: R3740899
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B5K7088
Received: 2015/10/13, 16:59

Sample Matrix: Organic Liquid
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
TEH in Soil (AA PIRI)	1	2015/10/19	2015/10/26	ATL SOP 00116	Atl. RBCA v3 m
Metal Scan for Oil - All Metals (D5708B) (1)	1	N/A	2015/10/26		
ABN Compounds in misc. solids by GC/MS (2, 3)	1	2015/10/27	2015/10/29	CAM SOP-00301	EPA 8270 m
API Gravity & Density(s) (oil) (1)	1	2015/10/26	2015/10/26		
VPH in Soil (PIRI2)	1	2015/10/14	2015/10/15	ATL SOP 00120	Atl. RBCA v3 m
ModTPH (T2) Calc. for Soil	1	N/A	2015/10/29	N/A	Atl. RBCA v3 m
Viscosity (Kinematic) @ non std T in Oil (1)	1	2015/10/26	2015/10/26		

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
ABN Compounds in Water by GC/MS (2)	1	2015/10/26	2015/10/29	CAM SOP-00301	EPA 8270 m
Carbonate, Bicarbonate and Hydroxide	1	N/A	2015/10/21	N/A	SM 22 4500-CO2 D
Alkalinity	1	N/A	2015/10/20	ATL SOP 00013	EPA 310.2 R1974 m
Chloride	1	N/A	2015/10/20	ATL SOP 00014	SM 22 4500-Cl- E m
Colour	1	N/A	2015/10/20	ATL SOP 00020	SM 22 2120C m
Conductance - water	1	N/A	2015/10/20	ATL SOP 00004	SM 22 2510B m
TEH in Water (AA PIRI)	1	2015/10/21	2015/10/28	ATL SOP 00116	Atl. RBCA v3 m
Hardness (calculated as CaCO3)	1	N/A	2015/10/15	ATL SOP 00048	SM 22 2340 B
Metals Water Diss. MS (as rec'd)	1	N/A	2015/10/15	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference)	1	N/A	2015/10/28		Auto Calc.
Anion and Cation Sum	1	N/A	2015/10/28		Auto Calc.
Nitrogen Ammonia - water	1	N/A	2015/10/27	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite	1	N/A	2015/10/20	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite	1	N/A	2015/10/20	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N)	1	N/A	2015/10/21	ATL SOP 00018	ASTM D3867
pH (4)	1	N/A	2015/10/20	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho	1	N/A	2015/10/20	ATL SOP 00021	EPA 365.2 m
VPH in Water (PIRI2)	1	2015/10/20	2015/10/21	ATL SOP 00120	Atl. RBCA v3 m
Sat. pH and Langelier Index (@ 20C)	1	N/A	2015/10/28	ATL SOP 00049	Auto Calc.

Your P.O. #: 4104251070
Your C.O.C. #: 533409

Attention:Nadine Wambolt

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

Report Date: 2015/10/30
Report #: R3740899
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B5K7088
Received: 2015/10/13, 16:59

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Sat. pH and Langelier Index (@ 4C)	1	N/A	2015/10/28	ATL SOP 00049	Auto Calc.
Reactive Silica	1	N/A	2015/10/20	ATL SOP 00022	EPA 366.0 m
Sulphate	1	N/A	2015/10/20	ATL SOP 00023	EPA 375.4 R1978 m
Total Dissolved Solids (TDS calc)	1	N/A	2015/10/28		Auto Calc.
Organic carbon - Total (TOC) (5)	1	N/A	2015/10/26	ATL SOP 00037	SM 22 5310C m
ModTPH (T2) Calc. for Water	1	N/A	2015/10/28	N/A	Atl. RBCA v3 m
Turbidity	1	N/A	2015/10/16	ATL SOP 00011	EPA 180.1 R2 m

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 Sydney to Edm Petroleum/Ind
(2) This test was performed by Maxxam Analytics Mississauga
(3) Sample(s) analyzed using methodologies that have not been subjected to Maxxam's standard validation process for the submitted matrix and is not an Accredited method. Analysis performed with client consent, however results should be viewed with discretion

(4) 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.
(5) 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 Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B5K7088
Report Date: 2015/10/30

Dillon Consulting Limited
Your P.O. #: 4104251070

ATLANTIC FRACTIONATION (PIRIT2) IN SOIL

Maxxam ID		BDK336		
Sampling Date		2015/10/09 16:00		
COC Number		533409		
	UNITS	CODT-103-MWB	RDL	QC Batch
Petroleum Hydrocarbons				
Benzene	mg/kg	<13 (1)	13	4244607
Toluene	mg/kg	56	13	4244607
Ethylbenzene	mg/kg	430	13	4244607
Total Xylenes	mg/kg	1900	25	4244607
Aliphatic >C6-C8	mg/kg	<500 (1)	500	4244607
Aliphatic >C8-C10	mg/kg	<500 (1)	500	4244607
>C8-C10 Aromatics (-EX)	mg/kg	8700	250	4244607
Aliphatic >C10-C12	mg/kg	7300 (2)	730	4234735
Aliphatic >C12-C16	mg/kg	15000 (2)	1400	4234735
Aliphatic >C16-C21	mg/kg	2500 (2)	1400	4234735
Aliphatic >C21-<C32	mg/kg	1700 (2)	1400	4234735
Aromatic >C10-C12	mg/kg	150000 (2)	18000	4234735
Aromatic >C12-C16	mg/kg	310000 (2)	68000	4234735
Aromatic >C16-C21	mg/kg	140000 (2)	68000	4234735
Aromatic >C21-<C32	mg/kg	80000 (2)	68000	4234735
Modified TPH (Tier 2)	mg/kg	710000	68000	4226816
Reached Baseline at C32	mg/kg	Yes	N/A	4234735
Hydrocarbon Resemblance	mg/kg	COMMENT (3)	N/A	4234735
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	105		4234735
n-Dotriacontane - Extractable	%	92		4234735
Isobutylbenzene - Volatile	%	63		4244607

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated VPH RDL(s) due to sample dilution.
(2) Elevated TEH RDL(s) due to sample dilution.
(3) Fuel oil fraction.

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Maxxam Job #: B5K7088
Report Date: 2015/10/30

Dillon Consulting Limited
Your P.O. #: 4104251070

ATLANTIC FRACTIONATION (PIRIT2) IN WATER

Maxxam ID		BDK326		
Sampling Date		2015/10/08 16:00		
COC Number		533409		
	UNITS	CODT-103-MWB	RDL	QC Batch
Petroleum Hydrocarbons				
Benzene	mg/L	0.034	0.010	4236438
Toluene	mg/L	0.11	0.010	4236438
Ethylbenzene	mg/L	0.18	0.010	4236438
Total Xylenes	mg/L	0.74	0.020	4236438
Aliphatic >C6-C8	mg/L	<0.10	0.10	4236438
Aliphatic >C8-C10	mg/L	0.17	0.10	4236438
>C8-C10 Aromatics (-EX)	mg/L	1.1	0.10	4236438
Aliphatic >C10-C12	mg/L	<0.010	0.010	4238074
Aliphatic >C12-C16	mg/L	<0.050	0.050	4238074
Aliphatic >C16-C21	mg/L	<0.050	0.050	4238074
Aliphatic >C21-<C32	mg/L	<0.10	0.10	4238074
Aromatic >C10-C12	mg/L	6.7 (1)	0.10	4238074
Aromatic >C12-C16	mg/L	2.2 (1)	0.50	4238074
Aromatic >C16-C21	mg/L	0.32	0.050	4238074
Aromatic >C21-<C32	mg/L	<0.10	0.10	4238074
Modified TPH (Tier 2)	mg/L	10	0.50	4226817
Reached Baseline at C32	mg/L	Yes	N/A	4238074
Hydrocarbon Resemblance	mg/L	COMMENT (2)	N/A	4238074
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	47 (3)		4238074
n-Dotriacontane - Extractable	%	96		4238074
Isobutylbenzene - Volatile	%	94		4236438

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated TEH RDL(s) due to sample dilution.
(2) One product in the gas/fuel oil range.
(3) TEH surrogate(s) not within acceptance limits due to product interference.

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Maxxam Job #: B5K7088
Report Date: 2015/10/30

Dillon Consulting Limited
Your P.O. #: 4104251070

AT. RCAP-MS DISSOLVED (FIELDFILT) IN W

Maxxam ID		BDK326		
Sampling Date		2015/10/08 16:00		
COC Number		533409		
	UNITS	CODT-103-MWB	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	9.43	N/A	4226318
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	210	1.0	4226314
Calculated TDS	mg/L	510	1.0	4226312
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.7	1.0	4226314
Cation Sum	me/L	8.93	N/A	4226318
Hardness (CaCO3)	mg/L	280	1.0	4226316
Ion Balance (% Difference)	%	2.72	N/A	4226317
Langelier Index (@ 20C)	N/A	0.764		4226310
Langelier Index (@ 4C)	N/A	0.516		4226311
Nitrate (N)	mg/L	<0.050	0.050	4226319
Saturation pH (@ 20C)	N/A	7.17		4226310
Saturation pH (@ 4C)	N/A	7.42		4226311
Inorganics				
Total Alkalinity (Total as CaCO3)	mg/L	210	25	4234682
Dissolved Chloride (Cl)	mg/L	180	1.0	4234688
Colour	TCU	14	5.0	4234709
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	4234718
Nitrite (N)	mg/L	<0.010	0.010	4234721
Nitrogen (Ammonia Nitrogen)	mg/L	0.33	0.050	4246309
Total Organic Carbon (C)	mg/L	2.2	0.50	4244635
Orthophosphate (P)	mg/L	0.021	0.010	4234712
pH	pH	7.93	N/A	4236094
Reactive Silica (SiO2)	mg/L	13	0.50	4234703
Dissolved Sulphate (SO4)	mg/L	6.3	2.0	4234696
Turbidity	NTU	18	0.10	4232489
Conductivity	uS/cm	960	1.0	4236091
Metals				
Dissolved Aluminum (Al)	ug/L	6.9	5.0	4229699
Dissolved Antimony (Sb)	ug/L	<1.0	1.0	4229699
Dissolved Arsenic (As)	ug/L	1.4	1.0	4229699
Dissolved Barium (Ba)	ug/L	820	1.0	4229699
Dissolved Beryllium (Be)	ug/L	<1.0	1.0	4229699
Dissolved Bismuth (Bi)	ug/L	<2.0	2.0	4229699
Dissolved Boron (B)	ug/L	59	50	4229699

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Maxxam Job #: B5K7088
Report Date: 2015/10/30

Dillon Consulting Limited
Your P.O. #: 4104251070

AT. RCAP-MS DISSOLVED (FIELDFILT) IN W

Maxxam ID		BDK326		
Sampling Date		2015/10/08 16:00		
COC Number		533409		
	UNITS	CODT-103-MWB	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	4229699
Dissolved Calcium (Ca)	ug/L	96000	100	4229699
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	4229699
Dissolved Cobalt (Co)	ug/L	<0.40	0.40	4229699
Dissolved Copper (Cu)	ug/L	<2.0	2.0	4229699
Dissolved Iron (Fe)	ug/L	<50	50	4229699
Dissolved Lead (Pb)	ug/L	<0.50	0.50	4229699
Dissolved Magnesium (Mg)	ug/L	10000	100	4229699
Dissolved Manganese (Mn)	ug/L	1400	2.0	4229699
Dissolved Molybdenum (Mo)	ug/L	<2.0	2.0	4229699
Dissolved Nickel (Ni)	ug/L	<2.0	2.0	4229699
Dissolved Phosphorus (P)	ug/L	<100	100	4229699
Dissolved Potassium (K)	ug/L	2700	100	4229699
Dissolved Selenium (Se)	ug/L	13	1.0	4229699
Dissolved Silver (Ag)	ug/L	<0.10	0.10	4229699
Dissolved Sodium (Na)	ug/L	73000	100	4229699
Dissolved Strontium (Sr)	ug/L	770	2.0	4229699
Dissolved Thallium (Tl)	ug/L	<0.10	0.10	4229699
Dissolved Tin (Sn)	ug/L	<2.0	2.0	4229699
Dissolved Titanium (Ti)	ug/L	<2.0	2.0	4229699
Dissolved Uranium (U)	ug/L	<0.10	0.10	4229699
Dissolved Vanadium (V)	ug/L	<2.0	2.0	4229699
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	4229699

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5K7088
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RESULTS OF ANALYSES OF ORGANIC LIQUID

Maxxam ID		BDK336	
Sampling Date		2015/10/09 16:00	
COC Number		533409	
	UNITS	**CODT-103-MWB**	**QC Batch**
Subcontracted Analysis			
Subcontract Parameter	N/A	ATTACHED	4244962
QC Batch = Quality Control Batch			

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SEMI-VOLATILE ORGANICS BY GC-MS (ORGANIC LIQUID)

