Phase II Environmental Site Assessment, Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL

Prepared for:
Newfoundland and Labrador
Department of Municipal Affairs and
Environment
4th Floor Confederation Building
West Block
St. John's, NL A1B 4J6

Prepared by:
Stassinu Stantec Limited Partnership.
141 Kelsey Drive
St. John's, NL A1B 0L2
Tel: (709) 576-1458
Fax: (709) 576-2126

File No: 121414998

Final Report

March 29, 2019

Executive Summary

Stassinu Stantec Limited Partnership (Stantec) was retained by Newfoundland and Labrador Department of Municipal Affairs and Environment (NLDMAE) to conduct a Phase II Environmental Site Assessment (ESA) at the former United States (US) Military Mid Canada Line (MCL) Radar Site 206 Harbour Lake located on an upper and lower terrace at Harbour Lake, Newfoundland and Labrador (NL) (see Drawing Nos. 121414998-EE-01 and 121414998-EE-02 in Appendix A), herein referred to as the "Upper Site" and "Lower Site" or "Sites". The purpose of the Phase II ESA investigation was to determine current environmental conditions of the property. It is our understanding that NLDMAE has a requirement to assess the former military site at Harbour Lake to collect the information necessary to be eligible for Federal Contaminated Sites Action Plan (FCSAP) funding to further assess and/or remediate the Site as required.

Site Description

Radar Site 206 - Harbour Lake (Harbour Lake) is located 97 km west of the Town of Hopedale, NL (see Drawing No. 121414998-EE-01 in Appendix A). The entire Harbour Lake site covers a land area of approximately 20 hectares. The Harbour Lake site facility was operated by the U.S. Military as an MCL Radar Site (a Doppler Detection Station) from 1958 to 1965.

The Upper Site contained a one-story operations building housing the radio equipment, a heating and power plant, sleeping area, kitchen, four communication antennae towers linked by a cable trough and wood trestle, an emergency shelter, nine diesel fuel aboveground storage tanks (ASTs), and helicopter pad. The Lower Site along the shores of Harbour Lake contained a one-story accommodation building, a fuel pump house, and seven diesel ASTs. The Lower Site acted as a supply area for the communications equipment located at the Upper Site. The Upper Site and Lower Site are remote and are accessible only by helicopter.

Description of Site Work

Stantec's scope of work for the current investigation, as per the work plan included in Stantec's Proposal dated May 9, 2018, included the following:

1. Complete a Phase II Environmental Site Assessment for the purpose of investigating potential subsurface soil impacts associated with various historical operations and activities.
2. Excavate manual test pits and collect representative soil samples from the test pits.
3. Collect representative surface soil samples in specified areas of the Site.
4. Collect representative sediment and surface water samples from potentially impacted ponds and lakes, as identified in Stantec's Proposal.
5. Collect representative vegetation samples.
6. Submit selected soil, sediment, surface water, and vegetation samples for laboratory analysis of COPCs.
7. Prepare a report detailing all observations, conclusions, and recommendations made during the investigation.

Conclusions and Recommendations

Based on information gathered and observations made, the Phase II ESA has revealed evidence of actual environmental contamination associated with the Site. The findings and results of the Phase II ESA are summarized as follows:

1. The stratigraphy at the Upper and Lower Sites generally consisted of a well-graded, brown sand with gravel material. Bedrock was encountered in all test pits (2018-206-TP06 (0.2 mbgs), 2018-206-TP07 (0.2 mbgs), 2018-206-TP08 (0.25 mbgs), 2018-206-TP09 (0.25 mbgs), and 2018-206-TP10 (0.15 mbgs)) at the Upper Site and one (1) test pit (2018-206-TP03 (0.2 mbgs)) at the Lower Site. Exposed bedrock is common at the Sites.
2. Concentrations of PAHs, VOCs, PCBs, and asbestos in environmental media were either non-detect or were detected at concentrations within the applicable guidelines in the samples analyzed.
3. Concentrations of TPH in select soil and sediment samples exceeded the applicable RBSLs and ESLs and may present risks to human or ecological health on the Site, as follows (estimated volume of impacted material is shown in brackets following each Site):

    a. Petroleum hydrocarbon impacts were identified in soil in exceedance of the applicable RBCA Tier I RBSLs and/or Tier I ESLs for a commercial site with coarse grained soil, non-potable water and either gasoline/fuel oil/lube oil impacts at the Upper Site (234 m^3)
    a. Petroleum hydrocarbon impacts were identified in freshwater sediment in exceedance of the applicable RBCA Tier I Sediment ESLs for the Protection of Freshwater and Marine Aquatic Life (Typical sediment) at the Upper Site (12 m^3) and Lower Site (12 m^3).

4. Concentrations of Metals in select soil, freshwater sediment, and surface water samples exceeded the applicable generic regulatory guidelines and may present risks to human or ecological health on the Site, as follows (estimated volume of impacted material is shown in brackets following each Site):

    a. Metals impacts were identified in surface soil in exceedance of the applicable CCME SQGs for the Protection of Environmental and Human Health for Commercial land use at the Upper Site (78 m^3) and Lower Site (78 m^3).
    b. Metals impacts were identified in sediment in exceedance of the applicable CCME sediment quality guidelines for the Protection of Aquatic Life at the Lower Site (12 m^3).
    c. Metals impacts were identified in surface water in exceedance of the applicable CCME WQG for the protection of Freshwater Aquatic Life in the Upper Site and Lower Site, but the areal extent of impacts was not assessed as part of the current investigation.

The volumes of impacted material provided herein are estimates generated based on the available site data. Based on NCSCS scoring, both the Upper Site and Lower Site are classified as Class 2, indicating a medium priority for action. Based on the results of the Phase II ESA, further site characterization is recommended through additional data collection, ecological screening, risk assessment, and risk management. Groundwater was not assessed as part of the current investigation.

It is also recommended that drums identified in previous reports are located and their contents, if any, are assessed.

Table of Contents

LIST OF APPENDICES

LIST OF DRAWINGS

LIST OF FIGURES

LIST OF TABLES

LIST OF PHOTOS

Abbreviations

AENV	Alberta Environment
B[a]P TPE	Benzo(a)pyrene Total Potency Equivalent
BTEX	Benzene, toluene, ethylbenzene, and xylenes
CCME	Canadian Council of Ministers of the Environment
CCME SQG	Canadian Council of Ministers of the Environment Soil Quality Guidelines
CCME WQG	Canadian Council of Ministers of the Environment Water Quality Guidelines
CEQG	Canadian Environmental Quality Guidelines
COPC	Contaminant of potential concern
ESA	Environmental Site Assessment
FCSAP	Federal Contaminated Sites Action Plan
RBCA	Risk Based Corrective Action
RDL	Reportable detection limit
RPD	Relative percent difference
mbgs	meters below ground surface
MOE	Ontario Ministers of the Environment
NLDMAE	Newfoundland and Labrador Department of Municipal Affairs and Environment
PHC	Petroleum Hydrocarbon
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
QA/QC	Quality assurance / quality control
Tier I ESL	Tier I Ecological Screening Level
Tier I RBSL	Tier I Risk Based Screening Level
TPH	Total Petroleum Hydrocarbons
TPH Frac.	TPH Fractionation
VOC	Volatile Organic Compound

1.0 INTRODUCTION

Stassinu Stantec Limited Partnership (Stantec) was retained by Newfoundland and Labrador Department of Municipal Affairs and Environment (NLDMAE) to conduct a Phase II Environmental Site Assessment (ESA) at the former United States (US) Military Mid Canada Line (MCL) Radar Site 206 Harbour Lake located on an upper and lower terrace at Harbour Lake, Newfoundland and Labrador (NL) (see Drawing Nos. 121414998-EE-01 and 121414998-EE-02 in Appendix A), herein referred to as the "Upper Site" and "Lower Site" or "Sites". The purpose of the Phase II ESA investigation was to determine current environmental conditions of the property. It is our understanding that NLDMAE has a requirement to assess the former military site at Harbour Lake to collect the information necessary to be eligible for Federal Contaminated Sites Action Plan (FCSAP) funding to further assess and/or remediate the Site as required.

1.1 Background

Based on the requirements of FCSAP funding, the assessment must follow the Federal Approach to Contaminated Sites (FACS) which constitutes a ten-step process. Under this approach, a Phase I ESA would first be completed to document site history and identify potential and/or actual environmental issues on or around the Site. A Phase I ESA would constitute Step 1 (Identify Suspect Sites) and Step 2 (Historical Review) of the FACS. A Phase II intrusive investigation would then be conducted to confirm the presence or absence of contaminants of concern in soil, groundwater, surface water, and sediment at potential areas of concern identified in the Phase I ESA for the purpose of defining environmental conditions on the property. A Phase II ESA would constitute Step 3 (Initial Testing) and Step 4 (Canadian Council of the Ministers of the Environment (CCME) National Classification System for Contaminated Sites (NCSCS)).

A Phase I ESA previously conducted at the Site (GHD, 2016) identified potential for several environmental issues associated with historical use and storage of petroleum hydrocarbons, solid waste, metals, chemical spills, preserved wood, and polychlorinated biphenyls (PCBs). As a result, Stantec was subsequently retained by NLDMAE to complete a Phase II ESA.

1.2 Site Description

1.2.1 Property Description and Land Use

Radar Site 206 - Harbour Lake (Harbour Lake) is located 97 km west of the Town of Hopedale, NL (see Drawing No. 121414998-EE-01 in Appendix A). The entire Harbour Lake site covers a land area of approximately 20 hectares. The Harbour Lake site facility was operated by the U.S. Military as an MCL Radar Site (a Doppler Detection Station) from 1958 to 1965.

Based on previous environmental reports and field work completed as part of the current investigation, the overall Site was divided into two (2) smaller study sites for the purpose of the Phase II ESA. These Sites are summarized in Table 1.1 and their locations with respect to the overall Site are shown on Drawing No. 12414998-EE-02 in Appendix A.

Table 1.1 Site Inventory

Area	Site Inventory	Drawing
Upper Site	Scattered metal debris, unknown concrete foundations and support pillars	Drawing No. 121414998-EE-03
Lower Site	Two (2) ruined wooden structures	Drawing No. 121414998-EE-04

The Upper Site contained a one-story operations building housing the radio equipment, a heating and power plant, sleeping area, kitchen, four communication antennae towers linked by a cable trough and wood trestle, an emergency shelter, nine diesel fuel aboveground storage tanks (ASTs), and helicopter pad. The Lower Site along the shores of Harbour Lake contained a one-story accommodation building, a fuel pump house, and seven diesel ASTs. The Lower Site acted as a supply area for the communications equipment located at the Upper Site. The Upper Site and Lower Site are remote and are accessible only by helicopter.

A 1987 document titled *Site Restoration, Former Dew Line Radar Sites, Labrador, Status Report #1* prepared by Bond Architects & Engineers Limited (BAE Group) noted that the buildings and towers were demolished and buried in 1986 as part of a decommissioning program. Residual fuel in the ASTs was burned off during the decommissioning program and debris (cut barrels/tanks, demolished buildings, garbage, etc.) was buried on the site at various unknown locations. An Environmental Inspection in 1996 by the Government of Newfoundland and Labrador identified concrete foundations of the former infrastructure and two rusted drums at the Upper Site. The drums were not located during the current investigation. The lower site was not located during the 1996 assessment. See Drawing Nos. 121414998-EE-02 to 121414998-EE-04 in Appendix A. Further details of historical land use for the Site are contained in the 2016 Phase I ESA (GHD, 2016).

1.2.2 Geology, Topography, and Drainage

Based on available surficial geology maps, the native surficial soils at the Site consist of glaciofluvial gravel and sand (Klassen et. al., 1992). The characteristic permeability of these soils is moderate to high.

Based on observations made during the current investigation, the stratigraphy at the Upper and Lower Sites consists generally of a loose brown silty sand till veneer with frequent cobbles and boulders directly overlying bedrock.

Bedrock in the area of the Site consists of tonalitic to granodioritic orthogneiss containing abundant mafic to ultramafic inclusions and relict mafic dykes of the Southern Nain and Makkovik Provinces of the Meso-Archean of Archean age (Wardle et. al., 1997). Exposed bedrock is common throughout the Upper and Lower Sites.

Topography at the Lower Site slopes gently west towards Harbour Lake. Topography at the Upper Site slopes gently north to a steep cliff-face. The Site ranges in elevation from 210 m above sea level (masl) at the Lower Site to 500 masl at the Upper Site.

1.3 Previous Environmental Assessments

Previous environmental reports completed for Harbour Lake include the following:

1. Government of Newfoundland and Labrador, 1981. PCB Spills and General Environmental Mismanagement at EX-USAF Bases in Labrador
2. BAE Group, 1987. Site Restoration, Former Dew Line Radar Sites, Labrador, Status Report #1, Period Ending July 31, 1987
3. Government of Newfoundland and Labrador, 1996. Environmental Inspection, Abandoned Military Sites in Labrador
4. GHD Ltd., 2016. Phase I Environmental Site Assessment, Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL

The Phase I ESA previously conducted at the Site (GHD, 2016) identified potential for several environmental issues associated with historical use and storage of petroleum hydrocarbons, solid waste, metals, chemical spills, preserved wood, and PCBs. The identified environmental issues at the former military site were not sufficiently defined in previous environmental assessment reports to enable the completion of NCSCS classification.

1.4 Project Objectives

In general, the project objectives set forth in the Terms of Reference (TOR) prepared by NLDMAE for the Environmental Site Assessment at the former military site in Harbour Lake, NL, were as follows:

1. Determine specific areas of environmental concern and areas of potential environmental concern at the Site.
2. Verify the presence/absence of contaminants of potential concern (COPCs) at the Site.
3. Complete the NCSCS scoring worksheets for the Site.
4. Estimate the volume and areas of impacted media at each Site.
5. Create a preliminary conceptual site model identifying actual and potential contaminants, identify and evaluate migration pathways, potential receptors of concern, and exposure pathways (human and ecological).
6. Make recommendations for the Site regarding additional work required to complete site characterization and delineation at the Site (provide recommendations for a detailed testing program (Step 5 of the FACS)).

1.5 Scope of Work

Stantec’s scope of work for the current investigation, as per the work plan included in Stantec’s Proposal dated May 9, 2018, included the following:

1. Complete a Phase II Environmental Site Assessment for the purpose of investigating potential subsurface soil impacts associated with various historical operations and activities.
2. Excavate manual test pits and collect representative soil samples from the test pits.

3. Collect representative surface soil samples in specified areas of the Site.
4. Collect representative sediment and surface water samples from potentially impacted ponds and lakes, as identified in Stantec's Proposal.
5. Collect representative vegetation samples.
6. Submit selected soil, sediment, surface water, and vegetation samples for laboratory analysis of COPCs.
7. Prepare a report detailing all observations, conclusions, and recommendations made during the investigation.

1.6 Regulatory Framework

The NLDMAE outlined soil and groundwater remediation criteria for petroleum hydrocarbons and other COPCs on February 22, 2005 under policy directive *PPD05-01*. These criteria are outlined in the *Guidance Document for the Management of Impacted Sites, Version 2.0* (January 2014). The purpose of this guidance document is to provide a clear process for the management of impacted sites in Newfoundland and Labrador that result in the satisfactory resolution of environmental contamination, which may present an unacceptable risk to human health and ecological receptors. The guidance document incorporates recent scientific and regulatory advances in this area that have resulted from work at the international, national, and regional levels.

1.6.1 Petroleum Hydrocarbons

For petroleum hydrocarbons, the NLDMAE guidance document recommends the current version of the Atlantic RBCA (Risk-Based Corrective Action) guidance. The current version of the Atlantic RBCA guidance (Version 3 User Guidance Document, July 2012, revised 2015) is used as part of the current assessment.

Human Health Screening

The Atlantic RBCA guidance document contains risk-based screening levels (RBSLs) for evaluating human exposure to sites impacted with TPH and BTEX. These guidelines are contained in "Tier I RBSL Tables" that are based on default conditions for typical sites and exposure pathways and are classified by receptor characteristics, groundwater usage, and soil type. In addition, the TPH guidelines are dependent on the nature of the hydrocarbon type (*i.e.*, the guidelines vary for gasoline, fuel oil, and lube oil).

If site concentrations exceed the Tier I RBSLs, the site may be remediated to the Tier I RBSLs or a Tier II human health risk assessment may be completed to determine more appropriate clean-up levels. A Tier II human health risk assessment may include comparison of the site concentrations to the Tier II Pathway-Specific Screening Level (PSSL) tables or development of Site-Specific Target Levels (SSTLs) using the Atlantic RBCA Toolkit Version 3.2. PSSLs are only appropriate for sites where the exposure pathways assumed in the Tier I RBSL tables are not complete (*e.g.*, if a property has no building on site, there would be no potential for on-site indoor air exposure).

Users of the Tier I RBSLs or Tier II PSSLs are required to confirm that site conditions are compatible with the default site conditions used to generate the screening guidelines. If significant differences exist, the site should be evaluated using a site-specific risk assessment approach. As documented in the Site Assessment and Tier I/II Checklist presented in Appendix B, and as requested by NLDMAE, the human health Tier I RBSLs for a commercial site with non-potable groundwater and coarse-grained soil are applicable for the Site.

Ecological Screening

The current version of the *Atlantic RBCA guidance document* (Version 3.0, July 2012, revised January 2015) includes an Ecological Screening Protocol for Petroleum Impacted Sites in Atlantic Canada. While the RBSLs, the PSSLs, and the Atlantic RBCA Toolkit assess risks to human health, the goal of the Ecological Screening Protocol is to assess potential risks to the environment (specifically ecological receptors). While this protocol is not an ecological risk assessment, the protocol provides a decision-making framework that will result in one of the following three conclusions:

- The site does not pose a risk to ecological receptors/habitat and no further action is necessary related to the environment;
- The site should be remediated to Tier I ecological screening levels; or,
- The site should undergo further assessment in terms of quantifying ecological risks at the site (e.g., further delineation, quantitative ecological risk assessment).

The three parts of the ecological screening protocol are:

- Part I: Identification of petroleum hydrocarbon hazards in site media or site-influenced media;
- Part II: Identification of habitat and ecological receptors on or near a site; and,
- Part III: Identification of exposure pathways by which ecological receptors could come into contact with site petroleum hydrocarbons.

In accordance with the Atlantic RBCA requirements, the Ecological Screening Protocol has been completed and is included in Appendix B. A discussion of ecological screening levels (ESLs) is summarized in Table 1.2. Based on this evaluation, the ESLs for the Protection of Plants and Soil Invertebrates; Direct Soil Contact, the Protection of Wildlife (mammals and birds) and Livestock; Soil and Food Ingestion, Plant and Invertebrate Direct Contact with Shallow Groundwater, the Protection of Freshwater and Marine Aquatic Life from groundwater and surface water impacts, and the Protection of Freshwater and Marine Aquatic Life from sediment impacts are applicable for this Site.

Table 1.2 Ecological Screening Level Applicability within 200 m of the Site

Pathway	Are ESLs Applicable?	Rationale
Protection of Plants and Soil Invertebrates; Direct Soil Contact (Table 1a)*	Yes	The Upper Site and Lower Site are both surrounded by tundra, forest, and plains. Site hydrocarbons in surface soil may come into contact with terrestrial plants and invertebrates in these areas.

Table 1.2 Ecological Screening Level Applicability within 200 m of the Site

Pathway	Are ESLs Applicable?	Rationale
Protection of Wildlife (mammals and birds) and Livestock; Soil and Food Ingestion (Table 1b)*	Yes	The Upper Site and Lower Site are both surrounded by tundra, forest, and plains. Site hydrocarbons in surface soil may come into contact with wildlife in these areas.
Plant and Invertebrate Direct Contact with Shallow Groundwater (Table 2)*	Yes	Groundwater was not encountered in the evaluated areas of the Site. It would be expected to be near surface near the shoreline of Harbour Lake at the Lower Site.
Protection of Freshwater and Marine Aquatic Life from groundwater and surface water impacts (Table 3a and Table 3b)*	Yes	The waters of Harbour Lake are located to the north and west of the Lower Site and a small pond is located at the Upper Site.
Protection of Freshwater and Marine Aquatic Life from sediment impacts (Table 4)*	Yes	Freshwater sediments were encountered on the shores of Harbour Lake.

Note:
*Table references based on *Atlantic RBCA Version 3 User Guidance (Appendix 2).*

1.6.2 Other Contaminants

In addition to petroleum hydrocarbons, environmental media at the Site was analyzed for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), metals, PCBs, asbestos, and general chemistry. In the absence of provincial guidelines, the applicable criteria are considered to be the Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CCME Guidelines; 1999 and subsequent updates) and its associated documents. The CCME guidelines provide limits for contaminants in environmental media and are intended to maintain, improve, and/or protect environmental quality, and human and ecological health at contaminated sites in general. These criteria include numerical values for the assessment and remediation of soil and water in the context of agricultural, residential/parkland, commercial, and industrial land uses. In addition to land use, the CCME include numerical values depending on soil texture (i.e., coarse or fine-grained soils). Environmental soil and water quality guidelines are derived using toxicological data to determine the threshold level to key receptors. These criteria include the CCME Canadian Soil Quality Guidelines (SQGs), 1999, and Water Quality Guidelines (WQGs), 1999. The latest update of the CCME SQGs and WQGs can be obtained on-line at http://ceqg-rcqe.ccme.ca/. The NLDMAE Guidance Document indicates that in most instances, the CCME Environmental Quality Guidelines (CEQG) provide the basis for Tier I assessment.

Where there are no CCME guidelines available, guidelines from other Canadian Jurisdictions were applied using a hierarchical approach. If there was no guideline for a given COPC, the next jurisdiction in the hierarchy was referenced until an appropriate guideline was available.

The following hierarchy was used for establishing screening levels for contaminants (other than petroleum hydrocarbons) in soil, groundwater, sediment, and surface water:

1. CCME Canadian Environmental Quality Guidelines (CEQGs) for soil, surface water, and sediment (1999, and subsequent updates);
2. Alberta Environment Tier I Soil and Groundwater Remediation Guidelines (AENV, 2016);
3. Ontario Ministry of the Environment (MOE) Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act (OMOE, 2011); and,
4. British Columbia (BC) Ministry of the Environment Contaminated Sites Regulation (BC, 1996, updated 2014) – Generic Numerical Standards for soil, surface water, sediment and vapour.

As per the Department's *Guidance Document for the Management of Impacted Site, Version 2.0* (January, 2014), the CCME CEQGs were given top priority for "other contaminants". AENV guidelines use a target cancer risk of 1E-05 (1 in 100,000) for human health which is similar to the Atlantic PIRI and Heath Canada (2004) methods. Ontario MOE and BC use a target cancer risk of 1E-06 (1 in 1,000,000) for human health. This, combined with the fact that the AENV guidelines are based on published screening levels derived for a full range of pathways for both human and ecological receptors, and that they regularly use Canadian Toxicity Reference Values and Canadian derivation methods is the reason AENV guidelines were given second priority for "Other Contaminants". AENV guidelines were used only when criteria were not available from the RBCA or CCME CEQGs. The Ontario guidelines were selected above the BC guidelines because they include a wider range of pathways.

For each jurisdiction, the most conservative values for a commercial non-potable site were used to screen COPCs. The differentiation between human health and ecologically-based guidelines was not made at the Tier I level for "Other Contaminants" (other than petroleum hydrocarbons).

The specific guidelines applied for each media were selected from the list of jurisdictions above (where available) and are listed below.

Soil

The following guidelines (in order of preference) were used for the screening of contaminants (other than petroleum hydrocarbons) in soil.

1. CCME Canadian Soil Quality Guidelines (1999, and subsequent updates) and Interim Remediation Criteria (1991) for non-potable, commercial land use for protection of human/ecological health. The CCME Interim Remediation Criteria are guideline values that have not yet been replaced by more scientifically defensible CSQGs. In the absence of CSQGs for the protection of human and/or ecological health, these values are to be applied for screening purposes.
2. Alberta Environment (AENV, 2016) Surface Soil Remediation Guidelines for Commercial land use (Table A-4, assuming non-potable groundwater).
3. Ontario Ministry of the Environment (MOE, 2011) Soil Standards for Use under Part XV.1 of the Environmental Protection Act for the protection of human health - Table 3: Full Depth, Non-Potable Water Scenario, Commercial/Industrial Land Use.
4. British Columbia Ministry of the Environment (BC, 1996, updated 2014) Contaminated Sites Regulation Schedule 4: Generic Numerical Soil Standards: Commercial.

Surface Water

The following guidelines (in order of preference) were used for the screening of contaminants (other than petroleum hydrocarbons) in surface water.

1. CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (1999, and subsequent updates).
2. Alberta Environment (AENV, 2014) Environmental Quality Guidelines for Alberta Surface Waters.
3. British Columbia Ministry of the Environment (BC, 1996, updated 2014) Contaminated Sites Regulation Schedule 6: Generic Numerical Water Standards - Aquatic Life.

Sediment

The following guidelines (in order of preference) were used for the screening of contaminants (other than petroleum hydrocarbons) in sediment.

1. CCME Canadian Sediment Quality Guidelines for the Protection of Freshwater and Marine Aquatic Life (1999, and subsequent updates), Probable Effects Levels (PELs).
2. Alberta Environment (AENV, 2014) Environmental Quality Guidelines for Alberta Surface Waters, Probable Effects Levels (PELs).
3. Ontario Provincial Sediment Quality Guidelines (2008) Lowest Effects Level (LEL).

2.0 METHODOLOGY

The Phase II ESA involved the manual excavation of shallow test pits, associated soil sampling and analysis, as well as collection of surface soil, freshwater sediment, surface water, and vegetation. The field component of the Phase II ESA was completed on July 19, 2018 and July 20, 2018. A description of work completed for each area is provided in Sections 4 and 5. Field work was conducted by Stantec field technicians in accordance with Stantec's Standard Operating Procedures. Helicopter services for site access were provided by Canadian Helicopters Ltd. of St. John's, NL.

The results of the investigation completed in each area are discussed in Sections 4 and 5. Approximate sample locations were selected by Stantec in target areas of concern. Actual sample locations were established in the field by Stantec. Drawings showing the layout of each individual area and sampling locations are provided in Appendix A (Drawings No. 121414998-EE-03 and 121414998-EE-04). Photographs of each location are shown in Appendix C.

2.1 Test Pit Excavation and Sampling Program

Due to the remoteness of the Site and the cost of mobilization of heavy equipment, test pits were excavated using hand tools. Test pits were excavated to approximately 0.5 mbgs or to refusal and were backfilled with excavated material once completed. Sub-surface conditions encountered in the test pits were recorded by field personnel at the time of excavating. The locations of the test pits were established in the field by field personnel with GPS and by visual identification of areas of potential environmental concern. Coordinates of the sample locations are provided in Appendix D.

Soils were sampled from the test pits by bulk sample methods. Soil samples were recovered from the test pits at 0.25 m intervals over their respective depths, the number of which varied with the test pit depth (one (1) to two (2)). The soil samples were visually examined in the field for any evidence of impacts. The samples were placed in clean glass jars and vials with methanol preservative, where applicable. Additional soil from each sample was placed in a plastic bag and soil vapour measurements were collected with a Mini-Rae 3000 photo-ionization detector (PID). Based on the measured soil vapor concentrations, field observations, and site usage and history, select soil samples were placed on ice in sample coolers and submitted to an accredited commercial laboratory for required laboratory analysis, according to the sampling plan.

2.2 Surface Soil Sampling

Near surface (i.e., 0 - 0.3 m depth) bulk soil samples were collected in suspected impacted areas at the Site (denoted “SS”). The near surface soil samples were collected manually using clean sampling equipment. The soil samples collected were examined for field evidence of petroleum hydrocarbon impacts at the time of collection and where possible, duplicate soil samples were collected. The samples were placed in clean glass jars and vials with methanol preservative, where applicable. Additional soil from each sample was placed in a plastic bag and soil vapour measurements were collected with a PID. Based on the measured soil vapor concentrations, field observations, and site usage and history, select soil samples were placed on ice in sample coolers and submitted to an accredited commercial laboratory for required laboratory analysis, according to the sampling plan.

2.3 Sediment and Surface Water Sampling

A freshwater sediment and surface water sampling program was carried out as part of the Phase II site investigation. This included the collection of freshwater sediment and surface water samples from the shoreline of Harbour Lake at the Lower Site and the pond at the Upper Site.

Freshwater sediment samples were collected approximately 3 m from the shoreline using bulk sampling methods beneath approximately 0.3 m of water. Samples were collected to a depth of 0.15 m below the sediment/water interface. The samples were examined for any field evidence of impacts and placed in clean glass jars. The samples were placed on ice in sample coolers and submitted to an accredited commercial laboratory for required analysis, according to the sampling plan.

Surface water samples were collected into clean, new sample bottles with a sodium bisulphate or nitric acid preservative, where applicable. The samples were placed on ice in sample coolers and submitted to an accredited commercial laboratory for required analysis, according to the sampling plan.

2.4 Vegetation Sampling

A vegetation sampling program was carried out as part of the Phase II site investigation. This included the collection of vegetation samples (stems, leaves, and berries) from areas of concern.

Approximately 200 grams of sample were collected at each location. During collection, samples were placed into pre-cleaned laboratory-supplied plastic bags. The samples were placed on ice in sample coolers and submitted to an accredited commercial laboratory for required analysis, according to the sampling plan.

2.5 Laboratory Analysis

Laboratory analysis was completed by Maxxam Analytics at their laboratories in St. John's, NL and Bedford, NS. Tables 4.1 and 5.1 herein provide a summary of laboratory work completed at the various areas of the Site as part of the Phase II ESA. Results of laboratory analysis are shown in Tables E.1 to E.18 in Appendix E. Methodologies utilized by Maxxam Analytics in analysis of the samples are noted on laboratory reports in Appendix F. Chain of custody documents for submitted samples are also provided in Appendix F.

Field duplicate sampling was completed for approximately 10% of the total number of samples being analyzed. Replicate (laboratory duplicate) sampling is a standard QA/QC procedure that was also carried out by the analytical laboratories for 10% of the total number of samples analyzed. The laboratory duplicates are denoted by the extension "Lab-Dup". The field duplicates were submitted blindly using the IDs presented in Table 2.1.

Table 2.1 Summary of Field Duplicate Samples Collected

Sample Matrix	Sample ID	Duplicate Sample	Laboratory Analysis Completed
Soil	2018-206-SS11	2018-206-SS24	TPH Frac./BTEX, PAHs, PCBs
	2018-206-SS15	2018-206-SS22	TPH/BTEX, PAHs
	2018-206-SS18	2018-206-SS21	TPH/BTEX, Metals

Analytical results for duplicate samples are provided in analytical summary tables in Appendix E. Duplicate samples were collected at the same location as the Sample IDs listed above, therefore duplicate samples are not shown on Drawings No. 121414998-EE-03 and 121414998-EE-04. The field and laboratory duplicate sample results are not discussed in the Results sections herein (Sections 4.3 and 5.3), unless the parameters were classified differently (e.g., either above or below applicable guideline levels) in the duplicate samples.

2.5.1 Quality Assurance/Quality Control Sampling Program

Results of the QA/QC for laboratory and field duplicates for PHCs and metals for soil and/or sediment are presented in Table 2.2 and Table 2.3. Laboratory duplicates are used to assess the precision of the laboratory. The field duplicate samples were used to assess the precision of the sampling and analytical procedures. Typically, the relative percent difference (RPD) is calculated for the concentrations in the original sample and its duplicate. The RPD was calculated using the following formula:

$$RPD = \left| \frac{C_1 - C_2}{(C_1 + C_2)/2} \right| \times 100$$

Where: C_1 is the concentration in the original sample;

C_2 is the concentration in the sample duplicate.

If the results for either or both the original sample and the duplicate were less than the laboratory reportable detection limit (RDL), the RPD was not calculated. RPDs were only calculated if both analytical results were greater than five times the RDL. For laboratory duplicate samples, CCME (2016) recommends an RPD limit of up to 30% for soil and sediment, and 20% for groundwater. For field duplicate samples, CCME (2016) recommends an RPD limit of up to 60% for soil and sediment, and 40% for groundwater. Higher RPDs may be expected due to the natural heterogeneity of soil type (e.g., grain size) and contaminant distribution. A high RPD can also be expected when analyte concentrations are close to the analytical detection limit.

Table 2.2 Relative Percent Differences in Laboratory Duplicate Samples

Analysis	Matrix (acceptable RPD)	Range of %RPD	Number of analytes within acceptable RPD	Acceptable Duplicate Correlation?
Petroleum Hydrocarbons	Soil (30%)	3 to 12	2 of 2	Yes
Metals	Soil (30%)	2 to 68	11 of 15	Yes

Table 2.3 Relative Percent Differences in Field Duplicate Samples

Analysis	Matrix (acceptable RPD)	Range of %RPD	Number of analytes within acceptable RPD	Acceptable Duplicate Correlation?
Petroleum Hydrocarbons	Soil (60%)	13 to 50	9 of 9	Yes
Metals	Soil (60%)	13 to 105	5 of 7	Yes

In general, the duplicate results agree closely with their corresponding samples and confirm the representativeness of the sampling procedures. A laboratory duplicate sample for metals with high RPDs was repeated by the laboratory. The second laboratory duplicate sample yielded similar results. The high RPDs are likely the result of sample heterogeneity. All individual parameters in the duplicates were classified the same (either above or below guidelines). The overall data quality is considered acceptable.

3.0 POTENTIAL EXPOSURE PATHWAYS AND CONCEPTUAL SITE MODEL

A conceptual site model was developed to outline contaminant sources (media), pathways, and exposure to receptors at the Sites. A complete exposure pathway is one that meets the following four criteria (USEPA, 1989):

- a contaminant source must be present;
- transport mechanisms and media must be available to move the chemicals from the source to the receptors;
- an opportunity must exist for the receptors to contact the affected media; and
- a means must exist by which the chemical is taken up by receptors, such as direct contact, ingestion, or inhalation.

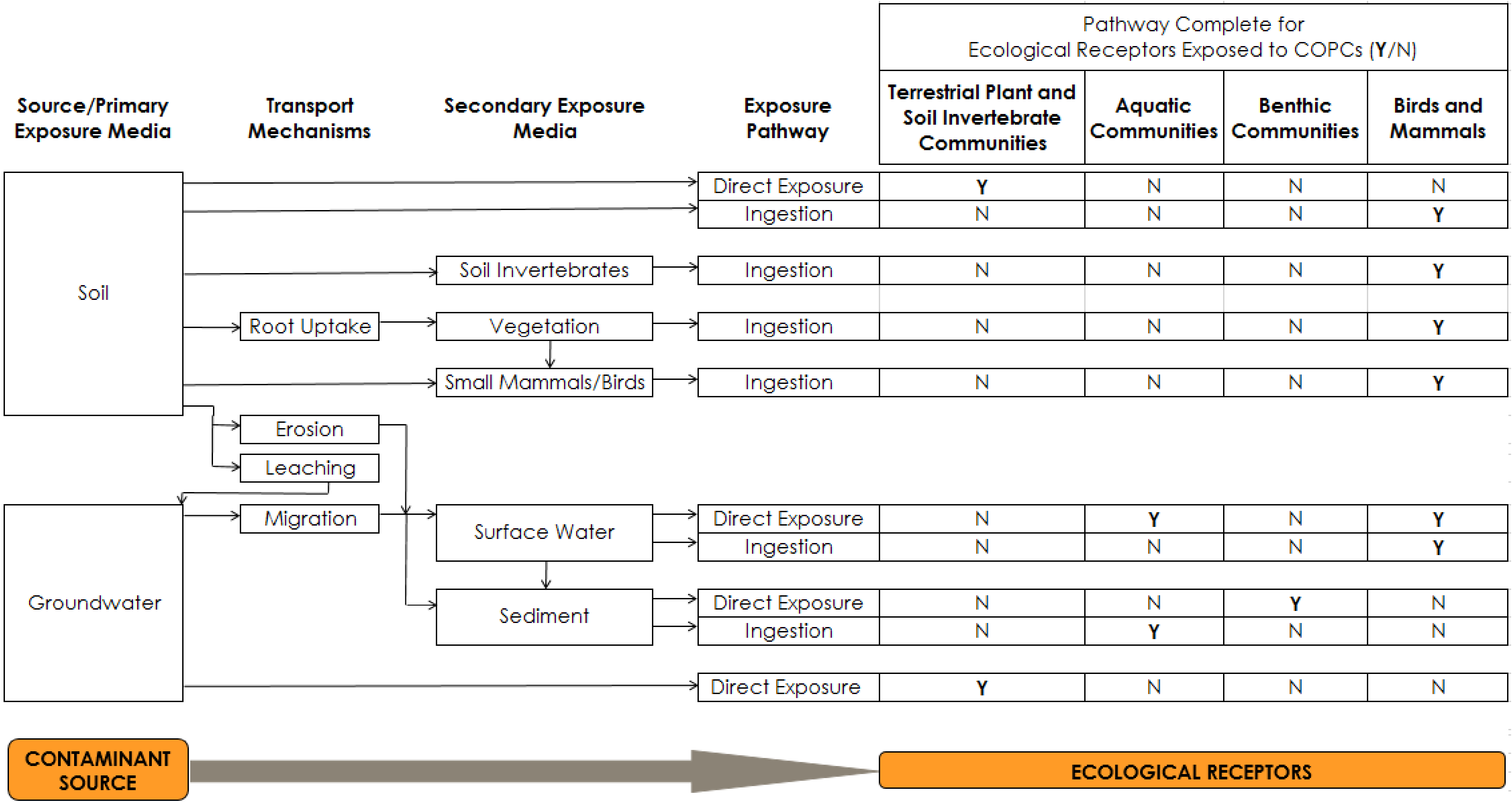
To better understand the results of the assessment, exposure pathways have been assessed for ecological and human health receptors (Tables 3.1 and 3.2, respectively). Conceptual site models identifying complete exposure pathways are provided in Figures 3-1 and 3-2.

Table 3.1 Potential Exposure Scenarios - Ecological Receptors

Exposure Pathway Description	Complete Pathway?	Justification
Ingestion of soil	Yes	Terrestrial receptors (birds and mammals) may ingest soil. Plant and soil invertebrate communities may come in contact with impacted surface soils.
Direct exposure to soil		
Ingestion of soil invertebrates, vegetation, or small mammals/birds living at the Site and exposed to contaminated soil	Yes	Terrestrial receptors (birds and mammals) may ingest soil invertebrates, vegetation, and small mammals/birds that have been exposed to impacts in surface soil.
Ingestion of surface water, freshwater, sediments, plants, or invertebrates	Yes	Terrestrial receptors (birds and mammals) may come into contact with and ingest surface water (Harbour Lake and ponds at the Site). Aquatic communities are directly exposed to surface water and may ingest sediment while benthic communities are directly exposed to sediments.
Direct exposure to surface water or freshwater sediments		
Direct exposure to groundwater	Yes	Terrestrial plants and soil invertebrate communities may come in direct contact with impacted groundwater.