Maxxam ID		BDK336		
Sampling Date		2015/10/09 16:00		
COC Number		533409		
	UNITS	CODT-103-MWB	RDL	QC Batch
Semivolatile Organics				
Acenaphthene	ug/g	26000	5000	4247319
Acenaphthylene	ug/g	<5000	5000	4247319
Anthracene	ug/g	8500	5000	4247319
Benzo(a)anthracene	ug/g	<5000	5000	4247319
Benzo(a)pyrene	ug/g	<5000	5000	4247319
Benzo(b/j)fluoranthene	ug/g	<5000	5000	4247319
Benzo(g,h,i)perylene	ug/g	<5000	5000	4247319
Benzo(k)fluoranthene	ug/g	<5000	5000	4247319
1-Chloronaphthalene	ug/g	<50000	50000	4247319
2-Chloronaphthalene	ug/g	<5000	5000	4247319
Chrysene	ug/g	<5000	5000	4247319
Dibenz(a,h)anthracene	ug/g	<5000	5000	4247319
Fluoranthene	ug/g	10000	5000	4247319
Fluorene	ug/g	21000	5000	4247319
Indeno(1,2,3-cd)pyrene	ug/g	<5000	5000	4247319
1-Methylnaphthalene	ug/g	44000	5000	4247319
2-Methylnaphthalene	ug/g	66000	5000	4247319
Naphthalene	ug/g	97000	5000	4247319
Perylene	ug/g	<10000	10000	4247319
Phenanthrene	ug/g	33000	5000	4247319
Pyrene	ug/g	6400	5000	4247319
Quinoline	ug/g	<10000	10000	4247319
1,2-Dichlorobenzene	ug/g	<5000	5000	4247319
1,3-Dichlorobenzene	ug/g	<5000	5000	4247319
1,4-Dichlorobenzene	ug/g	<5000	5000	4247319
Hexachlorobenzene	ug/g	<10000	10000	4247319
Pentachlorobenzene	ug/g	<10000	10000	4247319
1,2,3,4-Tetrachlorobenzene	ug/g	<10000	10000	4247319
1,2,3,5-Tetrachlorobenzene	ug/g	<10000	10000	4247319
1,2,4,5-Tetrachlorobenzene	ug/g	<10000	10000	4247319
1,2,3-Trichlorobenzene	ug/g	<10000	10000	4247319
1,2,4-Trichlorobenzene	ug/g	<10000	10000	4247319
1,3,5-Trichlorobenzene	ug/g	<10000	10000	4247319
2-Chlorophenol	ug/g	<5000	5000	4247319
4-Chloro-3-Methylphenol	ug/g	<5000	5000	4247319

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5K7088
Report Date: 2015/10/30

Dillon Consulting Limited
Your P.O. #: 4104251070

SEMI-VOLATILE ORGANICS BY GC-MS (ORGANIC LIQUID)

Maxxam ID		BDK336		
Sampling Date		2015/10/09 16:00		
COC Number		533409		
	UNITS	CODT-103-MWB	RDL	QC Batch
m/p-Cresol	ug/g	<10000	10000	4247319
o-Cresol	ug/g	<10000	10000	4247319
2,3-Dichlorophenol	ug/g	<5000	5000	4247319
2,4-Dichlorophenol	ug/g	<5000	5000	4247319
2,5-Dichlorophenol	ug/g	<5000	5000	4247319
2,6-Dichlorophenol	ug/g	<5000	5000	4247319
3,4-Dichlorophenol	ug/g	<5000	5000	4247319
3,5-Dichlorophenol	ug/g	<5000	5000	4247319
2,4-Dimethylphenol	ug/g	<5000	5000	4247319
2,4-Dinitrophenol	ug/g	<10000	10000	4247319
4,6-Dinitro-2-methylphenol	ug/g	<30000	30000	4247319
2-Nitrophenol	ug/g	<30000	30000	4247319
4-Nitrophenol	ug/g	<30000	30000	4247319
Pentachlorophenol	ug/g	<10000	10000	4247319
Phenol	ug/g	<10000	10000	4247319
2,3,4,5-Tetrachlorophenol	ug/g	<5000	5000	4247319
2,3,4,6-Tetrachlorophenol	ug/g	<5000	5000	4247319
2,3,5,6-Tetrachlorophenol	ug/g	<5000	5000	4247319
2,3,4-Trichlorophenol	ug/g	<5000	5000	4247319
2,3,5-Trichlorophenol	ug/g	<5000	5000	4247319
2,3,6-Trichlorophenol	ug/g	<5000	5000	4247319
2,4,5-Trichlorophenol	ug/g	<5000	5000	4247319
2,4,6-Trichlorophenol	ug/g	<5000	5000	4247319
3,4,5-Trichlorophenol	ug/g	<5000	5000	4247319
Benzyl butyl phthalate	ug/g	<10000	10000	4247319
Bis(2-chloroethoxy)methane	ug/g	<5000	5000	4247319
Bis(2-chloroisopropyl)ether	ug/g	<5000	5000	4247319
Bis(2-ethylhexyl)phthalate	ug/g	<30000	30000	4247319
4-Bromophenyl phenyl ether	ug/g	<5000	5000	4247319
p-Chloroaniline	ug/g	<10000	10000	4247319
4-Chlorophenyl phenyl ether	ug/g	<5000	5000	4247319
3,3'-Dichlorobenzidine	ug/g	<30000	30000	4247319
Diethyl phthalate	ug/g	<10000	10000	4247319
Di-N-butyl phthalate	ug/g	<10000	10000	4247319
Di-N-octyl phthalate	ug/g	<30000	30000	4247319
2,4-Dinitrotoluene	ug/g	<5000	5000	4247319

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5K7088
Report Date: 2015/10/30

Dillon Consulting Limited
Your P.O. #: 4104251070

SEMI-VOLATILE ORGANICS BY GC-MS (ORGANIC LIQUID)

Maxxam ID		BDK336		
Sampling Date		2015/10/09 16:00		
COC Number		533409		
	UNITS	**CODT-103-MWB**	**RDL**	**QC Batch**
2,6-Dinitrotoluene	ug/g	<5000	5000	4247319
Dimethyl phthalate	ug/g	<10000	10000	4247319
Biphenyl	ug/g	15000	5000	4247319
Bis(2-chloroethyl)ether	ug/g	<10000	10000	4247319
Hexachlorobutadiene	ug/g	<5000	5000	4247319
Hexachlorocyclopentadiene	ug/g	<30000	30000	4247319
Hexachloroethane	ug/g	<5000	5000	4247319
Isophorone	ug/g	<5000	5000	4247319
Nitrobenzene	ug/g	<5000	5000	4247319
Nitrosodiphenylamine/Diphenylamine	ug/g	<10000	10000	4247319
N-Nitroso-di-n-propylamine	ug/g	<5000	5000	4247319
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	95		4247319
2-Fluorobiphenyl	%	108		4247319
2-Fluorophenol	%	95		4247319
D14-Terphenyl	%	99		4247319
D5-Nitrobenzene	%	89		4247319
D5-Phenol	%	95		4247319

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5K7088
Report Date: 2015/10/30

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Your P.O. #: 4104251070

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BDK326		
Sampling Date		2015/10/08 16:00		
COC Number		533409		
	UNITS	CODT-103-MWB	RDL	QC Batch
Semivolatile Organics				
Acenaphthene	ug/L	140	4.0	4244749
Acenaphthylene	ug/L	<4.0	4.0	4244749
Anthracene	ug/L	7.5	4.0	4244749
Benzo(a)anthracene	ug/L	<4.0	4.0	4244749
Benzo(a)pyrene	ug/L	<4.0	4.0	4244749
Benzo(b/j)fluoranthene	ug/L	<4.0	4.0	4244749
Benzo(g,h,i)perylene	ug/L	<4.0	4.0	4244749
Benzo(k)fluoranthene	ug/L	<4.0	4.0	4244749
1-Chloronaphthalene	ug/L	<20	20	4244749
2-Chloronaphthalene	ug/L	<10	10	4244749
Chrysene	ug/L	<4.0	4.0	4244749
Dibenz(a,h)anthracene	ug/L	<4.0	4.0	4244749
Fluoranthene	ug/L	5.8	4.0	4244749
Fluorene	ug/L	78	4.0	4244749
Indeno(1,2,3-cd)pyrene	ug/L	<4.0	4.0	4244749
1-Methylnaphthalene	ug/L	360	4.0	4244749
2-Methylnaphthalene	ug/L	260	4.0	4244749
Naphthalene	ug/L	2400	4.0	4244749
Perylene	ug/L	<4.0	4.0	4244749
Phenanthrene	ug/L	50	4.0	4244749
Pyrene	ug/L	<4.0	4.0	4244749
1,2-Dichlorobenzene	ug/L	<10	10	4244749
1,3-Dichlorobenzene	ug/L	<10	10	4244749
1,4-Dichlorobenzene	ug/L	<10	10	4244749
Hexachlorobenzene	ug/L	<10	10	4244749
Pentachlorobenzene	ug/L	<10	10	4244749
1,2,3,5-Tetrachlorobenzene	ug/L	<10	10	4244749
1,2,4,5-Tetrachlorobenzene	ug/L	<10	10	4244749
1,2,3-Trichlorobenzene	ug/L	<10	10	4244749
1,2,4-Trichlorobenzene	ug/L	<10	10	4244749
1,3,5-Trichlorobenzene	ug/L	<10	10	4244749
2-Chlorophenol	ug/L	<6.0	6.0	4244749
4-Chloro-3-Methylphenol	ug/L	<10	10	4244749
m/p-Cresol	ug/L	<10	10	4244749
o-Cresol	ug/L	<10	10	4244749

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5K7088
Report Date: 2015/10/30

Dillon Consulting Limited
Your P.O. #: 4104251070

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BDK326		
Sampling Date		2015/10/08 16:00		
COC Number		533409		
	UNITS	CODT-103-MWB	RDL	QC Batch
1,2,3,4-Tetrachlorobenzene	ug/L	<10	10	4244749
2,3-Dichlorophenol	ug/L	<10	10	4244749
2,4-Dichlorophenol	ug/L	<6.0	6.0	4244749
2,5-Dichlorophenol	ug/L	<10	10	4244749
2,6-Dichlorophenol	ug/L	<10	10	4244749
3,4-Dichlorophenol	ug/L	<10	10	4244749
3,5-Dichlorophenol	ug/L	<10	10	4244749
2,4-Dimethylphenol	ug/L	56	10	4244749
2,4-Dinitrophenol	ug/L	<50 (1)	50	4244749
4,6-Dinitro-2-methylphenol	ug/L	<40	40	4244749
2-Nitrophenol	ug/L	<10	10	4244749
4-Nitrophenol	ug/L	<28	28	4244749
Pentachlorophenol	ug/L	<20	20	4244749
Phenol	ug/L	<10	10	4244749
2,3,4,5-Tetrachlorophenol	ug/L	<8.0	8.0	4244749
2,3,4,6-Tetrachlorophenol	ug/L	<10	10	4244749
2,3,5,6-Tetrachlorophenol	ug/L	<10	10	4244749
2,3,4-Trichlorophenol	ug/L	<10	10	4244749
2,3,5-Trichlorophenol	ug/L	<10	10	4244749
2,3,6-Trichlorophenol	ug/L	<10	10	4244749
2,4,5-Trichlorophenol	ug/L	<10	10	4244749
2,4,6-Trichlorophenol	ug/L	<10	10	4244749
3,4,5-Trichlorophenol	ug/L	<10	10	4244749
Benzyl butyl phthalate	ug/L	<10	10	4244749
Biphenyl	ug/L	71	10	4244749
Bis(2-chloroethyl)ether	ug/L	<10	10	4244749
Bis(2-chloroethoxy)methane	ug/L	<10	10	4244749
Bis(2-chloroisopropyl)ether	ug/L	<10	10	4244749
Bis(2-ethylhexyl)phthalate	ug/L	<40	40	4244749
4-Bromophenyl phenyl ether	ug/L	<6.0	6.0	4244749
p-Chloroaniline	ug/L	<20	20	4244749
4-Chlorophenyl phenyl ether	ug/L	<10	10	4244749
Di-N-butyl phthalate	ug/L	<40	40	4244749
Di-N-octyl phthalate	ug/L	<16	16	4244749
2,4-Dinitrotoluene	ug/L	<10	10	4244749

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Detection limit was raised due to matrix interference.

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Maxxam Job #: B5K7088
Report Date: 2015/10/30

Dillon Consulting Limited
Your P.O. #: 4104251070

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BDK326		
Sampling Date		2015/10/08 16:00		
COC Number		533409		
	UNITS	**CODT-103-MWB**	**RDL**	**QC Batch**
Diethyl phthalate	ug/L	<20	20	4244749
3,3'-Dichlorobenzidine	ug/L	<10	10	4244749
Dimethyl phthalate	ug/L	<20	20	4244749
2,6-Dinitrotoluene	ug/L	<10	10	4244749
Diphenyl Ether	ug/L	<6.0	6.0	4244749
Hexachlorobutadiene	ug/L	<8.0	8.0	4244749
Hexachlorocyclopentadiene	ug/L	<40	40	4244749
Hexachloroethane	ug/L	<10	10	4244749
Isophorone	ug/L	<10	10	4244749
Nitrobenzene	ug/L	<10	10	4244749
Nitrosodiphenylamine/Diphenylamine	ug/L	<20	20	4244749
N-Nitroso-di-n-propylamine	ug/L	<10	10	4244749
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	56		4244749
2-Fluorobiphenyl	%	38		4244749
2-Fluorophenol	%	20		4244749
D14-Terphenyl	%	82		4244749
D5-Nitrobenzene	%	38		4244749
D5-Phenol	%	16		4244749

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B5K7088
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Dillon Consulting Limited
Your P.O. #: 4104251070

GENERAL COMMENTS

REVISED REPORT - Issued to include subcontract results 2015/10/30 FTO

Sample BDK326-01 : ABN analysis: Due to the nature of the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample BDK336-01 : Data reported on an as received basis. No moisture correction applied.