Table 3.2 Potential Exposure Scenarios - Human Receptors

Exposure Pathway Description	Pathway Complete for Offsite Visitor?	Justification
Ingestion of vegetation/ garden produce grown in impacted soil	No	Edible produce is not grown on the Site.
Ingestion of animals who consume vegetation grown in impacted soil	Yes	Animals at the Site may be hunted as food.
Incidental Ingestion of soil/dust	Yes	Impacts are present in surface soil (ground surface to at least 0.3 mbgs).
Dermal contact with soil/dust		
Indirect dermal contact with soil/dust being tracked indoors		
Inhalation of vapours (indoors)	No	Buildings at the Site are not occupied.
Inhalation of vapours and particulates (outdoors)	Yes	Impacts are present in surface soil (ground surface to at least 0.3 mbgs).
Dermal contact with/Ingestion of surface water or sediment	Yes	Humans could contact surface water or sediments within Harbour Lake or small ponds at the Site.
Ingestion and dermal contact with groundwater	No	Groundwater at, and in the vicinity of the Site is not currently being used or expected to be used as a source of potable water.
Ingestion of fish	Yes	Users of the Site could fish on Harbour Lake.



Secondary Exposure Media	Exposure Pathway	Pathway Complete for Ecological Receptors Exposed to COPCs (**Y**/N)			
		Terrestrial Plant and Soil Invertebrate Communities	**Aquatic Communities**	**Benthic Communities**	**Birds and Mammals**
	Direct Exposure	**Y**	N	N	N
	Ingestion	N	N	N	**Y**
Soil Invertebrates	Ingestion	N	N	N	**Y**
Vegetation	Ingestion	N	N	N	**Y**
Small Mammals/Birds	Ingestion	N	N	N	**Y**
Surface Water	Direct Exposure	N	**Y**	N	**Y**
	Ingestion	N	N	N	**Y**
Sediment	Direct Exposure	N	N	**Y**	N
	Ingestion	N	**Y**	N	N
	Direct Exposure	**Y**	N	N	N

Figure 3-1 Conceptual Site Model for Ecological Receptors

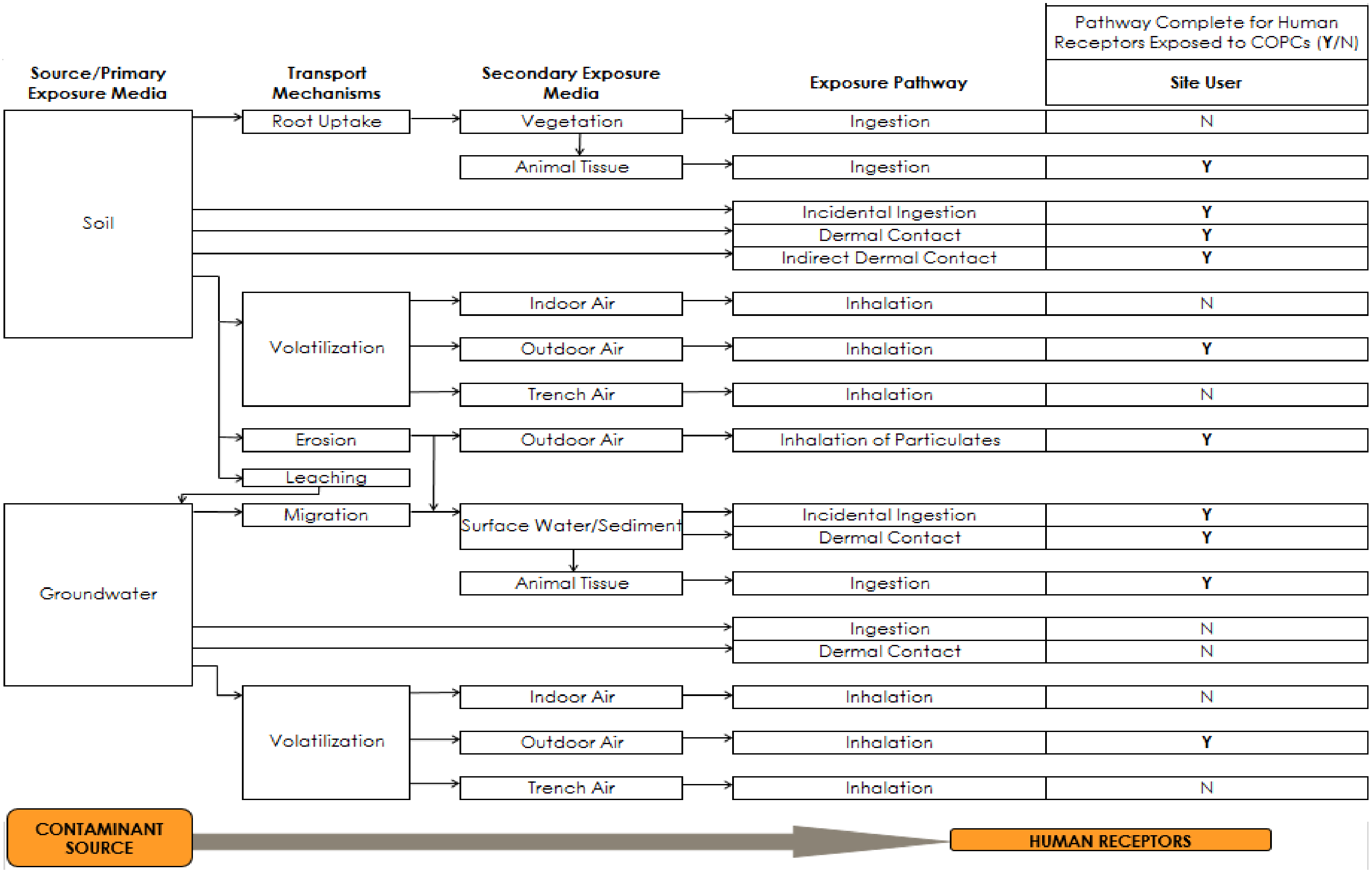


Figure 3-2 Conceptual Site Model for Human Receptors

4.0 UPPER SITE

4.1 Site Description

The Upper Site is located approximately 18 km southwest of the Lower Site, and approximately 225 m higher elevation than the Lower Site. Site surfaces consist of exposed bedrock, boulders, lichen, and till. Details of infrastructure at the Upper Site is limited, but it is assumed that during site operations, the Site consisted of a one-story operations building housing the radio equipment, a heating and power plant, sleeping area, kitchen, four communication antennae towers linked by a cable trough and wood trestle, an emergency shelter, nine diesel fuel ASTs, and a helicopter pad. During the current investigation, the Upper Site consisted of several short concrete support pillars, concrete foundations, and a small pond (~200 m^2). The Site layout is shown on Drawing No. 121414998-EE-03 in Appendix A.

4.2 Description of Site Work

Field work at the Upper Site area consisted of the excavation of five (5) manual test pits, the collection of 10 surface soil samples, the collection of two (2) sediment samples with corresponding surface water samples and the collection of two (2) vegetation samples. The sample locations are shown on Drawing No. 121414998-EE-03 in Appendix A.

The laboratory analysis schedule completed for the Upper Site area is presented in Table 4.1.

Table 4.1 Summary of Laboratory Work – Upper Site

Sample Locations	Sample Matrix		
	Soil/Sediment	Water	Vegetation
Soil: 2018-206-SS11, 2018-206-SS12, 2018-206-SS13, 2018-206-SS14, 2018-206-SS15, 2018-206-SS16, 2018-206-SS17,2018-206-SS18, 2018-206-SS19, 2018-206-SS20, 2018-206-TP06-BS01, 2018-206-TP07-BS01, 2018-206-TP08-BS01, 2018-206-TP09-BS01, 2018-206-TP10-BS01 *Sediment:* 2018-206-SED01, 2018-206-SED02 *Surface Water:* 2018-206-SW01, 2018-206-SW02 *Vegetation:* 2018-206-VEG01, 2018-206-VEG02	Soil TPH/BTEX (13), TPH Frac. (1), PAHs (6), Metals (9), PCBs (4), Asbestos (1) Sediment TPH/BTEX (2), PAHs (2), Metals (2), PCBs (2)	Surface Water TPH/BTEX (2), General Chemistry (2), VOCs (2), PAHs (2), Metals (2), PCBs (2)	Vegetation Metals (2), PCBs (2)

4.3 Results

4.3.1 Sub-surface Conditions

Conditions encountered in the manual test pits are summarized below.

4.3.1.1 Stratigraphy

The stratigraphy in the test pits generally consisted of a well-graded, brown sand with gravel material. Bedrock was encountered in all test pits (2018-206-TP06 (0.2 mbgs), 2018-206-TP07 (0.2 mbgs), 2018-206-TP08 (0.25 mbgs), 2018-206-TP09 (0.25 mbgs), and 2018-206-TP10 (0.15 mbgs)). Exposed bedrock is common at the Upper Site.

4.3.1.2 Groundwater Observations

Groundwater was not encountered in the manual test pits. The inferred local groundwater flow direction is to the north as shown on Drawing No. 121414998-EE-03.

4.3.2 Free Liquid Phase Petroleum Hydrocarbons

Staining or free liquid phase petroleum hydrocarbons were not observed on soil, sediment or surface water at the Upper Site.

Very slight to moderate petroleum hydrocarbon odours were detected on soil in samples 2018-206-SS11, 2018-206-SS14, 2018-206-TP06-BS01, and 2018-206-TP09-BS01.

4.3.3 Laboratory Analytical Results

Results of the laboratory analysis of soil, sediment, surface water, and vegetation samples for the identified COPCs are presented in Appendix E and are summarized below. The corresponding analytical reports from Maxxam Analytics are presented in Appendix F.

4.3.3.1 Soil Analytical Results

Petroleum Hydrocarbons in Soil

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on 13 soil samples collected from the Upper Site as part of the current investigation (2018-206-SS12, 2018-206-SS13, 2018-206-SS14, 2018-206-SS15, 2018-206-SS16, 2018-206-SS18, 2018-206-SS19, 2018-206-SS20, 2018-206-TP06-BS01, 2018-206-TP07-BS01, 2018-206-TP08-BS01, 2018-206-TP09-BS01, and 2018-206-TP10-BS01). Also, two (2) laboratory duplicate samples (2018-206-SS20 Lab-Dup and 2018-206-TP09-BS01 Lab-Dup) were analyzed. Triple silica gel cleanup was performed on all samples analyzed for petroleum hydrocarbon products to reduce organic interference. Results of the laboratory analysis of the soil samples for petroleum hydrocarbons are presented in Table E.1 in Appendix E.

Petroleum hydrocarbon fractionation (TPH Fract./BTEX) was conducted on one (1) soil sample collected from the Upper Site as part of the current investigation (2018-206-SS11). Results of the laboratory analysis of the soil sample for petroleum hydrocarbon fractionation are presented in Table E.2 in Appendix E.

TPH was detected in 10 of the 14 soil samples analyzed at concentrations ranging from 28 mg/kg to 5,400 mg/kg. The laboratory analytical reports indicated that products impacting the samples generally resembled weathered fuel oil, lube oil, or a mixture of fuel oil or weathered fuel oil and lube oil. The detected concentrations of TPH in samples 2018-206-SS14 (5,400 mg/kg) and 2018-206-SS11 (4,300 mg/kg) exceeded the applicable Tier I RBSL for a commercial site with non-potable groundwater, coarse grained soil, and fuel oil impacts of 4,000 mg/kg.

BTEX parameters were not detected in the soil samples analyzed.

Concentrations of hydrocarbon fraction F2 and/or F3 exceeded the applicable Tier I ESLs for the Protection of Plants and Soil Invertebrates (Table 1a) (260 mg/kg and 1,700 mg/kg, respectively) in soil samples 2018-206-SS11 (F2 = 2,500 mg/kg and F3 = 1,800 mg/kg), 2018-206-SS14 (F2 = 4,500 mg/kg), 2018-206-SS19 (F3 = 2,400 mg/kg), 2018-206-TP06-BS01 (F2 = 440 mg/kg), 2018-206-TP09-BS01 (F2 = 2,700 mg/kg), and 2018-206-TP10-BS01 (F2 = 1,600 mg/kg).

PAHs in Soil

PAH analysis was conducted on six (6) soil samples collected from the Upper Site as part of the current investigation (2018-206-SS11, 2018-206-SS12, 2018-206-SS15, 2018-206-SS17, 2018-206-TP06-BS01 and 2018-206-TP09-BS01). Results of the laboratory analysis of the soil samples for PAHs are presented in Table E.3 in Appendix E.

One (1) PAH parameter was detected in one (1) of the soil samples analyzed (2018-206-TP06-BS01), but it did not exceed the applicable CCME SQG. As per the CCME PAH guidance document, potentially carcinogenic PAHs were assessed cumulatively by multiplying concentrations of potentially carcinogenic PAHs by benzo(a)pyrene (B[a]P) Potency Equivalence Factors (PEFs) and summing the products to produce a B[a]P total potency equivalent (TPE). The non-carcinogenic PAHs were assessed individually by comparing concentrations to applicable human health guidelines from other jurisdictions and to the applicable CCME SQGs for the protection of ecological health.

The detected concentrations of individual PAH parameters were below the applicable guidelines for the protection of human health from other jurisdictions, where such guidelines exist. The calculated B[a]P TPEs were below the applicable CCME SQG (all land uses).

The following samples could not be evaluated for certain PAH parameters due to non-detected concentrations of those parameters having elevated RDLs that exceeded the applicable CCME SQG for a commercial site for the protection of environmental health:

- Acenapthene in soil samples 2018-206-SS11 and 2018-206-TP09-BS01.
- Napthalene in soil samples 2018-206-SS11 and 2018-206-TP09-BS01.
- Phenanthrene in soil samples 2018-206-SS11 and 2018-206-TP06-BS01.

Elevated RDLs were the result of matrix/co-extractive interference during laboratory analysis.

Metals in Soil

Metals analysis was conducted on nine (9) soil samples collected from the Upper Site as part of the current investigation (2018-206-SS13, 2018-206-SS14, 2018-206-SS17, 2018-206-SS18, 2018-206-SS19, 2018-206-SS20, 2018-206-TP06-BS01, 2018-206-TP08-BS01 and 2018-206-TP10-BS01). Also, two (2) laboratory duplicate samples (2018-206-SS17 Lab-Dup and 2018-206-SS17 Lab-Dup2) were analyzed. Results of the laboratory analysis of the soil samples for metals are presented in Table E.4 in Appendix E.

Concentrations of various metals were detected in the soil samples analyzed. The following exceedances were observed:

- The concentration of copper in soil sample 2018-206-SS17 (570 mg/kg) exceeded the CCME commercial SQG of 91 mg/kg.
- The concentration of zinc in soil sample 2018-206-TP08-BS01 (530 mg/kg) exceeded the CCME commercial SQG of 360 mg/kg.

None of the remaining detected concentrations of metals in the soil sample analyzed exceeded the applicable CCME SQGs for a commercial site, where such guidelines exist.

PCBs in Soil

PCB analysis was conducted on four (4) soil samples collected from the Upper Site as part of the current investigation (2018-206-SS11, 2018-206-TP07-BS01, 2018-206-TP08-BS01 and 2018-206-TP09-BS01). Also, one (1) laboratory duplicate sample (2018-206-TP07-BS01 Lab-Dup) was analyzed. Results of the laboratory analysis of the soil samples for PCBs are presented in Table E.5 in Appendix E.

A PCB concentration of 0.014 mg/kg was detected in one of the soil samples analyzed (2018-206-TP09-BS01), but it did not exceed the applicable guideline.

Asbestos in Soil

Asbestos analysis was conducted on one (1) soil sample collected from the Upper Site as part of the current investigation (2018-206-SS19). Results of the laboratory analysis of the soil samples for asbestos are presented in Table E.6 in Appendix E.

Asbestos was not detected in the soil samples analyzed. There are no applicable guidelines for asbestos in soil.

4.3.3.2 Sediment Analytical Results

Petroleum Hydrocarbons in Sediment

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on two (2) sediment samples collected from the Upper Site as part of the current investigation (2018-206-SED01 and 2018-206-SED02). Triple silica gel cleanup was performed on all samples analyzed for petroleum hydrocarbon products to reduce organic interference. Results of the laboratory analysis of the sediment samples for petroleum hydrocarbons are presented in Table E.7 in Appendix E.

TPH was detected in one sediment sample analyzed (2018-206-SED02) at a concentration of 160 mg/kg. The laboratory analytical report indicated that the product impacting the sample resembled a mixture of the weathered fuel oil fraction, the lube oil fraction and unidentified compounds in the lube oil range. The concentration of TPH exceeded the applicable Tier I ESL for the Protection of Freshwater Aquatic Life – typical sediment type, and lube oil impacts of 43 mg/kg.

Toluene and xylenes concentrations were detected in sample 2018-206-SED02, but they did not exceed the Tier I RBSLs. Benezene and ethylbenzene were not detected in the sediment samples analyzed.

PAHs in Sediment

PAH analysis was conducted on two (2) sediment samples collected from the Upper Site as part of the current investigation (2018-206-SED01 and 2018-206-SED02). Also, one (1) laboratory duplicate sample (2018-206-SED01 Lab-Dup) was analyzed. Results of the laboratory analysis of the sediment samples for PAHs are presented in Table E.8 in Appendix E.

One (1) to three (3) PAH parameters were detected in the sediment samples analyzed, but the concentrations did not exceed the applicable guidelines.

Metals in Sediment

Metals analysis was conducted on two (2) sediment samples collected from the Upper Site as part of the current investigation (2018-206-SED01 and 2018-206-SED02). Results of the laboratory analysis of the sediment samples for metals are presented in Table E.9 in Appendix E.

None of the detected concentrations of metals in the sediment samples analyzed exceeded the applicable guidelines, where such guidelines exist.

PCBs in Sediment

PCB analysis was conducted on two (2) sediment samples collected from the Upper Site as part of the current investigation (2018-206-SED01 and 2018-206-SED02). Results of the laboratory analysis of the sediment samples for PCBs are presented in Table E.10 in Appendix E.

PCBs were not detected in the sediment samples analyzed.

4.3.3.3 Surface Water Analytical Results

Petroleum Hydrocarbons in Surface Water

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on two (2) surface water samples collected from the Upper Site as part of the current investigation (2018-206-SW01 and 2018-206-SW02). Results of the laboratory analysis of the surface water samples for petroleum hydrocarbons are presented in Table E.11 in Appendix E.

TPH and BTEX parameters were not detected in the surface water samples analyzed.

General Chemistry in Surface Water

General chemistry analysis was conducted on two (2) surface water samples collected from the Upper Site as part of the current investigation (2018-206-SW01 and 2018-206-SW02). Also, one (1) laboratory duplicate sample (2018-206-SW02 Lab-Dup) was analyzed. Results of the laboratory analysis of the surface water samples for general chemistry are presented in Table E.12 in Appendix E.

The detected concentrations of general chemistry parameters in the surface water samples were within the applicable guidelines, where such guidelines exist.

VOCs in Surface Water

VOC analysis was conducted on two (2) surface water samples collected from the Upper Site as part of the current investigation (2018-206-SW01 and 2018-206-SW02). Results of the laboratory analysis of the surface water samples for VOCs are presented in Table E.13 in Appendix E.

VOC parameters were not detected in the surface water samples analyzed.

PAHs in Surface Water

PAH analysis was conducted on two (2) surface water samples collected from the Upper Site as part of the current investigation (2018-206-SW01 and 2018-206-SW02). Results of the laboratory analysis of the surface water samples for PAHs are presented in Table E.14 in Appendix E.

PAH parameters were not detected in the surface water samples analyzed.

Total Metals in Surface Water

Total metals analysis was conducted on two (2) surface water samples collected from the Upper Site as part of the current investigation (2018-206-SW01 and 2018-206-SW02). Results of the laboratory analysis of the surface water samples for metals are presented in Table E.15 in Appendix E.

Concentrations of various metals were detected in the surface water samples analyzed. The following exceedances were observed:

- The concentration of cadmium in surface water sample 2018-206-SW02 (0.41 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 0.040 µg/L.
- The concentration of copper in surface water sample 2018-206-SW02 (3.6 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 2.0 µg/L.
- The concentration of iron in surface water sample 2018-206-SW02 (310 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 300 µg/L.
- The concentration of zinc in surface water sample 2018-206-SW02 (250 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 30 µg/L.

None of the remaining detected concentrations of metals in the surface water samples analyzed exceeded the applicable CCME Water Quality Guidelines, where such guidelines exist. Note that the guidelines for aluminum, cadmium, copper, and lead in surface water are dependent on the pH or hardness of the sample and, as such, may change between site locations.

PCBs in Surface Water

PCB analysis was conducted on two (2) surface water samples collected from the Upper Site as part of the current investigation (2018-206-SW01 and 2018-206-SW02). Results of the laboratory analysis of the surface water samples for PCBs are presented in Table E.16 in Appendix E.

PCBs were not detected in the surface water samples analyzed.

4.3.3.4 Vegetation Analytical Results

Metals in Vegetation

Metals analysis was conducted on two (2) vegetation samples collected from the Upper Site as part of the current investigation (2018-206-VEG01 and 2018-206-VEG02). Also, one (1) laboratory duplicate sample (2018-206-VEG02 Lab-Dup) was analyzed. Results of the laboratory analysis of the vegetation samples for metals are presented in Table E.17 in Appendix E.

Concentrations of various metals were detected in the vegetation samples analyzed. There are no applicable guidelines for metals in vegetation.

PCBs in Vegetation

PCB analysis was conducted on two (2) vegetation samples collected from the Upper Site as part of the current investigation (2018-206-VEG01 and 2018-206-VEG02). Results of the laboratory analysis of the vegetation samples for PCBs are presented in Table E.18 in Appendix E.

PCBs were not detected in the vegetation samples analyzed.

4.3.4 Summary of Exceedances

The Phase II ESA identified several COPCs in environmental media at the Upper Site with concentrations exceeding the applicable criteria-based guidelines for a commercial site, where such guidelines exist. The exceedances recorded in soil, sediment, and surface water during the current investigation are summarized in Tables 4.2, 4.3 and 4.4, respectively.

Table 4.2 Soil Sample Exceedances – Upper Site

Sample No.	Parameter	Conc. (mg/kg)	Referenced Guidelines (mg/kg)[1, 2, 3]
2018-206-SS11	TPH F2 F3	4,300 2,500 1,800	4,000 (Tier I RBSL, Table 4a) 260 (Tier I ESL, Table 1a) 1,700 (Tier I ESL, Table 1a)
2018-206-SS14	TPH F2	5,400 4,500	4,000 (Tier I RBSL, Table 4a) 260 (Tier I ESL, Table 1a)
2018-206-SS17	Copper	570	91 (CCME SQG)
2018-206-SS19	F3	2,400	1,700 (Tier I ESL, Table 1a)
2018-206-TP06-BS01	F2	440	260 (Tier I ESL, Table 1a)
2018-206-TP08-BS01	Zinc	530	360 (CCME SQG)
2018-206-TP09-BS01	F2	2,700	260 (Tier I ESL, Table 1a)
2018-206-TP10-BS01	F2	1,600	260 (Tier I ESL, Table 1a)

Referenced Guidelines:

[1] CCME SQGs for the Protection of Environmental and Human Health for Commercial land use (1999 and updates)

[2] Atlantic Partnership in RBCA Tier I ESLs for the Protection of Plants and Soil Invertebrates, Table 1a (2012 and updates)

[3] Atlantic Partnership in RBCA Tier I RBSLs for the for a commercial site with non-potable groundwater, coarse grained soil, and gasoline/fuel oil / lube oil impacts, Table 4a (2012 and updates)

Table 4.3 Sediment Sample Exceedances – Upper Site

Sample No.	Parameter	Conc. (mg/kg)	Referenced Guidelines (mg/kg)[1]
2018-206-SED02	TPH	160	43 (Tier I ESL, Table 4)

Referenced Guidelines:

[1] Atlantic Partnership in RBCA Tier I Sediment ESLs for the Protection of Freshwater and Marine Aquatic Life – Typical sediment type for fuel oil, Table 4 (July 2012, January 2015)

Table 4.4 Surface Water Sample Exceedances – Upper Site

Sample No.	Parameter	Conc. (µg/L)	Referenced Guidelines (µg/L)[1]
2018-206-SW02	Cadmium Copper Iron Zinc	0.41 3.6 310 250	0.040 (CCME WQG) 2.0 (CCME WQG) 300 (CCME WQG) 30 (CCME WQG)

Referenced Guidelines:

[1] Canadian Council of Ministers of the Environment (CCME) WQGs for the Protection of Freshwater Aquatic Life (1999 and updates)

The approximate locations of TPH and metals in soil, sediment, and/or surface water at the Upper Site are shown on Drawing No. 121414998-EE-03 in Appendix A.

5.0 LOWER SITE

5.1 Site Description

The Lower Site is located approximately 18 km northeast of the Upper Site, and approximately 225 m lower elevation than the Upper Site. Site surfaces consist of exposed bedrock, boulders, lichen, and till. The Lower Site acted as a supply area for the communications equipment located at the Upper Site. Details of infrastructure at the Lower Site is limited, but it is assumed that during site operations, the Lower Site along the shores of Harbour Lake contained a one-story accommodation building, a fuel pump house, and seven diesel ASTs. The Site layout is shown on Drawing No. 121414998-EE-04 in Appendix A.

5.2 Description of Site Work

Field work at the Lower Site area consisted of the excavation of five (5) manual test pits, the collection of 10 surface soil samples, the collection of one (1) sediment sample with a corresponding surface water sample and the collection of two (2) vegetation samples. The sample locations are shown on Drawing No. 121414998-EE-04 in Appendix A.

The laboratory analysis schedule completed for the Lower Site area is presented in Table 5.1.

Table 5.1 Summary of Laboratory Work – Lower Site

Sample Locations	Sample Matrix		
	Soil/Sediment	**Water**	**Vegetation**
Soil: 2018-206-SS01, 2018-206-SS02, 2018-206-SS03, 2018-206-SS04, 2018-206-SS05, 2018-206-SS06, 2018-206-SS07, 2018-206-SS08, 2018-206-SS09, 2018-206-SS10, 2018-206-TP01-BS01, 2018-206-TP01-BS02, 2018-206-TP02-BS01, 2018-206-TP02-BS02, 2018-206-TP03-BS01, 2018-206-TP04-BS01, 2018-206-TP04-BS02, 2018-206-TP05-BS01, 2018-206-TP05-BS02 *Sediment:* 2018-206-SED03 *Surface Water:* 2018-206-SW03 *Vegetation:* 2018-206-VEG03, 2018-206-VEG04	Soil TPH/BTEX (15), PAHs (7), Metals (14), PCBs (5), Asbestos (1) Sediment TPH/BTEX (1), PAHs (1), Metals (1), PCBs (1)	Surface Water TPH/BTEX (1), General Chemistry (1), VOCs (1), PAHs (1), Metals (1), PCBs (1)	Vegetation Metals (2), PCBs (2)

5.3 Results

5.3.1 Sub-surface Conditions

Conditions encountered in the manual test pits are summarized below.

5.3.1.1 Stratigraphy

The stratigraphy in the test pits generally consisted of a well-graded, brown sand with gravel material. Bedrock was encountered in one (1) test pit (2018-206-TP03 (0.2 mbgs)). Exposed bedrock is common at the Lower Site.

5.3.1.2 Groundwater Observations

Groundwater was not encountered in the manual test pits. The inferred groundwater flow direction is to the west toward Harbour Lake as shown on Drawing No. 121414998-EE-04 in Appendix A.

5.3.2 Free Liquid Phase Petroleum Hydrocarbons

Staining or free liquid phase petroleum hydrocarbons were not observed on soil, sediment or surface water at the Lower Site.

Hydrocarbon odours were not detected in soils sampled as part of the current investigation.

5.3.3 Laboratory Analytical Results

Results of the laboratory analysis of soil, sediment, surface water, and vegetation samples for the identified COPCs are presented in Appendix E and are summarized below. The corresponding analytical reports from Maxxam Analytics are presented in Appendix F.

5.3.3.1 Soil Analytical Results

Petroleum Hydrocarbons in Soil

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on 15 soil samples collected from the Lower Site as part of the current investigation (2018-206-SS01, 2018-206-SS02, 2018-206-SS03, 2018-206-SS04, 2018-206-SS05, 2018-206-SS06, 2018-206-SS07, 2018-206-SS08, 2018-206-SS09, 2018-206-SS10, 2018-206-TP01-BS01, 2018-206-TP02-BS01, 2018-206-TP03-BS01, 2018-206-TP04-BS02 and 2018-206-TP05-BS01). Also, two (2) laboratory duplicate samples (2018-206-SS05 Lab-Dup and 2018-206-SS10 Lab-Dup) were analyzed. Triple silica gel cleanup was performed on all samples analyzed for petroleum hydrocarbon products to reduce organic interference. Results of the laboratory analysis of the soil samples for petroleum hydrocarbons are presented in Table E.1 in Appendix E.

TPH was detected in nine (9) soil samples analyzed at concentrations ranging from 25 mg/kg to 220 mg/kg. The laboratory analytical report indicated that products impacting the samples generally resembled unidentified compounds in the lube oil range and/or the possible lube oil range. The detected concentrations of TPH did not exceed the applicable Tier I RBSL for a commercial site with non-potable groundwater, coarse grained soil, and lube oil impacts of 10,000 mg/kg or the applicable Tier I ESLs for the Protection of Plants and Soil Invertebrates.

BTEX parameters were not detected in the soil samples analyzed.

PAHs in Soil

PAH analysis was conducted on six (6) soil samples collected from the Lower Site as part of the current investigation (2018-206-SS04, 2018-206-SS06, 2018-206-TP01-BS02, 2018-206-TP02-BS02, 2018-206-TP04-BS01 and 2018-206-TP05-BS02). Also, one (1) laboratory duplicate sample (2018-206-TP05-BS02 Lab-Dup) was analyzed. Results of the laboratory analysis of the soil samples for PAHs are presented in Table E.3 in Appendix E.

One (1) to two (2) PAH parameters were detected in the soil samples analyzed, but they did not exceed the applicable guidelines for a commercial site.

Metals in Soil

Metals analysis was conducted on 14 soil samples collected from the Lower Site as part of the current investigation (2018-206-SS01, 2018-206-SS02, 2018-206-SS03, 2018-206-SS04, 2018-206-SS05, 2018-206-SS06, 2018-206-SS07, 2018-206-SS09, 2018-206-SS10, 2018-206-TP01-BS01, 2018-206-TP02-

BS01, 2018-206-TP03-BS01, 2018-206-TP04-BS01 and 2018-206-TP05-BS01). Results of the laboratory analysis of the soil samples for metals are presented in Table E.4 in Appendix E.

Concentrations of various metals were detected in the soil samples analyzed. The following exceedances were observed:

- The concentrations of copper in soil samples 2018-206-SS03 (110 mg/kg) and 2018-206-TP03-BS01 (150 mg/kg) exceeded the CCME commercial SQG of 91 mg/kg.
- The concentration of zinc in soil sample 2018-206-TP03-BS01 (380 mg/kg) exceeded the CCME commercial SQG of 360 mg/kg.

None of the remaining detected concentrations of metals in the soil samples analyzed exceeded the applicable CCME SQGs for a commercial site, where such guidelines exist.

PCBs in Soil

PCB analysis was conducted on five (5) soil samples collected from the Lower Site as part of the current investigation (2018-206-SS01, 2018-206-SS09, 2018-206-TP01-BS01, 2018-206-TP04-BS02 and 2018-206-TP05-BS01). Results of the laboratory analysis of the soil samples for PCBs are presented in Table E.5 in Appendix E.

PCBs were not detected in the soil samples analyzed.

Asbestos in Soil

Asbestos analysis was conducted on one (1) soil sample collected from the Lower Site as part of the current investigation (2018-206-SS08). Results of the laboratory analysis of the soil samples for asbestos are presented in Table E.6 in Appendix E.

Asbestos was not detected in the soil samples analyzed. There are no applicable guidelines for asbestos in soil.

5.3.3.2 Sediment Analytical Results

Petroleum Hydrocarbons in Sediment

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on one (1) sediment sample collected from the Lower Site as part of the current investigation (2018-206-SED03). Triple silica gel cleanup was performed on all samples analyzed for petroleum hydrocarbon products to reduce organic interference. Results of the laboratory analysis of the sediment sample for petroleum hydrocarbons are presented in Table E.7 in Appendix E.

TPH was detected in the sediment sample analyzed at a concentration of 680 mg/kg. The laboratory analytical report indicated that the product impacting the sample resembled a mixture of the weathered fuel oil and the lube oil fractions. The concentration of TPH exceeded the applicable Tier I ESL for the Protection of Freshwater Aquatic Life – typical sediment type, and lube oil impacts of 43 mg/kg. BTEX parameters were not detected in the sediment sample analyzed.

PAHs in Sediment

PAH analysis was conducted on one (1) sediment sample collected from the Lower Site as part of the current investigation (2018-206-SED03). Results of the laboratory analysis of sediment samples for PAHs are presented in Table E.8 in Appendix E.

Two (2) PAH parameters were detected in the sediment sample analyzed, but they did not exceed the applicable guidelines.

Metals in Sediment

Metals analysis was conducted on one (1) sediment sample collected from the Lower Site as part of the current investigation (2018-206-SED03). Results of the laboratory analysis of the sediment sample for metals are presented in Table E.9 in Appendix E.

Concentrations of various metals were detected in the sediment sample analyzed. The concentration of nickel (24 mg/kg) exceeded the CCME sediment quality guideline of 16 mg/kg. None of the remaining detected concentrations of metals in the sediment sample analyzed exceeded the applicable guidelines, where such guidelines exist.

PCBs in Sediment

PCB analysis was conducted on one (1) sediment sample collected from the Lower Site as part of the current investigation (2018-206-SED03). Results of the laboratory analysis of the sediment sample for PCBs are presented in Table E.10 in Appendix E.

PCBs were not detected in the sediment sample analyzed.

5.3.3.3 Surface Water Analytical Results

Petroleum Hydrocarbons in Surface Water

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on one (1) surface water sample collected from the Lower Site as part of the current investigation (2018-206-SW03). Results of the laboratory analysis of the surface water sample for petroleum hydrocarbons are presented in Table E.11 in Appendix E.

TPH and BTEX parameters were not detected in the surface water sample analyzed.

General Chemistry in Surface Water

General chemistry analysis was conducted on one (1) surface water sample collected from the Lower Site as part of the current investigation (2018-206-SW03). Results of the laboratory analysis of the surface water sample for general chemistry are presented in Table E.12 in Appendix E.

pH detected in the surface water sample analyzed (6.46) was not within the applicable guideline of 6.5 to 9.0. The remaining detected concentrations of general chemistry parameters in the surface water sample analyzed were within the applicable guidelines, where such guidelines exist.

VOCs in Surface Water

VOC analysis was conducted on one (1) surface water sample collected from the Lower Site as part of the current investigation (2018-206-SW03). Results of the laboratory analysis of the surface water sample for VOCs are presented in Table E.13 in Appendix E.

VOC parameters were not detected in the surface water sample analyzed.

PAHs in Surface Water

PAH analysis was conducted on one (1) surface water sample collected from the Lower Site as part of the current investigation (2018-206-SW03). Results of the laboratory analysis of the surface water sample for PAHs are presented in Table E.14 in Appendix E.

PAH parameters were not detected in the surface water sample analyzed.

Total Metals in Surface Water

Total metals analysis was conducted on one (1) surface water sample collected from the Lower Site as part of the current investigation (2018-206-SW03). Results of the laboratory analysis of the surface water sample for metals are presented in Table E.15 in Appendix E.

Concentrations of various metals were detected in the surface water sample analyzed. The following exceedance was observed:

- The concentration of aluminum in surface water sample 2018-206-SW03 (120 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 100 µg/L.

None of the remaining detected concentrations of metals in the surface water sample analyzed exceeded the applicable CCME Water Quality Guidelines, where such guidelines exist. Note that the guidelines for aluminum, cadmium, copper, and lead in surface water are dependent on the pH or hardness of the sample and, as such, may change between site locations.

PCBs in Surface Water

PCB analysis was conducted on one (1) surface water sample collected from the Lower Site as part of the current investigation (2018-206-SW03). Results of the laboratory analysis of the surface water sample for PCBs are presented in Table E.16 in Appendix E.

PCBs were not detected in the surface water sample analyzed.

5.3.3.4 Vegetation Analytical Results

Metals in Vegetation

Metals analysis was conducted on two (2) vegetation samples collected from the Lower Site as part of the current investigation (2018-206-VEG03 and 2018-206-VEG04). Results of the laboratory analysis of the vegetation samples for metals are presented in Table E.17 in Appendix E.

Concentrations of various metals were detected in the vegetation samples analyzed. There are no applicable guidelines for metals in vegetation.

PCBs in Vegetation

PCB analysis was conducted on two (2) vegetation samples collected from the Lower Site as part of the current investigation (2018-206-VEG03 and 2018-206-VEG04). Results of the laboratory analysis of the vegetation samples for PCBs are presented in Table E.18 in Appendix E.

PCBs were not detected in the vegetation samples analyzed.

5.3.4 Summary of Exceedances

The Phase II ESA identified several COPCs in environmental media at the Lower Site with concentrations exceeding the applicable criteria-based guidelines for a commercial site, where such guidelines exist. The exceedances recorded in soil, sediment and surface water during the current investigation are summarized in Tables 5.2, 5.3 and 5.4, respectively.

Table 5.2 Soil Sample Exceedances – Lower Site

Sample No.	Parameter	Conc. (mg/kg)	Referenced Guidelines (mg/kg)[1]
20180206-SS03	Copper	110	91 (CCME SQG)
2018-206-TP03-BS01	Copper Zinc	150 380	91 (CCME SQG) 360 (CCME SQG)

Referenced Guidelines:

[1] CCME SQGs for the Protection of Environmental and Human Health for Commercial land use (1999 and updates)

Table 5.3 Sediment Sample Exceedances – Lower Site

Sample No.	Parameter	Conc. (mg/kg)	Referenced Guidelines (mg/kg)[1,2]
2018-206-SED03	TPH Nickel	680 24	43 (Tier I ESL, Table 4) 16 (CCME PELs)

Referenced Guidelines:

[1] Atlantic Partnership in RBCA Tier I Sediment ESLs for the Protection of Freshwater and Marine Aquatic Life – Typical sediment type for fuel oil, Table 4 (July 2012, January 2015)

[2] CCME Sediment Quality Guidelines for the Protection of Aquatic Life – Probably Effects Levels for Freshwater Sediment (PEL) (1999 and updates)

Table 5.4 Surface Water Sample Exceedances – Lower Site

Sample No.	Parameter	Conc. (µg/L)	Referenced Guidelines (µg/L)1
2018-206-SW03	pH Aluminum	6.46 120	6.5 to 9.0 (CCME WQG) 100 (CCME WQG)
Referenced Guidelines: [1] Canadian Council of Ministers of the Environment (CCME) WQGs for the Protection of Freshwater Aquatic Life (1999 and updates)			

The locations of TPH and metals in soil, sediment, and/or surface water at the Lower Site are shown on Drawing No. 121414998-EE-04 in Appendix A.

6.0 SUMMARY OF EXCEEDANCES

The Phase II ESA identified several COPCs in environmental media at the Sites with concentrations exceeding the applicable criteria-based guidelines for a commercial site, where such guidelines exist. Based on the identified areas of impacted media, volumes of impacted soil and sediment were estimated. The following assumptions were made when calculating volume estimates:

1. For initial soil estimations, an impacted radius of 5 m was assumed for individual areas of exceedances. The scale and scope of the investigation limits the ability to estimate combined areas for impacted samples;
2. The depth of impacted soil at the Upper Site extends to bedrock, which is estimated to be approximately 0.5 m;
3. The depth of impacted soil at the Lower Site extends to bedrock, which is estimated to be approximately 1.0 m; and,
4. The depth of impacts in freshwater sediment was assumed to be 0.15 m.

The estimated volumes (m^3) of impacted soil and sediment identified at the Site during the Phase II ESA are summarized in Table 6.1. Impacted samples that contain two or more COPCs have volumes listed for each individual COPC in Table 6.1, but are only counted once for the total volume estimate.

Table 6.1 Volume Estimates

COPC	Media	Area ID	Impacted Samples	Volume/Area of Impacted Material
Petroleum Hydrocarbons	Soil	Upper Site	2018-206-SS11, 2018-206-SS14, 2018-206-SS19, 2018-206-TP06, 2018-206-TP09, 2018-206-TP10	234 m^3
	Freshwater Sediment	Upper Site	2018-206-SED02	12 m^3
		Lower Site	2018-206-SED03	12 m^3
Metals	Soil	Upper Site	2018-206-SS17, 2018-206-TP08	78 m^3
		Lower Site	2018-206-SS03, 2018-206-TP03	78 m^3
	Surface Water	Upper Site	2018-206-SW02	Unknown+
		Lower Site	2018-206-SW03	Unknown+
	Freshwater Sediment	Lower Site	2018-206-SED03	12 m^3
Totals			**Soil / Sediment**	**425 m^3***
			Surface Water	**Unknown+**
Notes: *Overlapping COPCs are only counted once				
+Areal extent of surface water impacts was not calculated for Harbour Lake or for small ponds – further delineation is required				

7.0 NCSCS SITE CLASSIFICATION SUMMARY

The detailed evaluation form obtained from the National Classification System for Contaminated Sites (NCSCS) was developed by CCME, March 1992 (updated 2008, 2010 v1.3) to provide a nationally consistent ranking of sites in terms of potential remediation requirements. The evaluation process generally considers contaminant sources, exposure pathways, and potential human and environmental receptors, but is not intended to be used as a risk assessment tool. The scoring system reflects the concentrations and potential exposures of contaminants in relation to generic CCME remediation criteria. NCSCS site scores are categorized as shown in Table 7.1.

Table 7.1 NCSCS Scoring Summary (CCME, 2008, v1.3)

Total Score	Class	Priority for Action
>70	Class 1	High
50-69.9	Class 2	Medium
37-49.9	Class 3	Low
<37	Class N	Not a priority
>15% of Responses are “Do not know”	Class INS	Insufficient Information

The Upper Site and Lower Site both obtained an NCSCS score of 62.5. Based on this score, the Upper Site and Lower Site are both classified as Class 2, indicating a medium priority for action. The detailed NCSCS evaluation forms are presented in Appendix G.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on information gathered and observations made, the Phase II ESA has revealed evidence of actual environmental contamination associated with the Site. The findings and results of the Phase II ESA are summarized as follows:

1. The stratigraphy at the Upper and Lower Sites generally consisted of a well-graded, brown sand with gravel material. Bedrock was encountered in all test pits (2018-206-TP06 (0.2 mbgs), 2018-206-TP07 (0.2 mbgs), 2018-206-TP08 (0.25 mbgs), 2018-206-TP09 (0.25 mbgs), and 2018-206-TP10 (0.15 mbgs)) at the Upper Site and one (1) test pit (2018-206-TP03 (0.2 mbgs)) at the Lower Site. Exposed bedrock is common at the Upper and Lower Sites.
2. Concentrations of PAHs, VOCs, PCBs, and asbestos in environmental media were either non-detect or were detected at concentrations within the applicable guidelines in the samples analyzed.
3. Concentrations of TPH in select soil and sediment samples exceeded the applicable RBSLs and ESLs and may present risks to human or ecological health on the Site, as follows (estimated volume of impacted material is shown in brackets following each Site):

    a. Petroleum hydrocarbon impacts were identified in soil in exceedance of the applicable RBCA Tier I RBSLs and/or Tier I ESLs for a commercial site with coarse grained soil, non-potable water and either gasoline/fuel oil/lube oil impacts at the Upper Site (234 m^3)
    b. Petroleum hydrocarbon impacts were identified in freshwater sediment in exceedance of the applicable RBCA Tier I Sediment ESLs for the Protection of Freshwater and Marine Aquatic Life (Typical sediment) at the Upper Site (12 m^3) and Lower Site (12 m^3).

4. Concentrations of Metals in select soil, freshwater sediment, and surface water samples exceeded the applicable generic regulatory guidelines and may present risks to human or ecological health on the Site, as follows (estimated volume of impacted material is shown in brackets following each Site):

    a. Metals impacts were identified in surface soil in exceedance of the applicable CCME SQGs for the Protection of Environmental and Human Health for Commercial land use at the Upper Site (78 m^3) and Lower Site (78 m^3).
    b. Metals impacts were identified in sediment in exceedance of the applicable CCME sediment quality guidelines for the Protection of Aquatic Life at the Lower Site (12 m^3).
    c. Metals impacts were identified in surface water in exceedance of the applicable CCME WQG for the protection of Freshwater Aquatic Life in the Upper Site and Lower Site, but the areal extent of impacts was not assessed as part of the current investigation.

The volumes of impacted material provided herein are estimates generated based on the available site data. Based on NCSCS scoring, both the Upper Site and Lower Site are classified as Class 2, indicating a medium priority for action. Based on the results of the Phase II ESA, further site characterization is recommended through additional data collection, ecological screening, risk assessment, and risk management. Groundwater was not assessed as part of the current investigation.

It is also recommended that drums identified in previous reports are located and their contents, if any, are assessed.

9.0 CLOSURE

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec’s assessment may have significantly altered the property’s condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec’s professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property’s environmental condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities, or claims, howsoever arising, from third party use of this report.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (*e.g.*, utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site. As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the Site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report.

This report was prepared by Paula Brennan, M.A.Sc., P.Eng. and reviewed by Jim Slade, P.Eng., P.Geo.

Respectfully submitted,

STASSINU STANTEC LIMITED PARTNERSHIP

Paula Brennan

Paula Brennan, M.A.Sc., P.Eng.
Associate, Senior Environmental Engineer

Jim Slade

Jim Slade, P.Eng., P.Geo.
Principal, Senior Environmental Engineer

10.0 REFERENCES

Alberta Environment (AENV), 2016. Alberta Tier I Soil and Groundwater Remediation Guideline Values.

Alberta Environment (AENV), 2014. Environmental Quality Guidelines for Alberta Surface Waters.

Atlantic Partners in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Atlantic RBCA for Petroleum Impacted Sites in Atlantic Canada – User Guidance. Version 3.0. 2012, updated 2015.

BAE Group, 1987. Site Restoration, Former Dew Line Radar Sites, Labrador, Status Report #1, Period Ending July 31, 1987.

British Columbia Ministry of the Environment (BC), 1996 (updated 2014). Contaminated Sites Regulation Schedule 4: Generic Numerical Soil Standards.

British Columbia Ministry of the Environment (BC), 1996 (updated 2014). Contaminated Sites Regulation Schedule 6: Generic Numerical Water Standards.

British Columbia Ministry of the Environment (BC), 1996 (updated 2014). Contaminated Sites Regulation Schedule 9: Generic Numerical Sediment Criteria.

Canadian Council of Ministers of the Environment (CCME), 1999 (updated 2001). Canadian Sediment Quality Guidelines for the Protection of Aquatic Life:

Canadian Council of Ministers of the Environment (CCME), 1999 (and subsequent updates). Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health.

Canadian Council of Ministers of the Environment (CCME), 1999 (and subsequent updates). Canadian Water Quality Guidelines for the Protection of Aquatic Life.

GHD Ltd, 2016. Phase I Environmental Site Assessment, Former US Military Mid Canada Line Radar Site 206 Harbour Lake, NL. Report No 6 (March 2016).

Government of Newfoundland and Labrador, 1981. PCB Spills and General Environmental Mismanagement at EX-USAF Bases in Labrador.

Government of Newfoundland and Labrador, 1996. Environmental Inspection, Abandoned Military Sites in Labrador.

Klassen, R.A., Paradis, S., Bolduc, A.M., and Thomas, R.D. 1992. Glacial landforms and deposits – Labrador, Newfoundland and eastern Québec. Geological Survey of Canada, Map 1814A, scale 1:1 000 000.

Newfoundland and Labrador Department of Municipal Affairs and Environment (NLDMAE), 2005 (updated 2014). Guidance Document for the Management of Impacted Sites, Version 2.0.

Ontario Ministry of the Environment (MOE), 2011. Rationale for the Development of Soil and Ground water Standards for use at Contaminated Sites in Ontario.

Ontario Ministry of the Environment (MOE), 2011. Soil Standards for Use under Part XV.1 of the *Environmental Protection Act*.

United States Environmental Protection Agency (USEPA), 1989. Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part A), Interim Final.

Wardle, R.J., Gower, C.F., Ryan, B., Nunn, G.A.G., James, D.T., and Kerr, A. 1997. Geological map of Labrador; 1:1 million scale. Map 97-07. Scale 1:1 000 000. Government of Newfoundland and Labrador Department of Mines and Energy, Geological Survey. GS# LAB/1226.

.

APPENDIX A

Drawings

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:
NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT

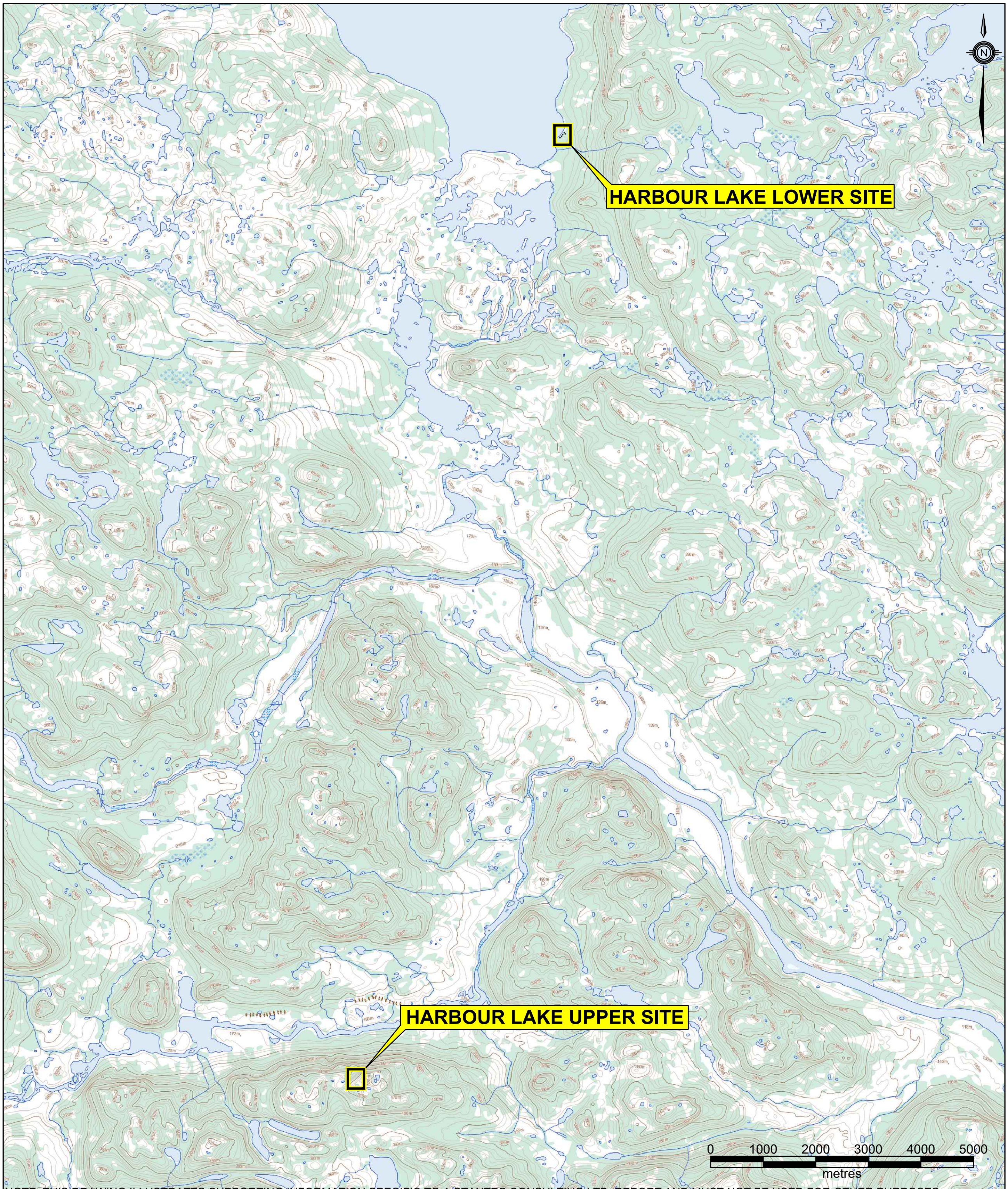
PROJECT TITLE:
PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER US MILITARY
MID CANADA LINE RADAR SITE 206, HARBOUR LAKE, NL

DRAWING TITLE:
SITE LOCATION PLAN

SCALE: 1:5,000,000	DATE: OCT. 25, 2018	REV. No. 0
DRAWN BY: N.M.	EDITED BY: -	CHECKED BY: J.S.
DRAWING No: **121414998-EE-01**	CAD FILE: 121414998-EE-01.DWG	

Stantec

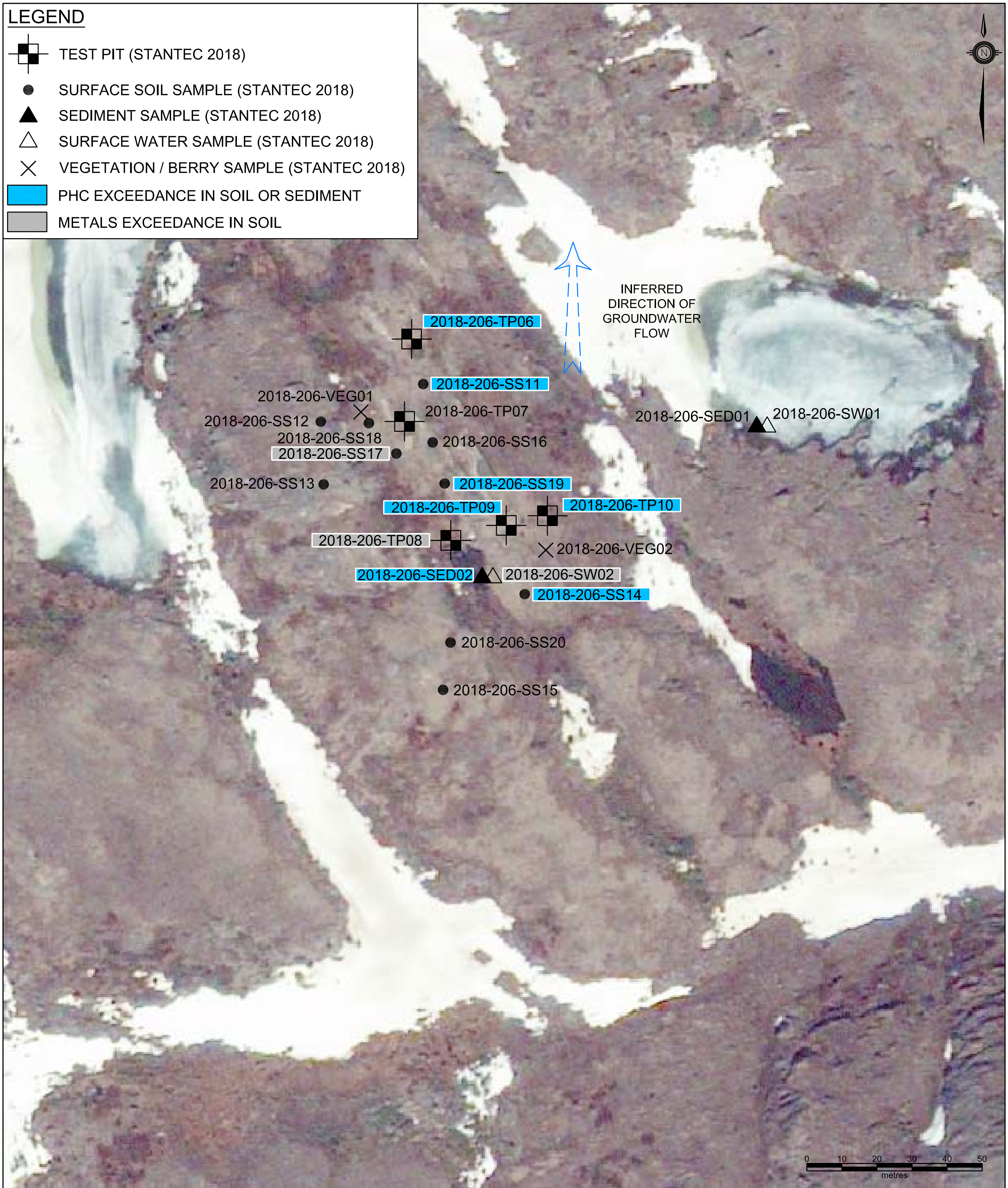
25OCT18 8:00AM



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: NEWFOUNDLAND AND LABRADOR DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT	SCALE: 1:100,000	DATE: OCT. 25, 2018	REV. No. 0
	DRAWN BY: N.M.	EDITED BY: -	CHECKED BY: J.S.
PROJECT TITLE: PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER US MILITARY MID CANADA LINE RADAR SITE 206, HARBOUR LAKE, NL	DRAWING No: **121414998-EE-02**	CAD FILE: 121414998-EE-02.DWG	
DRAWING TITLE: SITE LOCATION PLAN - SITE AREAS	Stantec		

25OCT18 8:00AM



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:
NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT

PROJECT TITLE:
PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER US MILITARY
MID CANADA LINE RADAR SITE 206, HARBOUR LAKE, NL

DRAWING TITLE:
SAMPLE LOCATION AND EXCEEDANCE PLAN - UPPER SITE

SCALE: 1:1500	DATE: OCT. 25, 2018	REV. No. 0
DRAWN BY: N.M.	EDITED BY: -	CHECKED BY: J.S.

DRAWING No: **121414998-EE-03**
CAD FILE: 121414998-EE-03.DWG

Stantec

25OCT18 8:00AM

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:
NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT

PROJECT TITLE:
PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER US MILITARY
MID CANADA LINE RADAR SITE 206, HARBOUR LAKE, NL

DRAWING TITLE:
SAMPLE LOCATION AND EXCEEDANCE PLAN - LOWER SITE

SCALE:	DATE:	REV. No.
1:1500	OCT. 25, 2018	0
DRAWN BY:	EDITED BY:	CHECKED BY:
N.M.	-	J.S.

DRAWING No: **121414998-EE-04**
CAD FILE: 121414998-EE-04.DWG

Stantec

25OCT18 8:00AM

APPENDIX B

Screening Checklists

SITE ASSESSMENT & TIER I/II TABLE CHECKLIST

Site Location:	MCL Radar Site 206, Harbour Lake, NL
Site Professional:	Jim Slade, P.Eng., P.Geo.
Date:	March 29, 2019

METHOD USED	
Tier I RBSL	✓
Tier II PSSL	
Tier II SSTL	

Minimum Site Assessment Requirements

Issue	Yes Or No*	Comment
PID, owner, location identified	Yes	
Current and anticipated future land use identified	Yes	
Review of underground services as conduits	Yes	
Historical review completed	Yes	See previous Phase I ESA completed.
Local groundwater use identified	Yes	
Adjacent land uses and receptors identified	Yes	
Ecological screening completed	Yes	
Soil and groundwater samples from all source areas obtained	No	Groundwater not assessed as part of the current investigation.
Soil and groundwater impacts delineated to Tier I RBSLs for potential receptor (adjacent property receptor may be lower Tier I RBSLs)	No	Soil only
Groundwater flow direction and gradient established	Yes	Assumed based on local topography
Combination of surface and sub-surface soil samples analyzed	No	Maximum sample depth 0.5 mbgs.
Free product observations made in soil and groundwater	No	Groundwater not assessed as part of the current investigation.
Low lab detection level for benzene in soil if potable water area	No	Non-potable area.
Grain size and organic carbon analysis completed on soil	No	Used most conservative grain-size for RBSL.
TPH fractionation done on soil and water if calculating Tier II SSTL	Yes	TPH fractionation done on soil.
Scale site plan showing all relevant site features	Yes	
Receptor building characteristics obtained (storeys, floor condition, ceiling height, *etc.*)	Yes	

Mandatory Conditions

Issue	Yes or No*	Comment
Non-aqueous phase liquids not present in groundwater	Unknown	Groundwater not assessed as part of the current investigation.
Potable water free of objectionable taste and odour	N/A	Non-potable site.
Soils do not contain liquid and/or free petroleum product	Yes	
Residual hydrocarbons do not create objectionable odours or explosive conditions in indoor or outdoor air	Yes	
Surface soil not stained	No	Staining was not observed in surface soil at the Sites.
No dirt basement floors, sumps with dirt bottoms, *etc*.	Yes	
Confirmed that correct TPH type selected in RBSL or PSSL Table	Yes	
Confirmed that correct soil type selected in RBSL or PSSL Table	Yes	

Defaults Site Characteristics and Exposure Scenarios		
Issue	**Yes Or No***	**Comment**
Depth to groundwater approximately 3.0 metres	Unknown	Depth to groundwater unknown.
Impacted soil thickness is less than 3.0 metres	Unknown	Bedrock outcrops suggest less than 3.0 m of soil at the Sites.
Default foundation crack fraction is appropriate	Yes	
Default foundation thickness is appropriate	Yes	
Two floors exist if using a residential scenario	N/A	Not a residential site
Hydrocarbon impacts above RBSL or PSSL Table soil values are not within 0.3 m of foundation walls or floor slab	N/A	No buildings present at the Sites.
Confirmed that RBSL or PSSL Table criteria is correct for adjacent property receptors (i.e., use residential at property line if adjacent property is residential)	Yes	
Where exposure pathways have been eliminated at Tier II, detailed explanation provided in report explain why pathways are not relevant	N/A	
Where PSSLs tables are used based on elimination or control of a pathway that could be reopened by changes in site use, this condition is specified as a limitation in the report	N/A	
Where Tier II SSTLs have been calculated by changing default values, the report includes the parameter changed, the default value, the site-specific value used, and the rationale and/or detailed written justification	N/A	

* If no, indicate in comment section if and where in report the issue is addressed.
Consult the Best Management Practices (Appendix 2) for additional details.

SUMMARY TABLE - RESULTS OF ECOLOGICAL SCREENING PROTOCOL FOR PETROLEUM IMPACTED SITES

Instructions to Practitioners: This table is intended to summarize the results of the Ecological Screening Protocol and must be completed in consultation with guidance provided in the protocol. Users should include this completed table in their Environmental Assessment or Closure Report. Details and explanations are to be provided in the body of the Report.

Ecological Screening Component		Yes or No	Report name and location of details and explanations
Part I - Identification of petroleum hydrocarbons in media			
1.	Do site characterization data indicate the presence of PHC in site surface soil (depth < 1.5 m) above the appropriate screening levels in Tables 1a and 1b?	Yes	Exceedances noted in surface soil at several areas (Refer to Tables E.1 and E.2, Appendix E).
2.	Do site characterization data indicate the presence of PHC in shallow site groundwater (depth < 3.0 m) above appropriate ecological screening levels that were derived for the protection of terrestrial plants and soil invertebrates in contact with site groundwater in Table 2?	N/A	Groundwater not assessed as part of the current investigation.
3.	Do existing site characterization data indicate the presence of PHC in site groundwater above appropriate ecological screening levels derived for the protection of aquatic receptors in Table 3a/3b?		
4.	Do site characterization data indicate the presence of PHC in site surface water above the appropriate screening levels in Table 3?	No	Refer to Table E.11, Appendix E
5.	Does site characterization indicate the presence of PHC in on-site or adjacent sediments above the appropriate screening levels in Table 4?	Yes	Exceedances noted in sediments at the Upper and Lower Sites (Refer to Table E.7, Appendix E).
IF ALL ANSWERS IN PART I ARE"NO" THEN NO FURTHER ACTION IS REQUIRED			
Part II - Identification of habitat and ecological receptors			
1.	Are the following habitat types or conditions present on the site or proximate to site within a minimum of 200 metres? • wetland habitats • aquatic habitats • forested habitats • grassland habitats • provincial/national parks or ecological reserves • known rare, threatened or endangered species • other known critical or sensitive habitat other local or regional receptor or habitat concerns	Yes	The Site is surrounded by tundra, forest, and plains. The Lower Site is surrounded by the waters of Harbour Lake. Site hydrocarbons in surface soil and sediment may come into contact with wildlife in these areas (Refer to Table 1.2 in the body of the text).

Ecological Screening Component		Yes or No	Report name and location of details and explanations
Part II - Identification of habitat and ecological receptors cont'd			
2a.	Are there visible indications of stressed vegetation on the site?	No	
2b.	Is there evidence that the site vegetation community differs from what would be expected?	No	
2c.	Are there indications that the site soil cannot support a soil invertebrate community?	No	
3.	Is there evidence that terrestrial plants in the habitats above are likely to be in root contact with site groundwater above screening levels?	No	Groundwater not assessed as part of the current investigation.
4.	Would wildlife receptors be expected to forage on or near the contaminated areas of the site?	Yes	
Part III - Identification of exposure pathways for ecological receptors			
1a.	Is it reasonable to conclude that site hydrocarbons in surface soil with concentrations exceeding applicable screening levels, will come into contact with terrestrial plants and invertebrates in a suitable habitat?	Yes	
1b.	Is it reasonable to conclude that site hydrocarbons in surface soil with concentrations exceeding applicable screening levels, will come into contact with mammalian, avian or herptile terrestrial receptors within an agricultural land use in a suitable habitat?	No	Agricultural land is not present within 200 m of the Site.
2.	Is it reasonable to conclude that dissolved hydrocarbons in site groundwater with concentrations exceeding applicable screening levels will come into contact with plants or soil invertebrates in a suitable habitat?	Unknown	Groundwater not assessed as part of the current investigation.
3.	Is it reasonable to conclude that dissolved hydrocarbons in site groundwater with concentrations exceeding applicable screening levels will come into contact with aquatic receptors or aquatic receptor habitat?	Unknown	Groundwater not assessed as part of the current investigation.
4.	Is it reasonable to conclude that site petroleum hydrocarbon contamination could impact aquatic receptors or aquatic habitat in surface water bodies via the following: a. surface runoff (*e.g.*, erosion, windblown contaminants) b. groundwater flow c. preferential overland flow pathways (*e.g*. drainage ditch, slope, swale) d. preferential subsurface flow pathways (*e.g*. culvert, trench, sewer line, pipelines, swales) such that aqueous media concentrations would potentially exceed surface water and/or sediment quality screening levels?	Yes	Possible unassessed preferential overland or subsurface flow pathways.
5.	Are there site specific conditions present, which were not considered in any section above that should require further ecological assessment?	No	
IF ALL ANSWERS IN PART III ARE"NO" THEN NO FURTHER ACTION IS REQUIRED			

APPENDIX C

Photos

Photo 1 Upper Site: concrete pad and foundation of former site structure. Looking north.

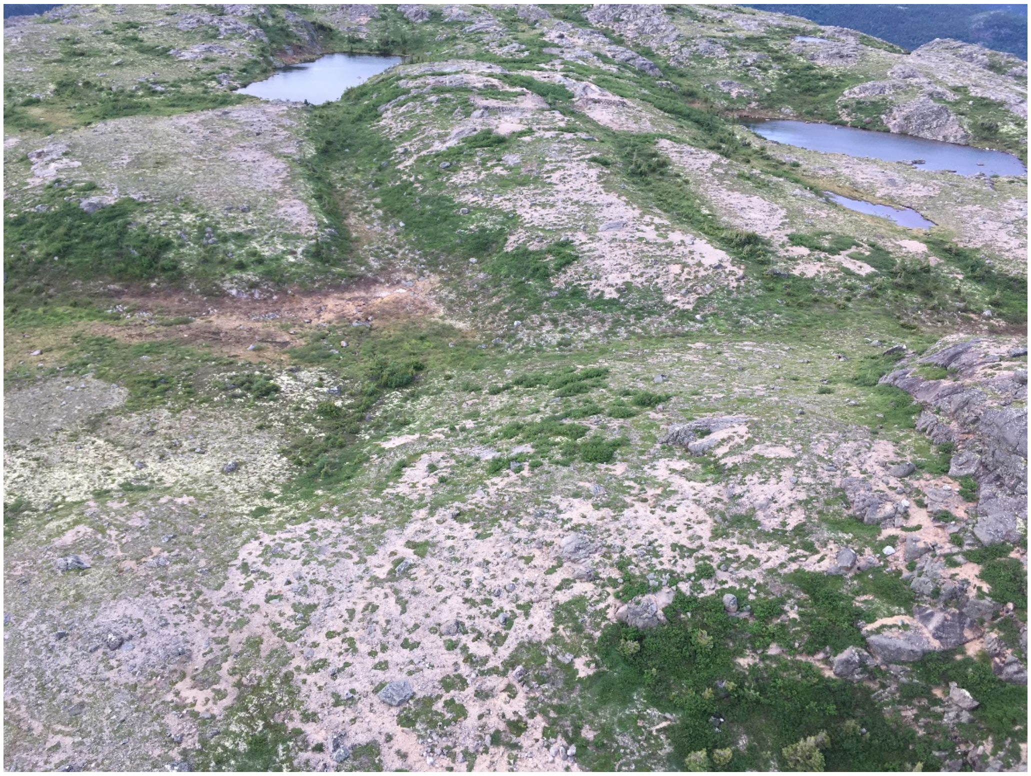


Photo 2 Upper Site: typical ground cover at the Upper Site. Looking northwest.

Photo 3 Upper Site: concrete pad and typical ground cover. Looking west.

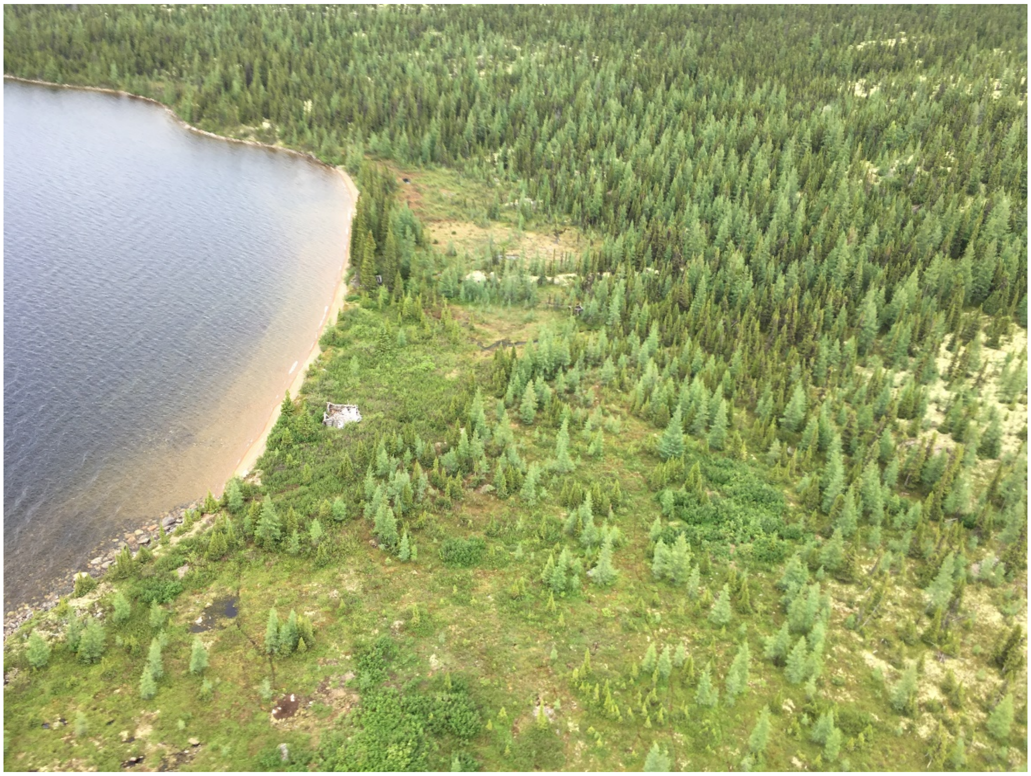


Photo 4 Lower Site: ruined wooden structure along shoreline. Looking north.

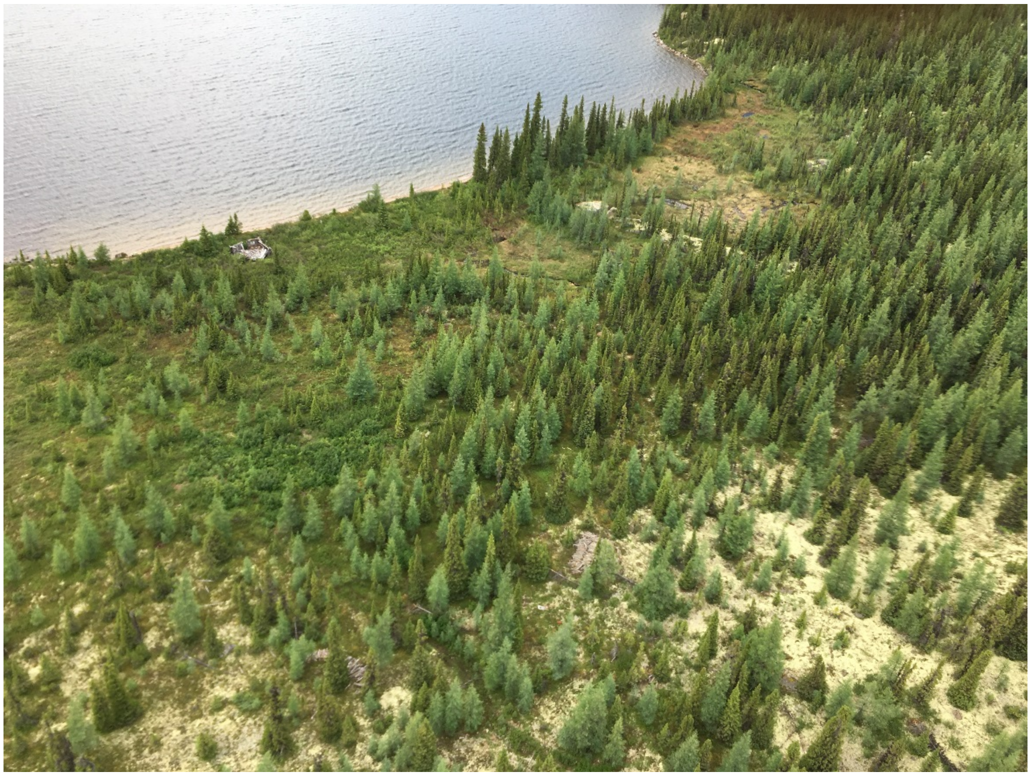


Photo 5 **Lower Site: ruined wooden structure along shoreline. Looking northwest toward Harbour Lake.**

Photo 6 **Lower Site: small, cleared area buffered by forest sloping up to the east. Looking south.**

APPENDIX D

Coordinates of Sample Locations

Table D.1 Coordinates of Sample Locations
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Year	Sample ID	Northing	Easting
2018	2018-206-SED01	6130024.17	574832.98
2018	2018-206-SED02	6129981.03	574754.70
2018	2018-206-SED03	6147996.30	578474.64
2018	2018-206-SS01	6147989.11	578512.76
2018	2018-206-SS02	6147974.60	578516.82
2018	2018-206-SS03	6147964.14	578510.55
2018	2018-206-SS04	6147954.64	578495.80
2018	2018-206-SS05	6147946.83	578463.94
2018	2018-206-SS06	6147977.48	578534.41
2018	2018-206-SS07	6147958.88	578484.22
2018	2018-206-SS08	6147972.11	578489.23
2018	2018-206-SS09	6148002.98	578516.25
2018	2018-206-SS10	6147992.76	578561.38
2018	2018-206-SS11	6130036.02	574736.34
2018	2018-206-SS12	6130025.29	574707.13
2018	2018-206-SS13	6130007.38	574707.94
2018	2018-206-SS14	6129976.07	574765.29
2018	2018-206-SS15	6129948.74	574742.01
2018	2018-206-SS16	6130019.37	574739.04
2018	2018-206-SS17	6130016.19	574728.68
2018	2018-206-SS18	6130024.85	574720.85
2018	2018-206-SS19	6130007.63	574742.47
2018	2018-206-SS20	6129962.24	574744.13
2018	2018-206-SW01	6130024.17	574832.98
2018	2018-206-SW02	6129981.03	574754.70
2018	2018-206-SW03	6147996.30	578474.64
2018	2018-206-TP01	6147971.62	578480.89
2018	2018-206-TP02	6147991.70	578538.40
2018	2018-206-TP03	6148031.37	578528.33
2018	2018-206-TP04	6147952.96	578476.18
2018	2018-206-TP05	6147966.72	578492.37
2018	2018-206-TP06	6130048.89	574733.02
2018	2018-206-TP07	6130025.37	574731.01
2018	2018-206-TP08	6129991.42	574744.22
2018	2018-206-TP09	6129995.69	574760.02
2018	2018-206-TP10	6129998.44	574771.77
2018	2018-206-VEG01	6130028.04	574718.57
2018	2018-206-VEG02	6129988.64	574771.30
2018	2018-206-VEG03	6147998.76	578504.69
2018	2018-206-VEG04	6147979.426	578556.2483

*Coordinates are in UTM-20

APPENDIX E

Laboratory Analytical Summary Tables

Table E.1 Results of Laboratory Analysis of Petroleum Hydrocarbons in Soil
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Sample ID	Sample Depth (m)	BTEX Parameters (mg/kg)				Total Petroleum Hydrocarbons (mg/kg)					Resemblance	Triple silica gel cleanup?[6]
		Benzene	Toluene	Ethyl-benzene	Xylenes	F1 (C_6-C_{10})	F2 (C_{10}-C_{16})	F3 (C_{16}-C_{32})	Returned to baseline?[4]	Modified TPH[5]		
RDL		0.025	0.025	0.025	0.050	2.5	10	15	-	15	-	-
Tier I ESLs - Plants and Soil Inv. [1]		180	250	300	350	320	260	1,700	-	-	-	-
Tier I ESLs - Wildlife and Livestock [2]		18	980	640	2,600	11,000	9,800	16,000	-	-	-	-
Tier I RBSLs [3]		2.5	10,000	10,000	110	-	-	-	-	870/4,000/ 10,000	-	-
Upper Site												
2018-206-SS12	0.0 - 0.15	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y
2018-206-SS13	0.0 - 0.15	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y
2018-206-SS14	0.0 - 0.25	nd	nd	nd	nd	nd	4,500	900	Yes	5,400	WFO	Y
2018-206-SS14 Lab-Dup	-	nd	nd	nd	nd	nd	-	-	-	-	-	Y
2018-206-SS15	0.0 - 0.1	nd	nd	nd	nd	nd	nd	38	No	38	LO	Y
2018-206-SS22 (Fld-Dup of 2018-206-SS15)	0.0 - 01	nd	nd	nd	nd	nd	12	38	No	50	FO/LO	Y
2018-206-SS16	0.0 - 0.1	nd	nd	nd	nd	nd	nd	28	No	28	LO	Y
2018-206-SS18	0.0 - 0.1	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y
2018-206-SS21 (Fld-Dup of 2018-206-SS18)	0.0 - 0.1	nd	nd	nd	nd	nd	nd	46	Yes	46	UC-LO/PLO	Y
2018-206-SS19	0.0 - 0.1	nd	nd	nd	nd	nd	130	2,400	No	2,500	FO/LO	Y
2018-206-SS20	0.0 - 0.15	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y
2018-206-SS20 Lab-Dup	-	-	-	-	-	-	nd	nd	-	-	-	Y
2018-206-TP06-BS01	0.0 - 0.2	nd	nd	nd	nd	nd	440	nd	Yes	1,800	FO/LO	Y
2018-206-TP07-BS01	0.0 - 0.2	nd	nd	nd	nd	nd	250	170	Yes	420	WFO	Y
2018-206-TP08-BS01	0.0 - 0.25	nd	nd	nd	nd	nd	nd	29	No	29	UC-LO/LO	Y
2018-206-TP09-BS01	0.0 - 0.25	nd	nd	nd	nd	9.3	2,700	nd	Yes	3,000	WFO	Y
2018-206-TP09-BS01 Lab-Dup	-	-	-	-	-	-	2,400	-	-	-	-	Y
2018-206-TP10-BS01	0.0 - 0.15	nd	nd	nd	nd	nd	1,600	370	Yes	2,000	WFO/LO	Y