ABN analysis: Due to the nature of the sample matrix, a smaller than usual portion of the sample was used for extraction and a further dilution was required. Detection limits were adjusted accordingly.

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
4229699	BAN	Matrix Spike	Dissolved Aluminum (Al)	2015/10/16		103	%	80 - 120
			Dissolved Antimony (Sb)	2015/10/16		103	%	80 - 120
			Dissolved Arsenic (As)	2015/10/16		101	%	80 - 120
			Dissolved Barium (Ba)	2015/10/16		NC	%	80 - 120
			Dissolved Beryllium (Be)	2015/10/16		103	%	80 - 120
			Dissolved Bismuth (Bi)	2015/10/16		97	%	80 - 120
			Dissolved Boron (B)	2015/10/16		101	%	80 - 120
			Dissolved Cadmium (Cd)	2015/10/16		104	%	80 - 120
			Dissolved Calcium (Ca)	2015/10/16		NC	%	80 - 120
			Dissolved Chromium (Cr)	2015/10/16		100	%	80 - 120
			Dissolved Cobalt (Co)	2015/10/16		98	%	80 - 120
			Dissolved Copper (Cu)	2015/10/16		97	%	80 - 120
			Dissolved Iron (Fe)	2015/10/16		NC	%	80 - 120
			Dissolved Lead (Pb)	2015/10/16		100	%	80 - 120
			Dissolved Magnesium (Mg)	2015/10/16		NC	%	80 - 120
			Dissolved Manganese (Mn)	2015/10/16		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/10/16		107	%	80 - 120
			Dissolved Nickel (Ni)	2015/10/16		98	%	80 - 120
			Dissolved Phosphorus (P)	2015/10/16		107	%	80 - 120
			Dissolved Potassium (K)	2015/10/16		101	%	80 - 120
			Dissolved Selenium (Se)	2015/10/16		102	%	80 - 120
			Dissolved Silver (Ag)	2015/10/16		84	%	80 - 120
			Dissolved Sodium (Na)	2015/10/16		NC	%	80 - 120
			Dissolved Strontium (Sr)	2015/10/16		NC	%	80 - 120
			Dissolved Thallium (Tl)	2015/10/16		100	%	80 - 120
			Dissolved Tin (Sn)	2015/10/16		106	%	80 - 120
			Dissolved Titanium (Ti)	2015/10/16		105	%	80 - 120
			Dissolved Uranium (U)	2015/10/16		105	%	80 - 120
			Dissolved Vanadium (V)	2015/10/16		101	%	80 - 120
			Dissolved Zinc (Zn)	2015/10/16		99	%	80 - 120
4229699	BAN	Spiked Blank	Dissolved Aluminum (Al)	2015/10/15		100	%	80 - 120
			Dissolved Antimony (Sb)	2015/10/15		97	%	80 - 120
			Dissolved Arsenic (As)	2015/10/15		98	%	80 - 120
			Dissolved Barium (Ba)	2015/10/15		101	%	80 - 120
			Dissolved Beryllium (Be)	2015/10/15		102	%	80 - 120
			Dissolved Bismuth (Bi)	2015/10/15		102	%	80 - 120
			Dissolved Boron (B)	2015/10/15		100	%	80 - 120
			Dissolved Cadmium (Cd)	2015/10/15		101	%	80 - 120
			Dissolved Calcium (Ca)	2015/10/15		101	%	80 - 120
			Dissolved Chromium (Cr)	2015/10/15		100	%	80 - 120
			Dissolved Cobalt (Co)	2015/10/15		100	%	80 - 120
			Dissolved Copper (Cu)	2015/10/15		101	%	80 - 120
			Dissolved Iron (Fe)	2015/10/15		102	%	80 - 120
			Dissolved Lead (Pb)	2015/10/15		101	%	80 - 120
			Dissolved Magnesium (Mg)	2015/10/15		104	%	80 - 120
			Dissolved Manganese (Mn)	2015/10/15		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2015/10/15		100	%	80 - 120
			Dissolved Nickel (Ni)	2015/10/15		102	%	80 - 120
			Dissolved Phosphorus (P)	2015/10/15		106	%	80 - 120
			Dissolved Potassium (K)	2015/10/15		101	%	80 - 120
			Dissolved Selenium (Se)	2015/10/15		101	%	80 - 120
			Dissolved Silver (Ag)	2015/10/15		100	%	80 - 120
			Dissolved Sodium (Na)	2015/10/15		104	%	80 - 120
			Dissolved Strontium (Sr)	2015/10/15		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 Thallium (Tl)	2015/10/15		100	%	80 - 120
			Dissolved Tin (Sn)	2015/10/15		102	%	80 - 120
			Dissolved Titanium (Ti)	2015/10/15		101	%	80 - 120
			Dissolved Uranium (U)	2015/10/15		104	%	80 - 120
			Dissolved Vanadium (V)	2015/10/15		100	%	80 - 120
			Dissolved Zinc (Zn)	2015/10/15		102	%	80 - 120
4229699	BAN	Method Blank	Dissolved Aluminum (Al)	2015/10/15	<5.0		ug/L	
			Dissolved Antimony (Sb)	2015/10/15	<1.0		ug/L	
			Dissolved Arsenic (As)	2015/10/15	<1.0		ug/L	
			Dissolved Barium (Ba)	2015/10/15	<1.0		ug/L	
			Dissolved Beryllium (Be)	2015/10/15	<1.0		ug/L	
			Dissolved Bismuth (Bi)	2015/10/15	<2.0		ug/L	
			Dissolved Boron (B)	2015/10/15	<50		ug/L	
			Dissolved Cadmium (Cd)	2015/10/15	<0.010		ug/L	
			Dissolved Calcium (Ca)	2015/10/15	<100		ug/L	
			Dissolved Chromium (Cr)	2015/10/15	<1.0		ug/L	
			Dissolved Cobalt (Co)	2015/10/15	<0.40		ug/L	
			Dissolved Copper (Cu)	2015/10/15	<2.0		ug/L	
			Dissolved Iron (Fe)	2015/10/15	<50		ug/L	
			Dissolved Lead (Pb)	2015/10/15	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2015/10/15	<100		ug/L	
			Dissolved Manganese (Mn)	2015/10/15	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2015/10/15	<2.0		ug/L	
			Dissolved Nickel (Ni)	2015/10/15	<2.0		ug/L	
			Dissolved Phosphorus (P)	2015/10/15	<100		ug/L	
			Dissolved Potassium (K)	2015/10/15	<100		ug/L	
			Dissolved Selenium (Se)	2015/10/15	<1.0		ug/L	
			Dissolved Silver (Ag)	2015/10/15	<0.10		ug/L	
			Dissolved Sodium (Na)	2015/10/15	<100		ug/L	
			Dissolved Strontium (Sr)	2015/10/15	<2.0		ug/L	
			Dissolved Thallium (Tl)	2015/10/15	<0.10		ug/L	
			Dissolved Tin (Sn)	2015/10/15	<2.0		ug/L	
			Dissolved Titanium (Ti)	2015/10/15	<2.0		ug/L	
			Dissolved Uranium (U)	2015/10/15	<0.10		ug/L	
			Dissolved Vanadium (V)	2015/10/15	<2.0		ug/L	
			Dissolved Zinc (Zn)	2015/10/15	<5.0		ug/L	
4229699	BAN	RPD	Dissolved Aluminum (Al)	2015/10/16	NC		%	20
			Dissolved Antimony (Sb)	2015/10/16	NC		%	20
			Dissolved Arsenic (As)	2015/10/16	NC		%	20
			Dissolved Barium (Ba)	2015/10/16	0.43		%	20
			Dissolved Beryllium (Be)	2015/10/16	NC		%	20
			Dissolved Bismuth (Bi)	2015/10/16	NC		%	20
			Dissolved Boron (B)	2015/10/16	NC		%	20
			Dissolved Cadmium (Cd)	2015/10/16	NC		%	20
			Dissolved Calcium (Ca)	2015/10/16	0.88		%	20
			Dissolved Chromium (Cr)	2015/10/16	NC		%	20
			Dissolved Cobalt (Co)	2015/10/16	NC		%	20
			Dissolved Copper (Cu)	2015/10/16	NC		%	20
			Dissolved Iron (Fe)	2015/10/16	0.44		%	20
			Dissolved Lead (Pb)	2015/10/16	NC		%	20
			Dissolved Magnesium (Mg)	2015/10/16	0.36		%	20
			Dissolved Manganese (Mn)	2015/10/16	0.59		%	20
			Dissolved Molybdenum (Mo)	2015/10/16	NC		%	20
			Dissolved Nickel (Ni)	2015/10/16	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 Phosphorus (P)	2015/10/16	NC		%	20
			Dissolved Potassium (K)	2015/10/16	0.57		%	20
			Dissolved Selenium (Se)	2015/10/16	NC		%	20
			Dissolved Silver (Ag)	2015/10/16	NC		%	20
			Dissolved Sodium (Na)	2015/10/16	0.022		%	20
			Dissolved Strontium (Sr)	2015/10/16	0.021		%	20
			Dissolved Thallium (Tl)	2015/10/16	NC		%	20
			Dissolved Tin (Sn)	2015/10/16	NC		%	20
			Dissolved Titanium (Ti)	2015/10/16	NC		%	20
			Dissolved Uranium (U)	2015/10/16	NC		%	20
			Dissolved Vanadium (V)	2015/10/16	NC		%	20
			Dissolved Zinc (Zn)	2015/10/16	NC		%	20
4232489	TMO	QC Standard	Turbidity	2015/10/16		102	%	80 - 120
4232489	TMO	Method Blank	Turbidity	2015/10/16	<0.10		NTU	
4232489	TMO	RPD	Turbidity	2015/10/16	4.7		%	25
4234682	ARS	Matrix Spike	Total Alkalinity (Total as CaCO3)	2015/10/20		95	%	80 - 120
4234682	ARS	Spiked Blank	Total Alkalinity (Total as CaCO3)	2015/10/20		111	%	80 - 120
4234682	ARS	Method Blank	Total Alkalinity (Total as CaCO3)	2015/10/20	<5.0		mg/L	
4234682	ARS	RPD	Total Alkalinity (Total as CaCO3)	2015/10/20	NC		%	25
4234688	ARS	Matrix Spike	Dissolved Chloride (Cl)	2015/10/20		NC	%	80 - 120
4234688	ARS	QC Standard	Dissolved Chloride (Cl)	2015/10/20		106	%	80 - 120
4234688	ARS	Spiked Blank	Dissolved Chloride (Cl)	2015/10/20		107	%	80 - 120
4234688	ARS	Method Blank	Dissolved Chloride (Cl)	2015/10/20	1.3, RDL=1.0		mg/L	
4234696	ARS	Matrix Spike	Dissolved Sulphate (SO4)	2015/10/20		NC	%	80 - 120
4234696	ARS	Spiked Blank	Dissolved Sulphate (SO4)	2015/10/20		98	%	80 - 120
4234696	ARS	Method Blank	Dissolved Sulphate (SO4)	2015/10/20	<2.0		mg/L	
4234696	ARS	RPD	Dissolved Sulphate (SO4)	2015/10/20	8.4		%	25
4234703	ARS	Matrix Spike	Reactive Silica (SiO2)	2015/10/20		98	%	80 - 120
4234703	ARS	Spiked Blank	Reactive Silica (SiO2)	2015/10/19		98	%	80 - 120
4234703	ARS	Method Blank	Reactive Silica (SiO2)	2015/10/19	<0.50		mg/L	
4234703	ARS	RPD	Reactive Silica (SiO2)	2015/10/20	NC		%	25
4234709	ARS	Spiked Blank	Colour	2015/10/20		98	%	80 - 120
4234709	ARS	Method Blank	Colour	2015/10/20	<5.0		TCU	
4234709	ARS	RPD	Colour	2015/10/20	NC		%	20
4234712	ARS	Matrix Spike	Orthophosphate (P)	2015/10/20		87	%	80 - 120
4234712	ARS	Spiked Blank	Orthophosphate (P)	2015/10/20		96	%	80 - 120
4234712	ARS	Method Blank	Orthophosphate (P)	2015/10/20	<0.010		mg/L	