Notes:

1 = Atlantic Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Soil Ecological Screening Levels (ESLs) for the Protection of Plants and Soil Invertebrates; Direct Soil Contact (Table 1a), for a commercial site with coarse grained soil (July 2012, revised January 2015). Screening levels apply to the top 1.5 m of the soil profile

2 = Atlantic Partnership in RBCA Implementation Tier I Soil ESLs for the Protection of Wildlife (mammals and birds) and Livestock; Soil and food ingestion (Table 1b), for an agricultural site with coarse grained soil (July 2012, revised January 2015). Note: guidelines only exist for agricultural land use. Screening levels apply to the top 1.5 m of the soil profile

3 = Atlantic Partnership in RBCA Implementation Tier I Risk-Based Screening Levels (RBSLs) (Table 4a) for a commercial site with non-potable groundwater, coarse grained soil, and gasoline/fuel oil / lube oil impacts (July 2012, revised January 2015)

4 = Atlantic Partnership in RBCA Implementation analytical method does not analyze for $>C_{32}$. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C_{32}. Samples are considered to have returned to baseline if the area from C_{32}-C_{36} is less than 10% of the area from C_{10}-

5 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

6 = Triple silica gel cleanup requested to reduce organic interference

"-" = not analyzed, not applicable or no applicable guideline

RDL = Reportable Detection Limit

nd = Not detected above RDL

Underlined = Value exceeds Tier I ESLs - Plants and Soil Invertebrates (surface soil only)

Shaded = Value exceeds Tier I RBSLs

Lab-Dup = laboratory duplicate sample

Fld-Dup = field duplicate sample

Resemblance:

PLO = Possible lube oil fraction
LO = Lube oil fraction / One product in lube oil range
UC-LO = Unidentified compound(s) in lube oil range

WFO = Weathered fuel oil fraction
FO = Fuel oil fraction / One product in the fuel oil range
FO/LO = One product in fuel/lube oil range

Table E.1 Results of Laboratory Analysis of Petroleum Hydrocarbons in Soil
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Sample ID	Sample Depth (m)	BTEX Parameters (mg/kg)				Total Petroleum Hydrocarbons (mg/kg)					Resemblance	Triple silica gel cleanup?[6]
		Benzene	Toluene	Ethyl-benzene	Xylenes	F1 (C_6-C_{10})	F2 (C_{10}-C_{16})	F3 (C_{16}-C_{32})	Returned to baseline?[4]	Modified TPH[5]		
RDL		0.025	0.025	0.025	0.050	2.5	10	15	-	15	-	-
Tier I ESLs - Plants and Soil Inv. [1]		180	250	300	350	320	260	1,700	-	-	-	-
Tier I ESLs - Wildlife and Livestock [2]		18	980	640	2,600	11,000	9,800	16,000	-	-	-	-
Tier I RBSLs [3]		2.5	10,000	10,000	110	-	-	-	-	870/4,000/ 10,000	-	-
Lower Site												
2018-206-SS01	0.0 - 0.3	nd	nd	nd	nd	nd	nd	65	Yes	65	UC-LO	Y
2018-206-SS02	0.0 - 0.3	nd	nd	nd	nd	nd	nd	99	Yes	99	UC-LO	Y
2018-206-SS03	0.0 - 0.3	nd	nd	nd	nd	nd	nd	25	Yes	25	UC-LO	Y
2018-206-SS04	0.0 - 0.3	nd	nd	nd	nd	nd	nd	88	Yes	88	UC-LO	Y
2018-206-SS05	0.0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y
2018-206-SS05 Lab-Dup	-	-	-	-	-	-	nd	-	-	-	-	Y
2018-206-SS06	0.0 - 0.3	nd (0.050)	nd (0.050)	nd (0.050)	nd (0.10)	nd (5.0)	nd	220	Yes	220	UC-LO	Y
2018-206-SS07	0.0 - 0.3	nd	nd	nd	nd	nd	nd	30	Yes	30	UC-LO	Y
2018-206-SS08	0.0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y
2018-206-SS09	0.0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y
2018-206-SS10	0.0 - 0.3	nd	nd	nd	nd	nd	nd	140	Yes	140	UC-LO	Y
2018-206-SS10 Lab-Dup	-	nd	nd	nd	nd	nd	-	-	-	-	-	Y
2018-206-TP01-BS01	0.0 - 0.25	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y
2018-206-TP02-BS01	0.0 - 0.25	nd (0.050)	nd (0.050)	nd (0.050)	nd (0.10)	nd (5.0)	nd	190	Yes	190	UC-LO/PLO	Y
2018-206-TP03-BS01	0.0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y
2018-206-TP04-BS02	0.25 - 0.5	nd	nd	nd	nd	nd	nd	100	No	99	UC-LO/PLO	Y
2018-206-TP05-BS01	0.0 - 0.25	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y

Notes:

1 = Atlantic Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Soil Ecological Screening Levels (ESLs) for the Protection of Plants and Soil Invertebrates; Direct Soil Contact (Table 1a), for a commercial site with coarse grained soil (July 2012, revised January 2015). Screening levels apply to the top 1.5 m of the soil profile

2 = Atlantic Partnership in RBCA Implementation Tier I Soil ESLs for the Protection of Wildlife (mammals and birds) and Livestock; Soil and food ingestion (Table 1b), for an agricultural site with coarse grained soil (July 2012, revised January 2015). Note: guidelines only exist for agricultural land use. Screening levels apply to the top 1.5 m of the soil profile

3 = Atlantic Partnership in RBCA Implementation Tier I Risk-Based Screening Levels (RBSLs) (Table 4a) for a commercial site with non-potable groundwater, coarse grained soil, and gasoline/fuel oil / lube oil impacts (July 2012, revised January 2015)

4 = Atlantic Partnership in RBCA Implementation analytical method does not analyze for >C_{32}. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C_{32}. Samples are considered to have returned to baseline if the area from C_{32}-C_{36} is less than 10% of the area from C_{10}-

5 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

6 = Triple silica gel cleanup requested to reduce organic interference

"-" = not analyzed, not applicable or no applicable guideline

RDL = Reportable Detection Limit

nd = Not detected above RDL

Resemblance:

PLO = Possible lube oil fraction

UC-LO = Unidentified compound(s) in lube oil range

Lab-Dup = laboratory duplicate sample

Table E.2 Results of Laboratory Analysis of Petroleum Hydrocarbon Fractionation in Soil
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Tier I ESLs - Plants and Soil Inv. [1]	Tier I ESLs - Wildlife and Livestock [2]	Tier I RBSLs [3]	Upper Site	
						2018-206-SS11	2018-206-SS24 (Fld-Dup of 2018-206-SS11)
					Sample Depth:	0.0 - 0.3	0.0 - 0.3
Benzene	0.025	mg/kg	180	18	2.5	nd	nd
Toluene	0.025	mg/kg	250	980	10,000	nd	nd
Ethylbenzene	0.025	mg/kg	300	640	10,000	nd	nd
Xylenes	0.050	mg/kg	350	2,600	110	nd	nd
Modified TPH - Tier I[4]	15	mg/kg	-	-	870/4,000/ 10,000	4,300	3,100
> C_8-C_{10} Aromatic	0.50	mg/kg	-	-	-	nd	nd
> C_{10}-C_{12} Aromatic	4.0	mg/kg	-	-	-	36	22
> C_{12}-C_{16} Aromatic	15	mg/kg	-	-	-	380	290
> C_{16}-C_{21} Aromatic	15	mg/kg	-	-	-	310	250
> C_{21}-C_{32} Aromatic	15	mg/kg	-	-	-	160	140
> C_6-C_8 Aliphatic	1.0	mg/kg	-	-	-	nd	nd
> C_8-C_{10} Aliphatic	1.0	mg/kg	-	-	-	4.5	4.7
> C_{10}-C_{12} Aliphatic	8.0	mg/kg	-	-	-	250	150
> C_{12}-C_{16} Aliphatic	15	mg/kg	-	-	-	1800	1300
> C_{16}-C_{21} Aliphatic	15	mg/kg	-	-	-	830	610
> C_{21}-C_{32} Aliphatic	15	mg/kg	-	-	-	450	360
F1 (C_6-C_{10})	-	mg/kg	320	11,000	-	4.5	4.7
F2 (C_{10}-C_{16})	-	mg/kg	260	9,800	-	2,500	1,800
F3 (C_{16}-C_{32})	-	mg/kg	1,700	16,000	-	1,800	1,400
					Returned to Baseline?[5]	Yes	Yes
					Resemblance	WFO/LO	WFO/LO
					Triple silica gel cleanup?[6]	Y	Y

Notes:

1 = Atlantic Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Soil Ecological Screening Levels (ESLs) for the Protection of Plants and Soil Invertebrates; Direct Soil Contact (Table 1a), for a commercial site with coarse grained soil (July 2012, revised January 2015). Screening levels apply to the top 1.5 m of the soil profile

2 = Atlantic Partnership in RBCA Implementation Tier I Soil ESLs for the Protection of Wildlife (mammals and birds) and Livestock; Soil and food ingestion (Table 1b), for an agricultural site with coarse grained soil (July 2012, revised January 2015). Note: guidelines only exist for agricultural land use. Screening levels apply to the top 1.5 m of the soil profile

3 = Atlantic Partnership in RBCA Implementation Tier I Risk-Based Screening Levels (RBSLs) (Table 4a) for a commercial site with non-potable groundwater, coarse grained soil, and gasoline/fuel oil / lube oil impacts (July 2012, revised January 2015).

4 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

5 = Atlantic Partnership in RBCA Implementation analytical method does not analyze for >C_{32}. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C_{32}. Samples are considered to have returned to baseline if the area from C_{32}-C_{36} is less than 10% of the area from C_{10}-C_{32}

6 = Triple silica gel cleanup requested to reduce organic interference

RDL = Reportable Detection Limit

nd (#) = Not detected above elevated RDL shown

nd = Not detected above standard RDL

"-" = not analyzed, not applicable or no applicable guideline

Underlined = Value exceeds Tier I ESLs - Plants and Soil Invertebrates (surface soil only)

Shaded = Value exceeds Tier I RBSLs

Resemblance:

WFO = Weathered fuel oil fraction

LO = Lube oil fraction

Table E.3 Results of Laboratory Analysis of PAHs in Soil
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	B(a)P PEF	HH Guidelines	CCME $CSQG_{EH}$	Upper Site							
						2018-206-SS11	2018-206-SS24 (Fld-Dup of 2018-206-SS11)	2018-206-SS12	2018-206-SS15	2018-206-SS22 (Fld-Dup of 2018-206-SS15)	2018-206-SS17	2018-206-TP06-BS01	2018-206-TP09-BS01
					Sample Depth (m):	0.0 - 0.3	0.0 - 0.3	0.0 - 0.15	0.0 - 0.1	0.0 - 0.1	0.0 - 0.3	0.0 - 0.2	0.0 - 0.25
Non-Carcinogenic PAHs													
1-Methylnaphthalene	0.010	mg/kg	-	160^{3}	-	nd (0.030)	nd (0.020)	nd	nd	nd	nd	nd (0.020)	nd (0.030)
2-Methylnaphthalene	0.010	mg/kg	-	160 ^{3}	-	nd (0.15)	nd (0.10)	nd	nd	nd	nd	nd (0.040)	nd (0.22)
Acenaphthene	0.010	mg/kg	-	43,000 ^{2}	0.28 ^{1}	nd (0.40)	nd (0.37)	nd	nd	nd	nd	nd (0.21)	nd (0.31)
Acenaphthylene	0.010	mg/kg	-	6.6 ^{3}	320 ^{1}	nd (0.080)	nd (0.070)	nd	nd	nd	nd	nd (0.030)	nd (0.10)
Anthracene	0.010	mg/kg	-	37,000 ^{2}	32 ^{1}	nd (0.030)	nd	nd	nd	nd	nd	nd (0.050)	nd
Fluoranthene	0.010	mg/kg	-	5,300 ^{2}	180 ^{1}	nd	nd (0.020)	nd	nd	nd	nd (0.030)	nd (0.050)	nd
Fluorene	0.010	mg/kg	-	4,100 ^{2}	0.25 ^{1}	nd (0.12)	nd (0.11)	nd	nd	nd	nd	nd (0.13)	nd (0.080)
Naphthalene	0.010	mg/kg	-	25 ^{2}	0.013 ^{1}	nd (0.070)	nd (0.060)	nd	nd	nd	nd	nd	nd (0.10)
Perylene	0.010	mg/kg	-	-	-	nd	nd	nd	nd	nd	nd	nd	nd
Phenanthrene	0.010	mg/kg	-	-	0.046 ^{1}	nd (0.090)	nd (0.070)	nd	nd	nd	nd (0.030)	nd (0.070)	nd
Pyrene	0.010	mg/kg	-	3,200 ^{2}	100 ^{1}	nd (0.020)	nd (0.020)	nd	nd	nd	nd (0.020)	0.36	nd
Carcinogenic PAHs													
Benzo(a)anthracene	0.010	mg/kg	0.1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(a)pyrene	0.010	mg/kg	1	-	72 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(b)fluoranthene	0.010	mg/kg	0.1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(b/j)fluoranthene	0.020	mg/kg	0.1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(g,h,i)perylene	0.010	mg/kg	0.01	-	13 ^{3}	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(j)fluoranthene	0.010	mg/kg	0.1	-	-	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(k)fluoranthene	0.010	mg/kg	0.1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Chrysene	0.010	mg/kg	0.01	-	14 ^{3}	nd	nd	nd	nd	nd	nd	nd	nd
Dibenzo(a,h,)anthracene	0.010	mg/kg	1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Indeno(1,2,3-c,d) pyrene	0.010	mg/kg	0.1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
B(a)P TPE			-	5.3^{1,4}	-	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (SQGs) for the Protection of Environmental and Human Health for Commercial land use (1999 and Updates)

2 = Alberta Tier I Soil and Groundwater Remediation Guidelines: Table A-4 Surface Soil Remediation Guidelines for Commercial Land Use - All Exposure Pathways (2016) assuming non-potable groundwater

3 = Soil and Groundwater Standards for Use at Contaminated Sites in Ontario: Table 3 - Full Depth, Non-Potable Water Scenario, Commercial/Industrial Land Use (2011)

4 = Carcinogenic PAHs assessed as B[a]P TPE for Human Health
Based on CCME guidelines for ingestion, inhalation and dermal exposures. Where a parameter is not detected, 1/2 of the RDL is used in the TPE calculation. Values were not multiplied by a factor of 3, as there was no evidence of creosote treated wood on the property

B(a)P TPE = Benzo(a)pyrene Total Potency Equivalent concentration.
RDL = Reportable Detection Limit; nd = Not detected above the standard RDL
nd (#) = Not detected above elevated RDL shown
nd = Not detected above standard RDL
"-" = Not applicable or no applicable guideline
Lab-Dup = laboratory duplicate sample
Fld-Dup = field duplicate sample

Table E.3 Results of Laboratory Analysis of PAHs in Soil
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	B(a)P PEF	HH Guidelines	CCME CSQG$_{EH}$	Lower Site							
						2018-206-SS03	2018-206-SS04	2018-206-SS06	2018-206-TP01-BS02	2018-206-TP02-BS02	2018-206-TP04-BS01	2018-206-TP05-BS02	2018-206-TP05-BS02 Lab-Dup
Sample Depth (m):						0.0 - 0.3	0.0 - 0.3	0.0 - 0.3	0.25 - 0.5	0.25 - 0.5	0.0 - 0.25	0.0 - 0.25	-
Non-Carcinogenic PAHs													
1-Methylnaphthalene	0.010	mg/kg	-	160^{3}	-	nd	nd	nd	nd	nd	nd	nd	nd
2-Methylnaphthalene	0.010	mg/kg	-	160 ^{3}	-	nd	nd	0.067	nd	nd	nd	nd	nd
Acenaphthene	0.010	mg/kg	-	43,000 ^{2}	0.28 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Acenaphthylene	0.010	mg/kg	-	6.6 ^{3}	320 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Anthracene	0.010	mg/kg	-	37,000 ^{2}	32 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Fluoranthene	0.010	mg/kg	-	5,300 ^{2}	180 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Fluorene	0.010	mg/kg	-	4,100 ^{2}	0.25 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Naphthalene	0.010	mg/kg	-	25 ^{2}	0.013 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Perylene	0.010	mg/kg	-	-	-	nd	nd	0.066	nd	1.9	nd	nd	nd
Phenanthrene	0.010	mg/kg	-	-	0.046 ^{1}	nd	nd (0.030)	nd	nd	nd	nd	nd	nd
Pyrene	0.010	mg/kg	-	3,200 ^{2}	100 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Carcinogenic PAHs													
Benzo(a)anthracene	0.010	mg/kg	0.1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(a)pyrene	0.010	mg/kg	1	-	72 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(b)fluoranthene	0.010	mg/kg	0.1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(b/j)fluoranthene	0.020	mg/kg	0.1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	-
Benzo(g,h,i)perylene	0.010	mg/kg	0.01	-	13 ^{3}	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(j)fluoranthene	0.010	mg/kg	0.1	-	-	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(k)fluoranthene	0.010	mg/kg	0.1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Chrysene	0.010	mg/kg	0.01	-	14 ^{3}	nd	nd	nd	nd	nd	nd	nd	nd
Dibenzo(a,h,)anthracene	0.010	mg/kg	1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
Indeno(1,2,3-c,d) pyrene	0.010	mg/kg	0.1	-	10 ^{1}	nd	nd	nd	nd	nd	nd	nd	nd
B(a)P TPE			-	5.3^{1,4}	-	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.013

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (SQGs) for the Protection of Environmental and Human Health for Commercial land use (1999 and Updates)

2 = Alberta Tier I Soil and Groundwater Remediation Guidelines: Table A-4 Surface Soil Remediation Guidelines for Commercial Land Use - All Exposure Pathways (2016) assuming non-potable groundwater

3 = Soil and Groundwater Standards for Use at Contaminated Sites in Ontario: Table 3 - Full Depth, Non-Potable Water Scenario, Commercial/Industrial Land Use (2011)

4 = Carcinogenic PAHs assessed as B[a]P TPE for Human Health
Based on CCME guidelines for ingestion, inhalation and dermal exposures. Where a parameter is not detected, 1/2 of the RDL is used in the TPE calculation. Values were not multiplied by a factor of 3, as there was no evidence of creosote treated wood on the property

B(a)P TPE = Benzo(a)pyrene Total Potency Equivalent concentration.
RDL = Reportable Detection Limit; nd = Not detected above the standard RDL
nd (#) = Not detected above elevated RDL shown
nd = Not detected above standard RDL
"-" = Not applicable or no applicable guideline
Lab-Dup = laboratory duplicate sample
Fld-Dup = field duplicate sample

Table E.4 Results of Laboratory Analysis of Available Metals in Soil
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline	Upper Site											
				2018-206-SS13	2018-206-SS14	2018-206-SS17	2018-206-SS17 Lab-Dup	2018-206-SS17 Lab-Dup 2	2018-206-SS18	2018-206-SS21 (Fld-Dup of 2018-206-SS18)	2018-206-SS19	2018-206-SS20	2018-206-TP06-BS01	2018-206-TP08-BS01	2018-206-TP10-BS01
			Sample Depth (m):	0.0 - 0.15	0.0 - 0.25	0.0 - 0.3	-	-	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.15	0.0 - 0.2	0.0 - 0.25	0.0 - 0.15
Aluminum	10	mg/kg	-	20,000	24,000	19,000	18,000	-	20,000	6,200	16,000	16,000	16,000	19,000	16,000
Antimony	2.0	mg/kg	40[1]	nd	nd	nd	nd	-	nd	nd	nd	nd	2.9	nd	nd
Arsenic	2.0	mg/kg	26[1]	nd	nd	nd	nd	-	nd	nd	nd	nd	nd	nd	nd
Barium	5.0	mg/kg	2,000[1]	93	91	61	60	-	61	42	130	50	58	66	49
Beryllium	2.0	mg/kg	8[2]	nd	nd	2.7	nd	-	nd	nd	nd	nd	nd	nd	nd
Bismuth	2.0	mg/kg	-	nd	nd	nd	nd	-	nd	nd	nd	nd	nd	nd	nd
Boron	50	mg/kg	120[3]	nd	nd	nd	nd	-	nd	nd	nd	nd	nd	nd	nd
Cadmium	0.30	mg/kg	22[1]	nd	nd	2.2	2.0	-	nd	nd	nd	nd	0.43	nd	0.60
Chromium	2.0	mg/kg	87[1]	12	12	25	27	-	12	14	12	12	13	14	12
Cobalt	1.0	mg/kg	300[1]	7.1	6.1	6.1	5.7	-	4.9	2.7	5.0	3.5	5.0	4.2	5.6
Copper	2.0	mg/kg	91[1]	8.3	6.6	**570**	**310**	**280**	9.7	10	18	7.9	47	7.0	10
Iron	50	mg/kg	-	15,000	13,000	23,000	15,000	14,000	15,000	10,000	13,000	13,000	14,000	12,000	15,000
Lead	0.50	mg/kg	600[1]	1.9	2.7	18	17	-	5.2	6.5	13	7.8	19	8.1	9.8
Lithium	2.0	mg/kg	-	4.5	4.9	4.5	4.9	-	5.0	4.0	4.6	4.9	5.5	4.3	4.8
Manganese	2.0	mg/kg	-	170	120	180	150	-	130	45	150	110	130	85	150
Mercury	0.10	mg/kg	50[1]	nd	nd	nd	nd	-	nd	nd	nd	nd	nd	nd	nd
Molybdenum	2.0	mg/kg	40[1]	nd	nd	nd	nd	-	nd	2.4	nd	nd	nd	nd	nd
Nickel	2.0	mg/kg	89[1]	11	11	12	13	-	9.2	9.1	9.0	7.4	10	9.0	8.3
Rubidium	2.0	mg/kg	-	2.1	2.3	2.2	2.1	-	nd	5.8	2.1	nd	nd	2.1	nd
Selenium	1.0	mg/kg	2.9[1]	nd	nd	nd	1.1	-	nd	nd	nd	nd	nd	nd	nd
Silver	0.50	mg/kg	40[1]	nd	nd	1.1	1.3	-	nd	nd	nd	nd	nd	nd	nd
Strontium	5.0	mg/kg	-	56	32	31	29	-	29	17	27	18	23	23	22
Thallium	0.10	mg/kg	1[1]	nd	nd	nd	nd	-	nd	0.10	nd	nd	nd	nd	nd
Tin	2.0	mg/kg	300[1]	nd	nd	7.2	3.2	2.5	nd	nd	nd	nd	nd	nd	nd
Uranium	0.10	mg/kg	300[1]	0.22	0.19	0.33	0.26	-	0.32	4.7	0.26	0.34	0.23	0.30	0.20
Vanadium	2.0	mg/kg	130[1]	30	24	26	28	-	24	21	22	24	25	22	33
Zinc	5.0	mg/kg	360[1]	26	23	240	190	-	130	20	57	52	110	**530**	94

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (SQGs) for the Protection of Environmental and Human Health for Commercial land use (1999 and updates).

2 = Canadian Council of Ministers of the Environment (CCME) Interim remediation criteria that have not yet been replaced by SQGs (1991). Commercial land use.

3 = Soil and Groundwater Standards for Use at Contaminated Sites in Ontario: Table 3 - Full Depth, Non-Potable Water Scenario, Commercial/Industrial Land Use (2011)

RDL = Reportable Detection Limit

nd = Not detected above RDL

"-" = Not analyzed, not applicable or no applicable guideline

Shaded = Value exceeds applicable guideline

Lab-Dup = laboratory duplicate sample

Fld-Dup = field duplicate sample

Table E.4 Results of Laboratory Analysis of Available Metals in Soil
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline	Lower Site													
				2018-206-SS01	2018-206-SS02	2018-206-SS03	2018-206-SS04	2018-206-SS05	2018-206-SS06	2018-206-SS07	2018-206-SS09	2018-206-SS10	2018-206-TP01-BS01	2018-206-TP02-BS01	2018-206-TP03-BS01	2018-206-TP04-BS01	2018-206-TP05-BS01
			Sample Depth (m):	0.0 - 0.3	0.0 - 0.3	0.0 - 0.3	0.0 - 0.3	0.0 - 0.3	0.0 - 0.3	0.0 - 0.3	0.0 - 0.3	0.0 - 0.3	0.0 - 0.25	0.0 - 0.25	0.0 - 0.3	0.0 - 0.25	0.0 - 0.25
Aluminum	10	mg/kg	-	6,600	7,000	8,300	4,700	4,900	7,700	4,400	13,000	7,000	3,000	4,200	9,200	6,700	1,600
Antimony	2.0	mg/kg	40[1]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Arsenic	2.0	mg/kg	26[1]	nd	nd	nd	nd	nd	nd	nd	nd	2.2	nd	nd	nd	nd	nd
Barium	5.0	mg/kg	2,000[1]	49	58	68	33	16	52	28	72	62	24	10	48	23	13
Beryllium	2.0	mg/kg	8[2]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bismuth	2.0	mg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Boron	50	mg/kg	120[3]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cadmium	0.30	mg/kg	22[1]	nd	nd	nd	nd	nd	0.41	nd	nd	0.73	0.47	0.48	nd	nd	nd
Chromium	2.0	mg/kg	87[1]	14	12	14	11	14	9.4	10	29	8.8	7.9	3.6	24	18	4.0
Cobalt	1.0	mg/kg	300[1]	2.8	2.5	2.0	1.4	1.9	2.1	2.2	8.1	5.9	nd	1.5	3.8	3.3	nd
Copper	2.0	mg/kg	91[1]	12	17	110	8.4	2.2	32	11	26	53	21	48	150	4.7	nd
Iron	50	mg/kg	-	10,000	6,900	9,500	3,700	10,000	5,700	8,000	22,000	17,000	3,100	2,400	14,000	13,000	2,000
Lead	0.50	mg/kg	600[1]	6.9	8.0	6.1	6.6	3.3	7.6	8.1	9.8	7.4	3.7	1.9	12	5.4	2.5
Lithium	2.0	mg/kg	-	3.5	3.0	3.7	nd	2.7	nd	4.1	12	nd	nd	nd	5.9	7.6	nd
Manganese	2.0	mg/kg	-	38	32	43	14	51	15	42	190	55	12	4.9	72	71	15
Mercury	0.10	mg/kg	50[1]	nd	nd	nd	0.12	nd	nd	nd	nd	0.17	nd	nd	0.11	nd	nd
Molybdenum	2.0	mg/kg	40[1]	2.4	nd	nd	nd	nd	3.7	nd	5.9	5.9	nd	9.8	2.8	nd	nd
Nickel	2.0	mg/kg	89[1]	10	11	14	4.6	4.3	13	5.8	21	12	5.7	9.4	17	7.9	nd
Rubidium	2.0	mg/kg	-	5.9	3.9	9.2	2.1	5.0	nd	5.3	11	3.2	3.7	nd	8.4	8.2	3.0
Selenium	1.0	mg/kg	2.9[1]	nd	nd	nd	nd	nd	1.5	nd	nd	2.2	nd	1.5	1.1	nd	nd
Silver	0.50	mg/kg	40[1]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Strontium	5.0	mg/kg	-	19	28	11	12	5.1	27	7.0	20	38	23	25	45	6.5	nd
Thallium	0.10	mg/kg	1[1]	0.11	nd	nd	nd	nd	nd	nd	0.24	0.21	nd	0.16	0.13	nd	nd
Tin	2.0	mg/kg	300[1]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.6	nd	nd
Uranium	0.10	mg/kg	300[1]	5.9	7.4	0.63	0.57	0.26	17	0.74	12	33	3.7	28	23	0.41	0.23
Vanadium	2.0	mg/kg	130[1]	22	13	18	4.8	31	10	14	40	9.5	3.8	5.6	25	29	5.1
Zinc	5.0	mg/kg	360[1]	19	16	28	nd	13	14	18	81	57	19	5.3	380	24	nd

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (SQGs) for the Protection of Environmental and Human Health for Commercial land use (1999 and updates).

2 = Canadian Council of Ministers of the Environment (CCME) Interim remediation criteria that have not yet been replaced by SQGs (1991). Commercial land use.

3 = Soil and Groundwater Standards for Use at Contaminated Sites in Ontario: Table 3 - Full Depth, Non-Potable Water Scenario, Commercial/Industrial Land Use (2011)

RDL = Reportable Detection Limit
nd = Not detected above RDL
"-" = Not analyzed, not applicable or no applicable guideline
Shaded = Value exceeds applicable guideline
Lab-Dup = laboratory duplicate sample
Fld-Dup = field duplicate sample

Table E.5 Results of Laboratory Analysis of PCBs in Soil
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline[1]	Upper Site						Lower Site				
				2018-206-SS11	2018-206-SS24 (Fld-Dup of 2018-206-SS11)	2018-206-TP07-BS01	2018-206-TP07-BS01 Lab-Dup	2018-206-TP08-BS01	2018-206-TP09-BS01	2018-206-SS01	2018-206-SS09	2018-206-TP01-BS01	2018-206-TP04-BS02	2018-206-TP05-BS01
			Sample Depth (m):	0.0 - 0.3	0.0 - 0.3	0.0 - 0.2	-	0.0 - 0.25	0.0 - 0.25	0.0 - 0.3	0.0 - 0.3	0.0 - 0.25	0.25 - 0.5	0.0 - 0.25
Aroclor 1016	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1221	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1232	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1248	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1242	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1254	0.050	µg/g	-	nd	nd	nd	nd	nd	0.14	nd	nd	nd	nd	nd
Aroclor 1260	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Calculated Total PCB	0.050	µg/g	33	nd	nd	nd	-	nd	0.14	nd	nd	nd	nd	nd

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (SQGs) for the Protection of Environmental and Human Health for Commercial land use (1999 and Updates)

RDL = Reportable Detection Limit

nd = Not detected above RDL

"-" = Not applicable or no applicable guideline

Lab-Dup = laboratory duplicate sample

Fld-Dup = field duplicate sample

Table E.6 Results of Laboratory Analysis of Asbestos in Soil
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Sample ID	Sample Depth	Asbestos
	RDL	0.25
	Units	% by weight
Upper Site		
2018-206-SS19	0.0 - 0.1	nd
Lower Site		
2018-206-SS08	0.0 - 0.1	nd

Notes:
RDL = Reportable Detection Limit
nd = Not detected above RDL

Table E.7 Results of Laboratory Analysis of Petroleum Hydrocarbons in Freshwater Sediment
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Sample ID	**BTEX Parameters (mg/kg)**				**Total Petroleum Hydrocarbons (mg/kg)**					**Resemblance**	**Triple silica gel cleanup?**[4]
	Benzene	**Toluene**	**Ethyl-benzene**	**Xylenes**	**F1 (C_6-C_{10})**	**F2 (C_{10}-C_{16})**	**F3 (C_{16}-C_{32})**	**Returned to baseline?**[2]	**Modified TPH**[3]		
RDL	0.025	0.025	0.025	0.05	2.5	10	15	-	15	-	-
Tier I ESLs - Aquatic Life[1]	1.2	1.4	1.2	1.3	-	-	-	-	15/25/43	-	-
Upper Site											
2018-206-SED01	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Y
2018-206-SED02	nd	0.17	nd	0.12	nd	31	130	Yes	160	WFO/LO/UC-LO	Y
Lower Site											
2018-206-SED03	nd	nd	nd	nd	nd	43	640	No	680	FO/LO	Y

Notes:

1 = Atlantic Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Sediment Ecological Screening Levels (ESLs) for the Protection of Freshwater and Marine Aquatic Life - Typical sediment type for gasoline/fuel oil/lube oil (July 2012, January 2015)

2= Atlantic Partners in RBCA (Risk-Based Corrective Action) Implementation (PIRI) analytical method does not analyze for >C_{32}. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C_{32}. Samples are considered to have returned to baseline if the area from C_{32}-C_{36} is less than 10% of the area from C_{10}-C_{32}

3 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

4 = Triple silica gel cleanup requested to reduce organic interference

RDL = Reportable Detection Limit
nd = Not detected above RDL
"-" = not analyzed, not applicable or no applicable guideline.
Shaded = Value exceeds applicable guideline

Resemblance:

WFOF = weathered fuel oil fraction
UC-LO = unidentified compounds in lube oil range
LO = lube oil fraction
FO = fuel oil range

Table E.8 Results of Laboratory Analysis of PAHs in Freshwater Sediment
Phase II Environmental Site Assessment

Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline	Upper Site			Lower Site
				2018-206-SED01	2018-206-SED01 Lab-Dup	2018-206-SED02	2018-206-SED03
1-Methylnaphthalene	0.0050	mg/kg	-	0.012	0.012	nd	nd
2-Methylnaphthalene	0.0050	mg/kg	0.201[1]	0.015	0.015	nd (0.010)	nd
Acenaphthene	0.0050	mg/kg	0.0889[1]	nd	nd	nd	nd
Acenaphthylene	0.0050	mg/kg	0.128[1]	nd	nd	nd	nd
Anthracene	0.0050	mg/kg	0.245[1]	nd	nd	nd	nd
Fluoranthene	0.0050	mg/kg	2.355[1]	nd	nd	nd	nd
Fluorene	0.0050	mg/kg	0.144[1]	nd	nd	nd	nd
Naphthalene	0.0050	mg/kg	0.391[1]	nd	nd	nd	nd
Perylene	0.010	mg/kg	-	nd	-	nd	nd
Phenanthrene	0.0050	mg/kg	0.515[1]	nd	nd	nd	nd
Pyrene	0.0050	mg/kg	0.875[1]	nd	nd	nd	nd
Benzo(a)anthracene	0.0050	mg/kg	0.385[1]	nd	nd	nd	nd
Benzo(a)pyrene	0.0050	mg/kg	0.782[1]	nd	nd	nd	0.0071
Benzo(b)fluoranthene	0.0050	mg/kg	-	nd	nd	nd	nd
Benzo(b/j)fluoranthene	0.0050	mg/kg	-	nd	nd	nd	nd
Benzo(g,h,i)perylene	0.0050	mg/kg	0.17[2]	nd	nd	nd	nd
Benzo(j)fluoranthene	0.0050	mg/kg	-	nd	nd	nd	nd
Benzo(k)fluoranthene	0.0050	mg/kg	0.24[2]	0.0070	0.0080	nd	nd
Chrysene	0.0050	mg/kg	0.862[1]	nd	nd	nd	0.073
Dibenzo(a,h,)anthracene	0.0050	mg/kg	0.135[1]	nd	nd	nd	nd
Indeno(1,2,3-c,d) pyrene	0.0050	mg/kg	0.2[2]	nd	nd	0.0059	nd

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Canadian Sediment Quality Guidelines for the Protection of Aquatic Life - Probable Effects Levels for Freshwater Sediment (PEL) (1999 and updates)

2 = Ontario Provincial Sediment Quality Guidelines (2008) Lowest Effects Level (LEL)
RDL = Reportable Detection Limit
nd = Not detected above standard RDL
nd (#) = Not detected above elevated RDL shown
"-" = not analyzed, not applicable or no applicable guideline
Lab-Dup = laboratory duplicate sample

Table E.9 Results of Laboratory Analysis of Available Metals in Freshwater Sediment

Phase II Environmental Site Assessment

Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline	Upper Site		Lower Site
				2018-206-SED01	2018-206-SED02	2018-206-SED03
Aluminum	10	mg/kg	-	12,000	16,000	14,000
Antimony	2.0	mg/kg	-	nd	nd	nd
Arsenic	2.0	mg/kg	17[1]	nd	nd	nd
Barium	5.0	mg/kg	-	51	55	76
Beryllium	2.0	mg/kg	-	nd	nd	nd
Bismuth	2.0	mg/kg	-	nd	nd	nd
Boron	50	mg/kg	-	nd	nd	nd
Cadmium	0.30	mg/kg	3.5[1]	nd	1.1	nd
Chromium	2.0	mg/kg	90[1]	11	13	21
Cobalt	1.0	mg/kg	-	2.8	5.6	5.9
Copper	2.0	mg/kg	197[1]	3.3	29	40
Iron	50	mg/kg	-	6,600	13,000	12,000
Lead	0.50	mg/kg	91.3[1]	2.0	34	21
Lithium	2.0	mg/kg	-	4.0	4.5	5.1
Manganese	2.0	mg/kg	460[3]	52	140	67
Mercury	0.10	mg/kg	0.486[1]	nd	nd	0.14
Molybdenum	2.0	mg/kg	-	nd	nd	2.9
Nickel	2.0	mg/kg	16[3]	8.5	13	24
Rubidium	2.0	mg/kg	-	nd	2.7	8.3
Selenium	1.0	mg/kg	-	nd	nd	2.5
Silver	0.50	mg/kg	2[2]	nd	nd	nd
Strontium	5.0	mg/kg	-	17	24	26
Thallium	0.10	mg/kg	-	nd	nd	0.14
Tin	2.0	mg/kg	-	nd	2.5	nd
Uranium	0.10	mg/kg	-	0.25	0.34	25
Vanadium	2.0	mg/kg	-	15	19	18
Zinc	5.0	mg/kg	315[1]	15	250	42

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Canadian Sediment Quality Guidelines for the Protection of Aquatic Life - Probable Effects Levels for Freshwater Sediment (PEL) (1999 and updates)

2 = AENV Environmental Quality Guidelines for Alberta Surface Waters (2014) PEL

3 = Ontario Provinical Sediment Quality Guidelines (2008) Lowest Effects Level (LEL)

RDL = Reportable Detection Limit

nd = Not detected above RDL

"-" = not analyzed, not applicable or no applicable guideline

Shaded = Value exceeds applicable guideline

Table E.10 Results of Laboratory Analysis of PCBs in Freshwater Sediment

Phase II Environmental Site Assessment

Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline[1]	Upper Site		Lower Site
				2018-206-SED01	2018-206-SED02	2018-206-SED03
Aroclor 1016	0.050	mg/kg	-	nd	nd	nd
Aroclor 1221	0.050	mg/kg	-	nd	nd	nd
Aroclor 1232	0.050	mg/kg	-	nd	nd	nd
Aroclor 1248	0.050	mg/kg	-	nd	nd	nd
Aroclor 1242	0.050	mg/kg	-	nd	nd	nd
Aroclor 1254	0.050	mg/kg	-	nd	nd	nd
Aroclor 1260	0.050	mg/kg	-	nd	nd	nd
Calculated Total PCB	0.050	mg/kg	0.277	nd	nd	nd