4234712	ARS	RPD	Orthophosphate (P)	2015/10/20	NC		%	25
4234718	ARS	Matrix Spike	Nitrate + Nitrite (N)	2015/10/20		NC	%	80 - 120
4234718	ARS	Spiked Blank	Nitrate + Nitrite (N)	2015/10/20		97	%	80 - 120
4234718	ARS	Method Blank	Nitrate + Nitrite (N)	2015/10/20	<0.050		mg/L	
4234718	ARS	RPD	Nitrate + Nitrite (N)	2015/10/20	1.2		%	25
4234721	ARS	Matrix Spike	Nitrite (N)	2015/10/20		NC	%	80 - 120
4234721	ARS	Spiked Blank	Nitrite (N)	2015/10/20		105	%	80 - 120
4234721	ARS	Method Blank	Nitrite (N)	2015/10/20	<0.010		mg/L	
4234721	ARS	RPD	Nitrite (N)	2015/10/20	3.8		%	25
4234735	SHF	Spiked Blank	Aliphatic >C10-C12	2015/10/26		92	%	30 - 130
			Aliphatic >C12-C16	2015/10/26		94	%	30 - 130
			Aliphatic >C16-C21	2015/10/26		102	%	30 - 130
			Aliphatic >C21-<C32	2015/10/26		106	%	30 - 130
			Aromatic >C10-C12	2015/10/26		105	%	30 - 130
			Aromatic >C12-C16	2015/10/26		99	%	30 - 130
			Aromatic >C16-C21	2015/10/26		99	%	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
			Aromatic >C21-<C32	2015/10/26		101	%	30 - 130
4234735	SHF	Method Blank	Isobutylbenzene - Extractable	2015/10/26		92	%	30 - 130
			n-Dotriacontane - Extractable	2015/10/26		92	%	30 - 130
			Aliphatic >C10-C12	2015/10/26	<8.0		mg/kg	
			Aliphatic >C12-C16	2015/10/26	<15		mg/kg	
			Aliphatic >C16-C21	2015/10/26	<15		mg/kg	
			Aliphatic >C21-<C32	2015/10/26	<15		mg/kg	
			Aromatic >C10-C12	2015/10/26	<4.0		mg/kg	
			Aromatic >C12-C16	2015/10/26	<15		mg/kg	
			Aromatic >C16-C21	2015/10/26	<15		mg/kg	
			Aromatic >C21-<C32	2015/10/26	<15		mg/kg	
4234735	SHF	RPD	Aliphatic >C10-C12	2015/10/27	0.27		%	50
			Aliphatic >C12-C16	2015/10/27	1.7 (1)		%	50
			Aliphatic >C16-C21	2015/10/27	6.3 (1)		%	50
			Aliphatic >C21-<C32	2015/10/27	13 (1)		%	50
			Aromatic >C10-C12	2015/10/27	8.5 (1)		%	50
			Aromatic >C12-C16	2015/10/27	7.5 (1)		%	50
			Aromatic >C16-C21	2015/10/27	8.1 (1)		%	50
			Aromatic >C21-<C32	2015/10/27	14 (1)		%	50
4236091	TMO	Spiked Blank	Conductivity	2015/10/20		103	%	80 - 120
4236091	TMO	Method Blank	Conductivity	2015/10/20	1.1, RDL=1.0		uS/cm	
4236091	TMO	RPD	Conductivity	2015/10/20	0.80		%	25
4236094	TMO	QC Standard	pH	2015/10/20		100	%	97 - 103
4236094	TMO	RPD	pH	2015/10/20	0.14		%	N/A
4236438	MS3	Spiked Blank	Isobutylbenzene - Volatile	2015/10/20		98	%	70 - 130
			Benzene	2015/10/20		99	%	70 - 130
			Toluene	2015/10/20		103	%	70 - 130
			Ethylbenzene	2015/10/20		103	%	70 - 130
			Total Xylenes	2015/10/20		104	%	70 - 130
4236438	MS3	Method Blank	Isobutylbenzene - Volatile	2015/10/20		97	%	70 - 130
			Benzene	2015/10/20	<0.0010		mg/L	
			Toluene	2015/10/20	<0.0010		mg/L	
			Ethylbenzene	2015/10/20	<0.0010		mg/L	
			Total Xylenes	2015/10/20	<0.0020		mg/L	
			Aliphatic >C6-C8	2015/10/20	<0.010		mg/L	
			Aliphatic >C8-C10	2015/10/20	<0.010		mg/L	
			>C8-C10 Aromatics (-EX)	2015/10/20	<0.010		mg/L	
4238074	SHF	Leachate Blank	Isobutylbenzene - Extractable	2015/10/27		71	%	30 - 130
			n-Dotriacontane - Extractable	2015/10/27		91	%	30 - 130
			Aliphatic >C10-C12	2015/10/27	<0.010		mg/L	
			Aliphatic >C12-C16	2015/10/27	<0.050		mg/L	
			Aliphatic >C16-C21	2015/10/27	<0.050		mg/L	
			Aliphatic >C21-<C32	2015/10/27	<0.10		mg/L	
			Aromatic >C10-C12	2015/10/27	<0.010		mg/L	
			Aromatic >C12-C16	2015/10/27	<0.050		mg/L	
			Aromatic >C16-C21	2015/10/27	<0.050		mg/L	
			Aromatic >C21-<C32	2015/10/27	<0.10		mg/L	
4238074	SHF	Spiked Blank	Aliphatic >C10-C12	2015/10/27		90	%	30 - 130
			Aliphatic >C12-C16	2015/10/27		90	%	30 - 130
			Aliphatic >C16-C21	2015/10/27		99	%	30 - 130
			Aliphatic >C21-<C32	2015/10/27		100	%	30 - 130
			Aromatic >C10-C12	2015/10/27		104	%	30 - 130
			Aromatic >C12-C16	2015/10/27		97	%	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
			Aromatic >C16-C21	2015/10/27		97	%	30 - 130
			Aromatic >C21-<C32	2015/10/27		97	%	30 - 130
4238074	SHF	Method Blank	Isobutylbenzene - Extractable	2015/10/27		54 (2)		30 - 130
			n-Dotriacontane - Extractable	2015/10/27		99	%	30 - 130
			Aliphatic >C10-C12	2015/10/27	<0.010		mg/L	
			Aliphatic >C12-C16	2015/10/27	<0.050		mg/L	
			Aliphatic >C16-C21	2015/10/27	<0.050		mg/L	
			Aliphatic >C21-<C32	2015/10/27	<0.10		mg/L	
			Aromatic >C10-C12	2015/10/27	<0.010		mg/L	
			Aromatic >C12-C16	2015/10/27	<0.050		mg/L	
			Aromatic >C16-C21	2015/10/27	<0.050		mg/L	
			Aromatic >C21-<C32	2015/10/27	<0.10		mg/L	
4238074	SHF	RPD [BDK326-04]	Aliphatic >C10-C12	2015/10/28	NC		%	40
			Aliphatic >C12-C16	2015/10/28	NC		%	40
			Aliphatic >C16-C21	2015/10/28	NC		%	40
			Aliphatic >C21-<C32	2015/10/28	NC		%	40
			Aromatic >C10-C12	2015/10/28	8.0 (1)		%	40
			Aromatic >C12-C16	2015/10/28	NC (1)		%	40
			Aromatic >C16-C21	2015/10/28	2.0		%	40
			Aromatic >C21-<C32	2015/10/28	NC		%	40
4244607	THL	Spiked Blank	Isobutylbenzene - Volatile	2015/10/26		96	%	60 - 140
			Benzene	2015/10/26		91	%	60 - 140
			Toluene	2015/10/26		99	%	60 - 140
			Ethylbenzene	2015/10/26		100	%	60 - 140
			Total Xylenes	2015/10/26		104	%	60 - 140
4244607	THL	Method Blank	Isobutylbenzene - Volatile	2015/10/26		101	%	60 - 140
			Benzene	2015/10/26	<0.025		mg/kg	
			Toluene	2015/10/26	<0.025		mg/kg	
			Ethylbenzene	2015/10/26	<0.025		mg/kg	
			Total Xylenes	2015/10/26	<0.050		mg/kg	
			Aliphatic >C6-C8	2015/10/26	<1.0		mg/kg	
			Aliphatic >C8-C10	2015/10/26	<1.0		mg/kg	
			>C8-C10 Aromatics (-EX)	2015/10/26	<0.50		mg/kg	
4244635	SMT	Matrix Spike	Total Organic Carbon (C)	2015/10/26		101	%	80 - 120
4244635	SMT	Spiked Blank	Total Organic Carbon (C)	2015/10/26		92	%	80 - 120
4244635	SMT	Method Blank	Total Organic Carbon (C)	2015/10/26	<0.50		mg/L	
4244635	SMT	RPD	Total Organic Carbon (C)	2015/10/26	NC		%	20
4244749	ANL	Matrix Spike	2,4,6-Tribromophenol	2015/10/28		73	%	10 - 130
			2-Fluorobiphenyl	2015/10/28		54	%	30 - 130
			2-Fluorophenol	2015/10/28		47	%	10 - 130
			D14-Terphenyl	2015/10/28		95	%	30 - 130
			D5-Nitrobenzene	2015/10/28		74	%	30 - 130
			D5-Phenol	2015/10/28		32	%	10 - 130
			Acenaphthene	2015/10/28		85	%	30 - 130
			Acenaphthylene	2015/10/28		84	%	30 - 130
			Anthracene	2015/10/28		90	%	30 - 130
			Benzo(a)anthracene	2015/10/28		105	%	30 - 130
			Benzo(a)pyrene	2015/10/28		107	%	30 - 130
			Benzo(b/j)fluoranthene	2015/10/28		109	%	30 - 130
			Benzo(g,h,i)perylene	2015/10/28		80	%	30 - 130
			Benzo(k)fluoranthene	2015/10/28		117	%	30 - 130
			1-Chloronaphthalene	2015/10/28		73	%	30 - 130
			2-Chloronaphthalene	2015/10/28		78	%	30 - 130
			Chrysene	2015/10/28		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
			Dibenz(a,h)anthracene	2015/10/28		83	%	30 - 130
			Fluoranthene	2015/10/28		104	%	30 - 130
			Fluorene	2015/10/28		94	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/10/28		83	%	30 - 130
			1-Methylnaphthalene	2015/10/28		77	%	30 - 130
			2-Methylnaphthalene	2015/10/28		72	%	30 - 130
			Naphthalene	2015/10/28		70	%	30 - 130
			Perylene	2015/10/28		109	%	30 - 130
			Phenanthrene	2015/10/28		94	%	30 - 130
			Pyrene	2015/10/28		112	%	30 - 130
			1,2-Dichlorobenzene	2015/10/28		58	%	30 - 130
			1,3-Dichlorobenzene	2015/10/28		53	%	30 - 130
			1,4-Dichlorobenzene	2015/10/28		54	%	30 - 130
			Hexachlorobenzene	2015/10/28		74	%	30 - 130
			Pentachlorobenzene	2015/10/28		62	%	30 - 130
			1,2,3,5-Tetrachlorobenzene	2015/10/28		66	%	30 - 130
			1,2,4,5-Tetrachlorobenzene	2015/10/28		55	%	30 - 130
			1,2,3-Trichlorobenzene	2015/10/28		61	%	30 - 130
			1,2,4-Trichlorobenzene	2015/10/28		57	%	30 - 130
			1,3,5-Trichlorobenzene	2015/10/28		71	%	30 - 130
			2-Chlorophenol	2015/10/28		76	%	10 - 130
			4-Chloro-3-Methylphenol	2015/10/28		79	%	10 - 130
			m/p-Cresol	2015/10/28		62	%	10 - 130
			o-Cresol	2015/10/28		64	%	10 - 130
			1,2,3,4-Tetrachlorobenzene	2015/10/28		65	%	30 - 130
			2,3-Dichlorophenol	2015/10/28		77	%	10 - 130
			2,4-Dichlorophenol	2015/10/28		87	%	10 - 130
			2,5-Dichlorophenol	2015/10/28		74	%	10 - 130
			2,6-Dichlorophenol	2015/10/28		77	%	10 - 130
			3,4-Dichlorophenol	2015/10/28		78	%	10 - 130
			3,5-Dichlorophenol	2015/10/28		89	%	10 - 130
			2,4-Dimethylphenol	2015/10/28		37	%	10 - 130
			2,4-Dinitrophenol	2015/10/28		88	%	10 - 130
			4,6-Dinitro-2-methylphenol	2015/10/28		96	%	10 - 130
			2-Nitrophenol	2015/10/28		79	%	10 - 130
			4-Nitrophenol	2015/10/28		41	%	10 - 130
			Pentachlorophenol	2015/10/28		65	%	10 - 130
			Phenol	2015/10/28		31	%	10 - 130
			2,3,4,5-Tetrachlorophenol	2015/10/28		89	%	10 - 130
			2,3,4,6-Tetrachlorophenol	2015/10/28		103	%	10 - 130
			2,3,5,6-Tetrachlorophenol	2015/10/28		79	%	10 - 130
			2,3,4-Trichlorophenol	2015/10/28		84	%	10 - 130
			2,3,5-Trichlorophenol	2015/10/28		96	%	10 - 130
			2,3,6-Trichlorophenol	2015/10/28		84	%	10 - 130
			2,4,5-Trichlorophenol	2015/10/28		92	%	10 - 130
			2,4,6-Trichlorophenol	2015/10/28		91	%	10 - 130
			3,4,5-Trichlorophenol	2015/10/28		89	%	10 - 130
			Benzyl butyl phthalate	2015/10/28		96	%	30 - 130
			Biphenyl	2015/10/28		78	%	30 - 130
			Bis(2-chloroethyl)ether	2015/10/28		76	%	30 - 130
			Bis(2-chloroethoxy)methane	2015/10/28		72	%	30 - 130
			Bis(2-chloroisopropyl)ether	2015/10/28		65	%	30 - 130
			Bis(2-ethylhexyl)phthalate	2015/10/28		100	%	30 - 130
			4-Bromophenyl phenyl ether	2015/10/28		79	%	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
			p-Chloroaniline	2015/10/28		53	%	30 - 130
			4-Chlorophenyl phenyl ether	2015/10/28		76	%	30 - 130
			Di-N-butyl phthalate	2015/10/28		95	%	30 - 130
			Di-N-octyl phthalate	2015/10/28		120	%	30 - 130
			2,4-Dinitrotoluene	2015/10/28		92	%	30 - 130
			Diethyl phthalate	2015/10/28		91	%	30 - 130
			3,3'-Dichlorobenzidine	2015/10/28		80	%	30 - 130
			Dimethyl phthalate	2015/10/28		86	%	30 - 130
			2,6-Dinitrotoluene	2015/10/28		87	%	30 - 130
			Diphenyl Ether	2015/10/28		77	%	30 - 130
			Hexachlorobutadiene	2015/10/28		49	%	30 - 130
			Hexachlorocyclopentadiene	2015/10/28		25 (3)	%	30 - 130
			Hexachloroethane	2015/10/28		52	%	30 - 130
			Isophorone	2015/10/28		74	%	30 - 130
			Nitrobenzene	2015/10/28		73	%	30 - 130
			Nitrosodiphenylamine/Diphenylamine	2015/10/28		86	%	30 - 130
			N-Nitroso-di-n-propylamine	2015/10/28		78	%	30 - 130
4244749	ANL	Spiked Blank	2,4,6-Tribromophenol	2015/10/27		81	%	10 - 130
			2-Fluorobiphenyl	2015/10/27		89	%	30 - 130
			2-Fluorophenol	2015/10/27		54	%	10 - 130
			D14-Terphenyl	2015/10/27		98	%	30 - 130
			D5-Nitrobenzene	2015/10/27		85	%	30 - 130
			D5-Phenol	2015/10/27		36	%	10 - 130
			Acenaphthene	2015/10/27		93	%	30 - 130
			Acenaphthylene	2015/10/27		91	%	30 - 130
			Anthracene	2015/10/27		91	%	30 - 130
			Benzo(a)anthracene	2015/10/27		107	%	30 - 130
			Benzo(a)pyrene	2015/10/27		106	%	30 - 130
			Benzo(b/j)fluoranthene	2015/10/27		107	%	30 - 130
			Benzo(g,h,i)perylene	2015/10/27		118	%	30 - 130
			Benzo(k)fluoranthene	2015/10/27		118	%	30 - 130
			1-Chloronaphthalene	2015/10/27		88	%	30 - 130
			2-Chloronaphthalene	2015/10/27		92	%	30 - 130
			Chrysene	2015/10/27		104	%	30 - 130
			Dibenz(a,h)anthracene	2015/10/27		116	%	30 - 130
			Fluoranthene	2015/10/27		104	%	30 - 130
			Fluorene	2015/10/27		98	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/10/27		119	%	30 - 130
			1-Methylnaphthalene	2015/10/27		89	%	30 - 130
			2-Methylnaphthalene	2015/10/27		81	%	30 - 130
			Naphthalene	2015/10/27		81	%	30 - 130
			Perylene	2015/10/27		107	%	30 - 130
			Phenanthrene	2015/10/27		95	%	30 - 130
			Pyrene	2015/10/27		108	%	30 - 130
			1,2-Dichlorobenzene	2015/10/27		66	%	30 - 130
			1,3-Dichlorobenzene	2015/10/27		60	%	30 - 130
			1,4-Dichlorobenzene	2015/10/27		61	%	30 - 130
			Hexachlorobenzene	2015/10/27		78	%	30 - 130
			Pentachlorobenzene	2015/10/27		69	%	30 - 130
			1,2,3,5-Tetrachlorobenzene	2015/10/27		71	%	30 - 130
			1,2,4,5-Tetrachlorobenzene	2015/10/27		68	%	30 - 130
			1,2,3-Trichlorobenzene	2015/10/27		71	%	30 - 130
			1,2,4-Trichlorobenzene	2015/10/27		66	%	30 - 130
			1,3,5-Trichlorobenzene	2015/10/27		78	%	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
			2-Chlorophenol	2015/10/27		83	%	10 - 130
			4-Chloro-3-Methylphenol	2015/10/27		86	%	10 - 130
			m/p-Cresol	2015/10/27		70	%	10 - 130
			o-Cresol	2015/10/27		76	%	10 - 130
			1,2,3,4-Tetrachlorobenzene	2015/10/27		74	%	30 - 130
			2,3-Dichlorophenol	2015/10/27		83	%	10 - 130
			2,4-Dichlorophenol	2015/10/27		93	%	10 - 130
			2,5-Dichlorophenol	2015/10/27		84	%	10 - 130
			2,6-Dichlorophenol	2015/10/27		85	%	10 - 130
			3,4-Dichlorophenol	2015/10/27		85	%	10 - 130
			3,5-Dichlorophenol	2015/10/27		97	%	10 - 130
			2,4-Dimethylphenol	2015/10/27		73	%	10 - 130
			2,4-Dinitrophenol	2015/10/27		96	%	10 - 130
			4,6-Dinitro-2-methylphenol	2015/10/27		100	%	10 - 130
			2-Nitrophenol	2015/10/27		84	%	10 - 130
			4-Nitrophenol	2015/10/27		49	%	10 - 130
			Pentachlorophenol	2015/10/27		81	%	10 - 130
			Phenol	2015/10/27		33	%	10 - 130
			2,3,4,5-Tetrachlorophenol	2015/10/27		89	%	10 - 130
			2,3,4,6-Tetrachlorophenol	2015/10/27		107	%	10 - 130
			2,3,5,6-Tetrachlorophenol	2015/10/27		100	%	10 - 130
			2,3,4-Trichlorophenol	2015/10/27		91	%	10 - 130
			2,3,5-Trichlorophenol	2015/10/27		101	%	10 - 130
			2,3,6-Trichlorophenol	2015/10/27		92	%	10 - 130
			2,4,5-Trichlorophenol	2015/10/27		98	%	10 - 130
			2,4,6-Trichlorophenol	2015/10/27		100	%	10 - 130
			3,4,5-Trichlorophenol	2015/10/27		95	%	10 - 130
			Benzyl butyl phthalate	2015/10/27		96	%	30 - 130
			Biphenyl	2015/10/27		89	%	30 - 130
			Bis(2-chloroethyl)ether	2015/10/27		82	%	30 - 130
			Bis(2-chloroethoxy)methane	2015/10/27		77	%	30 - 130
			Bis(2-chloroisopropyl)ether	2015/10/27		69	%	30 - 130
			Bis(2-ethylhexyl)phthalate	2015/10/27		97	%	30 - 130
			4-Bromophenyl phenyl ether	2015/10/27		83	%	30 - 130
			p-Chloroaniline	2015/10/27		78	%	30 - 130
			4-Chlorophenyl phenyl ether	2015/10/27		81	%	30 - 130
			Di-N-butyl phthalate	2015/10/27		95	%	30 - 130
			Di-N-octyl phthalate	2015/10/27		107	%	30 - 130
			2,4-Dinitrotoluene	2015/10/27		94	%	30 - 130
			Diethyl phthalate	2015/10/27		93	%	30 - 130
			3,3'-Dichlorobenzidine	2015/10/27		101	%	30 - 130
			Dimethyl phthalate	2015/10/27		89	%	30 - 130
			2,6-Dinitrotoluene	2015/10/27		93	%	30 - 130
			Diphenyl Ether	2015/10/27		83	%	30 - 130
			Hexachlorobutadiene	2015/10/27		62	%	30 - 130
			Hexachlorocyclopentadiene	2015/10/27		61	%	30 - 130
			Hexachloroethane	2015/10/27		66	%	30 - 130
			Isophorone	2015/10/27		78	%	30 - 130
			Nitrobenzene	2015/10/27		81	%	30 - 130
			Nitrosodiphenylamine/Diphenylamine	2015/10/27		85	%	30 - 130
			N-Nitroso-di-n-propylamine	2015/10/27		84	%	30 - 130
4244749	ANL	Method Blank	2,4,6-Tribromophenol	2015/10/27		63	%	10 - 130
			2-Fluorobiphenyl	2015/10/27		63	%	30 - 130
			2-Fluorophenol	2015/10/27		43	%	10 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			D14-Terphenyl	2015/10/27		87	%	30 - 130
			D5-Nitrobenzene	2015/10/27		66	%	30 - 130
			D5-Phenol	2015/10/27		29	%	10 - 130
			Acenaphthene	2015/10/27	<0.20		ug/L	
			Acenaphthylene	2015/10/27	<0.20		ug/L	
			Anthracene	2015/10/27	<0.20		ug/L	
			Benzo(a)anthracene	2015/10/27	<0.20		ug/L	
			Benzo(a)pyrene	2015/10/27	<0.20		ug/L	
			Benzo(b/j)fluoranthene	2015/10/27	<0.20		ug/L	
			Benzo(g,h,i)perylene	2015/10/27	<0.20		ug/L	
			Benzo(k)fluoranthene	2015/10/27	<0.20		ug/L	
			1-Chloronaphthalene	2015/10/27	<1.0		ug/L	
			2-Chloronaphthalene	2015/10/27	<0.50		ug/L	
			Chrysene	2015/10/27	<0.20		ug/L	
			Dibenz(a,h)anthracene	2015/10/27	<0.20		ug/L	
			Fluoranthene	2015/10/27	<0.20		ug/L	
			Fluorene	2015/10/27	<0.20		ug/L	
			Indeno(1,2,3-cd)pyrene	2015/10/27	<0.20		ug/L	
			1-Methylnaphthalene	2015/10/27	<0.20		ug/L	
			2-Methylnaphthalene	2015/10/27	<0.20		ug/L	
			Naphthalene	2015/10/27	<0.20		ug/L	
			Perylene	2015/10/27	<0.20		ug/L	
			Phenanthrene	2015/10/27	<0.20		ug/L	
			Pyrene	2015/10/27	<0.20		ug/L	
			1,2-Dichlorobenzene	2015/10/27	<0.50		ug/L	
			1,3-Dichlorobenzene	2015/10/27	<0.50		ug/L	
			1,4-Dichlorobenzene	2015/10/27	<0.50		ug/L	
			Hexachlorobenzene	2015/10/27	<0.50		ug/L	
			Pentachlorobenzene	2015/10/27	<0.50		ug/L	
			1,2,3,5-Tetrachlorobenzene	2015/10/27	<0.50		ug/L	
			1,2,4,5-Tetrachlorobenzene	2015/10/27	<0.50		ug/L	
			1,2,3-Trichlorobenzene	2015/10/27	<0.50		ug/L	
			1,2,4-Trichlorobenzene	2015/10/27	<0.50		ug/L	
			1,3,5-Trichlorobenzene	2015/10/27	<0.50		ug/L	
			2-Chlorophenol	2015/10/27	<0.30		ug/L	
			4-Chloro-3-Methylphenol	2015/10/27	<0.50		ug/L	
			m/p-Cresol	2015/10/27	<0.50		ug/L	
			o-Cresol	2015/10/27	<0.50		ug/L	
			1,2,3,4-Tetrachlorobenzene	2015/10/27	<0.50		ug/L	
			2,3-Dichlorophenol	2015/10/27	<0.50		ug/L	
			2,4-Dichlorophenol	2015/10/27	<0.30		ug/L	