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Canadian Sediment Quality Guidelines for the Protection of Aquatic Life - Probable Effects Levels for Marine Sediment (PEL) (1999 and updates)

RDL = Reportable Detection Limit

nd = Not detected above RDL

"-" = Not analyzed, not applicable or no applicable guideline

Table E.11 Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water

Phase II Environmental Site Assessment

Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Sample ID	BTEX Parameters (mg/L)				Total Petroleum Hydrocarbons (mg/L)					Resemblance
	Benzene	Toluene	Ethyl-benzene	Xylenes	F1 (C_6-C_{10})	F2 (C_{10}-C_{16})	F3 (C_{16}-C_{32})	Returned to baseline?[2]	Modified TPH[3]	
RDL	0.0010	0.0010	0.0010	0.0020	0.010	0.050	0.15	-	0.10	-
Tier I ESLs - Aquatic Life [1]	2.1	0.77	0.32	0.33	-	-	-	-	1.5 / 0.10 / 0.10	-
Upper Site										
2018-206-SW01	nd	nd	nd	nd	nd	nd	nd	NA	nd	-
2018-206-SW01 Lab-Dup	-	-	-	-	-	nd	nd	-	-	-
2018-206-SW02	nd	nd	nd	nd	nd	nd	nd	NA	nd	-
Lower Site										
2018-206-SW03	nd	nd	nd	nd	nd	nd	nd	NA	nd	-

Notes:

1 = Atlantic Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Ecological Screening Levels (ESLs) for the Protection of Freshwater and Marine Aquatic Life (Table 3a), Surface Water guidelines for gasoline/diesel/lube oil (July 2012. revised January 2015)

2 =Atlantic Partnership in RBCA Implementation analytical method does not analyze for $>C_{32}$. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C_{32}. Samples are considered to have returned to baseline if the area from C_{32}-C_{36} is less than 10% of the area from C_{10}-C_{32}

3 = Modified TPH = TPH C_6 - C_{32} (excluding BTEX)

RDL = Reportable Detection Limit

nd = Not detected above RDL

"-" = Not analyzed, not applicable or no applicable guideline

Lab-Dup = laboratory duplicate sample

Table E.12 Results of Laboratory Analysis of General Chemistry in Surface Water
Phase II Environmental Site Assessment

Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline[1]	Upper Site			Lower Site
				2018-206-SW01	2018-206-SW02	2018-206-SW02 Lab-Dup	2018-206-SW03
Calculated Parameters							
Anion Sum	-	me/L	-	0.120	0.230	-	0.130
Bicarb. Alkalinity (calc. as CaCO3)	1.0	mg/L	-	6.1	11	-	6.7
Calculated TDS	1.0	mg/L	-	7.0	19	-	14
Carb. Alkalinity (calc. as CaCO3)	1.0	mg/L	-	nd	nd	-	nd
Cation Sum	-	me/L	-	0.130	0.250	-	0.190
Hardness (CaCO3)	1.0	mg/L	-	5.4	9.7	-	6.9
Ion Balance (% Difference)	-	%	-	4.00	4.17	-	18.8
Langelier Index (@ 20C)	-	N/A	-	-3.41	-2.89	-	-3.65
Langelier Index (@ 4C)	-	N/A	-	-3.66	-3.14	-	-3.90
Nitrate (N)	0.050	mg/L	-	nd	0.12	-	nd
Saturation pH (@ 20C)	-	N/A	-	10.2	9.71	-	10.1
Saturation pH (@ 4C)	-	N/A	-	10.4	9.97	-	10.4
Inorganics							
Total Alkalinity (Total as CaCO3)	5.0	mg/L	20[1, 6]	6.1	11	-	6.7
Dissolved Chloride (Cl)	1.0	mg/L	120[3]	nd	nd	-	nd
Colour	5.0	TCU	narrative[3,4]	nd	13	-	26
Nitrate + Nitrite	0.050	mg/L	400[7]	nd	0.13	-	nd
Nitrite (N)	0.010			nd	0.010	-	nd
Nitrogen (Ammonia Nitrogen)	0.050	mg/L	-	nd	nd	-	nd
Total Organic Carbon (C)	0.50	mg/L	-	2.0	3.5	-	4.4
Orthophosphate (P)	0.010	mg/L	-	nd	nd	-	nd
pH	-	pH	6.5 - 9.0[3]	6.77	6.83	-	6.46
Reactive Silica (SiO2)	0.50	mg/L	-	1.0	6.9	-	6.1
Dissolved Sulphate (SO4)	2.0	mg/L	218/309[1,2]	nd	nd	-	nd
Turbidity	0.10	NTU	narrative[3,5]	1.1	0.64	-	0.71
Conductivity	1.0	uS/cm	-	13	28	-	19

Notes:

1 = Alberta Environmental Quality Guidelines for Alberta Surface Waters (2014)

2 = Varies with water hardness. For hardness < 30 mg/L, gudeline = 128 mg/L; for hardness between 31 and 75 mg/L, guideline = 218 mg/L; for hardness between 76 and 180 mg/L, guideline = 218 mg/L; for hardness between 181 and 250 mg/L, guideline = 429 mg/L; and, for hardness > 250 mg/L, guideline determined based on site water (not known)

3 = CCME Water Quality Guidelines for the Protection of Freshwater Aquatic Life

4 = CCME guideline for colour is narrative: the mean absorbance of filtered water samples at 456 nm shall not be significantly higher than the seasonally adjusted expected value for the system under consideration. The seasonally adjusted expected value of the system under consideration is not known

5 = CCME guideline for turbidity is narrative: maximum increase of 8 NTUs from background levels when background levels are between 8 and 80 NTUs. Background levels of turbidity are not known

6 = Total Alkalinity guideline is a minumum value

7 = British Columbia Ministry of the Environment Contaminated Sites Regulation Schedule 6 : Generic Numerical Water Standards: Aquatic Life

RDL = Reportable Detection Limit

nd = Not detected above RDL

"-" = not analyzed, not applicable or no applicable guideline

Shaded = Value exceeds or not within applicable guideline

Lab-Dup = laboratory duplicate sample

Table E.13 Results of Laboratory Analysis of VOCs in Surface Water
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Volatile Organics	RDL	Units	Guideline	Upper Site		Lower Site
				2018-206-SW01	2018-206-SW02	2018-206-SW03
Chlorobenzenes						
1,2-Dichlorobenzene	0.50	µg/L	0.7[1]	nd	nd	nd
1,3-Dichlorobenzene	1.0	µg/L	150[1]	nd	nd	nd
1,4-Dichlorobenzene	1.0	µg/L	26[1]	nd	nd	nd
Chlorobenzene	1.0	µg/L	1.3[2]	nd	nd	nd
Volatile Organics						
1,1,1-Trichloroethane	1.0	µg/L	-	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.50	µg/L	-	nd	nd	nd
1,1,2-Trichloroethane	1.0	µg/L	-	nd	nd	nd
1,1-Dichloroethane	2.0	µg/L	-	nd	nd	nd
1,1-Dichloroethylene	0.50	µg/L	-	nd	nd	nd
1,2-Dichloroethane	1.0	µg/L	100[1]	nd	nd	nd
1,2-Dichloropropane	0.50	µg/L	-	nd	nd	nd
Benzene	1.0	µg/L	2,100[3]	nd	nd	nd
Bromodichloromethane	1.0	µg/L	-	nd	nd	nd
Bromoform	1.0	µg/L	-	nd	nd	nd
Bromomethane	0.50	µg/L	-	nd	nd	nd
Carbon Tetrachloride	0.50	µg/L	13.3[1]	nd	nd	nd
Chloroethane	8.0	µg/L	-	nd	nd	nd
Chloroform	1.0	µg/L	1.8[1]	nd	nd	nd
Chloromethane	8.0	µg/L	-	nd	nd	nd
cis-1,2-Dichloroethylene	0.50	µg/L	-	nd	nd	nd
cis-1,3-Dichloropropene	0.50	µg/L	-	nd	nd	nd
Dibromochloromethane	1.0	µg/L	-	nd	nd	nd
Ethylbenzene	1.0	µg/L	320[3]	nd	nd	nd
Ethylene Dibromide	0.20	µg/L		nd	nd	nd
Methyl t-butyl ether (MTBE)	2.0			nd	nd	nd
Methylene Chloride(Dichloromethane)	3.0	µg/L	98.1[1]	nd	nd	nd
o-Xylene	1.0	µg/L	330[3]	nd	nd	nd
p+m-Xylene	2.0	µg/L	330[3]	nd	nd	nd
Styrene	1.0	µg/L	72[1]	nd	nd	nd
Tetrachloroethylene	1.0	µg/L	110[1]	nd	nd	nd
Toluene	1.0	µg/L	770[3]	nd	nd	nd
Total Trihalomethanes	1.0			nd	nd	nd
Total Xylenes	1.0			nd	nd	nd
trans-1,2-Dichloroethylene	0.50	µg/L	-	nd	nd	nd
trans-1,3-Dichloropropene	0.50	µg/L	-	nd	nd	nd
Trichloroethylene	1.0	µg/L	21[1]	nd	nd	nd
Trichlorofluoromethane (FREON 11)	8.0	µg/L	-	nd	nd	nd
Vinyl Chloride	0.50	µg/L	-	nd	nd	nd

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the protection of freshwater aquatic life (1999 and updates)

2 = Alberta Environmental Quality Guidelines for Alberta Surface Waters (2014)

3 = Atlantic RBCA Tier I Surface Water Ecological Screening Levels (ESLs) for the Protection of Freshwater and Marine Aquatic Life (Table 3a) (July 2012, revised January 2015)

RDL = Reportable Detection Limit
nd = not detected above RDL
"-" = Not analyzed, not applicable or no applicable guideline

Table E.14 Results of Laboratory Analysis of PAHs in Surface Water
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline[1]	Upper Site		Lower Site
				2018-206-SW01	2018-206-SW02	2018-206-SW03
1-Methylnaphthalene	0.050	µg/L	-	nd	nd	nd
2-Methylnaphthalene	0.050	µg/L	-	nd	nd	nd
Acenaphthene	0.010	µg/L	5.8 [1]	nd	nd	nd
Acenaphthylene	0.010	µg/L	-	nd	nd	nd
Anthracene	0.010	µg/L	0.012 [1]	nd	nd	nd
Benzo(a)anthracene	0.010	µg/L	0.018 [1]	nd	nd	nd
Benzo(a)pyrene	0.010	µg/L	0.015 [1]	nd	nd	nd
Benzo(b)fluoranthene	0.010	µg/L	-	nd	nd	nd
Benzo(b/j)fluoranthene	0.020	µg/L	-	nd	nd	nd
Benzo(g,h,i)perylene	0.010	µg/L	-	nd	nd	nd
Benzo(j)fluoranthene	0.010	µg/L	-	nd	nd	nd
Benzo(k)fluoranthene	0.010	µg/L	-	nd	nd	nd
Chrysene	0.010	µg/L	1 [2]	nd	nd	nd
Dibenzo(a,h,)anthracene	0.010	µg/L	-	nd	nd	nd
Fluoranthene	0.010	µg/L	0.04 [1]	nd	nd	nd
Fluorene	0.010	µg/L	3 [1]	nd	nd	nd
Indeno(1,2,3-c,d) pyrene	0.010	µg/L	-	nd	nd	nd
Naphthalene	0.20	µg/L	1.1 [1]	nd	nd	nd
Perylene	0.010	µg/L	-	nd	nd	nd
Phenanthrene	0.010	µg/L	0.4 [1]	nd	nd	nd
Pyrene	0.010	µg/L	0.025 [1]	nd	nd	nd

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the protection of freshwater aquatic life (1999 and updates)

2 = British Columbia Ministry of the Environment Contaminated Sites Regulation Schedule 6 : Generic Numerical Water Standards: Aquatic Life

RDL = Reportable Detection Limit

nd = Not detected above RDL

"-" = Not analyzed, not applicable or no applicable guideline

Table E.15 Results of Laboratory Analysis of Total Metals in Surface Water
Phase II Environmental Site Assessment

Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	**RDL**	**Units**	**Guideline[1]**	**Upper Site**		**Lower Site**
				2018-206-SW01	**2018-206-SW02**	**2018-206-SW03**
pH [2]:				6.77	6.83	6.46
Hardness (mg/L as $CaCO_3$) [2]:				5.4	9.7	6.9
Aluminum Guideline[3]				100	100	5
Cadmium Guideline[4]				0.040	0.040	0.040
Copper Guideline[5]				2.0	2.0	2.0
Lead Guideline[6]				1.0	1.0	1.0
Nickel Guideline[7]				25	25	25
Aluminum	5.0	µg/L	5 - 100[1,3]	56	100	120
Antimony	1.0	µg/L	200 [8]	nd	nd	nd
Arsenic	1.0	µg/L	5 [1]	nd	nd	nd
Barium	1.0	µg/L	10,000 [8]	5.7	31	1.8
Beryllium	1.0	µg/L	56 [8]	nd	nd	nd
Bismuth	2.0	µg/L	-	nd	nd	nd
Boron	50	µg/L	1,500 [1]	nd	nd	nd
Cadmium	0.010	µg/L	0.04 - 0.37[1,4]	nd	0.41	0.029
Calcium	100	µg/L	-	1,900	3,300	2,200
Chromium	1.0	µg/L	-	nd	nd	nd
Cobalt	0.40	µg/L	2.5 [9]	nd	nd	nd
Copper	2.0	µg/L	2 - 4 [1,5]	nd	3.6	nd
Iron	50	µg/L	300 [1]	97	310	80
Lead	0.50	µg/L	1 - 7 [1,6]	nd	0.81	nd
Magnesium	100	µg/L	-	140	360	350
Manganese	2.0	µg/L	-	nd	53	nd
Molybdenum	2.0	µg/L	73 [1]	nd	nd	nd
Nickel	2.0	µg/L	25 - 150 [1,7]	nd	nd	nd
Phosphorous	100	µg/L	-	nd	nd	nd
Potassium	100	µg/L	-	nd	200	120
Selenium	1.0	µg/L	1 [1]	nd	nd	nd
Silver	0.10	µg/L	0.25 [1]	nd	nd	nd
Sodium	100	µg/L	-	450	1,000	1,000
Strontium	2.0	µg/L	-	6.2	21	8.7
Thallium	0.10	µg/L	0.8 [1]	nd	nd	nd
Tin	2.0	µg/L	-	nd	nd	nd
Titanium	2.0	µg/L	1,000 [8]	nd	8.2	3.1
Uranium	0.10	µg/L	15 [1]	nd	nd	0.38
Vanadium	2.0	µg/L	-	nd	nd	nd
Zinc	5.0	µg/L	30 [1]	nd	250	nd

Notes:

1 = Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Freshwater Aquatic Life (1999 and updates)

2 = From Table E.11

3 = Aluminum guideline = 5 µg/L at pH<6.5, or 100 µg/L at pH>=6.5

4 = Cadmium guideline [µg/L] = $10^{0.83[\log(\text{hardness})]-2.46}$, for water hardness between 17 and 280 mg/L as CaCO3

5 = Copper guideline [µg/L] = 0.2 * $e^{0.8545[\ln(\text{hardness})]-1.465}$, for water hardness between 82 and 180 mg/L as $CaCO_3$

6 = Lead guideline [µg/L] = $e^{1.273[\ln(\text{hardness})]-4.705}$, for water hardness between 60 and 180 mg/L as $CaCO_3$

7 = Nickel guideline [µg/L] = $e^{0.76[\ln(\text{hardness})]+1.06}$, for hardness between 60 and 180 mg/L as $CaCO_3$

8 = Alberta Environmental Quality Guidelines for Alberta Surface Waters (2014)

9 = British Columbia Ministry of the Environment Contaminated Sites Regulation Schedule 6 : Generic Numerical Water Standards: Aquatic Life

RDL = Reportable Detection Limit

nd = Not detected above RDL

"-" = Not analyzed, not applicable or no applicable guideline

Shaded = Value exceed applicable guideline

Table E.16 Results of Laboratory Analysis of PCBs in Surface Water
Phase II Environmental Site Assessment

Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline[1]	Upper Site		Lower Site
				2018-206-SW01	2018-206-SW02	2018-206-SW03
Aroclor 1016	0.050	ug/L	-	nd	nd	nd
Aroclor 1221	0.050	ug/L	-	nd	nd	nd
Aroclor 1232	0.050	ug/L	-	nd	nd	nd
Aroclor 1248	0.050	ug/L	-	nd	nd	nd
Aroclor 1242	0.050	ug/L	-	nd	nd	nd
Aroclor 1254	0.050	ug/L	-	nd	nd	nd
Aroclor 1260	0.050	ug/L	-	nd	nd	nd
Calculated Total PCB	0.050	ug/L	-	nd	nd	nd

Notes:
1 = No applicable guideline for PCBs in surface water
RDL = Reportable Detection Limit
nd = Not detected above RDL
"-" = Not analyzed, not applicable or no applicable guideline

Table E.17 Results of Laboratory Analysis of Available Metals in Vegetation
Phase II Environmental Site Assessment

Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline[1]	Upper Site			Lower Site	
				2018-206-VEG01	2018-206-VEG02	2018-206-VEG02 Lab-Dup	2018-206-VEG03	2018-206-VEG04
Aluminum	10	mg/kg	-	930	1,700	1,900	94	77
Antimony	2.0	mg/kg	-	nd	nd	nd	nd	nd
Arsenic	2.0	mg/kg	-	nd	nd	nd	nd	nd
Barium	5.0	mg/kg	-	82	100	100	22	14
Beryllium	2.0	mg/kg	-	nd	nd	nd	nd	nd
Boron	5.0	mg/kg	-	12	9.5	9.6	13	13
Cadmium	0.30	mg/kg	-	0.71	0.44	0.44	0.60	0.38
Chromium	2.0	mg/kg	-	nd	nd	nd	nd	nd
Cobalt	1.0	mg/kg	-	nd	nd	nd	nd	1.9
Copper	2.0	mg/kg	-	8.8	7.8	7.0	6.0	5.7
Iron	50	mg/kg	-	530	950	1,000	710	190
Lead	0.50	mg/kg	-	2.3	2.6	2.6	8.8	1.3
Lithium	2.0	mg/kg	-	nd	nd	nd	nd	nd
Manganese	2.0	mg/kg	-	360	200	200	230	110
Mercury	0.030	mg/kg	-	nd	nd	nd	nd	nd
Molybdenum	2.0	mg/kg	-	nd	nd	nd	2.4	nd
Nickel	2.0	mg/kg	-	nd	2.3	2.4	2.3	nd
Selenium	2.0	mg/kg	-	nd	nd	nd	nd	nd
Silver	0.50	mg/kg	-	nd	nd	nd	nd	nd
Strontium	5.0	mg/kg	-	15	26	26	31	32
Thallium	0.10	mg/kg	-	nd	nd	nd	nd	nd
Uranium	0.10	mg/kg	-	nd	nd	nd	nd	0.12
Vanadium	2.0	mg/kg	-	nd	nd	nd	nd	nd
Zinc	5.0	mg/kg	-	170	150	160	86	89

Notes:

1 = No applicable guideline for metals in vegetation

RDL = Reportable Detection Limit

nd = Not detected above RDL

"-" = Not analyzed, not applicable or no applicable guideline

Lab-Dup = laboratory duplicate sample

Table E.18 Results of Laboratory Analysis of PCBs in Vegetation
Phase II Environmental Site Assessment
Former US Military Mid Canada Line Radar Site 206, Harbour Lake, NL
Stantec Project No. 121414998

Parameters	RDL	Units	Guideline	Upper Site		Lower Site	
				2018-206-VEG01	2018-206-VEG02	2018-206-VEG03	2018-206-VEG04
Aroclor 1016	0.25	µg/g	-	nd	nd	nd	nd
Aroclor 1221	0.25	µg/g	-	nd	nd	nd	nd
Aroclor 1232	0.25	µg/g	-	nd	nd	nd	nd
Aroclor 1248	0.25	µg/g	-	nd	nd	nd	nd
Aroclor 1242	0.25	µg/g	-	nd	nd	nd	nd
Aroclor 1254	0.25	µg/g	-	nd	nd	nd	nd
Aroclor 1260	0.25	µg/g	-	nd	nd	nd	nd
Calculated Total PCB	0.25	µg/g	-	nd	nd	nd	nd

Notes:

1 = No applicable guideline for PCBs in vegetation

RDL = Reportable Detection Limit

nd = Not detected above the standard RDL

mbgs = metres below ground surface

"-" = Not applicable or no applicable guideline

APPENDIX F

Laboratory Analytical Reports and Chain of Custody Documentation

Your Project #: 121414998.200.001
Site Location: MCL SITES

Attention: Jim Slade
Stantec Consulting Ltd
141 Kelsey Drive
St. John's, NL
CANADA A1B 0L2

Your C.O.C. #: D 16961, D 16962, D 16963, D 16964, D 16965, D 33499, D 33500, D 33393, D 33394, D 33395, D 33396, D 33397, D 33398, D 33399, D 33494

Report Date: 2018/08/24
Report #: R5372482
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8I9887
Received: 2018/07/26, 09:55

Sample Matrix: Soil
Samples Received: 39

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Benzo(b/j)fluoranthene Sum (soil)	1	N/A	2018/08/03	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (soil)	37	N/A	2018/08/13	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (soil)	1	N/A	2018/08/14	N/A	Auto Calc.
TEH in Soil (AA PIRI)	1	2018/08/01	2018/08/03	ATL SOP 00116	Atl. RBCA v3.1 m
TEH in Soil (AA PIRI)	3	2018/08/01	2018/08/04	ATL SOP 00116	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	20	2018/08/01	2018/08/04	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	28	2018/08/01	2018/08/07	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	11	2018/08/01	2018/08/08	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	3	2018/08/02	2018/08/04	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	1	2018/08/02	2018/08/07	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	15	2018/08/02	2018/08/08	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	5	2018/08/02	2018/08/09	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	4	2018/08/02	2018/08/10	ATL SOP 00111	Atl. RBCA v3.1 m
Metals Solids Acid Extr. ICPMS	7	2018/08/01	2018/08/01	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	10	2018/08/01	2018/08/02	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	17	2018/08/02	2018/08/02	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	5	2018/08/02	2018/08/03	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	13	2018/08/03	2018/08/03	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	16	2018/08/03	2018/08/04	ATL SOP 00058	EPA 6020A R1 m
Moisture	72	N/A	2018/08/01	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	18	N/A	2018/08/02	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	8	N/A	2018/08/03	ATL SOP 00001	OMOE Handbook 1983 m
PAH Compounds by GCMS (SIM) (1)	1	2018/08/01	2018/08/02	ATL SOP 00102	EPA 8270E 2017 m
PAH Compounds by GCMS (SIM) (1)	20	2018/08/02	2018/08/12	ATL SOP 00102	EPA 8270E 2017 m
PAH Compounds by GCMS (SIM) (1)	5	2018/08/03	2018/08/11	ATL SOP 00102	EPA 8270E 2017 m
PAH Compounds by GCMS (SIM) (1)	12	2018/08/03	2018/08/12	ATL SOP 00102	EPA 8270E 2017 m

Your Project #: 121414998.200.001
Site Location: MCL SITES

Attention: Jim Slade

Stantec Consulting Ltd
141 Kelsey Drive
St. John's, NL
CANADA A1B 0L2

Your C.O.C. #: D 16961, D 16962, D 16963, D 16964, D 16965, D 33499, D 33500, D 33393, D 33394, D 33395, D 33396, D 33397, D 33398, D 33399, D 33494

Report Date: 2018/08/24
Report #: R5372482
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8I9887
Received: 2018/07/26, 09:55

Sample Matrix: Soil
Samples Received: 109

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
PAH Compounds by GCMS (SIM) (1)	1	2018/08/03	2018/08/13	ATL SOP 00102	EPA 8270E 2017 m
PCBs in soil by GC/ECD (1)	1	2018/07/31	2018/08/02	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (1)	8	2018/08/01	2018/08/02	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (1)	1	2018/08/02	2018/08/02	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (1)	1	2018/08/02	2018/08/09	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (1)	1	2018/08/07	2018/08/08	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (1)	14	2018/08/08	2018/08/09	ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	9	N/A	2018/08/02	N/A	Auto Calc.
PCB Aroclor sum (soil)	1	N/A	2018/08/03	N/A	Auto Calc.
PCB Aroclor sum (soil)	1	N/A	2018/08/08	N/A	Auto Calc.
PCB Aroclor sum (soil)	15	N/A	2018/08/09	N/A	Auto Calc.
Asbestos BULK (RDL<0.25%) (Sub fr Bed.) (3)	5	N/A	2018/08/02		
ModTPH (T1) Calc. for Soil	40	N/A	2018/08/08	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	30	N/A	2018/08/09	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	17	N/A	2018/08/10	N/A	Atl. RBCA v3.1 m
ModTPH (T2) Calc. for Soil	4	N/A	2018/08/10	N/A	Atl. RBCA v3 m
VPH in Soil (PIRI2) - Field Preserved (2)	4	N/A	2018/08/08	ATL SOP 00120	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (2)	26	N/A	2018/08/07	ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (2)	45	N/A	2018/08/08	ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (2)	15	N/A	2018/08/09	ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (2)	1	N/A	2018/08/10	ATL SOP 00119	Atl. RBCA v3.1 m

Sample Matrix: SEDIMENT
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference

Your Project #: 121414998.200.001
Site Location: MCL SITES

Attention: Jim Slade

Stantec Consulting Ltd
141 Kelsey Drive
St. John's, NL
CANADA A1B 0L2

Your C.O.C. #: D 16961, D 16962, D 16963, D 16964, D 16965, D 33499, D 33500, D 33393, D 33394, D 33395, D 33396, D 33397, D 33398, D 33399, D 33494

Report Date: 2018/08/24
Report #: R5372482
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8I9887
Received: 2018/07/26, 09:55

Sample Matrix: SEDIMENT
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Benzo(b/j)fluoranthene Sum (soil)	3	N/A	2018/08/13	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (LL soil)	4	N/A	2018/08/09	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (LL soil)	3	N/A	2018/08/13	N/A	Auto Calc.
TEH in Soil (PIRI) (1)	1	2018/07/31	2018/08/07	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	3	2018/08/02	2018/08/08	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	1	2018/08/02	2018/08/09	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	2	2018/08/02	2018/08/10	ATL SOP 00111	Atl. RBCA v3.1 m
Metals Solids Acid Extr. ICPMS	5	2018/08/02	2018/08/02	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	2	2018/08/03	2018/08/04	ATL SOP 00058	EPA 6020A R1 m
Moisture	3	N/A	2018/08/01	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	4	N/A	2018/08/02	ATL SOP 00001	OMOE Handbook 1983 m
PAH in sediment by GC/MS (Low Level) (1)	4	2018/08/01	2018/08/08	ATL SOP 00102	EPA 8270E 2017 m
PAH in sediment by GC/MS (Low Level) (1)	1	2018/08/03	2018/08/12	ATL SOP 00102	EPA 8270E 2017 m
PAH in sediment by GC/MS (Low Level) (1)	2	2018/08/03	2018/08/13	ATL SOP 00102	EPA 8270E 2017 m
PCBs in soil by GC/ECD (1)	2	2018/08/02	2018/08/09	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (1)	5	2018/08/08	2018/08/09	ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	7	N/A	2018/08/09	N/A	Auto Calc.
ModTPH (T1) Calc. for Soil	1	N/A	2018/08/08	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	2	N/A	2018/08/09	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	4	N/A	2018/08/10	N/A	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (2)	5	N/A	2018/08/08	ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (2)	2	N/A	2018/08/09	ATL SOP 00119	Atl. RBCA v3.1 m

Your Project #: 121414998.200.001
Site Location: MCL SITES

Attention: Jim Slade

Stantec Consulting Ltd
141 Kelsey Drive
St. John's, NL
CANADA A1B 0L2

Your C.O.C. #: D 16961, D 16962, D 16963, D 16964, D 16965, D 33499, D 33500, D 33393, D 33394, D 33395, D 33396, D 33397, D 33398, D 33399, D 33494

Report Date: 2018/08/24
Report #: R5372482
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8I9887
Received: 2018/07/26, 09:55

Sample Matrix: Vegetation
Samples Received: 14

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Mercury (CVAA)	14	2018/08/09	2018/08/10	ATL SOP 00026	EPA 245.5 m
Metals in Terrestrial Biota	11	2018/08/03	2018/08/08	ATL SOP 00058	EPA 6020A R1 m
Metals in Terrestrial Biota	3	2018/08/09	2018/08/09	ATL SOP 00058	EPA 6020A R1 m
PCBs in soil by GC/ECD (1)	7	2018/08/02	2018/08/09	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (1)	4	2018/08/03	2018/08/09	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (1)	3	2018/08/08	2018/08/09	ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	14	N/A	2018/08/09	N/A	Auto Calc.

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide	3	N/A	2018/08/02	N/A	SM 22 4500-CO2 D
Carbonate, Bicarbonate and Hydroxide	4	N/A	2018/08/08	N/A	SM 22 4500-CO2 D
Alkalinity	2	N/A	2018/08/02	ATL SOP 00013	EPA 310.2 R1974 m
Alkalinity	5	N/A	2018/08/03	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water)	6	N/A	2018/08/09	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (water)	1	N/A	2018/08/11	N/A	Auto Calc.
Chloride	5	N/A	2018/08/02	ATL SOP 00014	SM 23 4500-Cl- E m
Chloride	2	N/A	2018/08/03	ATL SOP 00014	SM 23 4500-Cl- E m
Colour	7	N/A	2018/08/02	ATL SOP 00020	SM 23 2120C m
Conductance - water	3	N/A	2018/08/02	ATL SOP 00004	SM 23 2510B m
Conductance - water	4	N/A	2018/08/07	ATL SOP 00004	SM 23 2510B m
TEH in Water (PIRI)	2	2018/08/02	2018/08/03	ATL SOP 00113	Atl. RBCA v3.1 m
TEH in Water (PIRI)	5	2018/08/03	2018/08/09	ATL SOP 00113	Atl. RBCA v3.1 m
Hardness (calculated as CaCO3)	7	N/A	2018/08/07	ATL SOP 00048	Auto Calc

Your Project #: 121414998.200.001
Site Location: MCL SITES

Attention: Jim Slade

Stantec Consulting Ltd
141 Kelsey Drive
St. John's, NL
CANADA A1B 0L2

Your C.O.C. #: D 16961, D 16962, D 16963, D 16964, D 16965, D 33499, D 33500, D 33393, D 33394, D 33395, D 33396, D 33397, D 33398, D 33399, D 33494

Report Date: 2018/08/24
Report #: R5372482
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8I9887
Received: 2018/07/26, 09:55

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Metals Water Total MS	7	2018/08/03	2018/08/04	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference)	3	N/A	2018/08/07	N/A	Auto Calc.
Ion Balance (% Difference)	4	N/A	2018/08/08	N/A	Auto Calc.
Anion and Cation Sum	3	N/A	2018/08/07	N/A	Auto Calc.
Anion and Cation Sum	4	N/A	2018/08/08	N/A	Auto Calc.
Nitrogen Ammonia - water	7	N/A	2018/08/02	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite	7	N/A	2018/08/02	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite	7	N/A	2018/08/03	ATL SOP 00017	SM 23 4500-NO2- B m
Nitrogen - Nitrate (as N)	7	N/A	2018/08/03	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM)	5	2018/07/26	2018/08/07	ATL SOP 00103	EPA 8270D 2014 m
PAH in Water by GC/MS (SIM)	1	2018/07/26	2018/08/11	ATL SOP 00103	EPA 8270D 2014 m
PAH in Water by GC/MS (SIM)	1	2018/08/01	2018/08/07	ATL SOP 00103	EPA 8270D 2014 m
PCBs in water by GC/ECD	2	2018/07/26	2018/08/02	ATL SOP 00107	EPA 8082A m
PCBs in water by GC/ECD	5	2018/07/26	2018/08/08	ATL SOP 00107	EPA 8082A m
PCB Aroclor sum (water)	2	N/A	2018/08/02	N/A	Auto Calc.
PCB Aroclor sum (water)	5	N/A	2018/08/08	N/A	Auto Calc.
pH (4)	3	N/A	2018/08/02	ATL SOP 00003	SM 23 4500-H+ B m
pH (4)	4	N/A	2018/08/07	ATL SOP 00003	SM 23 4500-H+ B m
Phosphorus - ortho	7	N/A	2018/08/02	ATL SOP 00021	SM 23 4500-P E m
VPH in Water (PIRI)	5	N/A	2018/08/01	ATL SOP 00118	Atl. RBCA v3.1 m
VPH in Water (PIRI)	2	N/A	2018/08/02	ATL SOP 00118	Atl. RBCA v3.1 m
Sat. pH and Langelier Index (@ 20C)	3	N/A	2018/08/07	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 20C)	4	N/A	2018/08/08	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C)	3	N/A	2018/08/07	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C)	4	N/A	2018/08/08	ATL SOP 00049	Auto Calc.
Reactive Silica	7	N/A	2018/08/03	ATL SOP 00022	EPA 366.0 m

Your Project #: 121414998.200.001
Site Location: MCL SITES

Attention: Jim Slade

Stantec Consulting Ltd
141 Kelsey Drive
St. John's, NL
CANADA A1B 0L2

Your C.O.C. #: D 16961, D 16962, D 16963, D 16964, D 16965, D 33499, D 33500, D 33393, D 33394, D 33395, D 33396, D 33397, D 33398, D 33399, D 33494

Report Date: 2018/08/24
Report #: R5372482
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8I9887
Received: 2018/07/26, 09:55

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Sulphate	7	N/A	2018/08/03	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc)	7	N/A	2018/08/07	N/A	Auto Calc.
Organic carbon - Total (TOC) (5)	4	N/A	2018/08/03	ATL SOP 00203	SM 23 5310B m
Organic carbon - Total (TOC) (5)	3	N/A	2018/08/04	ATL SOP 00203	SM 23 5310B m
ModTPH (T1) Calc. for Water	2	N/A	2018/08/07	N/A	Atl. RBCA v3 m
ModTPH (T1) Calc. for Water	5	N/A	2018/08/10	N/A	Atl. RBCA v3 m
Turbidity	6	N/A	2018/08/08	ATL SOP 00011	EPA 180.1 R2 m
Turbidity	1	N/A	2018/08/09	ATL SOP 00011	EPA 180.1 R2 m
Volatile Organic Compounds in Water	7	N/A	2018/07/31	ATL SOP 00133	EPA 8260C R3 m

Remarks:

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

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

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

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

Your Project #: 121414998.200.001
Site Location: MCL SITES

Attention: Jim Slade

Stantec Consulting Ltd
141 Kelsey Drive
St. John's, NL
CANADA A1B 0L2

Your C.O.C. #: D 16961, D 16962, D 16963, D 16964, D 16965, D 33499, D 33500, D 33393, D 33394, D 33395, D 33396, D 33397, D 33398, D 33399, D 33494

Report Date: 2018/08/24
Report #: R5372482
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B8I9887
Received: 2018/07/26, 09:55

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

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Soils are reported on a dry weight basis unless otherwise specified.
(2) No lab extraction date is given for C6-C10/BTEX and VOC samples that are field preserved with methanol. Extraction date is date sampled unless otherwise stated.
(3) This test was performed by Bedford to BV (Georgia)
(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.
Heather Macumber, Senior Project Manager
Email: HMacumber@maxxam.ca
Phone# (902)420-0203 Ext:226
==
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.