			2,5-Dichlorophenol	2015/10/27	<0.50		ug/L	
			2,6-Dichlorophenol	2015/10/27	<0.50		ug/L	
			3,4-Dichlorophenol	2015/10/27	<0.50		ug/L	
			3,5-Dichlorophenol	2015/10/27	<0.50		ug/L	
			2,4-Dimethylphenol	2015/10/27	<0.50		ug/L	
			2,4-Dinitrophenol	2015/10/27	<2.0		ug/L	
			4,6-Dinitro-2-methylphenol	2015/10/27	<2.0		ug/L	
			2-Nitrophenol	2015/10/27	<0.50		ug/L	
			4-Nitrophenol	2015/10/27	<1.4		ug/L	
			Pentachlorophenol	2015/10/27	<1.0		ug/L	
			Phenol	2015/10/27	<0.50		ug/L	
			2,3,4,5-Tetrachlorophenol	2015/10/27	<0.40		ug/L	
			2,3,4,6-Tetrachlorophenol	2015/10/27	<0.50		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
			2,3,5,6-Tetrachlorophenol	2015/10/27	<0.50		ug/L	
			2,3,4-Trichlorophenol	2015/10/27	<0.50		ug/L	
			2,3,5-Trichlorophenol	2015/10/27	<0.50		ug/L	
			2,3,6-Trichlorophenol	2015/10/27	<0.50		ug/L	
			2,4,5-Trichlorophenol	2015/10/27	<0.50		ug/L	
			2,4,6-Trichlorophenol	2015/10/27	<0.50		ug/L	
			3,4,5-Trichlorophenol	2015/10/27	<0.50		ug/L	
			Benzyl butyl phthalate	2015/10/27	<0.50		ug/L	
			Biphenyl	2015/10/27	<0.50		ug/L	
			Bis(2-chloroethyl)ether	2015/10/27	<0.50		ug/L	
			Bis(2-chloroethoxy)methane	2015/10/27	<0.50		ug/L	
			Bis(2-chloroisopropyl)ether	2015/10/27	<0.50		ug/L	
			Bis(2-ethylhexyl)phthalate	2015/10/27	<2.0		ug/L	
			4-Bromophenyl phenyl ether	2015/10/27	<0.30		ug/L	
			p-Chloroaniline	2015/10/27	<1.0		ug/L	
			4-Chlorophenyl phenyl ether	2015/10/27	<0.50		ug/L	
			Di-N-butyl phthalate	2015/10/27	<2.0		ug/L	
			Di-N-octyl phthalate	2015/10/27	<0.80		ug/L	
			2,4-Dinitrotoluene	2015/10/27	<0.50		ug/L	
			Diethyl phthalate	2015/10/27	<1.0		ug/L	
			3,3'-Dichlorobenzidine	2015/10/27	<0.50		ug/L	
			Dimethyl phthalate	2015/10/27	<1.0		ug/L	
			2,6-Dinitrotoluene	2015/10/27	<0.50		ug/L	
			Diphenyl Ether	2015/10/27	<0.30		ug/L	
			Hexachlorobutadiene	2015/10/27	<0.40		ug/L	
			Hexachlorocyclopentadiene	2015/10/27	<2.0		ug/L	
			Hexachloroethane	2015/10/27	<0.50		ug/L	
			Isophorone	2015/10/27	<0.50		ug/L	
			Nitrobenzene	2015/10/27	<0.50		ug/L	
			Nitrosodiphenylamine/Diphenylamine	2015/10/27	<1.0		ug/L	
			N-Nitroso-di-n-propylamine	2015/10/27	<0.50		ug/L	
4244749	ANL	RPD	Acenaphthene	2015/10/28	NC		%	40
			Acenaphthylene	2015/10/28	NC		%	40
			Anthracene	2015/10/28	NC		%	40
			Benzo(a)anthracene	2015/10/28	NC		%	40
			Benzo(a)pyrene	2015/10/28	NC		%	40
			Benzo(b/j)fluoranthene	2015/10/28	NC		%	40
			Benzo(g,h,i)perylene	2015/10/28	NC		%	40
			Benzo(k)fluoranthene	2015/10/28	NC		%	40
			1-Chloronaphthalene	2015/10/28	NC		%	40
			2-Chloronaphthalene	2015/10/28	NC		%	40
			Chrysene	2015/10/28	NC		%	40
			Dibenz(a,h)anthracene	2015/10/28	NC		%	40
			Fluoranthene	2015/10/28	NC		%	40
			Fluorene	2015/10/28	NC		%	40
			Indeno(1,2,3-cd)pyrene	2015/10/28	NC		%	40
			1-Methylnaphthalene	2015/10/28	NC		%	40
			2-Methylnaphthalene	2015/10/28	NC		%	40
			Naphthalene	2015/10/28	66 (4)		%	40
			Perylene	2015/10/28	NC		%	40
			Phenanthrene	2015/10/28	NC		%	40
			Pyrene	2015/10/28	NC		%	40
			Benzyl butyl phthalate	2015/10/28	NC		%	40
			Biphenyl	2015/10/28	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
			Bis(2-chloroethyl)ether	2015/10/28	NC		%	40
			Bis(2-chloroethoxy)methane	2015/10/28	NC		%	40
			Bis(2-chloroisopropyl)ether	2015/10/28	NC		%	40
			Bis(2-ethylhexyl)phthalate	2015/10/28	NC		%	40
			4-Bromophenyl phenyl ether	2015/10/28	NC		%	40
			4-Chlorophenyl phenyl ether	2015/10/28	NC		%	40
			Di-N-butyl phthalate	2015/10/28	NC		%	40
			Di-N-octyl phthalate	2015/10/28	NC		%	40
			2,4-Dinitrotoluene	2015/10/28	NC		%	40
			2,6-Dinitrotoluene	2015/10/28	NC		%	40
			Diphenyl Ether	2015/10/28	NC		%	40
			Nitrosodiphenylamine/Diphenylamine	2015/10/28	NC		%	40
			N-Nitroso-di-n-propylamine	2015/10/28	NC		%	40
4246309	ARS	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2015/10/27		94	%	80 - 120
4246309	ARS	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2015/10/27		94	%	80 - 120
4246309	ARS	Method Blank	Nitrogen (Ammonia Nitrogen)	2015/10/27	<0.050		mg/L	
4246309	ARS	RPD	Nitrogen (Ammonia Nitrogen)	2015/10/27	NC		%	20
4247319	ANL	Matrix Spike [BDK336-02]	2,4,6-Tribromophenol	2015/10/29		108	%	10 - 130
			2-Fluorobiphenyl	2015/10/29		101	%	30 - 130
			2-Fluorophenol	2015/10/29		93	%	10 - 130
			D14-Terphenyl	2015/10/29		101	%	30 - 130
			D5-Nitrobenzene	2015/10/29		88	%	30 - 130
			D5-Phenol	2015/10/29		90	%	10 - 130
			Acenaphthene	2015/10/29		102	%	30 - 130
			Acenaphthylene	2015/10/29		101	%	30 - 130
			Anthracene	2015/10/29		96	%	30 - 130
			Benzo(a)anthracene	2015/10/29		111	%	30 - 130
			Benzo(a)pyrene	2015/10/29		102	%	30 - 130
			Benzo(b/j)fluoranthene	2015/10/29		101	%	30 - 130
			Benzo(g,h,i)perylene	2015/10/29		107	%	30 - 130
			Benzo(k)fluoranthene	2015/10/29		100	%	30 - 130
			1-Chloronaphthalene	2015/10/29		97	%	30 - 130
			2-Chloronaphthalene	2015/10/29		104	%	30 - 130
			Chrysene	2015/10/29		102	%	30 - 130
			Dibenz(a,h)anthracene	2015/10/29		100	%	30 - 130
			Fluoranthene	2015/10/29		106	%	30 - 130
			Fluorene	2015/10/29		104	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/10/29		104	%	30 - 130
			1-Methylnaphthalene	2015/10/29		104	%	30 - 130
			2-Methylnaphthalene	2015/10/29		NC	%	30 - 130
			Naphthalene	2015/10/29		NC	%	30 - 130
			Perylene	2015/10/29		103	%	30 - 130
			Phenanthrene	2015/10/29		99	%	30 - 130
			Pyrene	2015/10/29		102	%	30 - 130
			Quinoline	2015/10/29		93	%	30 - 130
			1,2-Dichlorobenzene	2015/10/29		94	%	30 - 130
			1,3-Dichlorobenzene	2015/10/29		94	%	30 - 130
			1,4-Dichlorobenzene	2015/10/29		89	%	30 - 130
			Hexachlorobenzene	2015/10/29		107	%	30 - 130
			Pentachlorobenzene	2015/10/29		102	%	30 - 130
			1,2,3,4-Tetrachlorobenzene	2015/10/29		103	%	30 - 130
			1,2,3,5-Tetrachlorobenzene	2015/10/29		100	%	30 - 130
			1,2,4,5-Tetrachlorobenzene	2015/10/29		106	%	30 - 130
			1,2,3-Trichlorobenzene	2015/10/29		96	%	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
			1,2,4-Trichlorobenzene	2015/10/29		96	%	30 - 130
			1,3,5-Trichlorobenzene	2015/10/29		98	%	30 - 130
			2-Chlorophenol	2015/10/29		101	%	10 - 130
			4-Chloro-3-Methylphenol	2015/10/29		96	%	10 - 130
			m/p-Cresol	2015/10/29		90	%	10 - 130
			o-Cresol	2015/10/29		95	%	10 - 130
			2,3-Dichlorophenol	2015/10/29		92	%	10 - 130
			2,4-Dichlorophenol	2015/10/29		97	%	10 - 130
			2,5-Dichlorophenol	2015/10/29		89	%	10 - 130
			2,6-Dichlorophenol	2015/10/29		89	%	10 - 130
			3,4-Dichlorophenol	2015/10/29		103	%	10 - 130
			3,5-Dichlorophenol	2015/10/29		101	%	10 - 130
			2,4-Dimethylphenol	2015/10/29		91	%	10 - 130
			2,4-Dinitrophenol	2015/10/29		102	%	10 - 130
			4,6-Dinitro-2-methylphenol	2015/10/29		104	%	10 - 130
			2-Nitrophenol	2015/10/29		94	%	10 - 130
			4-Nitrophenol	2015/10/29		98	%	10 - 130
			Pentachlorophenol	2015/10/29		81	%	10 - 130
			Phenol	2015/10/29		92	%	10 - 130
			2,3,4,5-Tetrachlorophenol	2015/10/29		94	%	10 - 130
			2,3,4,6-Tetrachlorophenol	2015/10/29		103	%	10 - 130
			2,3,5,6-Tetrachlorophenol	2015/10/29		91	%	10 - 130
			2,3,4-Trichlorophenol	2015/10/29		98	%	10 - 130
			2,3,5-Trichlorophenol	2015/10/29		123	%	10 - 130
			2,3,6-Trichlorophenol	2015/10/29		107	%	10 - 130
			2,4,5-Trichlorophenol	2015/10/29		105	%	10 - 130
			2,4,6-Trichlorophenol	2015/10/29		104	%	10 - 130
			3,4,5-Trichlorophenol	2015/10/29		90	%	10 - 130
			Benzyl butyl phthalate	2015/10/29		94	%	30 - 130
			Bis(2-chloroethoxy)methane	2015/10/29		84	%	30 - 130
			Bis(2-chloroisopropyl)ether	2015/10/29		83	%	30 - 130
			Bis(2-ethylhexyl)phthalate	2015/10/29		93	%	30 - 130
			4-Bromophenyl phenyl ether	2015/10/29		107	%	30 - 130
			p-Chloroaniline	2015/10/29		79	%	30 - 130
			4-Chlorophenyl phenyl ether	2015/10/29		96	%	30 - 130
			3,3'-Dichlorobenzidine	2015/10/29		92	%	30 - 130
			Diethyl phthalate	2015/10/29		100	%	30 - 130
			Di-N-butyl phthalate	2015/10/29		98	%	30 - 130
			Di-N-octyl phthalate	2015/10/29		97	%	30 - 130
			2,4-Dinitrotoluene	2015/10/29		102	%	30 - 130
			2,6-Dinitrotoluene	2015/10/29		99	%	30 - 130
			Dimethyl phthalate	2015/10/29		101	%	30 - 130
			Biphenyl	2015/10/29		97	%	30 - 130
			Bis(2-chloroethyl)ether	2015/10/29		82	%	30 - 130
			Hexachlorobutadiene	2015/10/29		101	%	30 - 130
			Hexachlorocyclopentadiene	2015/10/29		79	%	30 - 130
			Hexachloroethane	2015/10/29		94	%	30 - 130
			Isophorone	2015/10/29		85	%	30 - 130
			Nitrobenzene	2015/10/29		90	%	30 - 130
			Nitrosodiphenylamine/Diphenylamine	2015/10/29		107	%	30 - 130
			N-Nitroso-di-n-propylamine	2015/10/29		82	%	30 - 130
4247319	ANL	Spiked Blank	2,4,6-Tribromophenol	2015/10/29		105	%	10 - 130
			2-Fluorobiphenyl	2015/10/29		102	%	30 - 130
			2-Fluorophenol	2015/10/29		94	%	10 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			D14-Terphenyl	2015/10/29		100	%	30 - 130
			D5-Nitrobenzene	2015/10/29		87	%	30 - 130
			D5-Phenol	2015/10/29		94	%	10 - 130
			Acenaphthene	2015/10/29		105	%	30 - 130
			Acenaphthylene	2015/10/29		102	%	30 - 130
			Anthracene	2015/10/29		98	%	30 - 130
			Benzo(a)anthracene	2015/10/29		111	%	30 - 130
			Benzo(a)pyrene	2015/10/29		105	%	30 - 130
			Benzo(b/j)fluoranthene	2015/10/29		101	%	30 - 130
			Benzo(g,h,i)perylene	2015/10/29		108	%	30 - 130
			Benzo(k)fluoranthene	2015/10/29		107	%	30 - 130
			1-Chloronaphthalene	2015/10/29		93	%	30 - 130
			2-Chloronaphthalene	2015/10/29		105	%	30 - 130
			Chrysene	2015/10/29		104	%	30 - 130
			Dibenz(a,h)anthracene	2015/10/29		100	%	30 - 130
			Fluoranthene	2015/10/29		106	%	30 - 130
			Fluorene	2015/10/29		104	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2015/10/29		105	%	30 - 130
			1-Methylnaphthalene	2015/10/29		106	%	30 - 130
			2-Methylnaphthalene	2015/10/29		98	%	30 - 130
			Naphthalene	2015/10/29		126	%	30 - 130
			Perylene	2015/10/29		108	%	30 - 130
			Phenanthrene	2015/10/29		101	%	30 - 130
			Pyrene	2015/10/29		102	%	30 - 130
			Quinoline	2015/10/29		92	%	30 - 130
			1,2-Dichlorobenzene	2015/10/29		97	%	30 - 130
			1,3-Dichlorobenzene	2015/10/29		93	%	30 - 130
			1,4-Dichlorobenzene	2015/10/29		90	%	30 - 130
			Hexachlorobenzene	2015/10/29		106	%	30 - 130
			Pentachlorobenzene	2015/10/29		100	%	30 - 130
			1,2,3,4-Tetrachlorobenzene	2015/10/29		101	%	30 - 130
			1,2,3,5-Tetrachlorobenzene	2015/10/29		103	%	30 - 130
			1,2,4,5-Tetrachlorobenzene	2015/10/29		99	%	30 - 130
			1,2,3-Trichlorobenzene	2015/10/29		94	%	30 - 130
			1,2,4-Trichlorobenzene	2015/10/29		92	%	30 - 130
			1,3,5-Trichlorobenzene	2015/10/29		97	%	30 - 130
			2-Chlorophenol	2015/10/29		102	%	10 - 130
			4-Chloro-3-Methylphenol	2015/10/29		93	%	10 - 130
			m/p-Cresol	2015/10/29		93	%	10 - 130
			o-Cresol	2015/10/29		100	%	10 - 130
			2,3-Dichlorophenol	2015/10/29		90	%	10 - 130
			2,4-Dichlorophenol	2015/10/29		92	%	10 - 130
			2,5-Dichlorophenol	2015/10/29		92	%	10 - 130
			2,6-Dichlorophenol	2015/10/29		88	%	10 - 130
			3,4-Dichlorophenol	2015/10/29		101	%	10 - 130
			3,5-Dichlorophenol	2015/10/29		105	%	10 - 130
			2,4-Dimethylphenol	2015/10/29		89	%	10 - 130
			2,4-Dinitrophenol	2015/10/29		103	%	10 - 130
			4,6-Dinitro-2-methylphenol	2015/10/29		104	%	10 - 130
			2-Nitrophenol	2015/10/29		94	%	10 - 130
			4-Nitrophenol	2015/10/29		96	%	10 - 130
			Pentachlorophenol	2015/10/29		81	%	10 - 130
			Phenol	2015/10/29		92	%	10 - 130
			2,3,4,5-Tetrachlorophenol	2015/10/29		96	%	10 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			2,3,4,6-Tetrachlorophenol	2015/10/29		114	%	10 - 130
			2,3,5,6-Tetrachlorophenol	2015/10/29		90	%	10 - 130
			2,3,4-Trichlorophenol	2015/10/29		97	%	10 - 130
			2,3,5-Trichlorophenol	2015/10/29		119	%	10 - 130
			2,3,6-Trichlorophenol	2015/10/29		105	%	10 - 130
			2,4,5-Trichlorophenol	2015/10/29		105	%	10 - 130
			2,4,6-Trichlorophenol	2015/10/29		106	%	10 - 130
			3,4,5-Trichlorophenol	2015/10/29		87	%	10 - 130
			Benzyl butyl phthalate	2015/10/29		93	%	30 - 130
			Bis(2-chloroethoxy)methane	2015/10/29		82	%	30 - 130
			Bis(2-chloroisopropyl)ether	2015/10/29		83	%	30 - 130
			Bis(2-ethylhexyl)phthalate	2015/10/29		92	%	30 - 130
			4-Bromophenyl phenyl ether	2015/10/29		105	%	30 - 130
			p-Chloroaniline	2015/10/29		79	%	30 - 130
			4-Chlorophenyl phenyl ether	2015/10/29		95	%	30 - 130
			3,3'-Dichlorobenzidine	2015/10/29		95	%	30 - 130
			Diethyl phthalate	2015/10/29		99	%	30 - 130
			Di-N-butyl phthalate	2015/10/29		96	%	30 - 130
			Di-N-octyl phthalate	2015/10/29		98	%	30 - 130
			2,4-Dinitrotoluene	2015/10/29		102	%	30 - 130
			2,6-Dinitrotoluene	2015/10/29		98	%	30 - 130
			Dimethyl phthalate	2015/10/29		100	%	30 - 130
			Biphenyl	2015/10/29		100	%	30 - 130
			Bis(2-chloroethyl)ether	2015/10/29		84	%	30 - 130
			Hexachlorobutadiene	2015/10/29		101	%	30 - 130
			Hexachlorocyclopentadiene	2015/10/29		81	%	30 - 130
			Hexachloroethane	2015/10/29		96	%	30 - 130
			Isophorone	2015/10/29		82	%	30 - 130
			Nitrobenzene	2015/10/29		90	%	30 - 130
			Nitrosodiphenylamine/Diphenylamine	2015/10/29		100	%	30 - 130
			N-Nitroso-di-n-propylamine	2015/10/29		83	%	30 - 130
4247319	ANL	Method Blank	2,4,6-Tribromophenol	2015/10/29		91	%	10 - 130
			2-Fluorobiphenyl	2015/10/29		105	%	30 - 130
			2-Fluorophenol	2015/10/29		96	%	10 - 130
			D14-Terphenyl	2015/10/29		97	%	30 - 130
			D5-Nitrobenzene	2015/10/29		88	%	30 - 130
			D5-Phenol	2015/10/29		92	%	10 - 130
			Acenaphthene	2015/10/29	<0.1		ug/g	
			Acenaphthylene	2015/10/29	<0.1		ug/g	
			Anthracene	2015/10/29	<0.1		ug/g	
			Benzo(a)anthracene	2015/10/29	<0.1		ug/g	
			Benzo(a)pyrene	2015/10/29	<0.1		ug/g	
			Benzo(b/j)fluoranthene	2015/10/29	<0.1		ug/g	
			Benzo(g,h,i)perylene	2015/10/29	<0.1		ug/g	
			Benzo(k)fluoranthene	2015/10/29	<0.1		ug/g	
			1-Chloronaphthalene	2015/10/29	<1		ug/g	
			2-Chloronaphthalene	2015/10/29	<0.1		ug/g	
			Chrysene	2015/10/29	<0.1		ug/g	
			Dibenz(a,h)anthracene	2015/10/29	<0.1		ug/g	
			Fluoranthene	2015/10/29	<0.1		ug/g	
			Fluorene	2015/10/29	<0.1		ug/g	
			Indeno(1,2,3-cd)pyrene	2015/10/29	<0.1		ug/g	
			1-Methylnaphthalene	2015/10/29	<0.1		ug/g	
			2-Methylnaphthalene	2015/10/29	<0.1		ug/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Naphthalene	2015/10/29	<0.1		ug/g	
			Perylene	2015/10/29	<0.2		ug/g	
			Phenanthrene	2015/10/29	<0.1		ug/g	
			Pyrene	2015/10/29	<0.1		ug/g	
			Quinoline	2015/10/29	<0.2		ug/g	
			1,2-Dichlorobenzene	2015/10/29	<0.1		ug/g	
			1,3-Dichlorobenzene	2015/10/29	<0.1		ug/g	
			1,4-Dichlorobenzene	2015/10/29	<0.1		ug/g	
			Hexachlorobenzene	2015/10/29	<0.2		ug/g	
			Pentachlorobenzene	2015/10/29	<0.2		ug/g	
			1,2,3,4-Tetrachlorobenzene	2015/10/29	<0.2		ug/g	
			1,2,3,5-Tetrachlorobenzene	2015/10/29	<0.2		ug/g	
			1,2,4,5-Tetrachlorobenzene	2015/10/29	<0.2		ug/g	
			1,2,3-Trichlorobenzene	2015/10/29	<0.2		ug/g	
			1,2,4-Trichlorobenzene	2015/10/29	<0.2		ug/g	
			1,3,5-Trichlorobenzene	2015/10/29	<0.2		ug/g	
			2-Chlorophenol	2015/10/29	<0.1		ug/g	
			4-Chloro-3-Methylphenol	2015/10/29	<0.1		ug/g	
			m/p-Cresol	2015/10/29	<0.2		ug/g	
			o-Cresol	2015/10/29	<0.2		ug/g	
			2,3-Dichlorophenol	2015/10/29	<0.1		ug/g	
			2,4-Dichlorophenol	2015/10/29	<0.1		ug/g	
			2,5-Dichlorophenol	2015/10/29	<0.1		ug/g	
			2,6-Dichlorophenol	2015/10/29	<0.1		ug/g	
			3,4-Dichlorophenol	2015/10/29	<0.1		ug/g	
			3,5-Dichlorophenol	2015/10/29	<0.1		ug/g	
			2,4-Dimethylphenol	2015/10/29	<0.1		ug/g	
			2,4-Dinitrophenol	2015/10/29	<0.2		ug/g	
			4,6-Dinitro-2-methylphenol	2015/10/29	<0.5		ug/g	
			2-Nitrophenol	2015/10/29	<0.5		ug/g	
			4-Nitrophenol	2015/10/29	<0.5		ug/g	
			Pentachlorophenol	2015/10/29	<0.2		ug/g	
			Phenol	2015/10/29	<0.2		ug/g	
			2,3,4,5-Tetrachlorophenol	2015/10/29	<0.1		ug/g	
			2,3,4,6-Tetrachlorophenol	2015/10/29	<0.1		ug/g	
			2,3,5,6-Tetrachlorophenol	2015/10/29	<0.1		ug/g	
			2,3,4-Trichlorophenol	2015/10/29	<0.1		ug/g	
			2,3,5-Trichlorophenol	2015/10/29	<0.1		ug/g	
			2,3,6-Trichlorophenol	2015/10/29	<0.1		ug/g	
			2,4,5-Trichlorophenol	2015/10/29	<0.1		ug/g	
			2,4,6-Trichlorophenol	2015/10/29	<0.1		ug/g	
			3,4,5-Trichlorophenol	2015/10/29	<0.1		ug/g	
			Benzyl butyl phthalate	2015/10/29	<0.2		ug/g	
			Bis(2-chloroethoxy)methane	2015/10/29	<0.1		ug/g	
			Bis(2-chloroisopropyl)ether	2015/10/29	<0.1		ug/g	
			Bis(2-ethylhexyl)phthalate	2015/10/29	<0.5		ug/g	
			4-Bromophenyl phenyl ether	2015/10/29	<0.1		ug/g	
			p-Chloroaniline	2015/10/29	<0.2		ug/g	
			4-Chlorophenyl phenyl ether	2015/10/29	<0.1		ug/g	
			3,3'-Dichlorobenzidine	2015/10/29	<0.5		ug/g	
			Diethyl phthalate	2015/10/29	<0.2		ug/g	
			Di-N-butyl phthalate	2015/10/29	<0.2		ug/g	
			Di-N-octyl phthalate	2015/10/29	<0.5		ug/g	
			2,4-Dinitrotoluene	2015/10/29	<0.1		ug/g	