RESULTS OF ANALYSES OF SOIL

Maxxam ID		HIG362	HIG362	HIG363	HIG364	HIG365			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16961	D 16961	D 16961	D 16961	D 16961			
	UNITS	**2018-203-SS01**	**2018-203-SS01 Lab-Dup**	**2018-203-SS02**	**2018-203-SS03**	**2018-203-SS04**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	35	32	23	15	26	1.0	5656226	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam ID		HIG366	HIG367	HIG368	HIG369	HIG370			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16961	D 16961	D 16961	D 16961	D 16961			
	UNITS	**2018-203-SS05**	**2018-203-SS06**	**2018-203-SS07**	**2018-203-SS08**	**2018-203-SS09**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	15	11	35	13	9.1	1.0	5656226	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIG371		HIG388	HIG389	HIG390	HIG391			
Sampling Date		2018/07/19		2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16961		D 16962	D 16962	D 16962	D 16962			
	UNITS	**2018-203-SS10**	**QC Batch**	**2018-203-SS11**	**2018-203-SS12**	**2018-203-SS13**	**2018-203-SS14**	**RDL**	**QC Batch**	**MDL**
Inorganics										
Moisture	%	13	5656226	27	40	21	28	1.0	5656285	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIG392	HIG393	HIG394				HIG395			
Sampling Date		2018/07/19	2018/07/19	2018/07/19				2018/07/19			
COC Number		D 16962	D 16962	D 16962				D 16962			
	UNITS	**2018-203-SS15**	**2018-203-SS16**	**2018-203-SS17**	**RDL**	**QC Batch**	**MDL**	**2018-203-SS18**	**RDL**	**QC Batch**	**MDL**
Inorganics											
Moisture	%	14	16	12	1.0	5656285	0.20	36	1.0	5661703	0.20
Subcontracted Analysis											
Subcontract Parameter	N/A							ATTACHED	N/A	5657046	N/A

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

RESULTS OF ANALYSES OF SOIL

Maxxam ID		HIG396	HIG503	HIG504	HIG505	HIG506			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16962	D 16963	D 16963	D 16963	D 16963			
	UNITS	**2018-203-SS19**	**2018-203-SS21**	**2018-203-SS22**	**2018-203-SS23**	**2018-203-SS24**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	27	12	25	28	33	1.0	5656285	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIG507				HIG510			
Sampling Date		2018/07/19				2018/07/19			
COC Number		D 16963				D 16963			
	UNITS	**2018-203-TP01-BS01**	**RDL**	**QC Batch**	**MDL**	**2018-203-TP03-BS01**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	39	1.0	5660945	0.20	14	1.0	5661703	0.20
Subcontracted Analysis									
Subcontract Parameter	N/A					ATTACHED	N/A	5657046	N/A

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

Maxxam ID		HIG617	HIG617	HIG618	HIG620			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16964	D 16964	D 16964	D 16964			
	UNITS	**2018-203-TP04-BS01**	**2018-203-TP04-BS01 Lab-Dup**	**2018-203-TP05-BS01**	**2018-203-TP06-BS01**	**RDL**	**QC Batch**	**MDL**
Inorganics								
Moisture	%	11	11	23	11	1.0	5656573	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam ID		HIG622	HIG623	HIG624	HIG625			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16964	D 16964	D 16964	D 16964			
	UNITS	**2018-203-TP07-BS01**	**2018-203-TP08-BS01**	**2018-203-TP09-BS01**	**2018-203-TP10-BS01**	**RDL**	**QC Batch**	**MDL**
Inorganics								
Moisture	%	61	35	19	29	1.0	5656573	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

RESULTS OF ANALYSES OF SOIL

Maxxam ID		HIG626	HIG898	HIG899	HIG900	HIG901			
Sampling Date		2018/07/19	2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 16964	D 33499	D 33499	D 33499	D 33499			
	UNITS	**2018-203-TP11-BS01**	**2018-206-SS01**	**2018-206-SS02**	**2018-206-SS03**	**2018-206-SS04**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	45	45	70	27	47	1.0	5656573	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIG902		HIG903	HIG904			
Sampling Date		2018/07/20		2018/07/20	2018/07/20			
COC Number		D 33499		D 33499	D 33499			
	UNITS	**2018-206-SS05**	**QC Batch**	**2018-206-SS06**	**2018-206-SS07**	**RDL**	**QC Batch**	**MDL**
Inorganics								
Moisture	%	15	5656573	77	18	1.0	5657037	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIG905				HIG906	HIG907			
Sampling Date		2018/07/20				2018/07/20	2018/07/20			
COC Number		D 33499				D 33499	D 33499			
	UNITS	**2018-206-SS08**	**RDL**	**QC Batch**	**MDL**	**2018-206-SS09**	**2018-206-SS10**	**RDL**	**QC Batch**	**MDL**
Inorganics										
Moisture	%	23	1.0	5661703	0.20	29	83	1.0	5657037	0.20
Subcontracted Analysis										
Subcontract Parameter	N/A	ATTACHED	N/A	5657046	N/A					

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

Maxxam ID		HIG963	HIG964	HIG965		HIG966			
Sampling Date		2018/07/20	2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33500	D 33500	D 33500		D 33500			
	UNITS	**2018-206-SS11**	**2018-206-SS12**	**2018-206-SS13**	**QC Batch**	**2018-206-SS14**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	9.6	8.3	11	5656628	11	1.0	5660945	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

RESULTS OF ANALYSES OF SOIL

Maxxam ID		HIG967	HIG968	HIG969	HIG970			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33500	D 33500	D 33500	D 33500			
	UNITS	**2018-206-SS15**	**2018-206-SS16**	**2018-206-SS17**	**2018-206-SS18**	**RDL**	**QC Batch**	**MDL**
Inorganics								
Moisture	%	15	6.8	12	19	1.0	5656628	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIG971				HIG972		HIH047			
Sampling Date		2018/07/20				2018/07/20		2018/07/20			
COC Number		D 33500				D 33500		D 33393			
	UNITS	**2018-206-SS19**	**RDL**	**QC Batch**	**MDL**	**2018-206-SS20**	**QC Batch**	**2018-206-SS21**	**RDL**	**QC Batch**	**MDL**
Inorganics											
Moisture	%	9.3	1.0	5661289	0.20	17	5656628	47	1.0	5657130	0.20
Subcontracted Analysis											
Subcontract Parameter	N/A	ATTACHED	N/A	5657046	N/A						

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

Maxxam ID		HIH047	HIH048	HIH049	HIH050			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33393	D 33393	D 33393	D 33393			
	UNITS	**2018-206-SS21 Lab-Dup**	**2018-206-SS22**	**2018-206-SS24**	**2018-206-TP01-BS01**	**RDL**	**QC Batch**	**MDL**
Inorganics								
Moisture	%	40	14	11	35	1.0	5657130	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam ID		HIH051	HIH052	HIH053	HIH054			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33393	D 33393	D 33393	D 33393			
	UNITS	**2018-206-TP01-BS02**	**2018-206-TP02-BS01**	**2018-206-TP02-BS02**	**2018-206-TP03-BS01**	**RDL**	**QC Batch**	**MDL**
Inorganics								
Moisture	%	13	83	78	63	1.0	5657130	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

RESULTS OF ANALYSES OF SOIL

Maxxam ID		HIH055	HIH205	HIH206	HIH207			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33393	D 33394	D 33394	D 33394			
	UNITS	**2018-206-TP04-BS01**	**2018-206-TP04-BS02**	**2018-206-TP05-BS01**	**2018-206-TP05-BS02**	**RDL**	**QC Batch**	**MDL**
Inorganics								
Moisture	%	11	22	19	25	1.0	5657130	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIH208		HIH209		HIH210			
Sampling Date		2018/07/20		2018/07/20		2018/07/20			
COC Number		D 33394		D 33394		D 33394			
	UNITS	**2018-206-TP06-BS01**	**QC Batch**	**2018-206-TP07-BS01**	**QC Batch**	**2018-206-TP08-BS01**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	9.8	5657130	15	5660945	25	1.0	5657130	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIH211	HIH212		HIH432	HIH433			
Sampling Date		2018/07/20	2018/07/20		2018/07/20	2018/07/20			
COC Number		D 33394	D 33394		D 33396	D 33396			
	UNITS	**2018-206-TP09-BS01**	**2018-206-TP010-BS01**	**QC Batch**	**2018-209-SS01**	**2018-209-SS02**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	8.6	6.1	5657130	62	80	1.0	5658488	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIH434	HIH434	HIH435	HIH437	HIH438			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33396	D 33396	D 33396	D 33396	D 33396			
	UNITS	**2018-209-SS03**	**2018-209-SS03 Lab-Dup**	**2018-209-SS04**	**2018-209-SS08**	**2018-209-SS09**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	74	70	78	9.0	9.3	1.0	5658488	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

RESULTS OF ANALYSES OF SOIL

Maxxam ID		HIH439				HIH440			HIH441			
Sampling Date		2018/07/20				2018/07/20			2018/07/20			
COC Number		D 33396				D 33396			D 33396			
	UNITS	**2018-209-SS10**	**RDL**	**QC Batch**	**MDL**	**2018-209-SS11**	**QC Batch**	**MDL**	**2018-209-SS12**	**RDL**	**QC Batch**	**MDL**
Inorganics												
Moisture	%	16	1.0	5658488	0.20				7.1	1.0	5658910	0.20
Subcontracted Analysis												
Subcontract Parameter	N/A					ATTACHED	5657046	N/A				

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

Maxxam ID		HIH460	HIH460	HIH461	HIH462	HIH463			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33397	D 33397	D 33397	D 33397	D 33397			
	UNITS	**2018-209-SS13**	**2018-209-SS13 Lab-Dup**	**2018-209-SS14**	**2018-209-SS15**	**2018-209-SS16**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	4.5	4.1	14	15	46	1.0	5658910	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

Maxxam ID		HIH464	HIH465	HIH466	HIH467	HIH468			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33397	D 33397	D 33397	D 33397	D 33397			
	UNITS	**2018-209-SS17**	**2018-209-SS18**	**2018-209-SS19**	**2018-209-SS20**	**2018-209-SS21**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	11	7.3	14	16	72	1.0	5658910	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIH469		HIH680	HIH681	HIH682			
Sampling Date		2018/07/20		2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33397		D 33398	D 33398	D 33398			
	UNITS	**2018-209-SS22**	**QC Batch**	**2018-209-SS24**	**2018-209-TP06-BS01**	**2018-209-TP06-BS02**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	20	5658910	11	9.4	9.0	1.0	5657037	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

RESULTS OF ANALYSES OF SOIL

Maxxam ID		HIH683	HIH685	HIH686	HIH688			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33398	D 33398	D 33398	D 33398			
	UNITS	**2018-209-TP07-BS01**	**2018-209-TP08-BS01**	**2018-209-TP08-BS02**	**2018-209-TP09-BS02**	**RDL**	**QC Batch**	**MDL**
Inorganics								
Moisture	%	13	9.7	10	8.9	1.0	5657037	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIH711	HIH712		HJL969			
Sampling Date		2018/07/20	2018/07/20		2018/07/19			
COC Number		D 33399	D 33399		D 16963			
	UNITS	**2018-209-TP10-BS01**	**2018-209-TP10-BS02**	**QC Batch**	**2018-203-TP02-BS01**	**RDL**	**QC Batch**	**MDL**
Inorganics								
Moisture	%	11	11	5657037	30	1.0	5660945	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG362		HIG363	HIG364	HIG367			
Sampling Date		2018/07/19		2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16961		D 16961	D 16961	D 16961			
	UNITS	**2018-203-SS01**	**QC Batch**	**2018-203-SS02**	**2018-203-SS03**	**2018-203-SS06**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	4300	5658534	18000	3400	10000	10	5658703	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5658534	<2.0	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5658534	<2.0	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Barium (Ba)	mg/kg	12	5658534	7.6	10	19	5.0	5658703	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5658534	<2.0	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5658534	<2.0	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Boron (B)	mg/kg	<50	5658534	<50	<50	<50	50	5658703	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5658534	<0.30	<0.30	<0.30	0.30	5658703	N/A
Acid Extractable Chromium (Cr)	mg/kg	8.2	5658534	10	5.9	19	2.0	5658703	N/A
Acid Extractable Cobalt (Co)	mg/kg	1.3	5658534	1.5	<1.0	3.9	1.0	5658703	N/A
Acid Extractable Copper (Cu)	mg/kg	<2.0	5658534	<2.0	<2.0	6.1	2.0	5658703	N/A
Acid Extractable Iron (Fe)	mg/kg	4600	5658534	8300	3500	12000	50	5658703	N/A
Acid Extractable Lead (Pb)	mg/kg	0.99	5658534	2.1	1.1	3.1	0.50	5658703	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	5658534	2.2	<2.0	3.7	2.0	5658703	N/A
Acid Extractable Manganese (Mn)	mg/kg	33	5658534	38	23	89	2.0	5658703	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5658534	<0.10	<0.10	<0.10	0.10	5658703	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5658534	<2.0	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Nickel (Ni)	mg/kg	3.2	5658534	3.8	<2.0	9.0	2.0	5658703	N/A
Acid Extractable Rubidium (Rb)	mg/kg	<2.0	5658534	<2.0	<2.0	2.5	2.0	5658703	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5658534	<1.0	<1.0	<1.0	1.0	5658703	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5658534	<0.50	<0.50	<0.50	0.50	5658703	N/A
Acid Extractable Strontium (Sr)	mg/kg	12	5658534	10	11	15	5.0	5658703	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5658534	<0.10	<0.10	<0.10	0.10	5658703	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5658534	<2.0	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	5658534	0.14	<0.10	0.17	0.10	5658703	N/A
Acid Extractable Vanadium (V)	mg/kg	8.5	5658534	15	7.9	31	2.0	5658703	N/A
Acid Extractable Zinc (Zn)	mg/kg	5.2	5658534	<5.0	<5.0	14	5.0	5658703	N/A

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

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG367		HIG369	HIG371	HIG388			
Sampling Date		2018/07/19		2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16961		D 16961	D 16961	D 16962			
	UNITS	**2018-203-SS06 Lab-Dup**	**QC Batch**	**2018-203-SS08**	**2018-203-SS10**	**2018-203-SS11**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	9700	5658703	16000	7400	15000	10	5658534	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5658703	<2.0	4.4	<2.0	2.0	5658534	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5658703	<2.0	<2.0	<2.0	2.0	5658534	N/A
Acid Extractable Barium (Ba)	mg/kg	17	5658703	16	16	13	5.0	5658534	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5658703	<2.0	<2.0	<2.0	2.0	5658534	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5658703	<2.0	<2.0	<2.0	2.0	5658534	N/A
Acid Extractable Boron (B)	mg/kg	<50	5658703	<50	<50	<50	50	5658534	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5658703	<0.30	<0.30	<0.30	0.30	5658534	N/A
Acid Extractable Chromium (Cr)	mg/kg	15	5658703	13	14	18	2.0	5658534	N/A
Acid Extractable Cobalt (Co)	mg/kg	3.4	5658703	2.5	3.8	3.0	1.0	5658534	N/A
Acid Extractable Copper (Cu)	mg/kg	5.6	5658703	2.1	5.2	10	2.0	5658534	N/A
Acid Extractable Iron (Fe)	mg/kg	11000	5658703	11000	12000	19000	50	5658534	N/A
Acid Extractable Lead (Pb)	mg/kg	2.9	5658703	3.1	2.4	3.7	0.50	5658534	N/A
Acid Extractable Lithium (Li)	mg/kg	3.9	5658703	2.9	4.1	3.9	2.0	5658534	N/A
Acid Extractable Manganese (Mn)	mg/kg	86	5658703	100	110	72	2.0	5658534	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5658703	<0.10	<0.10	<0.10	0.10	5658534	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5658703	<2.0	<2.0	5.6	2.0	5658534	N/A
Acid Extractable Nickel (Ni)	mg/kg	7.8	5658703	6.4	11	8.5	2.0	5658534	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.5	5658703	<2.0	2.2	2.1	2.0	5658534	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5658703	<1.0	<1.0	<1.0	1.0	5658534	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5658703	<0.50	<0.50	<0.50	0.50	5658534	N/A
Acid Extractable Strontium (Sr)	mg/kg	15	5658703	15	14	16	5.0	5658534	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5658703	<0.10	<0.10	<0.10	0.10	5658534	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5658703	<2.0	<2.0	<2.0	2.0	5658534	N/A
Acid Extractable Uranium (U)	mg/kg	0.16	5658703	0.17	0.16	1.1	0.10	5658534	N/A
Acid Extractable Vanadium (V)	mg/kg	26	5658703	19	23	30	2.0	5658534	N/A
Acid Extractable Zinc (Zn)	mg/kg	12	5658703	11	16	14	5.0	5658534	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG389	HIG390		HIG391			
Sampling Date		2018/07/19	2018/07/19		2018/07/19			
COC Number		D 16962	D 16962		D 16962			
	UNITS	**2018-203-SS12**	**2018-203-SS13**	**QC Batch**	**2018-203-SS14**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	18000	15000	5658534	15000	10	5658703	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	5658534	<2.0	2.0	5658703	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	5658534	<2.0	2.0	5658703	N/A
Acid Extractable Barium (Ba)	mg/kg	36	16	5658534	16	5.0	5658703	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	5658534	<2.0	2.0	5658703	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	5658534	<2.0	2.0	5658703	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	5658534	<50	50	5658703	N/A
Acid Extractable Cadmium (Cd)	mg/kg	0.59	<0.30	5658534	<0.30	0.30	5658703	N/A
Acid Extractable Chromium (Cr)	mg/kg	16	17	5658534	19	2.0	5658703	N/A
Acid Extractable Cobalt (Co)	mg/kg	4.6	4.2	5658534	2.8	1.0	5658703	N/A
Acid Extractable Copper (Cu)	mg/kg	16	12	5658534	11	2.0	5658703	N/A
Acid Extractable Iron (Fe)	mg/kg	17000	17000	5658534	7400	50	5658703	N/A
Acid Extractable Lead (Pb)	mg/kg	5.4	4.1	5658534	3.6	0.50	5658703	N/A
Acid Extractable Lithium (Li)	mg/kg	4.3	5.1	5658534	3.9	2.0	5658703	N/A
Acid Extractable Manganese (Mn)	mg/kg	93	100	5658534	60	2.0	5658703	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	5658534	<0.10	0.10	5658703	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	3.2	6.0	5658534	<2.0	2.0	5658703	N/A
Acid Extractable Nickel (Ni)	mg/kg	12	11	5658534	8.8	2.0	5658703	N/A
Acid Extractable Rubidium (Rb)	mg/kg	3.0	2.8	5658534	2.4	2.0	5658703	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	5658534	<1.0	1.0	5658703	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	5658534	<0.50	0.50	5658703	N/A
Acid Extractable Strontium (Sr)	mg/kg	27	14	5658534	16	5.0	5658703	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	5658534	<0.10	0.10	5658703	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	5658534	<2.0	2.0	5658703	N/A
Acid Extractable Uranium (U)	mg/kg	0.54	1.0	5658534	1.4	0.10	5658703	N/A
Acid Extractable Vanadium (V)	mg/kg	27	30	5658534	29	2.0	5658703	N/A
Acid Extractable Zinc (Zn)	mg/kg	290	16	5658534	11	5.0	5658703	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG395		HIG396		HIG397			
Sampling Date		2018/07/19		2018/07/19		2018/07/19			
COC Number		D 16962		D 16962		D 16962			
	UNITS	**2018-203-SS18**	**QC Batch**	**2018-203-SS19**	**QC Batch**	**2018-203-SS20**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	16000	5663204	20000	5658703	14000	10	5658534	N/A
Acid Extractable Antimony (Sb)	mg/kg	20	5663204	<2.0	5658703	<2.0	2.0	5658534	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5663204	<2.0	5658703	<2.0	2.0	5658534	N/A
Acid Extractable Barium (Ba)	mg/kg	140	5663204	62	5658703	56	5.0	5658534	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5663204	<2.0	5658703	<2.0	2.0	5658534	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5663204	<2.0	5658703	<2.0	2.0	5658534	N/A
Acid Extractable Boron (B)	mg/kg	<50	5663204	<50	5658703	<50	50	5658534	N/A
Acid Extractable Cadmium (Cd)	mg/kg	1.6	5663204	0.52	5658703	<0.30	0.30	5658534	N/A
Acid Extractable Chromium (Cr)	mg/kg	25	5663204	65	5658703	17	2.0	5658534	N/A
Acid Extractable Cobalt (Co)	mg/kg	5.6	5663204	6.1	5658703	1.6	1.0	5658534	N/A
Acid Extractable Copper (Cu)	mg/kg	860	5663204	250	5658703	11	2.0	5658534	N/A
Acid Extractable Iron (Fe)	mg/kg	20000	5663204	48000	5658703	7300	50	5658534	N/A
Acid Extractable Lead (Pb)	mg/kg	780	5663204	13	5658703	6.6	0.50	5658534	N/A
Acid Extractable Lithium (Li)	mg/kg	5.1	5663204	8.2	5658703	2.4	2.0	5658534	N/A
Acid Extractable Manganese (Mn)	mg/kg	180	5663204	280	5658703	46	2.0	5658534	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5663204	0.10	5658703	0.13	0.10	5658534	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	2.2	5663204	16	5658703	<2.0	2.0	5658534	N/A
Acid Extractable Nickel (Ni)	mg/kg	17	5663204	21	5658703	4.6	2.0	5658534	N/A
Acid Extractable Rubidium (Rb)	mg/kg	4.2	5663204	12	5658703	3.3	2.0	5658534	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5663204	1.7	5658703	<1.0	1.0	5658534	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5663204	<0.50	5658703	<0.50	0.50	5658534	N/A
Acid Extractable Strontium (Sr)	mg/kg	41	5663204	8.9	5658703	6.7	5.0	5658534	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5663204	0.15	5658703	<0.10	0.10	5658534	N/A
Acid Extractable Tin (Sn)	mg/kg	88	5663204	<2.0	5658703	<2.0	2.0	5658534	N/A
Acid Extractable Uranium (U)	mg/kg	0.55	5663204	0.92	5658703	1.5	0.10	5658534	N/A
Acid Extractable Vanadium (V)	mg/kg	25	5663204	64	5658703	19	2.0	5658534	N/A
Acid Extractable Zinc (Zn)	mg/kg	1600	5663204	100	5658703	35	5.0	5658534	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG504	HIG508	HIG509	HIG511			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16963	D 16963	D 16963	D 16963			
	UNITS	**2018-203-SS22**	**2018-203-TP01-BS02**	**2018-203-TP02-BS02**	**2018-203-TP03-BS02**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	14000	22000	8400	11000	10	5660657	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Barium (Ba)	mg/kg	13	26	13	15	5.0	5660657	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	50	5660657	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	0.30	5660657	N/A
Acid Extractable Chromium (Cr)	mg/kg	17	15	6.5	12	2.0	5660657	N/A
Acid Extractable Cobalt (Co)	mg/kg	3.1	3.8	1.4	2.7	1.0	5660657	N/A
Acid Extractable Copper (Cu)	mg/kg	10	3.9	<2.0	3.0	2.0	5660657	N/A
Acid Extractable Iron (Fe)	mg/kg	18000	13000	5500	9600	50	5660657	N/A
Acid Extractable Lead (Pb)	mg/kg	3.9	3.1	1.8	2.5	0.50	5660657	N/A
Acid Extractable Lithium (Li)	mg/kg	4.2	5.3	<2.0	3.2	2.0	5660657	N/A
Acid Extractable Manganese (Mn)	mg/kg	76	98	46	76	2.0	5660657	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	5660657	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	5.8	<2.0	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Nickel (Ni)	mg/kg	10	9.6	4.1	6.7	2.0	5660657	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.1	3.3	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	1.0	5660657	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	0.50	5660657	N/A
Acid Extractable Strontium (Sr)	mg/kg	17	17	15	18	5.0	5660657	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	5660657	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Uranium (U)	mg/kg	1.1	0.23	<0.10	0.30	0.10	5660657	N/A
Acid Extractable Vanadium (V)	mg/kg	29	19	8.5	20	2.0	5660657	N/A
Acid Extractable Zinc (Zn)	mg/kg	17	17	8.2	12	5.0	5660657	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG619		HIG620			
Sampling Date		2018/07/19		2018/07/19			
COC Number		D 16964		D 16964			
	UNITS	**2018-203-TP05-BS02**	**QC Batch**	**2018-203-TP06-BS01**	**RDL**	**QC Batch**	**MDL**
Metals							
Acid Extractable Aluminum (Al)	mg/kg	20000	5660657	6100	10	5660595	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5660657	<2.0	2.0	5660595	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5660657	<2.0	2.0	5660595	N/A
Acid Extractable Barium (Ba)	mg/kg	23	5660657	10	5.0	5660595	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5660657	<2.0	2.0	5660595	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5660657	<2.0	2.0	5660595	N/A
Acid Extractable Boron (B)	mg/kg	<50	5660657	<50	50	5660595	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5660657	<0.30	0.30	5660595	N/A
Acid Extractable Chromium (Cr)	mg/kg	15	5660657	9.6	2.0	5660595	N/A
Acid Extractable Cobalt (Co)	mg/kg	3.6	5660657	2.5	1.0	5660595	N/A
Acid Extractable Copper (Cu)	mg/kg	4.2	5660657	2.1	2.0	5660595	N/A
Acid Extractable Iron (Fe)	mg/kg	13000	5660657	7900	50	5660595	N/A
Acid Extractable Lead (Pb)	mg/kg	2.7	5660657	2.0	0.50	5660595	N/A
Acid Extractable Lithium (Li)	mg/kg	4.4	5660657	4.2	2.0	5660595	N/A
Acid Extractable Manganese (Mn)	mg/kg	100	5660657	58	2.0	5660595	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5660657	<0.10	0.10	5660595	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5660657	<2.0	2.0	5660595	N/A
Acid Extractable Nickel (Ni)	mg/kg	8.7	5660657	7.7	2.0	5660595	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.3	5660657	<2.0	2.0	5660595	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5660657	<1.0	1.0	5660595	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5660657	<0.50	0.50	5660595	N/A
Acid Extractable Strontium (Sr)	mg/kg	18	5660657	10	5.0	5660595	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5660657	<0.10	0.10	5660595	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5660657	<2.0	2.0	5660595	N/A
Acid Extractable Uranium (U)	mg/kg	0.27	5660657	0.14	0.10	5660595	N/A
Acid Extractable Vanadium (V)	mg/kg	20	5660657	11	2.0	5660595	N/A
Acid Extractable Zinc (Zn)	mg/kg	15	5660657	12	5.0	5660595	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG621		HIG623	HIG625			
Sampling Date		2018/07/19		2018/07/19	2018/07/19			
COC Number		D 16964		D 16964	D 16964			
	UNITS	**2018-203-TP06-BS02**	**QC Batch**	**2018-203-TP08-BS01**	**2018-203-TP10-BS01**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	7900	5660657	16000	15000	10	5660595	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5660657	10	<2.0	2.0	5660595	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Barium (Ba)	mg/kg	11	5660657	92	27	5.0	5660595	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Boron (B)	mg/kg	<50	5660657	280	<50	50	5660595	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5660657	1.3	<0.30	0.30	5660595	N/A
Acid Extractable Chromium (Cr)	mg/kg	6.6	5660657	35	20	2.0	5660595	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.1	5660657	6.1	5.7	1.0	5660595	N/A
Acid Extractable Copper (Cu)	mg/kg	2.4	5660657	220	39	2.0	5660595	N/A
Acid Extractable Iron (Fe)	mg/kg	6300	5660657	12000	18000	50	5660595	N/A
Acid Extractable Lead (Pb)	mg/kg	2.0	5660657	43	7.8	0.50	5660595	N/A
Acid Extractable Lithium (Li)	mg/kg	3.4	5660657	8.0	7.4	2.0	5660595	N/A
Acid Extractable Manganese (Mn)	mg/kg	53	5660657	140	130	2.0	5660595	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5660657	0.10	<0.10	0.10	5660595	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5660657	<2.0	2.1	2.0	5660595	N/A
Acid Extractable Nickel (Ni)	mg/kg	5.7	5660657	24	15	2.0	5660595	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.4	5660657	3.4	5.9	2.0	5660595	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5660657	<1.0	<1.0	1.0	5660595	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5660657	<0.50	<0.50	0.50	5660595	N/A
Acid Extractable Strontium (Sr)	mg/kg	15	5660657	32	16	5.0	5660595	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5660657	<0.10	<0.10	0.10	5660595	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5660657	6.0	<2.0	2.0	5660595	N/A
Acid Extractable Uranium (U)	mg/kg	0.11	5660657	0.58	0.62	0.10	5660595	N/A
Acid Extractable Vanadium (V)	mg/kg	8.3	5660657	32	35	2.0	5660595	N/A
Acid Extractable Zinc (Zn)	mg/kg	10	5660657	3000	29	5.0	5660595	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG898	HIG899	HIG900	HIG901	HIG902			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33499	D 33499	D 33499	D 33499	D 33499			
	UNITS	**2018-206-SS01**	**2018-206-SS02**	**2018-206-SS03**	**2018-206-SS04**	**2018-206-SS05**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	6600	7000	8300	4700	4900	10	5660595	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Barium (Ba)	mg/kg	49	58	68	33	16	5.0	5660595	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	50	5660595	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5660595	N/A
Acid Extractable Chromium (Cr)	mg/kg	14	12	14	11	14	2.0	5660595	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.8	2.5	2.0	1.4	1.9	1.0	5660595	N/A
Acid Extractable Copper (Cu)	mg/kg	12	17	110	8.4	2.2	2.0	5660595	N/A
Acid Extractable Iron (Fe)	mg/kg	10000	6900	9500	3700	10000	50	5660595	N/A
Acid Extractable Lead (Pb)	mg/kg	6.9	8.0	6.1	6.6	3.3	0.50	5660595	N/A
Acid Extractable Lithium (Li)	mg/kg	3.5	3.0	3.7	<2.0	2.7	2.0	5660595	N/A
Acid Extractable Manganese (Mn)	mg/kg	38	32	43	14	51	2.0	5660595	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	0.12	<0.10	0.10	5660595	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	2.4	<2.0	<2.0	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Nickel (Ni)	mg/kg	10	11	14	4.6	4.3	2.0	5660595	N/A
Acid Extractable Rubidium (Rb)	mg/kg	5.9	3.9	9.2	2.1	5.0	2.0	5660595	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5660595	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5660595	N/A
Acid Extractable Strontium (Sr)	mg/kg	19	28	11	12	5.1	5.0	5660595	N/A
Acid Extractable Thallium (Tl)	mg/kg	0.11	<0.10	<0.10	<0.10	<0.10	0.10	5660595	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Uranium (U)	mg/kg	5.9	7.4	0.63	0.57	0.26	0.10	5660595	N/A
Acid Extractable Vanadium (V)	mg/kg	22	13	18	4.8	31	2.0	5660595	N/A
Acid Extractable Zinc (Zn)	mg/kg	19	16	28	<5.0	13	5.0	5660595	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG903	HIG904	HIG906		HIG907			
Sampling Date		2018/07/20	2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33499	D 33499	D 33499		D 33499			
	UNITS	**2018-206-SS06**	**2018-206-SS07**	**2018-206-SS09**	**QC Batch**	**2018-206-SS10**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	7700	4400	13000	5660595	7000	10	5660657	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	5660595	<2.0	2.0	5660657	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	5660595	2.2	2.0	5660657	N/A
Acid Extractable Barium (Ba)	mg/kg	52	28	72	5660595	62	5.0	5660657	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	5660595	<2.0	2.0	5660657	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	5660595	<2.0	2.0	5660657	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	5660595	<50	50	5660657	N/A
Acid Extractable Cadmium (Cd)	mg/kg	0.41	<0.30	<0.30	5660595	0.73	0.30	5660657	N/A
Acid Extractable Chromium (Cr)	mg/kg	9.4	10	29	5660595	8.8	2.0	5660657	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.1	2.2	8.1	5660595	5.9	1.0	5660657	N/A
Acid Extractable Copper (Cu)	mg/kg	32	11	26	5660595	53	2.0	5660657	N/A
Acid Extractable Iron (Fe)	mg/kg	5700	8000	22000	5660595	17000	50	5660657	N/A
Acid Extractable Lead (Pb)	mg/kg	7.6	8.1	9.8	5660595	7.4	0.50	5660657	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	4.1	12	5660595	<2.0	2.0	5660657	N/A
Acid Extractable Manganese (Mn)	mg/kg	15	42	190	5660595	55	2.0	5660657	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	5660595	0.17	0.10	5660657	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	3.7	<2.0	5.9	5660595	5.9	2.0	5660657	N/A
Acid Extractable Nickel (Ni)	mg/kg	13	5.8	21	5660595	12	2.0	5660657	N/A
Acid Extractable Rubidium (Rb)	mg/kg	<2.0	5.3	11	5660595	3.2	2.0	5660657	N/A
Acid Extractable Selenium (Se)	mg/kg	1.5	<1.0	<1.0	5660595	2.2	1.0	5660657	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	5660595	<0.50	0.50	5660657	N/A
Acid Extractable Strontium (Sr)	mg/kg	27	7.0	20	5660595	38	5.0	5660657	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	0.24	5660595	0.21	0.10	5660657	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	5660595	<2.0	2.0	5660657	N/A
Acid Extractable Uranium (U)	mg/kg	17	0.74	12	5660595	33	0.10	5660657	N/A
Acid Extractable Vanadium (V)	mg/kg	10	14	40	5660595	9.5	2.0	5660657	N/A
Acid Extractable Zinc (Zn)	mg/kg	14	18	81	5660595	57	5.0	5660657	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG965		HIG966		HIG969			
Sampling Date		2018/07/20		2018/07/20		2018/07/20			
COC Number		D 33500		D 33500		D 33500			
	UNITS	**2018-206-SS13**	**QC Batch**	**2018-206-SS14**	**QC Batch**	**2018-206-SS17**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	20000	5660657	24000	5663204	19000	10	5660698	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5660657	<2.0	5663204	<2.0	2.0	5660698	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5660657	<2.0	5663204	<2.0	2.0	5660698	N/A
Acid Extractable Barium (Ba)	mg/kg	93	5660657	91	5663204	61	5.0	5660698	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5660657	<2.0	5663204	2.7	2.0	5660698	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5660657	<2.0	5663204	<2.0	2.0	5660698	N/A
Acid Extractable Boron (B)	mg/kg	<50	5660657	<50	5663204	<50	50	5660698	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5660657	<0.30	5663204	2.2	0.30	5660698	N/A
Acid Extractable Chromium (Cr)	mg/kg	12	5660657	12	5663204	25	2.0	5660698	N/A
Acid Extractable Cobalt (Co)	mg/kg	7.1	5660657	6.1	5663204	6.1	1.0	5660698	N/A
Acid Extractable Copper (Cu)	mg/kg	8.3	5660657	6.6	5663204	570	2.0	5660698	N/A
Acid Extractable Iron (Fe)	mg/kg	15000	5660657	13000	5663204	23000	50	5660698	N/A
Acid Extractable Lead (Pb)	mg/kg	1.9	5660657	2.7	5663204	18	0.50	5660698	N/A
Acid Extractable Lithium (Li)	mg/kg	4.5	5660657	4.9	5663204	4.5	2.0	5660698	N/A
Acid Extractable Manganese (Mn)	mg/kg	170	5660657	120	5663204	180	2.0	5660698	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5660657	<0.10	5663204	<0.10	0.10	5660698	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5660657	<2.0	5663204	<2.0	2.0	5660698	N/A
Acid Extractable Nickel (Ni)	mg/kg	11	5660657	11	5663204	12	2.0	5660698	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.1	5660657	2.3	5663204	2.2	2.0	5660698	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5660657	<1.0	5663204	<1.0	1.0	5660698	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5660657	<0.50	5663204	1.1	0.50	5660698	N/A
Acid Extractable Strontium (Sr)	mg/kg	56	5660657	32	5663204	31	5.0	5660698	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5660657	<0.10	5663204	<0.10	0.10	5660698	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5660657	<2.0	5663204	7.2	2.0	5660698	N/A
Acid Extractable Uranium (U)	mg/kg	0.22	5660657	0.19	5663204	0.33	0.10	5660698	N/A
Acid Extractable Vanadium (V)	mg/kg	30	5660657	24	5663204	26	2.0	5660698	N/A
Acid Extractable Zinc (Zn)	mg/kg	26	5660657	23	5663204	240	5.0	5660698	N/A

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

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG969				HIG969			
Sampling Date		2018/07/20				2018/07/20			
COC Number		D 33500				D 33500			
	UNITS	**2018-206-SS17 Lab-Dup**	**RDL**	**QC Batch**	**MDL**	**2018-206-SS17 Lab-Dup 2**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	18000	10	5660698	N/A				
Acid Extractable Antimony (Sb)	mg/kg	<2.0	2.0	5660698	N/A				
Acid Extractable Arsenic (As)	mg/kg	<2.0	2.0	5660698	N/A				
Acid Extractable Barium (Ba)	mg/kg	60	5.0	5660698	N/A				
Acid Extractable Beryllium (Be)	mg/kg	<2.0	2.0	5660698	N/A				
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	2.0	5660698	N/A				
Acid Extractable Boron (B)	mg/kg	<50	50	5660698	N/A				
Acid Extractable Cadmium (Cd)	mg/kg	2.0	0.30	5660698	N/A				
Acid Extractable Chromium (Cr)	mg/kg	27	2.0	5660698	N/A				
Acid Extractable Cobalt (Co)	mg/kg	5.7	1.0	5660698	N/A				
Acid Extractable Copper (Cu)	mg/kg	310 (1)	2.0	5660698	N/A	280 (2)	2.0	5660698	N/A
Acid Extractable Iron (Fe)	mg/kg	15000 (1)	50	5660698	N/A	14000 (2)	50	5660698	N/A
Acid Extractable Lead (Pb)	mg/kg	17	0.50	5660698	N/A				
Acid Extractable Lithium (Li)	mg/kg	4.9	2.0	5660698	N/A				
Acid Extractable Manganese (Mn)	mg/kg	150	2.0	5660698	N/A				
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.10	5660698	N/A				
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	2.0	5660698	N/A				
Acid Extractable Nickel (Ni)	mg/kg	13	2.0	5660698	N/A				
Acid Extractable Rubidium (Rb)	mg/kg	2.1	2.0	5660698	N/A				
Acid Extractable Selenium (Se)	mg/kg	1.1	1.0	5660698	N/A				
Acid Extractable Silver (Ag)	mg/kg	1.3	0.50	5660698	N/A				
Acid Extractable Strontium (Sr)	mg/kg	29	5.0	5660698	N/A				
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.10	5660698	N/A				
Acid Extractable Tin (Sn)	mg/kg	3.2 (1)	2.0	5660698	N/A	2.5 (2)	2.0	5660698	N/A
Acid Extractable Uranium (U)	mg/kg	0.26	0.10	5660698	N/A				
Acid Extractable Vanadium (V)	mg/kg	28	2.0	5660698	N/A				
Acid Extractable Zinc (Zn)	mg/kg	190	5.0	5660698	N/A				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Poor RPD due to sample inhomogeneity. Result confirmed by repeat digestion and analysis.
(2) Poor RPD due to sample inhomogeneity.