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Maxxam Job #: B5K7088
Report Date: 2015/10/30

Dillon Consulting Limited
Your P.O. #: 4104251070

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			2,6-Dinitrotoluene	2015/10/29	<0.1		ug/g	
			Dimethyl phthalate	2015/10/29	<0.2		ug/g	
			Biphenyl	2015/10/29	<0.1		ug/g	
			Bis(2-chloroethyl)ether	2015/10/29	<0.2		ug/g	
			Hexachlorobutadiene	2015/10/29	<0.1		ug/g	
			Hexachlorocyclopentadiene	2015/10/29	<0.5		ug/g	
			Hexachloroethane	2015/10/29	<0.1		ug/g	
			Isophorone	2015/10/29	<0.1		ug/g	
			Nitrobenzene	2015/10/29	<0.1		ug/g	
			Nitrosodiphenylamine/Diphenylamine	2015/10/29	<0.2		ug/g	
			N-Nitroso-di-n-propylamine	2015/10/29	<0.1		ug/g	
4247319	ANL	RPD [BDK336-02]	Acenaphthene	2015/10/29	6.2		%	50
			Acenaphthylene	2015/10/29	NC		%	50
			Anthracene	2015/10/29	NC		%	50
			Benzo(a)anthracene	2015/10/29	NC		%	50
			Benzo(a)pyrene	2015/10/29	NC		%	50
			Benzo(b/j)fluoranthene	2015/10/29	NC		%	50
			Benzo(g,h,i)perylene	2015/10/29	NC		%	50
			Benzo(k)fluoranthene	2015/10/29	NC		%	50
			1-Chloronaphthalene	2015/10/29	NC		%	50
			2-Chloronaphthalene	2015/10/29	NC		%	50
			Chrysene	2015/10/29	NC		%	50
			Dibenz(a,h)anthracene	2015/10/29	NC		%	50
			Fluoranthene	2015/10/29	NC		%	50
			Fluorene	2015/10/29	NC		%	50
			Indeno(1,2,3-cd)pyrene	2015/10/29	NC		%	50
			1-Methylnaphthalene	2015/10/29	6.0		%	50
			2-Methylnaphthalene	2015/10/29	7.0		%	50
			Naphthalene	2015/10/29	6.4		%	50
			Perylene	2015/10/29	NC		%	50
			Phenanthrene	2015/10/29	7.7		%	50
			Pyrene	2015/10/29	NC		%	50
			Quinoline	2015/10/29	NC		%	50
			1,2-Dichlorobenzene	2015/10/29	NC		%	50
			1,3-Dichlorobenzene	2015/10/29	NC		%	50
			1,4-Dichlorobenzene	2015/10/29	NC		%	50
			Hexachlorobenzene	2015/10/29	NC		%	50
			Pentachlorobenzene	2015/10/29	NC		%	50
			1,2,3,4-Tetrachlorobenzene	2015/10/29	NC		%	50
			1,2,3,5-Tetrachlorobenzene	2015/10/29	NC		%	50
			1,2,4,5-Tetrachlorobenzene	2015/10/29	NC		%	50
			1,2,3-Trichlorobenzene	2015/10/29	NC		%	50
			1,2,4-Trichlorobenzene	2015/10/29	NC		%	50
			1,3,5-Trichlorobenzene	2015/10/29	NC		%	50
			2-Chlorophenol	2015/10/29	NC		%	50
			4-Chloro-3-Methylphenol	2015/10/29	NC		%	50
			m/p-Cresol	2015/10/29	NC		%	50
			o-Cresol	2015/10/29	NC		%	50
			2,3-Dichlorophenol	2015/10/29	NC		%	50
			2,4-Dichlorophenol	2015/10/29	NC		%	50
			2,5-Dichlorophenol	2015/10/29	NC		%	50
			2,6-Dichlorophenol	2015/10/29	NC		%	50
			3,4-Dichlorophenol	2015/10/29	NC		%	50
			3,5-Dichlorophenol	2015/10/29	NC		%	50

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			2,4-Dimethylphenol	2015/10/29	NC		%	50
			2,4-Dinitrophenol	2015/10/29	NC		%	50
			4,6-Dinitro-2-methylphenol	2015/10/29	NC		%	50
			2-Nitrophenol	2015/10/29	NC		%	50
			4-Nitrophenol	2015/10/29	NC		%	50
			Pentachlorophenol	2015/10/29	NC		%	50
			Phenol	2015/10/29	NC		%	50
			2,3,4,5-Tetrachlorophenol	2015/10/29	NC		%	50
			2,3,4,6-Tetrachlorophenol	2015/10/29	NC		%	50
			2,3,5,6-Tetrachlorophenol	2015/10/29	NC		%	50
			2,3,4-Trichlorophenol	2015/10/29	NC		%	50
			2,3,5-Trichlorophenol	2015/10/29	NC		%	50
			2,3,6-Trichlorophenol	2015/10/29	NC		%	50
			2,4,5-Trichlorophenol	2015/10/29	NC		%	50
			2,4,6-Trichlorophenol	2015/10/29	NC		%	50
			3,4,5-Trichlorophenol	2015/10/29	NC		%	50
			Benzyl butyl phthalate	2015/10/29	NC		%	50
			Bis(2-chloroethoxy)methane	2015/10/29	NC		%	50
			Bis(2-chloroisopropyl)ether	2015/10/29	NC		%	50
			Bis(2-ethylhexyl)phthalate	2015/10/29	NC		%	50
			4-Bromophenyl phenyl ether	2015/10/29	NC		%	50
			p-Chloroaniline	2015/10/29	NC		%	50
			4-Chlorophenyl phenyl ether	2015/10/29	NC		%	50
			3,3'-Dichlorobenzidine	2015/10/29	NC		%	50
			Diethyl phthalate	2015/10/29	NC		%	50
			Di-N-butyl phthalate	2015/10/29	NC		%	50
			Di-N-octyl phthalate	2015/10/29	NC		%	50
			2,4-Dinitrotoluene	2015/10/29	NC		%	50
			2,6-Dinitrotoluene	2015/10/29	NC		%	50
			Dimethyl phthalate	2015/10/29	NC		%	50
			Biphenyl	2015/10/29	NC		%	50
			Bis(2-chloroethyl)ether	2015/10/29	NC		%	50
			Hexachlorobutadiene	2015/10/29	NC		%	50
			Hexachlorocyclopentadiene	2015/10/29	NC		%	50
			Hexachloroethane	2015/10/29	NC		%	50
			Isophorone	2015/10/29	NC		%	50
			Nitrobenzene	2015/10/29	NC		%	50
			Nitrosodiphenylamine/Diphenylamine	2015/10/29	NC		%	50

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			N-Nitroso-di-n-propylamine	2015/10/29	NC		%	50

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.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

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 spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of 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 (one or both samples < 5x RDL).

(1) Elevated TEH RDL(s) due to sample dilution.

(2) TEH surrogate(s) not within acceptance limits. Samples tested had insufficient volume to repeat the analytical run.

(3) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(4) Duplicate results exceeded RPD acceptance criteria. The variability in the results for this analyte may be more pronounced.

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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).

Cristina Carriere

Cristina Carriere, Scientific Services

Kevin G. MacDonald

Kevin MacDonald, Inorganics Supervisor

NMacAskill

Natalie MacAskill, Sr. Project Manager

RosMarie MacDonald

Rosemarie MacDonald, Scientific Specialist (Organics)

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

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Appendix D

Mann-Kendall Tables

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MCES-204-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Acenaphthylene	0.0017	0.0018	0.0025	0.0019	0.0018						
	28-Mar-13	24-Jul-13	7-Nov-13	18-Dec-14	10-Dec-15						
Row 1: Compare to Event 1:		1	1	1	1	0	0	0	0	0	4
Row 2: Compare to Event 2:			1	1	0	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 0.00001 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							
± 16							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
± 28							
± 29							
± 30							
± 31							
± 32							
± 33							
± 34							
± 35							
± 36							
± 37							
± 38							
± 39							
± 40							
± 41							
± 42							
± 43							
± 44							
± 45							

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

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

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

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO:	MCES-204-MW								
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Anthracene	0.0036	0.0033	0.0042	0.0019	0.0026						
	28-Mar-13	24-Jul-13	7-Nov-13	18-Dec-14	10-Dec-15						
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 = **-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

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO:	MCES-204-MW								
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Selenium	0.21	0.12	0.036	0.067	0.005						
	28-Mar-13	24-Jul-13	7-Nov-13	18-Dec-14	10-Dec-15						
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 0.001 mg/L

Mann-Kendall (S) Statistic = **-8**

Confidence Level Chart

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

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	7.5	7.57	7.61	8.91	9.44						
	28-Mar-13	26-Jul-13	5-Nov-13	10-Dec-14	3-Dec-15						
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 = **10**

Confidence Level Chart

S Value	Total No. of Sampling Events						
	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8							
± 9							
± 10		X					
± 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)	
	S < 0	Diminishing Plume
X	S > 0	Expanding Plume

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	374	376	390	260	260						
	28-Mar-13	26-Jul-13	5-Nov-13	10-Dec-14	3-Dec-15						
Row 1: Compare to Event 1:		1	1	-1	-1	0	0	0	0	0	0
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:					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 = **-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

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	28	34	70	88						
	28-Mar-13	26-Jul-13	5-Nov-13	10-Dec-14	3-Dec-15						
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	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 0.001 mg/L

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

Confidence Level Chart

S Value	Total No. of Sampling Events						
	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)	
	S < 0	Diminishing Plume
X	S > 0	Expanding Plume

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

MANN-KENDALL ANALYSIS OF PLUME	MONITORING WELL NO: MSES-008-MW										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Acenaphthylene	0.0042	0.0032	0.0041	0.0027	0.0024						
	26-Mar-13	26-Jul-13	15-Nov-13	10-Dec-14	3-Dec-15						
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 = **-8**

Confidence Level Chart

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

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

MANN-KENDALL ANALYSIS OF PLUME **MONITORING WELL NO: MSES-104-MWB**

	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Sum Rows
Acenaphthylene	0.03	0.036	0.032	0.033	0.031						
	26-Mar-13	24-Jul-13	5-Nov-13	10-Dec-14	3-Dec-15						
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 0.001 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							
± 17							
± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
± 27							
± 28							
± 29							
± 30							
± 31							
± 32							
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± 34							
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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

Sydney OHP & HE

Nova Scotia Lands Incorporated

141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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
Acenaphthylene	0.0006	0.0028	0.0034	0.000026	0.000047						
	29-Mar-13	24-Jul-13	23-Oct-13	15-Dec-14	10-Dec-15						
Row 1: Compare to Event 1:		1	1	-1	-1	0	0	0	0	0	0
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 Value	Total No. of Sampling Events						
	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

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	0.015	0.14	0.011	0.002	0.00013						
	29-Mar-13	24-Jul-13	23-Oct-13	15-Dec-14	10-Dec-15						
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	-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 = **-8**

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		X					
± 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

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	0.0017	0.03	0.0026	0.000032	0.0012						
	29-Mar-13	24-Jul-13	23-Oct-13	15-Dec-14	10-Dec-15						
Row 1: Compare to Event 1:		1	1	-1	-1	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	-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 = **-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

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	0.00065	0.014	0.00064	0.000018	0.00031						
	29-Mar-13	24-Jul-13	23-Oct-13	15-Dec-14	10-Dec-15						
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	-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 = **-6**

Confidence Level Chart

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

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

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

Stability Evaulation Results

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

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	0.017	0.029	0.0028	0.0001	0.0001						
	29-Mar-13	24-Jul-13	23-Oct-13	15-Dec-14	10-Dec-15						
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	-2
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 0.0.00020 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							
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± 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

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	0.00045	0.0025	0.0017	0.0025	0.0023						
	13-Mar-13	16-Jul-13	23-Oct-13	15-Dec-14	9-Dec-15						
Row 1: Compare to Event 1:		1	1	1	1	0	0	0	0	0	4
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 0.00001 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							
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± 18							
± 19							
± 20							
± 21							
± 22							
± 23							
± 24	Not Physically possible						
± 25							
± 26							
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± 34							
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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

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	0.00073	0.0036	0.0025	0.0037	0.0047						
	13-Mar-13	16-Jul-13	23-Oct-13	15-Dec-14	9-Dec-15						
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 = **8**

Confidence Level Chart

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

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

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	0.00033	0.0015	0.0011	0.0015	0.0019						
	13-Mar-13	16-Jul-13	23-Oct-13	15-Dec-14	9-Dec-15						
Row 1: Compare to Event 1:		1	1	1	1	0	0	0	0	0	4
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

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

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

Confidence Level Chart

S Value	Total No. of Sampling Events						
	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							
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± 22							
± 23							
± 24	Not Physically possible						
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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

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

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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
Acenaphthylene	0.0038	0.008	0.01	0.012	0.018						
	13-Mar-13	16-Jul-13	23-Oct-13	15-Dec-14	9-Dec-15						
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

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

Mann-Kendall (S) Statistic = **10**

Confidence Level Chart

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

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

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	0.0049	0.0045	0.0033	0.0059	0.005						
	13-Mar-13	16-Jul-13	23-Oct-13	15-Dec-14	9-Dec-15						
Row 1: Compare to Event 1:		-1	-1	1	1	0	0	0	0	0	0
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

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	5.1	4.9	6.3	7.2	9.5						
	13-Mar-13	16-Jul-13	23-Oct-13	15-Dec-14	9-Dec-15						
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	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 = **8**

Confidence Level Chart

S Value	Total No. of Sampling Events						
	4	5	6	7	8	9	10
0							
± 1							
± 2							
± 3							
± 4							
± 5							
± 6							
± 7							
±8		X					
± 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)	
	S < 0	Diminishing Plume
X	S > 0	Expanding Plume

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	0.0021	0.0026	0.0025	0.00055	0.00042						
	13-Mar-13	16-Jul-13	23-Oct-13	12-Dec-14	8-Dec-15						
Row 1: Compare to Event 1:		1	1	-1	-1	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	-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 = **-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							
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± 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

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

MANN-KENDALL PLUME STABILITY ANALYSIS

Sydney OHP & HE
Nova Scotia Lands Incorporated
141360 - LTMM GROUNDWATER MONITORING EVENT DECEMBER 2015

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	0.00024	0.00038	0.00029	0.00028	0.00029						
	13-Mar-13	16-Jul-13	23-Oct-13	12-Dec-14	8-Dec-15						
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	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 0.00001 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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± 24	Not Physically possible						
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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

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