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIG970		HIG971		HIG972			
Sampling Date		2018/07/20		2018/07/20		2018/07/20			
COC Number		D 33500		D 33500		D 33500			
	UNITS	**2018-206-SS18**	**QC Batch**	**2018-206-SS19**	**QC Batch**	**2018-206-SS20**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	20000	5660657	16000	5663204	16000	10	5660657	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5660657	<2.0	5663204	<2.0	2.0	5660657	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5660657	<2.0	5663204	<2.0	2.0	5660657	N/A
Acid Extractable Barium (Ba)	mg/kg	61	5660657	130	5663204	50	5.0	5660657	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5660657	<2.0	5663204	<2.0	2.0	5660657	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5660657	<2.0	5663204	<2.0	2.0	5660657	N/A
Acid Extractable Boron (B)	mg/kg	<50	5660657	<50	5663204	<50	50	5660657	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5660657	<0.30	5663204	<0.30	0.30	5660657	N/A
Acid Extractable Chromium (Cr)	mg/kg	12	5660657	12	5663204	12	2.0	5660657	N/A
Acid Extractable Cobalt (Co)	mg/kg	4.9	5660657	5.0	5663204	3.5	1.0	5660657	N/A
Acid Extractable Copper (Cu)	mg/kg	9.7	5660657	18	5663204	7.9	2.0	5660657	N/A
Acid Extractable Iron (Fe)	mg/kg	15000	5660657	13000	5663204	13000	50	5660657	N/A
Acid Extractable Lead (Pb)	mg/kg	5.2	5660657	13	5663204	7.8	0.50	5660657	N/A
Acid Extractable Lithium (Li)	mg/kg	5.0	5660657	4.6	5663204	4.9	2.0	5660657	N/A
Acid Extractable Manganese (Mn)	mg/kg	130	5660657	150	5663204	110	2.0	5660657	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5660657	<0.10	5663204	<0.10	0.10	5660657	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5660657	<2.0	5663204	<2.0	2.0	5660657	N/A
Acid Extractable Nickel (Ni)	mg/kg	9.2	5660657	9.0	5663204	7.4	2.0	5660657	N/A
Acid Extractable Rubidium (Rb)	mg/kg	<2.0	5660657	2.1	5663204	<2.0	2.0	5660657	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5660657	<1.0	5663204	<1.0	1.0	5660657	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5660657	<0.50	5663204	<0.50	0.50	5660657	N/A
Acid Extractable Strontium (Sr)	mg/kg	29	5660657	27	5663204	18	5.0	5660657	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5660657	<0.10	5663204	<0.10	0.10	5660657	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5660657	<2.0	5663204	<2.0	2.0	5660657	N/A
Acid Extractable Uranium (U)	mg/kg	0.32	5660657	0.26	5663204	0.34	0.10	5660657	N/A
Acid Extractable Vanadium (V)	mg/kg	24	5660657	22	5663204	24	2.0	5660657	N/A
Acid Extractable Zinc (Zn)	mg/kg	130	5660657	57	5663204	52	5.0	5660657	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIH047	HIH050	HIH052	HIH054			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33393	D 33393	D 33393	D 33393			
	UNITS	**2018-206-SS21**	**2018-206-TP01-BS01**	**2018-206-TP02-BS01**	**2018-206-TP03-BS01**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	6200	3000	4200	9200	10	5660657	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Barium (Ba)	mg/kg	42	24	10	48	5.0	5660657	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5660657	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	50	5660657	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	0.47	0.48	<0.30	0.30	5660657	N/A
Acid Extractable Chromium (Cr)	mg/kg	14	7.9	3.6	24	2.0	5660657	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.7	<1.0	1.5	3.8	1.0	5660657	N/A
Acid Extractable Copper (Cu)	mg/kg	10	21	48	150	2.0	5660657	N/A
Acid Extractable Iron (Fe)	mg/kg	10000	3100	2400	14000	50	5660657	N/A
Acid Extractable Lead (Pb)	mg/kg	6.5	3.7	1.9	12	0.50	5660657	N/A
Acid Extractable Lithium (Li)	mg/kg	4.0	<2.0	<2.0	5.9	2.0	5660657	N/A
Acid Extractable Manganese (Mn)	mg/kg	45	12	4.9	72	2.0	5660657	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	0.11	0.10	5660657	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	2.4	<2.0	9.8	2.8	2.0	5660657	N/A
Acid Extractable Nickel (Ni)	mg/kg	9.1	5.7	9.4	17	2.0	5660657	N/A
Acid Extractable Rubidium (Rb)	mg/kg	5.8	3.7	<2.0	8.4	2.0	5660657	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	1.5	1.1	1.0	5660657	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	0.50	5660657	N/A
Acid Extractable Strontium (Sr)	mg/kg	17	23	25	45	5.0	5660657	N/A
Acid Extractable Thallium (Tl)	mg/kg	0.10	<0.10	0.16	0.13	0.10	5660657	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	5.6	2.0	5660657	N/A
Acid Extractable Uranium (U)	mg/kg	4.7	3.7	28	23	0.10	5660657	N/A
Acid Extractable Vanadium (V)	mg/kg	21	3.8	5.6	25	2.0	5660657	N/A
Acid Extractable Zinc (Zn)	mg/kg	20	19	5.3	380	5.0	5660657	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIH055		HIH206	HIH208			
Sampling Date		2018/07/20		2018/07/20	2018/07/20			
COC Number		D 33393		D 33394	D 33394			
	UNITS	**2018-206-TP04-BS01**	**QC Batch**	**2018-206-TP05-BS01**	**2018-206-TP06-BS01**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	6700	5660657	1600	16000	10	5658703	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5660657	<2.0	2.9	2.0	5658703	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Barium (Ba)	mg/kg	23	5660657	13	58	5.0	5658703	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Boron (B)	mg/kg	<50	5660657	<50	<50	50	5658703	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5660657	<0.30	0.43	0.30	5658703	N/A
Acid Extractable Chromium (Cr)	mg/kg	18	5660657	4.0	13	2.0	5658703	N/A
Acid Extractable Cobalt (Co)	mg/kg	3.3	5660657	<1.0	5.0	1.0	5658703	N/A
Acid Extractable Copper (Cu)	mg/kg	4.7	5660657	<2.0	47	2.0	5658703	N/A
Acid Extractable Iron (Fe)	mg/kg	13000	5660657	2000	14000	50	5658703	N/A
Acid Extractable Lead (Pb)	mg/kg	5.4	5660657	2.5	19	0.50	5658703	N/A
Acid Extractable Lithium (Li)	mg/kg	7.6	5660657	<2.0	5.5	2.0	5658703	N/A
Acid Extractable Manganese (Mn)	mg/kg	71	5660657	15	130	2.0	5658703	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5660657	<0.10	<0.10	0.10	5658703	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Nickel (Ni)	mg/kg	7.9	5660657	<2.0	10	2.0	5658703	N/A
Acid Extractable Rubidium (Rb)	mg/kg	8.2	5660657	3.0	<2.0	2.0	5658703	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5660657	<1.0	<1.0	1.0	5658703	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5660657	<0.50	<0.50	0.50	5658703	N/A
Acid Extractable Strontium (Sr)	mg/kg	6.5	5660657	<5.0	23	5.0	5658703	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5660657	<0.10	<0.10	0.10	5658703	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5658703	N/A
Acid Extractable Uranium (U)	mg/kg	0.41	5660657	0.23	0.23	0.10	5658703	N/A
Acid Extractable Vanadium (V)	mg/kg	29	5660657	5.1	25	2.0	5658703	N/A
Acid Extractable Zinc (Zn)	mg/kg	24	5660657	<5.0	110	5.0	5658703	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIH210	HIH212		HIH432			
Sampling Date		2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33394	D 33394		D 33396			
	UNITS	**2018-206-TP08-BS01**	**2018-206-TP010-BS01**	**QC Batch**	**2018-209-SS01**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	19000	16000	5658703	13000	10	5660698	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	5658703	<2.0	2.0	5660698	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	5658703	2.3	2.0	5660698	N/A
Acid Extractable Barium (Ba)	mg/kg	66	49	5658703	53	5.0	5660698	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	5658703	<2.0	2.0	5660698	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	5658703	<2.0	2.0	5660698	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	5658703	<50	50	5660698	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	0.60	5658703	<0.30	0.30	5660698	N/A
Acid Extractable Chromium (Cr)	mg/kg	14	12	5658703	15	2.0	5660698	N/A
Acid Extractable Cobalt (Co)	mg/kg	4.2	5.6	5658703	2.5	1.0	5660698	N/A
Acid Extractable Copper (Cu)	mg/kg	7.0	10	5658703	30	2.0	5660698	N/A
Acid Extractable Iron (Fe)	mg/kg	12000	15000	5658703	5500	50	5660698	N/A
Acid Extractable Lead (Pb)	mg/kg	8.1	9.8	5658703	5.7	0.50	5660698	N/A
Acid Extractable Lithium (Li)	mg/kg	4.3	4.8	5658703	4.2	2.0	5660698	N/A
Acid Extractable Manganese (Mn)	mg/kg	85	150	5658703	45	2.0	5660698	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	5658703	0.13	0.10	5660698	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	5658703	<2.0	2.0	5660698	N/A
Acid Extractable Nickel (Ni)	mg/kg	9.0	8.3	5658703	5.7	2.0	5660698	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.1	<2.0	5658703	2.8	2.0	5660698	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	5658703	<1.0	1.0	5660698	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	5658703	<0.50	0.50	5660698	N/A
Acid Extractable Strontium (Sr)	mg/kg	23	22	5658703	15	5.0	5660698	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	5658703	<0.10	0.10	5660698	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	5658703	<2.0	2.0	5660698	N/A
Acid Extractable Uranium (U)	mg/kg	0.30	0.20	5658703	2.8	0.10	5660698	N/A
Acid Extractable Vanadium (V)	mg/kg	22	33	5658703	10	2.0	5660698	N/A
Acid Extractable Zinc (Zn)	mg/kg	530	94	5658703	12	5.0	5660698	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIH433	HIH434	HIH435	HIH436	HIH437			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33396	D 33396	D 33396	D 33396	D 33396			
	UNITS	**2018-209-SS02**	**2018-209-SS03**	**2018-209-SS04**	**2018-209-SS07**	**2018-209-SS08**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	4700	11000	7900	6700	8300	10	5663204	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Arsenic (As)	mg/kg	2.6	2.4	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Barium (Ba)	mg/kg	250	60	57	54	57	5.0	5663204	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	50	5663204	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5663204	N/A
Acid Extractable Chromium (Cr)	mg/kg	2.6	9.4	13	14	15	2.0	5663204	N/A
Acid Extractable Cobalt (Co)	mg/kg	6.7	1.7	3.9	4.8	4.9	1.0	5663204	N/A
Acid Extractable Copper (Cu)	mg/kg	8.7	24	12	8.1	10	2.0	5663204	N/A
Acid Extractable Iron (Fe)	mg/kg	3700	2600	8600	13000	13000	50	5663204	N/A
Acid Extractable Lead (Pb)	mg/kg	3.0	2.8	3.2	4.5	3.8	0.50	5663204	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	2.8	5.3	7.7	5.5	2.0	5663204	N/A
Acid Extractable Manganese (Mn)	mg/kg	11	30	81	130	110	2.0	5663204	N/A
Acid Extractable Mercury (Hg)	mg/kg	0.18	0.11	<0.10	<0.10	<0.10	0.10	5663204	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Nickel (Ni)	mg/kg	3.7	4.4	6.4	7.2	9.0	2.0	5663204	N/A
Acid Extractable Rubidium (Rb)	mg/kg	<2.0	<2.0	5.2	9.0	6.6	2.0	5663204	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5663204	N/A
Acid Extractable Silver (Ag)	mg/kg	0.58	<0.50	<0.50	<0.50	<0.50	0.50	5663204	N/A
Acid Extractable Strontium (Sr)	mg/kg	150	19	21	14	16	5.0	5663204	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5663204	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Uranium (U)	mg/kg	0.58	2.2	1.5	0.53	0.42	0.10	5663204	N/A
Acid Extractable Vanadium (V)	mg/kg	4.4	8.0	17	28	30	2.0	5663204	N/A
Acid Extractable Zinc (Zn)	mg/kg	19	8.0	18	24	19	5.0	5663204	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIH438		HIH440	HIH441	HIH462			
Sampling Date		2018/07/20		2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33396		D 33396	D 33396	D 33397			
	UNITS	**2018-209-SS09**	**QC Batch**	**2018-209-SS11**	**2018-209-SS12**	**2018-209-SS15**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	7500	5660698	8300	8300	7800	10	5663204	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5660698	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5660698	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Barium (Ba)	mg/kg	46	5660698	72	84	80	5.0	5663204	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5660698	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5660698	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Boron (B)	mg/kg	<50	5660698	<50	<50	<50	50	5663204	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5660698	<0.30	1.2	<0.30	0.30	5663204	N/A
Acid Extractable Chromium (Cr)	mg/kg	14	5660698	16	16	17	2.0	5663204	N/A
Acid Extractable Cobalt (Co)	mg/kg	4.9	5660698	5.6	5.6	5.2	1.0	5663204	N/A
Acid Extractable Copper (Cu)	mg/kg	10	5660698	13	12	15	2.0	5663204	N/A
Acid Extractable Iron (Fe)	mg/kg	13000	5660698	14000	15000	14000	50	5663204	N/A
Acid Extractable Lead (Pb)	mg/kg	4.1	5660698	4.0	120	9.0	0.50	5663204	N/A
Acid Extractable Lithium (Li)	mg/kg	5.5	5660698	6.0	6.6	5.6	2.0	5663204	N/A
Acid Extractable Manganese (Mn)	mg/kg	110	5660698	140	140	130	2.0	5663204	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5660698	<0.10	<0.10	<0.10	0.10	5663204	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5660698	<2.0	<2.0	<2.0	2.0	5663204	N/A
Acid Extractable Nickel (Ni)	mg/kg	8.5	5660698	9.3	9.3	10	2.0	5663204	N/A
Acid Extractable Rubidium (Rb)	mg/kg	5.4	5660698	8.8	8.9	8.7	2.0	5663204	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5660698	<1.0	<1.0	<1.0	1.0	5663204	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5660698	<0.50	<0.50	<0.50	0.50	5663204	N/A
Acid Extractable Strontium (Sr)	mg/kg	14	5660698	21	20	19	5.0	5663204	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5660698	<0.10	<0.10	<0.10	0.10	5663204	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5660698	<2.0	<2.0	11	2.0	5663204	N/A
Acid Extractable Uranium (U)	mg/kg	0.39	5660698	0.45	0.55	0.51	0.10	5663204	N/A
Acid Extractable Vanadium (V)	mg/kg	30	5660698	30	34	36	2.0	5663204	N/A
Acid Extractable Zinc (Zn)	mg/kg	19	5660698	30	31	36	5.0	5663204	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIH465		HIH466	HIH467			
Sampling Date		2018/07/20		2018/07/20	2018/07/20			
COC Number		D 33397		D 33397	D 33397			
	UNITS	**2018-209-SS18**	**QC Batch**	**2018-209-SS19**	**2018-209-SS20**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	8900	5663204	6300	5400	10	5660698	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5663204	<2.0	3.3	2.0	5660698	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5663204	<2.0	<2.0	2.0	5660698	N/A
Acid Extractable Barium (Ba)	mg/kg	58	5663204	69	56	5.0	5660698	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5663204	<2.0	<2.0	2.0	5660698	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5663204	<2.0	<2.0	2.0	5660698	N/A
Acid Extractable Boron (B)	mg/kg	<50	5663204	<50	<50	50	5660698	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5663204	<0.30	<0.30	0.30	5660698	N/A
Acid Extractable Chromium (Cr)	mg/kg	15	5663204	13	13	2.0	5660698	N/A
Acid Extractable Cobalt (Co)	mg/kg	5.1	5663204	4.6	4.1	1.0	5660698	N/A
Acid Extractable Copper (Cu)	mg/kg	11	5663204	9.1	8.1	2.0	5660698	N/A
Acid Extractable Iron (Fe)	mg/kg	15000	5663204	12000	10000	50	5660698	N/A
Acid Extractable Lead (Pb)	mg/kg	4.8	5663204	3.7	3.6	0.50	5660698	N/A
Acid Extractable Lithium (Li)	mg/kg	6.6	5663204	6.1	7.1	2.0	5660698	N/A
Acid Extractable Manganese (Mn)	mg/kg	140	5663204	110	86	2.0	5660698	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5663204	<0.10	<0.10	0.10	5660698	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5663204	<2.0	<2.0	2.0	5660698	N/A
Acid Extractable Nickel (Ni)	mg/kg	9.6	5663204	8.1	7.3	2.0	5660698	N/A
Acid Extractable Rubidium (Rb)	mg/kg	7.7	5663204	8.0	4.9	2.0	5660698	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5663204	<1.0	<1.0	1.0	5660698	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5663204	<0.50	<0.50	0.50	5660698	N/A
Acid Extractable Strontium (Sr)	mg/kg	14	5663204	18	12	5.0	5660698	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5663204	<0.10	<0.10	0.10	5660698	N/A
Acid Extractable Tin (Sn)	mg/kg	32	5663204	<2.0	<2.0	2.0	5660698	N/A
Acid Extractable Uranium (U)	mg/kg	0.41	5663204	0.37	0.32	0.10	5660698	N/A
Acid Extractable Vanadium (V)	mg/kg	28	5663204	27	26	2.0	5660698	N/A
Acid Extractable Zinc (Zn)	mg/kg	21	5663204	25	20	5.0	5660698	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIH468	HIH468		HIH469			
Sampling Date		2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33397	D 33397		D 33397			
	UNITS	**2018-209-SS21**	**2018-209-SS21 Lab-Dup**	**QC Batch**	**2018-209-SS22**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	14000	13000	5663204	7500	10	5660698	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	5663204	<2.0	2.0	5660698	N/A
Acid Extractable Arsenic (As)	mg/kg	2.5	2.2	5663204	<2.0	2.0	5660698	N/A
Acid Extractable Barium (Ba)	mg/kg	59	57	5663204	50	5.0	5660698	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	5663204	<2.0	2.0	5660698	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	5663204	<2.0	2.0	5660698	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	5663204	<50	50	5660698	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	5663204	<0.30	0.30	5660698	N/A
Acid Extractable Chromium (Cr)	mg/kg	17	15	5663204	16	2.0	5660698	N/A
Acid Extractable Cobalt (Co)	mg/kg	3.5	3.0	5663204	4.8	1.0	5660698	N/A
Acid Extractable Copper (Cu)	mg/kg	24	22	5663204	9.5	2.0	5660698	N/A
Acid Extractable Iron (Fe)	mg/kg	6100	5600	5663204	14000	50	5660698	N/A
Acid Extractable Lead (Pb)	mg/kg	5.7	5.3	5663204	4.1	0.50	5660698	N/A
Acid Extractable Lithium (Li)	mg/kg	6.5	6.0	5663204	5.6	2.0	5660698	N/A
Acid Extractable Manganese (Mn)	mg/kg	64	59	5663204	120	2.0	5660698	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	5663204	<0.10	0.10	5660698	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	5663204	<2.0	2.0	5660698	N/A
Acid Extractable Nickel (Ni)	mg/kg	8.2	6.5	5663204	8.8	2.0	5660698	N/A
Acid Extractable Rubidium (Rb)	mg/kg	3.5	3.3	5663204	6.6	2.0	5660698	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	5663204	<1.0	1.0	5660698	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	5663204	<0.50	0.50	5660698	N/A
Acid Extractable Strontium (Sr)	mg/kg	16	16	5663204	13	5.0	5660698	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	5663204	<0.10	0.10	5660698	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	5663204	20	2.0	5660698	N/A
Acid Extractable Uranium (U)	mg/kg	2.0	1.9	5663204	0.38	0.10	5660698	N/A
Acid Extractable Vanadium (V)	mg/kg	13	12	5663204	28	2.0	5660698	N/A
Acid Extractable Zinc (Zn)	mg/kg	16	15	5663204	21	5.0	5660698	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIH679		HIH680	HIH681			
Sampling Date		2018/07/20		2018/07/20	2018/07/20			
COC Number		D 33398		D 33398	D 33398			
	UNITS	**2018-209-SS23**	**QC Batch**	**2018-209-SS24**	**2018-209-TP06-BS01**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	6400	5660657	7100	7800	10	5660595	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Barium (Ba)	mg/kg	49	5660657	73	75	5.0	5660595	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Boron (B)	mg/kg	<50	5660657	<50	<50	50	5660595	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5660657	<0.30	<0.30	0.30	5660595	N/A
Acid Extractable Chromium (Cr)	mg/kg	14	5660657	19	15	2.0	5660595	N/A
Acid Extractable Cobalt (Co)	mg/kg	4.6	5660657	5.0	5.3	1.0	5660595	N/A
Acid Extractable Copper (Cu)	mg/kg	8.2	5660657	13	11	2.0	5660595	N/A
Acid Extractable Iron (Fe)	mg/kg	12000	5660657	13000	13000	50	5660595	N/A
Acid Extractable Lead (Pb)	mg/kg	4.9	5660657	4.3	3.9	0.50	5660595	N/A
Acid Extractable Lithium (Li)	mg/kg	7.7	5660657	5.2	6.5	2.0	5660595	N/A
Acid Extractable Manganese (Mn)	mg/kg	120	5660657	120	130	2.0	5660595	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5660657	<0.10	<0.10	0.10	5660595	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Nickel (Ni)	mg/kg	7.2	5660657	9.4	9.1	2.0	5660595	N/A
Acid Extractable Rubidium (Rb)	mg/kg	8.6	5660657	7.4	8.5	2.0	5660595	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5660657	<1.0	<1.0	1.0	5660595	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5660657	<0.50	<0.50	0.50	5660595	N/A
Acid Extractable Strontium (Sr)	mg/kg	14	5660657	20	18	5.0	5660595	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5660657	<0.10	<0.10	0.10	5660595	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5660657	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Uranium (U)	mg/kg	0.58	5660657	0.44	0.45	0.10	5660595	N/A
Acid Extractable Vanadium (V)	mg/kg	27	5660657	35	31	2.0	5660595	N/A
Acid Extractable Zinc (Zn)	mg/kg	24	5660657	36	25	5.0	5660595	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIH684		HIH686			
Sampling Date		2018/07/20		2018/07/20			
COC Number		D 33398		D 33398			
	UNITS	**2018-209-TP07-BS02**	**QC Batch**	**2018-209-TP08-BS02**	**RDL**	**QC Batch**	**MDL**
Metals							
Acid Extractable Aluminum (Al)	mg/kg	6900	5660595	9900	10	5658703	N/A
Acid Extractable Antimony (Sb)	mg/kg	7.5	5660595	<2.0	2.0	5658703	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5660595	<2.0	2.0	5658703	N/A
Acid Extractable Barium (Ba)	mg/kg	35	5660595	110	5.0	5658703	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5660595	<2.0	2.0	5658703	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5660595	<2.0	2.0	5658703	N/A
Acid Extractable Boron (B)	mg/kg	<50	5660595	<50	50	5658703	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5660595	<0.30	0.30	5658703	N/A
Acid Extractable Chromium (Cr)	mg/kg	15	5660595	28	2.0	5658703	N/A
Acid Extractable Cobalt (Co)	mg/kg	3.8	5660595	6.0	1.0	5658703	N/A
Acid Extractable Copper (Cu)	mg/kg	8.4	5660595	80	2.0	5658703	N/A
Acid Extractable Iron (Fe)	mg/kg	12000	5660595	14000	50	5658703	N/A
Acid Extractable Lead (Pb)	mg/kg	3.6	5660595	34	0.50	5658703	N/A
Acid Extractable Lithium (Li)	mg/kg	5.2	5660595	5.8	2.0	5658703	N/A
Acid Extractable Manganese (Mn)	mg/kg	97	5660595	170	2.0	5658703	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5660595	<0.10	0.10	5658703	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5660595	<2.0	2.0	5658703	N/A
Acid Extractable Nickel (Ni)	mg/kg	8.9	5660595	11	2.0	5658703	N/A
Acid Extractable Rubidium (Rb)	mg/kg	5.5	5660595	7.4	2.0	5658703	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5660595	<1.0	1.0	5658703	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5660595	<0.50	0.50	5658703	N/A
Acid Extractable Strontium (Sr)	mg/kg	13	5660595	20	5.0	5658703	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5660595	<0.10	0.10	5658703	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5660595	<2.0	2.0	5658703	N/A
Acid Extractable Uranium (U)	mg/kg	0.35	5660595	0.49	0.10	5658703	N/A
Acid Extractable Vanadium (V)	mg/kg	26	5660595	34	2.0	5658703	N/A
Acid Extractable Zinc (Zn)	mg/kg	18	5660595	99	5.0	5658703	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		HIH687	HIH711			
Sampling Date		2018/07/20	2018/07/20			
COC Number		D 33398	D 33399			
	UNITS	**2018-209-TP09-BS01**	**2018-209-TP10-BS01**	**RDL**	**QC Batch**	**MDL**
Metals						
Acid Extractable Aluminum (Al)	mg/kg	7300	7800	10	5660595	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Barium (Ba)	mg/kg	68	80	5.0	5660595	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	50	5660595	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	6.4	0.30	5660595	N/A
Acid Extractable Chromium (Cr)	mg/kg	16	18	2.0	5660595	N/A
Acid Extractable Cobalt (Co)	mg/kg	5.2	4.6	1.0	5660595	N/A
Acid Extractable Copper (Cu)	mg/kg	14	20	2.0	5660595	N/A
Acid Extractable Iron (Fe)	mg/kg	13000	13000	50	5660595	N/A
Acid Extractable Lead (Pb)	mg/kg	4.2	10	0.50	5660595	N/A
Acid Extractable Lithium (Li)	mg/kg	5.5	5.8	2.0	5660595	N/A
Acid Extractable Manganese (Mn)	mg/kg	140	110	2.0	5660595	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	0.10	5660595	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Nickel (Ni)	mg/kg	8.6	9.0	2.0	5660595	N/A
Acid Extractable Rubidium (Rb)	mg/kg	8.8	7.8	2.0	5660595	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	1.0	5660595	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	23	0.50	5660595	N/A
Acid Extractable Strontium (Sr)	mg/kg	17	17	5.0	5660595	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	0.10	5660595	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Uranium (U)	mg/kg	0.50	0.52	0.10	5660595	N/A
Acid Extractable Vanadium (V)	mg/kg	26	33	2.0	5660595	N/A
Acid Extractable Zinc (Zn)	mg/kg	31	44	5.0	5660595	N/A

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

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIG364	HIG369	HIG370		HIG392			
Sampling Date		2018/07/19	2018/07/19	2018/07/19		2018/07/19			
COC Number		D 16961	D 16961	D 16961		D 16962			
	UNITS	**2018-203-SS03**	**2018-203-SS08**	**2018-203-SS09**	**RDL**	**2018-203-SS15**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
2-Methylnaphthalene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.020 (1)	0.020	5661854	N/A
Acenaphthene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Acenaphthylene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Anthracene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(a)anthracene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(a)pyrene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	<0.020	<0.020	0.020	<0.020	0.020	5655353	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Chrysene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Fluoranthene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Fluorene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Naphthalene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Perylene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Phenanthrene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Pyrene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	89	93	92		86		5661854	
D14-Terphenyl (FS)	%	93	94	94		89		5661854	
D8-Acenaphthylene	%	90	96	96		99		5661854	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIG393		HIG394			HIG503			
Sampling Date		2018/07/19		2018/07/19			2018/07/19			
COC Number		D 16962		D 16962			D 16963			
	UNITS	**2018-203-SS16**	**RDL**	**2018-203-SS17**	**RDL**	**QC Batch**	**2018-203-SS21**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	mg/kg	<0.060 (1)	0.060	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
2-Methylnaphthalene	mg/kg	<0.13 (1)	0.13	<0.010	0.010	5661854	<0.020 (1)	0.020	5661854	N/A
Acenaphthene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.020 (1)	0.020	5661854	N/A
Acenaphthylene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Anthracene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	0.020	<0.020	0.020	5655353	<0.020	0.020	5655351	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Chrysene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Fluorene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.030 (1)	0.030	5661854	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Naphthalene	mg/kg	<0.060 (1)	0.060	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Perylene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Phenanthrene	mg/kg	<0.030 (1)	0.030	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Pyrene	mg/kg	<0.010	0.010	<0.010	0.010	5661854	<0.010	0.010	5661854	N/A
Surrogate Recovery (%)										
D10-Anthracene	%	38 (2)		91		5661854	86		5661854	
D14-Terphenyl (FS)	%	41 (2)		94		5661854	88		5661854	
D8-Acenaphthylene	%	77		94		5661854	103		5661854	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.
(2) PAH surrogate(s) not within acceptance limits. Sample past recommended hold time for repeat analysis.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIG617		HIG622		HIG624			
Sampling Date		2018/07/19		2018/07/19		2018/07/19			
COC Number		D 16964		D 16964		D 16964			
	UNITS	**2018-203-TP04-BS01**	**RDL**	**2018-203-TP07-BS01**	**RDL**	**2018-203-TP09-BS01**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	mg/kg	<0.030 (1)	0.030	0.12	0.010	<0.010	0.010	5661854	N/A
2-Methylnaphthalene	mg/kg	<0.030 (1)	0.030	0.40	0.010	<0.030 (1)	0.030	5661854	N/A
Acenaphthene	mg/kg	<0.030 (1)	0.030	<0.010	0.010	<0.10 (1)	0.10	5661854	N/A
Acenaphthylene	mg/kg	<0.010	0.010	<0.010	0.010	<0.040 (1)	0.040	5661854	N/A
Anthracene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	0.070	0.010	<0.010	0.010	5661854	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	0.020	0.070	0.020	<0.020	0.020	5655353	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	0.031	0.010	<0.010	0.010	5661854	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Chrysene	mg/kg	<0.010	0.010	0.084	0.010	<0.010	0.010	5661854	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Fluoranthene	mg/kg	<0.010	0.010	0.11	0.010	<0.010	0.010	5661854	N/A
Fluorene	mg/kg	<0.020 (1)	0.020	<0.010	0.010	<0.050 (1)	0.050	5661854	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Naphthalene	mg/kg	<0.010	0.010	0.22	0.010	<0.010	0.010	5661854	N/A
Perylene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Phenanthrene	mg/kg	<0.010	0.010	0.14	0.010	<0.010	0.010	5661854	N/A
Pyrene	mg/kg	<0.010	0.010	0.085	0.010	<0.010	0.010	5661854	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	83		78		95		5661854	
D14-Terphenyl (FS)	%	87		88		90		5661854	
D8-Acenaphthylene	%	104		93		105		5661854	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIG626	HIG900		HIG901		HIG903			
Sampling Date		2018/07/19	2018/07/20		2018/07/20		2018/07/20			
COC Number		D 16964	D 33499		D 33499		D 33499			
	UNITS	**2018-203-TP11-BS01**	**2018-206-SS03**	**RDL**	**2018-206-SS04**	**RDL**	**2018-206-SS06**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
2-Methylnaphthalene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	0.067	0.010	5661854	N/A
Acenaphthene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Acenaphthylene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Anthracene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(a)anthracene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(a)pyrene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	<0.020	0.020	<0.020	0.020	<0.020	0.020	5655353	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Chrysene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Fluoranthene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Fluorene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Naphthalene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Perylene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	0.066	0.010	5661854	N/A
Phenanthrene	mg/kg	<0.010	<0.010	0.010	<0.030 (1)	0.030	<0.010	0.010	5661854	N/A
Pyrene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Surrogate Recovery (%)										
D10-Anthracene	%	80	84		67		84		5661854	
D14-Terphenyl (FS)	%	86	88		82		91		5661854	
D8-Acenaphthylene	%	90	91		83		93		5661854	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIG963		HIG964	HIG967		HIG969			
Sampling Date		2018/07/20		2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33500		D 33500	D 33500		D 33500			
	UNITS	**2018-206-SS11**	**RDL**	**2018-206-SS12**	**2018-206-SS15**	**RDL**	**2018-206-SS17**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	mg/kg	<0.030 (1)	0.030	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
2-Methylnaphthalene	mg/kg	<0.15 (1)	0.15	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Acenaphthene	mg/kg	<0.41 (1)	0.41	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Acenaphthylene	mg/kg	<0.080 (1)	0.080	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Anthracene	mg/kg	<0.030 (1)	0.030	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	0.020	<0.020	<0.020	0.020	<0.020	0.020	5655351	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Chrysene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Fluoranthene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.030 (1)	0.030	5661854	N/A
Fluorene	mg/kg	<0.12 (1)	0.12	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Naphthalene	mg/kg	<0.070 (1)	0.070	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Perylene	mg/kg	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	5661854	N/A
Phenanthrene	mg/kg	<0.090 (1)	0.090	<0.010	<0.010	0.010	<0.030 (1)	0.030	5661854	N/A
Pyrene	mg/kg	<0.020 (1)	0.020	<0.010	<0.010	0.010	<0.020 (1)	0.020	5661854	N/A
Surrogate Recovery (%)										
D10-Anthracene	%	96		85	87		86		5661854	
D14-Terphenyl (FS)	%	86		88	91		88		5661854	
D8-Acenaphthylene	%	100		92	96		93		5661854	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIH048		HIH049		HIH051	HIH053			
Sampling Date		2018/07/20		2018/07/20		2018/07/20	2018/07/20			
COC Number		D 33393		D 33393		D 33393	D 33393			
	UNITS	**2018-206-SS22**	**RDL**	**2018-206-SS24**	**RDL**	**2018-206-TP01-BS02**	**2018-206-TP02-BS02**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	mg/kg	<0.010	0.010	<0.020 (1)	0.020	<0.010	<0.010	0.010	5670804	N/A
2-Methylnaphthalene	mg/kg	<0.010	0.010	<0.10 (1)	0.10	<0.010	<0.010	0.010	5670804	N/A
Acenaphthene	mg/kg	<0.010	0.010	<0.37 (1)	0.37	<0.010	<0.010	0.010	5670804	N/A
Acenaphthylene	mg/kg	<0.010	0.010	<0.070 (1)	0.070	<0.010	<0.010	0.010	5670804	N/A
Anthracene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	<0.020	0.020	5655351	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5670804	N/A
Chrysene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5670804	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5670804	N/A
Fluoranthene	mg/kg	<0.010	0.010	<0.020 (1)	0.020	<0.010	<0.010	0.010	5670804	N/A
Fluorene	mg/kg	<0.010	0.010	<0.11 (1)	0.11	<0.010	<0.010	0.010	5670804	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	<0.010	0.010	5670804	N/A
Naphthalene	mg/kg	<0.010	0.010	<0.060 (1)	0.060	<0.010	<0.010	0.010	5670804	N/A
Perylene	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	1.9	0.010	5670804	N/A
Phenanthrene	mg/kg	<0.010	0.010	<0.070 (1)	0.070	<0.010	<0.010	0.010	5670804	N/A
Pyrene	mg/kg	<0.010	0.010	<0.020 (1)	0.020	<0.010	<0.010	0.010	5670804	N/A
Surrogate Recovery (%)										
D10-Anthracene	%	99		105		105	104		5670804	
D14-Terphenyl (FS)	%	93		92		101	102		5670804	
D8-Acenaphthylene	%	87		107		96	91		5670804	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIH055		HIH207			
Sampling Date		2018/07/20		2018/07/20			
COC Number		D 33393		D 33394			
	UNITS	**2018-206-TP04-BS01**	**QC Batch**	**2018-206-TP05-BS02**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons							
1-Methylnaphthalene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
2-Methylnaphthalene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Acenaphthene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Acenaphthylene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Anthracene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Benzo(a)anthracene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Benzo(a)pyrene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	5655351	<0.020	0.020	5655351	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Chrysene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Fluoranthene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Fluorene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Naphthalene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Perylene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Phenanthrene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Pyrene	mg/kg	<0.010	5670804	<0.010	0.010	5659288	N/A
Surrogate Recovery (%)							
D10-Anthracene	%	107	5670804	78		5659288	
D14-Terphenyl (FS)	%	103	5670804	93		5659288	
D8-Acenaphthylene	%	96	5670804	95		5659288	

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

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIH207				HIH208			
Sampling Date		2018/07/20				2018/07/20			
COC Number		D 33394				D 33394			
	UNITS	**2018-206-TP05-BS02 Lab-Dup**	**RDL**	**QC Batch**	**MDL**	**2018-206-TP06-BS01**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	mg/kg	<0.010	0.010	5659288	N/A	<0.020 (1)	0.020	5670804	N/A
2-Methylnaphthalene	mg/kg	<0.010	0.010	5659288	N/A	<0.040 (1)	0.040	5670804	N/A
Acenaphthene	mg/kg	<0.010	0.010	5659288	N/A	<0.21 (1)	0.21	5670804	N/A
Acenaphthylene	mg/kg	<0.010	0.010	5659288	N/A	<0.030 (1)	0.030	5670804	N/A
Anthracene	mg/kg	<0.010	0.010	5659288	N/A	<0.050 (1)	0.050	5670804	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	5659288	N/A	<0.010	0.010	5670804	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	5659288	N/A	<0.010	0.010	5670804	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	5659288	N/A	<0.010	0.010	5670804	N/A
Benzo(b/j)fluoranthene	mg/kg					<0.020	0.020	5655351	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	5659288	N/A	<0.010	0.010	5670804	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	5659288	N/A	<0.010	0.010	5670804	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	5659288	N/A	<0.020 (1)	0.020	5670804	N/A
Chrysene	mg/kg	<0.010	0.010	5659288	N/A	<0.070 (1)	0.070	5670804	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	5659288	N/A	<0.010	0.010	5670804	N/A
Fluoranthene	mg/kg	<0.010	0.010	5659288	N/A	<0.050 (1)	0.050	5670804	N/A
Fluorene	mg/kg	<0.010	0.010	5659288	N/A	<0.13 (1)	0.13	5670804	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	5659288	N/A	<0.010	0.010	5670804	N/A
Naphthalene	mg/kg	<0.010	0.010	5659288	N/A	<0.010	0.010	5670804	N/A
Perylene	mg/kg	<0.010	0.010	5659288	N/A	<0.010	0.010	5670804	N/A
Phenanthrene	mg/kg	<0.010	0.010	5659288	N/A	<0.070 (1)	0.070	5670804	N/A
Pyrene	mg/kg	<0.010	0.010	5659288	N/A	0.36	0.010	5670804	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	100		5659288		105		5670804	
D14-Terphenyl (FS)	%	90		5659288		94		5670804	
D8-Acenaphthylene	%	96		5659288		109		5670804	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIH211		HIH432	HIH435	HIH439			
Sampling Date		2018/07/20		2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33394		D 33396	D 33396	D 33396			
	UNITS	**2018-206-TP09-BS01**	**RDL**	**2018-209-SS01**	**2018-209-SS04**	**2018-209-SS10**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	mg/kg	<0.030 (1)	0.030	<0.010	<0.010	<0.010	0.010	5670804	N/A
2-Methylnaphthalene	mg/kg	<0.22 (1)	0.22	<0.010	<0.010	<0.010	0.010	5670804	N/A
Acenaphthene	mg/kg	<0.31 (1)	0.31	<0.010	<0.010	<0.010	0.010	5670804	N/A
Acenaphthylene	mg/kg	<0.10 (1)	0.10	<0.010	<0.010	<0.010	0.010	5670804	N/A
Anthracene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	0.020	<0.020	<0.020	<0.020	0.020	5655351	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Chrysene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Fluoranthene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Fluorene	mg/kg	<0.080 (1)	0.080	<0.010	<0.010	<0.010	0.010	5670804	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Naphthalene	mg/kg	<0.10 (1)	0.10	<0.010	<0.010	<0.010	0.010	5670804	N/A
Perylene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Phenanthrene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Pyrene	mg/kg	<0.010	0.010	<0.010	<0.010	<0.010	0.010	5670804	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	106		101	107	110		5670804	
D14-Terphenyl (FS)	%	95		99	104	104		5670804	
D8-Acenaphthylene	%	103		94	94	100		5670804	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIH461		HIH462			HIH468			
Sampling Date		2018/07/20		2018/07/20			2018/07/20			
COC Number		D 33397		D 33397			D 33397			
	UNITS	**2018-209-SS14**	**RDL**	**2018-209-SS15**	**RDL**	**QC Batch**	**2018-209-SS21**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	mg/kg	<0.010	0.010	0.14	0.010	5670804	<0.010	0.010	5661854	N/A
2-Methylnaphthalene	mg/kg	<0.010	0.010	0.49	0.010	5670804	<0.010	0.010	5661854	N/A
Acenaphthene	mg/kg	<0.010	0.010	<0.090 (1)	0.090	5670804	<0.010	0.010	5661854	N/A
Acenaphthylene	mg/kg	<0.010	0.010	<0.030 (1)	0.030	5670804	<0.010	0.010	5661854	N/A
Anthracene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	0.020	<0.020	0.020	5655351	<0.020	0.020	5655351	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Chrysene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Fluoranthene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Fluorene	mg/kg	<0.010	0.010	<0.060 (1)	0.060	5670804	<0.010	0.010	5661854	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Naphthalene	mg/kg	<0.010	0.010	<0.090 (1)	0.090	5670804	<0.010	0.010	5661854	N/A
Perylene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Phenanthrene	mg/kg	<0.010	0.010	<0.030 (1)	0.030	5670804	<0.010	0.010	5661854	N/A
Pyrene	mg/kg	<0.010	0.010	<0.010	0.010	5670804	<0.010	0.010	5661854	N/A
Surrogate Recovery (%)										
D10-Anthracene	%	107		105		5670804	89		5661854	
D14-Terphenyl (FS)	%	99		99		5670804	97		5661854	
D8-Acenaphthylene	%	96		106		5670804	97		5661854	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIH468				HIH680		HIH682			
Sampling Date		2018/07/20				2018/07/20		2018/07/20			
COC Number		D 33397				D 33398		D 33398			
	UNITS	**2018-209-SS21 Lab-Dup**	**RDL**	**QC Batch**	**MDL**	**2018-209-SS24**	**RDL**	**2018-209-TP06-BS02**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons											
1-Methylnaphthalene	mg/kg	<0.010	0.010	5661854	N/A	0.094	0.010	<0.010	0.010	5670804	N/A
2-Methylnaphthalene	mg/kg	<0.010	0.010	5661854	N/A	<0.19 (1)	0.19	<0.010	0.010	5670804	N/A
Acenaphthene	mg/kg	<0.010	0.010	5661854	N/A	<0.070 (1)	0.070	<0.010	0.010	5670804	N/A
Acenaphthylene	mg/kg	<0.010	0.010	5661854	N/A	<0.020 (1)	0.020	<0.010	0.010	5670804	N/A
Anthracene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(b/j)fluoranthene	mg/kg					<0.020	0.020	<0.020	0.020	5654210	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Chrysene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Fluoranthene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Fluorene	mg/kg	<0.010	0.010	5661854	N/A	<0.040 (1)	0.040	<0.010	0.010	5670804	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Naphthalene	mg/kg	<0.010	0.010	5661854	N/A	<0.030 (1)	0.030	<0.010	0.010	5670804	N/A
Perylene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Phenanthrene	mg/kg	<0.010	0.010	5661854	N/A	<0.020 (1)	0.020	<0.010	0.010	5670804	N/A
Pyrene	mg/kg	<0.010	0.010	5661854	N/A	<0.010	0.010	<0.010	0.010	5670804	N/A
Surrogate Recovery (%)											
D10-Anthracene	%	85		5661854		104		112		5670804	
D14-Terphenyl (FS)	%	90		5661854		99		109		5670804	
D8-Acenaphthylene	%	89		5661854		106		103		5670804	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIH683	HIH685		HIH688			
Sampling Date		2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33398	D 33398		D 33398			
	UNITS	**2018-209-TP07-BS01**	**2018-209-TP08-BS01**	**RDL**	**2018-209-TP09-BS02**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
2-Methylnaphthalene	mg/kg	<0.010	<0.010	0.010	<0.020 (1)	0.020	5670804	N/A
Acenaphthene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Acenaphthylene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Anthracene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(a)anthracene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(a)pyrene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	<0.020	0.020	<0.020	0.020	5654210	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Chrysene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Fluoranthene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Fluorene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Naphthalene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Perylene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Phenanthrene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Pyrene	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	5670804	N/A
Surrogate Recovery (%)								
D10-Anthracene	%	108	108		129		5670804	
D14-Terphenyl (FS)	%	102	101		124		5670804	
D8-Acenaphthylene	%	99	98		129		5670804	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		HIH711			HJL969			
Sampling Date		2018/07/20			2018/07/19			
COC Number		D 33399			D 16963			
	UNITS	**2018-209-TP10-BS01**	**RDL**	**QC Batch**	**2018-203-TP02-BS01**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	mg/kg	0.041	0.010	5673992	<0.010	0.010	5661854	N/A
2-Methylnaphthalene	mg/kg	0.18	0.010	5673992	<0.010	0.010	5661854	N/A
Acenaphthene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Acenaphthylene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Anthracene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	0.020	5655351	<0.020	0.020	5661061	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Chrysene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Fluoranthene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Fluorene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Naphthalene	mg/kg	<0.070 (1)	0.070	5673992	<0.010	0.010	5661854	N/A
Perylene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Phenanthrene	mg/kg	<0.010	0.010	5673992	<0.030 (1)	0.030	5661854	N/A
Pyrene	mg/kg	<0.010	0.010	5673992	<0.010	0.010	5661854	N/A
Surrogate Recovery (%)								
D10-Anthracene	%	116		5673992	74		5661854	
D14-Terphenyl (FS)	%	115		5673992	84		5661854	
D8-Acenaphthylene	%	100		5673992	86		5661854	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG362				HIG362			
Sampling Date		2018/07/19				2018/07/19			
COC Number		D 16961				D 16961			
	UNITS	**2018-203-SS01**	**RDL**	**QC Batch**	**MDL**	**2018-203-SS01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	0.025	5665044	N/A	<0.025	0.025	5665044	N/A
Toluene	mg/kg	<0.025	0.025	5665044	N/A	<0.025	0.025	5665044	N/A
Ethylbenzene	mg/kg	<0.025	0.025	5665044	0.025	<0.025	0.025	5665044	0.025
Total Xylenes	mg/kg	<0.050	0.050	5665044	N/A	<0.050	0.050	5665044	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	2.5	5665044	N/A	<2.5	2.5	5665044	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	10	5658552	N/A				
>C16-C21 Hydrocarbons	mg/kg	<10	10	5658552	N/A				
>C21-<C32 Hydrocarbons	mg/kg	31	15	5658552	N/A				
Modified TPH (Tier1)	mg/kg	31	15	5655411	N/A				
Reached Baseline at C32	mg/kg	Yes	N/A	5658552	N/A				
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5658552	N/A				
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	84		5658552					
n-Dotriacontane - Extractable	%	119 (2)		5658552					
Isobutylbenzene - Volatile	%	110		5665044		110		5665044	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Unidentified compound(s) in lube oil range.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG363	HIG364	HIG365	HIG366	HIG367			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16961	D 16961	D 16961	D 16961	D 16961			
	UNITS	**2018-203-SS02**	**2018-203-SS03**	**2018-203-SS04**	**2018-203-SS05**	**2018-203-SS06**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5665044	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5665044	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5665044	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5665044	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	5665044	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	<10	<10	10	5658552	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	<10	<10	10	5658552	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	<15	<15	<15	15	5658552	N/A
Modified TPH (Tier1)	mg/kg	<15	<15	<15	<15	<15	15	5655411	N/A
Reached Baseline at C32	mg/kg	NA	NA	NA	NA	NA	N/A	5658552	N/A
Hydrocarbon Resemblance	mg/kg	NA	NA	NA	NA	NA	N/A	5658552	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	85	95	95	79	92 (1)		5658552	
n-Dotriacontane - Extractable	%	120 (2)	103 (2)	111 (2)	85 (2)	99 (2)		5658552	
Isobutylbenzene - Volatile	%	106	112	122	112	104		5665044	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG368	HIG369	HIG370	HIG371			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16961	D 16961	D 16961	D 16961			
	UNITS	**2018-203-SS07**	**2018-203-SS08**	**2018-203-SS09**	**2018-203-SS10**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5665044	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5665044	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5665044	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	5665044	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	2.5	5665044	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	<10	10	5658552	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	<10	10	5658552	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	21	20	15	5658552	N/A
Modified TPH (Tier1)	mg/kg	<15	<15	21	20	15	5655411	N/A
Reached Baseline at C32	mg/kg	NA	NA	Yes	Yes	N/A	5658552	N/A
Hydrocarbon Resemblance	mg/kg	NA	NA	COMMENT (1)	COMMENT (1)	N/A	5658552	N/A
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	84	94	93	94		5658552	
n-Dotriacontane - Extractable	%	92 (2)	99 (2)	99 (2)	102 (2)		5658552	
Isobutylbenzene - Volatile	%	129	113	112	96		5665044	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Possible lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG388	HIG389		HIG390	HIG391			
Sampling Date		2018/07/19	2018/07/19		2018/07/19	2018/07/19			
COC Number		D 16962	D 16962		D 16962	D 16962			
	UNITS	**2018-203-SS11**	**2018-203-SS12**	**QC Batch**	**2018-203-SS13**	**2018-203-SS14**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	5665044	<0.025	<0.025	0.025	5665044	N/A
Toluene	mg/kg	<0.025	<0.025	5665044	<0.025	<0.025	0.025	5665044	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5665044	<0.025	<0.025	0.025	5665044	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5665044	<0.050	<0.050	0.050	5665044	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5665044	<2.5	<2.5	2.5	5665044	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5658552	<10	<10	10	5658552	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5658552	<10	<10	10	5658552	N/A
>C21-<C32 Hydrocarbons	mg/kg	60	51	5658552	26	80	15	5658552	N/A
Modified TPH (Tier1)	mg/kg	60	51	5653620	26	80	15	5655411	N/A
Reached Baseline at C32	mg/kg	Yes	Yes	5658552	Yes	Yes	N/A	5658552	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (1)	5658552	COMMENT (1)	COMMENT (1)	N/A	5658552	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	78	84	5658552	81	92		5658552	
n-Dotriacontane - Extractable	%	95 (2)	91 (2)	5658552	88 (2)	106 (2)		5658552	
Isobutylbenzene - Volatile	%	113 (3)	103	5665044	112	117		5665044	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in lube oil range.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(3) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG392		HIG393				HIG393			
Sampling Date		2018/07/19		2018/07/19				2018/07/19			
COC Number		D 16962		D 16962				D 16962			
	UNITS	**2018-203-SS15**	**QC Batch**	**2018-203-SS16**	**RDL**	**QC Batch**	**MDL**	**2018-203-SS16 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons											
Benzene	mg/kg	<0.025	5665044	0.051	0.025	5665085	N/A	0.051	0.025	5665085	N/A
Toluene	mg/kg	<0.025	5665044	0.061	0.025	5665085	N/A	0.056	0.025	5665085	N/A
Ethylbenzene	mg/kg	<0.025	5665044	<0.025	0.025	5665085	0.025	<0.025	0.025	5665085	0.025
Total Xylenes	mg/kg	<0.050	5665044	<0.050	0.050	5665085	N/A	<0.050	0.050	5665085	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5665044	<2.5	2.5	5665085	N/A	<2.5	2.5	5665085	N/A
>C10-C16 Hydrocarbons	mg/kg	260	5658552	36	10	5658552	N/A				
>C16-C21 Hydrocarbons	mg/kg	210	5658552	<10	10	5658552	N/A				
>C21-<C32 Hydrocarbons	mg/kg	20	5658552	35	15	5658552	N/A				
Modified TPH (Tier1)	mg/kg	490	5655411	71	15	5655411	N/A				
Reached Baseline at C32	mg/kg	Yes	5658552	Yes	N/A	5658552	N/A				
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5658552	COMMENT (2)	N/A	5658552	N/A				
Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%	89	5658552	92		5658552					
n-Dotriacontane - Extractable	%	94 (3)	5658552	85 (3)		5658552					
Isobutylbenzene - Volatile	%	92	5665044	80		5665085		84		5665085	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) One product in fuel / lube range.
(2) Weathered fuel oil fraction. Possible lube oil fraction.
(3) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG394		HIG395		HIG396			
Sampling Date		2018/07/19		2018/07/19		2018/07/19			
COC Number		D 16962		D 16962		D 16962			
	UNITS	**2018-203-SS17**	**QC Batch**	**2018-203-SS18**	**QC Batch**	**2018-203-SS19**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	5665085	<0.025	5665085	<0.025	0.025	5665085	N/A
Toluene	mg/kg	<0.025	5665085	<0.025	5665085	<0.025	0.025	5665085	N/A
Ethylbenzene	mg/kg	<0.025	5665085	<0.025	5665085	<0.025	0.025	5665085	0.025
Total Xylenes	mg/kg	<0.050	5665085	<0.050	5665085	<0.050	0.050	5665085	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5665085	<2.5	5665085	<2.5	2.5	5665085	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5658552	<10	5661982	290	10	5658552	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	5658552	17	5661982	150	10	5658552	N/A
>C21-<C32 Hydrocarbons	mg/kg	21	5658552	220	5661982	1900	15	5658552	N/A
Modified TPH (Tier1)	mg/kg	21	5655411	240	5661762	2300	15	5655411	N/A
Reached Baseline at C32	mg/kg	Yes	5658552	No	5661982	No	N/A	5658552	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5658552	COMMENT (2)	5661982	COMMENT (3)	N/A	5658552	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	92	5658552	86	5661982	83		5658552	
n-Dotriacontane - Extractable	%	102 (4)	5658552	84 (4)	5661982	74 (4)		5658552	
Isobutylbenzene - Volatile	%	97	5665085	89	5665085	68		5665085	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Possible lube oil fraction.
(2) Lube oil fraction.
(3) One product in fuel oil range. Lube oil fraction.
(4) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG503		HIG504				HIG504			
Sampling Date		2018/07/19		2018/07/19				2018/07/19			
COC Number		D 16963		D 16963				D 16963			
	UNITS	**2018-203-SS21**	**QC Batch**	**2018-203-SS22**	**RDL**	**QC Batch**	**MDL**	**2018-203-SS22 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons											
Benzene	mg/kg	<0.025	5665085	<0.025	0.025	5665085	N/A				
Toluene	mg/kg	<0.025	5665085	<0.025	0.025	5665085	N/A				
Ethylbenzene	mg/kg	<0.025	5665085	<0.025	0.025	5665085	0.025				
Total Xylenes	mg/kg	<0.050	5665085	<0.050	0.050	5665085	N/A				
C6 - C10 (less BTEX)	mg/kg	<2.5	5665085	<2.5	2.5	5665085	N/A				
>C10-C16 Hydrocarbons	mg/kg	350	5658552	<10	10	5658559	N/A	<10	10	5658559	N/A
>C16-C21 Hydrocarbons	mg/kg	260	5658552	<10	10	5658559	N/A	<10	10	5658559	N/A
>C21-<C32 Hydrocarbons	mg/kg	29	5658552	63	15	5658559	N/A	63	15	5658559	N/A
Modified TPH (Tier1)	mg/kg	640	5655409	63	15	5655409	N/A				
Reached Baseline at C32	mg/kg	Yes	5658552	Yes	N/A	5658559	N/A				
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5658552	COMMENT (2)	N/A	5658559	N/A				
Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%	93	5658552	99		5658559		100		5658559	
n-Dotriacontane - Extractable	%	109 (3)	5658552	113 (3)		5658559		103 (3)		5658559	
Isobutylbenzene - Volatile	%	77	5665085	97 (4)		5665085					

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) One product in fuel oil range. Possible lube oil fraction.
(2) Unidentified compound(s) in lube oil range.
(3) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(4) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG505	HIG506		HIG507			
Sampling Date		2018/07/19	2018/07/19		2018/07/19			
COC Number		D 16963	D 16963		D 16963			
	UNITS	**2018-203-SS23**	**2018-203-SS24**	**QC Batch**	**2018-203-TP01-BS01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	5665085	<0.025	0.025	5666492	N/A
Toluene	mg/kg	<0.025	<0.025	5665085	<0.025	0.025	5666492	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5665085	<0.025	0.025	5666492	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5665085	<0.050	0.050	5666492	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5665085	<2.5	2.5	5666492	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5658559	<10	10	5661621	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5658559	<10	10	5661621	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	5658559	<15	15	5661621	N/A
Modified TPH (Tier1)	mg/kg	<15	<15	5655409	<15	15	5660654	N/A
Reached Baseline at C32	mg/kg	NA	NA	5658559	NA	N/A	5661621	N/A
Hydrocarbon Resemblance	mg/kg	NA	NA	5658559	NA	N/A	5661621	N/A
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	100	99	5658559	97		5661621	
n-Dotriacontane - Extractable	%	107 (1)	106 (1)	5658559	114 (1)		5661621	
Isobutylbenzene - Volatile	%	95	89	5665085	127		5666492	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG507				HIG510			
Sampling Date		2018/07/19				2018/07/19			
COC Number		D 16963				D 16963			
	UNITS	**2018-203-TP01-BS01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**	**2018-203-TP03-BS01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg					<0.025	0.025	5665085	N/A
Toluene	mg/kg					<0.025	0.025	5665085	N/A
Ethylbenzene	mg/kg					<0.025	0.025	5665085	0.025
Total Xylenes	mg/kg					<0.050	0.050	5665085	N/A
C6 - C10 (less BTEX)	mg/kg					<2.5	2.5	5665085	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	10	5661621	N/A	<10	10	5661982	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	10	5661621	N/A	<10	10	5661982	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	15	5661621	N/A	25	15	5661982	N/A
Modified TPH (Tier1)	mg/kg					25	15	5661762	N/A
Reached Baseline at C32	mg/kg					Yes	N/A	5661982	N/A
Hydrocarbon Resemblance	mg/kg					COMMENT (1)	N/A	5661982	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	91		5661621		89		5661982	
n-Dotriacontane - Extractable	%	108 (2)		5661621		97 (2)		5661982	
Isobutylbenzene - Volatile	%					95		5665085	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Possible lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG617	HIG618	HIG620			
Sampling Date		2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16964	D 16964	D 16964			
	UNITS	**2018-203-TP04-BS01**	**2018-203-TP05-BS01**	**2018-203-TP06-BS01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons							
Benzene	mg/kg	<0.025	<0.025	<0.025	0.025	5665085	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	0.025	5665085	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	0.025	5665085	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	0.050	5665085	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	2.5	5665085	N/A
>C10-C16 Hydrocarbons	mg/kg	1300	<10	<10	10	5658559	N/A
>C16-C21 Hydrocarbons	mg/kg	240	<10	<10	10	5658559	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	<15	15	5658559	N/A
Modified TPH (Tier1)	mg/kg	1500	<15	<15	15	5653620	N/A
Reached Baseline at C32	mg/kg	Yes	NA	NA	N/A	5658559	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	NA	NA	N/A	5658559	N/A
Surrogate Recovery (%)							
Isobutylbenzene - Extractable	%	97	97	97		5658559	
n-Dotriacontane - Extractable	%	100 (2)	109 (2)	106 (2)		5658559	
Isobutylbenzene - Volatile	%	82	99	98		5665085	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Weathered fuel oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG622			HIG623			
Sampling Date		2018/07/19			2018/07/19			
COC Number		D 16964			D 16964			
	UNITS	**2018-203-TP07-BS01**	**RDL**	**QC Batch**	**2018-203-TP08-BS01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.050	0.050	5665085	<0.025	0.025	5666492	0.010
Toluene	mg/kg	<0.050	0.050	5665085	<0.025	0.025	5666492	0.010
Ethylbenzene	mg/kg	<0.050	0.050	5665085	<0.025	0.025	5666492	0.025
Total Xylenes	mg/kg	<0.10	0.10	5665085	<0.050	0.050	5666492	N/A
C6 - C10 (less BTEX)	mg/kg	<5.0	5.0	5665085	<2.5	2.5	5666492	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	10	5658559	<10	10	5658559	N/A
>C16-C21 Hydrocarbons	mg/kg	36	10	5658559	<10	10	5658559	N/A
>C21-<C32 Hydrocarbons	mg/kg	670	15	5658559	190	15	5658559	N/A
Modified TPH (Tier1)	mg/kg	710	15	5653620	190	15	5653620	N/A
Reached Baseline at C32	mg/kg	No	N/A	5658559	No	N/A	5658559	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5658559	COMMENT (1)	N/A	5658559	N/A
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	99		5658559	95		5658559	
n-Dotriacontane - Extractable	%	119 (2)		5658559	113 (2)		5658559	
Isobutylbenzene - Volatile	%	62 (3)		5665085	116		5666492	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(3) Elevated VPH RDL(s) due to limited sample.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG624				HIG624			
Sampling Date		2018/07/19				2018/07/19			
COC Number		D 16964				D 16964			
	UNITS	**2018-203-TP09-BS01**	**RDL**	**QC Batch**	**MDL**	**2018-203-TP09-BS01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	0.025	5668121	0.010				
Toluene	mg/kg	<0.025	0.025	5668121	0.010				
Ethylbenzene	mg/kg	<0.025	0.025	5668121	0.010				
Total Xylenes	mg/kg	<0.050	0.050	5668121	0.010				
Aliphatic >C6-C8	mg/kg	<1.0	1.0	5668121	0.020				
Aliphatic >C8-C10	mg/kg	<1.0	1.0	5668121	0.080				
>C8-C10 Aromatics (-EX)	mg/kg	<0.50	0.50	5668121	0.020				
Aliphatic >C10-C12	mg/kg	<8.0	8.0	5658436	1.6	<8.0	8.0	5658436	1.6
Aliphatic >C12-C16	mg/kg	730	15	5658436	3.0	670	15	5658436	3.0
Aliphatic >C16-C21	mg/kg	540	15	5658436	3.0	470	15	5658436	3.0
Aliphatic >C21-<C32	mg/kg	24	15	5658436	3.0	22	15	5658436	3.0
Aromatic >C10-C12	mg/kg	6.9	4.0	5658436	0.80	<4.0	4.0	5658436	0.80
Reached Baseline at C32	mg/kg	Yes	N/A	5658436	N/A				
Aromatic >C12-C16	mg/kg	66	15	5658436	3.0	58	15	5658436	3.0
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5658436	N/A				
Aromatic >C16-C21	mg/kg	110	15	5658436	3.0	84	15	5658436	3.0
Aromatic >C21-<C32	mg/kg	40	15	5658436	3.0	34	15	5658436	3.0
Modified TPH (Tier 2)	mg/kg	1500	15	5656261	3.0				
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	91		5658436		79		5658436	
n-Dotriacontane - Extractable	%	96		5658436		100		5658436	
Isobutylbenzene - Volatile	%	81		5668121					

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) One product in fuel / lube range.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG625				HIG625			
Sampling Date		2018/07/19				2018/07/19			
COC Number		D 16964				D 16964			
	UNITS	**2018-203-TP10-BS01**	**RDL**	**QC Batch**	**MDL**	**2018-203-TP10-BS01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	0.025	5666779	N/A	<0.025	0.025	5666779	N/A
Toluene	mg/kg	<0.025	0.025	5666779	N/A	<0.025	0.025	5666779	N/A
Ethylbenzene	mg/kg	<0.025	0.025	5666779	0.025	<0.025	0.025	5666779	0.025
Total Xylenes	mg/kg	<0.050	0.050	5666779	N/A	<0.050	0.050	5666779	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	2.5	5666779	N/A	<2.5	2.5	5666779	N/A
>C10-C16 Hydrocarbons	mg/kg	26	10	5658559	N/A				
>C16-C21 Hydrocarbons	mg/kg	46	10	5658559	N/A				
>C21-<C32 Hydrocarbons	mg/kg	57	15	5658559	N/A				
Modified TPH (Tier1)	mg/kg	130	15	5653620	N/A				
Reached Baseline at C32	mg/kg	Yes	N/A	5658559	N/A				
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5658559	N/A				
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	97		5658559					
n-Dotriacontane - Extractable	%	108 (2)		5658559					
Isobutylbenzene - Volatile	%	100		5666779		95		5666779	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) One product in fuel oil range. Unidentified compound(s) in lube oil range.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG626	HIG898	HIG899	HIG900			
Sampling Date		2018/07/19	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 16964	D 33499	D 33499	D 33499			
	UNITS	**2018-203-TP11-BS01**	**2018-206-SS01**	**2018-206-SS02**	**2018-206-SS03**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5666779	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5666779	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5666779	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	5666779	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	2.5	5666779	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	<10	10	5658559	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	<10	10	5658559	N/A
>C21-<C32 Hydrocarbons	mg/kg	140	65	99	25	15	5658559	N/A
Modified TPH (Tier1)	mg/kg	140	65	99	25	15	5653620	N/A
Reached Baseline at C32	mg/kg	Yes	Yes	Yes	Yes	N/A	5658559	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (1)	COMMENT (1)	COMMENT (1)	N/A	5658559	N/A
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	97	100	96	98		5658559	
n-Dotriacontane - Extractable	%	123 (2)	116 (2)	114 (2)	110 (2)		5658559	
Isobutylbenzene - Volatile	%	102	80	101	103		5666779	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in lube oil range.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG901		HIG902				HIG902			
Sampling Date		2018/07/20		2018/07/20				2018/07/20			
COC Number		D 33499		D 33499				D 33499			
	UNITS	**2018-206-SS04**	**QC Batch**	**2018-206-SS05**	**RDL**	**QC Batch**	**MDL**	**2018-206-SS05 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons											
Benzene	mg/kg	<0.025	5666779	<0.025	0.025	5666779	N/A				
Toluene	mg/kg	<0.025	5666779	<0.025	0.025	5666779	N/A				
Ethylbenzene	mg/kg	<0.025	5666779	<0.025	0.025	5666779	0.025				
Total Xylenes	mg/kg	<0.050	5666779	<0.050	0.050	5666779	N/A				
C6 - C10 (less BTEX)	mg/kg	<2.5	5666779	<2.5	2.5	5666779	N/A				
>C10-C16 Hydrocarbons	mg/kg	<10	5658559	<10	10	5658581	N/A	<10	10	5658581	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	5658559	<10	10	5658581	N/A	<10	10	5658581	N/A
>C21-<C32 Hydrocarbons	mg/kg	88	5658559	<15	15	5658581	N/A	<15	15	5658581	N/A
Modified TPH (Tier1)	mg/kg	88	5653620	<15	15	5653620	N/A				
Reached Baseline at C32	mg/kg	Yes	5658559	NA	N/A	5658581	N/A				
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5658559	NA	N/A	5658581	N/A				
Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%	97	5658559	107		5658581		85		5658581	
n-Dotriacontane - Extractable	%	116 (2)	5658559	109 (2)		5658581		93 (2)		5658581	
Isobutylbenzene - Volatile	%	82	5666779	101		5666779					

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Unidentified compound(s) in lube oil range.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG903		HIG904		HIG905			
Sampling Date		2018/07/20		2018/07/20		2018/07/20			
COC Number		D 33499		D 33499		D 33499			
	UNITS	**2018-206-SS06**	**RDL**	**2018-206-SS07**	**QC Batch**	**2018-206-SS08**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.050	0.050	<0.025	5666779	<0.025	0.025	5666779	N/A
Toluene	mg/kg	<0.050	0.050	<0.025	5666779	<0.025	0.025	5666779	N/A
Ethylbenzene	mg/kg	<0.050	0.050	<0.025	5666779	<0.025	0.025	5666779	0.025
Total Xylenes	mg/kg	<0.10	0.10	<0.050	5666779	<0.050	0.050	5666779	N/A
C6 - C10 (less BTEX)	mg/kg	<5.0	5.0	<2.5	5666779	<2.5	2.5	5666779	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	10	<10	5658559	<10	10	5661982	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	10	<10	5658559	<10	10	5661982	N/A
>C21-<C32 Hydrocarbons	mg/kg	220	15	30	5658559	<15	15	5661982	N/A
Modified TPH (Tier1)	mg/kg	220	15	30	5653620	<15	15	5661762	N/A
Reached Baseline at C32	mg/kg	Yes	N/A	Yes	5658559	NA	N/A	5661982	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	COMMENT (1)	5658559	NA	N/A	5661982	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	97		96 (2)	5658559	88		5661982	
n-Dotriacontane - Extractable	%	121 (2)		112 (3)	5658559	99 (2)		5661982	
Isobutylbenzene - Volatile	%	99 (4)		100 (5)	5666779	90		5666779	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in lube oil range.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.
(4) Elevated VPH RDL(s) due to limited sample.
(5) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG906		HIG907				HIG907			
Sampling Date		2018/07/20		2018/07/20				2018/07/20			
COC Number		D 33499		D 33499				D 33499			
	UNITS	**2018-206-SS09**	**QC Batch**	**2018-206-SS10**	**RDL**	**QC Batch**	**MDL**	**2018-206-SS10 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons											
Benzene	mg/kg	<0.025	5666779	<0.025	0.025	5666790	N/A	<0.025	0.025	5666790	0.010
Toluene	mg/kg	<0.025	5666779	<0.025	0.025	5666790	N/A	<0.025	0.025	5666790	0.010
Ethylbenzene	mg/kg	<0.025	5666779	<0.025	0.025	5666790	0.025	<0.025	0.025	5666790	0.025
Total Xylenes	mg/kg	<0.050	5666779	<0.050	0.050	5666790	N/A	<0.050	0.050	5666790	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5666779	<2.5	2.5	5666790	N/A	<2.5	2.5	5666790	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5658559	<10	10	5658559	N/A				
>C16-C21 Hydrocarbons	mg/kg	<10	5658559	<10	10	5658559	N/A				
>C21-<C32 Hydrocarbons	mg/kg	<15	5658559	140	15	5658559	N/A				
Modified TPH (Tier1)	mg/kg	<15	5653620	140	15	5653620	N/A				
Reached Baseline at C32	mg/kg	NA	5658559	Yes	N/A	5658559	N/A				
Hydrocarbon Resemblance	mg/kg	NA	5658559	COMMENT (1)	N/A	5658559	N/A				
Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%	96	5658559	95		5658559					
n-Dotriacontane - Extractable	%	116 (2)	5658559	108 (2)		5658559					
Isobutylbenzene - Volatile	%	95	5666779	62		5666790		63		5666790	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Unidentified compound(s) in lube oil range.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG963				HIG964		HIG965			
Sampling Date		2018/07/20				2018/07/20		2018/07/20			
COC Number		D 33500				D 33500		D 33500			
	UNITS	**2018-206-SS11**	**RDL**	**QC Batch**	**MDL**	**2018-206-SS12**	**QC Batch**	**2018-206-SS13**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons											
Benzene	mg/kg	<0.025	0.025	5668121	0.010	<0.025	5666790	<0.025	0.025	5666790	0.010
Toluene	mg/kg	<0.025	0.025	5668121	0.010	<0.025	5666790	<0.025	0.025	5666790	0.010
Ethylbenzene	mg/kg	<0.025	0.025	5668121	0.010	<0.025	5666790	<0.025	0.025	5666790	0.025
Total Xylenes	mg/kg	<0.050	0.050	5668121	0.010	<0.050	5666790	<0.050	0.050	5666790	N/A
Aliphatic >C6-C8	mg/kg	<1.0	1.0	5668121	0.020						
Aliphatic >C8-C10	mg/kg	4.5	1.0	5668121	0.080						
C6 - C10 (less BTEX)	mg/kg					<2.5	5666790	<2.5	2.5	5666790	N/A
>C10-C16 Hydrocarbons	mg/kg					<10	5658559	<10	10	5658581	N/A
>C8-C10 Aromatics (-EX)	mg/kg	<0.50	0.50	5668121	0.020						
>C16-C21 Hydrocarbons	mg/kg					<10	5658559	<10	10	5658581	N/A
Aliphatic >C10-C12	mg/kg	250	8.0	5658436	1.6						
Aliphatic >C12-C16	mg/kg	1800	15	5658436	3.0						
>C21-<C32 Hydrocarbons	mg/kg					<15	5658559	<15	15	5658581	N/A
Aliphatic >C16-C21	mg/kg	830	15	5658436	3.0						
Aliphatic >C21-<C32	mg/kg	450	15	5658436	3.0						
Modified TPH (Tier1)	mg/kg					<15	5654481	<15	15	5654481	N/A
Aromatic >C10-C12	mg/kg	36	4.0	5658436	0.80						
Reached Baseline at C32	mg/kg	Yes	N/A	5658436	N/A	NA	5658559	NA	N/A	5658581	N/A
Aromatic >C12-C16	mg/kg	380	15	5658436	3.0						
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5658436	N/A	NA	5658559	NA	N/A	5658581	N/A
Aromatic >C16-C21	mg/kg	310	15	5658436	3.0						
Aromatic >C21-<C32	mg/kg	160	15	5658436	3.0						
Modified TPH (Tier 2)	mg/kg	4300	15	5655417	3.0						
Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%	122		5658436							
n-Dotriacontane - Extractable	%	103		5658436							
Isobutylbenzene - Extractable	%					94	5658559	101		5658581	
n-Dotriacontane - Extractable	%					110 (2)	5658559	108 (2)		5658581	
Isobutylbenzene - Volatile	%	65		5668121							
Isobutylbenzene - Volatile	%					97	5666790	101		5666790	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Weathered fuel oil fraction. Lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG966				HIG966			
Sampling Date		2018/07/20				2018/07/20			
COC Number		D 33500				D 33500			
	UNITS	**2018-206-SS14**	**RDL**	**QC Batch**	**MDL**	**2018-206-SS14 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	0.025	5668106	0.010	<0.025	0.025	5668106	0.010
Toluene	mg/kg	<0.025	0.025	5668106	0.010	<0.025	0.025	5668106	0.010
Ethylbenzene	mg/kg	<0.025	0.025	5668106	0.025	<0.025	0.025	5668106	0.025
Total Xylenes	mg/kg	<0.050	0.050	5668106	N/A	<0.050	0.050	5668106	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	2.5	5668106	N/A	<2.5	2.5	5668106	N/A
>C10-C16 Hydrocarbons	mg/kg	4500	50	5661621	N/A				
>C16-C21 Hydrocarbons	mg/kg	880	50	5661621	N/A				
>C21-<C32 Hydrocarbons	mg/kg	<75	75	5661621	N/A				
Modified TPH (Tier1)	mg/kg	5400	75	5660654	N/A				
Reached Baseline at C32	mg/kg	Yes	N/A	5661621	N/A				
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5661621	N/A				
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	108 (2)		5661621					
n-Dotriacontane - Extractable	%	126 (3)		5661621					
Isobutylbenzene - Volatile	%	61		5668106		65		5668106	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Weathered fuel oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(3) Elevated TEH RDL(s) due to sample dilution.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG967	HIG968		HIG970			
Sampling Date		2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33500	D 33500		D 33500			
	UNITS	**2018-206-SS15**	**2018-206-SS16**	**QC Batch**	**2018-206-SS18**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	5666790	<0.025	0.025	5666790	0.010
Toluene	mg/kg	<0.025	<0.025	5666790	<0.025	0.025	5666790	0.010
Ethylbenzene	mg/kg	<0.025	<0.025	5666790	<0.025	0.025	5666790	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5666790	<0.050	0.050	5666790	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5666790	<2.5	2.5	5666790	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5658581	<10	10	5658581	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5658581	<10	10	5658581	N/A
>C21-<C32 Hydrocarbons	mg/kg	38	28	5658581	<15	15	5658581	N/A
Modified TPH (Tier1)	mg/kg	38	28	5654481	<15	15	5655409	N/A
Reached Baseline at C32	mg/kg	No	No	5658581	NA	N/A	5658581	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (1)	5658581	NA	N/A	5658581	N/A
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	97	94	5658581	82		5658581	
n-Dotriacontane - Extractable	%	93 (2)	125 (2)	5658581	95 (2)		5658581	
Isobutylbenzene - Volatile	%	103 (3)	108	5666790	99		5666790	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(3) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIG971		HIG972				HIG972			
Sampling Date		2018/07/20		2018/07/20				2018/07/20			
COC Number		D 33500		D 33500				D 33500			
	UNITS	**2018-206-SS19**	**QC Batch**	**2018-206-SS20**	**RDL**	**QC Batch**	**MDL**	**2018-206-SS20 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons											
Benzene	mg/kg	<0.025	5666790	<0.025	0.025	5666790	0.010				
Toluene	mg/kg	<0.025	5666790	<0.025	0.025	5666790	0.010				
Ethylbenzene	mg/kg	<0.025	5666790	<0.025	0.025	5666790	0.025				
Total Xylenes	mg/kg	<0.050	5666790	<0.050	0.050	5666790	N/A				
C6 - C10 (less BTEX)	mg/kg	<2.5	5666790	<2.5	2.5	5666790	N/A				
>C10-C16 Hydrocarbons	mg/kg	130	5661982	<10	10	5661724	N/A	<10	10	5661724	N/A
>C16-C21 Hydrocarbons	mg/kg	170	5661982	<10	10	5661724	N/A	<10	10	5661724	N/A
>C21-<C32 Hydrocarbons	mg/kg	2200	5661982	<15	15	5661724	N/A	<15	15	5661724	N/A
Modified TPH (Tier1)	mg/kg	2500	5661762	<15	15	5655409	N/A				
Reached Baseline at C32	mg/kg	No	5661982	NA	N/A	5661724	N/A				
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5661982	NA	N/A	5661724	N/A				
Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%	95	5661982	99		5661724		97		5661724	
n-Dotriacontane - Extractable	%	81 (2)	5661982	97 (2)		5661724		93 (2)		5661724	
Isobutylbenzene - Volatile	%	74	5666790	77		5666790					

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) One product in fuel oil range. Lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH047	HIH048				HIH049			
Sampling Date		2018/07/20	2018/07/20				2018/07/20			
COC Number		D 33393	D 33393				D 33393			
	UNITS	**2018-206-SS21**	**2018-206-SS22**	**RDL**	**QC Batch**	**MDL**	**2018-206-SS24**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	<0.025	0.025	5666790	0.010	<0.025	0.025	5668121	0.010
Toluene	mg/kg	<0.025	<0.025	0.025	5666790	0.010	<0.025	0.025	5668121	0.010
Ethylbenzene	mg/kg	<0.025	<0.025	0.025	5666790	0.025	<0.025	0.025	5668121	0.010
Total Xylenes	mg/kg	<0.050	<0.050	0.050	5666790	N/A	<0.050	0.050	5668121	0.010
Aliphatic >C6-C8	mg/kg						<1.0	1.0	5668121	0.020
Aliphatic >C8-C10	mg/kg						4.7	1.0	5668121	0.080
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	2.5	5666790	N/A				
>C10-C16 Hydrocarbons	mg/kg	<10	12	10	5658581	N/A				
>C8-C10 Aromatics (-EX)	mg/kg						<0.50	0.50	5668121	0.020
>C16-C21 Hydrocarbons	mg/kg	<10	<10	10	5658581	N/A				
Aliphatic >C10-C12	mg/kg						150	8.0	5658436	1.6
Aliphatic >C12-C16	mg/kg						1300	15	5658436	3.0
>C21-<C32 Hydrocarbons	mg/kg	46	38	15	5658581	N/A				
Aliphatic >C16-C21	mg/kg						610	15	5658436	3.0
Aliphatic >C21-<C32	mg/kg						360	15	5658436	3.0
Modified TPH (Tier1)	mg/kg	46	50	15	5654481	N/A				
Aromatic >C10-C12	mg/kg						22	4.0	5658436	0.80
Reached Baseline at C32	mg/kg	Yes	No	N/A	5658581	N/A	Yes	N/A	5658436	N/A
Aromatic >C12-C16	mg/kg						290	15	5658436	3.0
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (2)	N/A	5658581	N/A	COMMENT (3)	N/A	5658436	N/A
Aromatic >C16-C21	mg/kg						250	15	5658436	3.0
Aromatic >C21-<C32	mg/kg						140	15	5658436	3.0
Modified TPH (Tier 2)	mg/kg						3100	15	5655417	3.0
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%						93		5658436	
n-Dotriacontane - Extractable	%						76		5658436	
Isobutylbenzene - Extractable	%	80	94		5658581					
n-Dotriacontane - Extractable	%	102 (4)	69 (4)		5658581					
Isobutylbenzene - Volatile	%						81		5668121	
Isobutylbenzene - Volatile	%	86	96		5666790					

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in lube oil range. Possible lube oil fraction.
(2) One product in fuel oil range. Lube oil fraction.
(3) Weathered fuel oil fraction. Lube oil fraction.
(4) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH050		HIH052		HIH054			
Sampling Date		2018/07/20		2018/07/20		2018/07/20			
COC Number		D 33393		D 33393		D 33393			
	UNITS	**2018-206-TP01-BS01**	**RDL**	**2018-206-TP02-BS01**	**RDL**	**2018-206-TP03-BS01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	0.025	<0.050	0.050	<0.025	0.025	5666790	0.010
Toluene	mg/kg	<0.025	0.025	<0.050	0.050	<0.025	0.025	5666790	0.010
Ethylbenzene	mg/kg	<0.025	0.025	<0.050	0.050	<0.025	0.025	5666790	0.025
Total Xylenes	mg/kg	<0.050	0.050	<0.10	0.10	<0.050	0.050	5666790	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	2.5	<5.0	5.0	<2.5	2.5	5666790	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	10	<10	10	<10	10	5658581	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	10	<10	10	<10	10	5658581	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	15	190	15	<15	15	5658581	N/A
Modified TPH (Tier1)	mg/kg	<15	15	190	15	<15	15	5654481	N/A
Reached Baseline at C32	mg/kg	NA	N/A	Yes	N/A	NA	N/A	5658581	N/A
Hydrocarbon Resemblance	mg/kg	NA	N/A	COMMENT (1)	N/A	NA	N/A	5658581	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	88		99		86		5658581	
n-Dotriacontane - Extractable	%	104 (2)		117 (2)		99 (2)		5658581	
Isobutylbenzene - Volatile	%	71		74 (3)		72		5666790	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in lube oil range. Possible lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(3) Elevated VPH RDL(s) due to limited sample.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH205	HIH206	HIH208			
Sampling Date		2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33394	D 33394	D 33394			
	UNITS	**2018-206-TP04-BS02**	**2018-206-TP05-BS01**	**2018-206-TP06-BS01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons							
Benzene	mg/kg	<0.025	<0.025	<0.025	0.025	5666790	0.010
Toluene	mg/kg	<0.025	<0.025	<0.025	0.025	5666790	0.010
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	0.025	5666790	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	0.050	5666790	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	2.5	5666790	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	440	10	5658581	N/A
>C16-C21 Hydrocarbons	mg/kg	17	<10	1100	10	5658581	N/A
>C21-<C32 Hydrocarbons	mg/kg	82	<15	180	15	5658581	N/A
Modified TPH (Tier1)	mg/kg	99	<15	1800	15	5654481	N/A
Reached Baseline at C32	mg/kg	No	NA	Yes	N/A	5658581	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	NA	COMMENT (2)	N/A	5658581	N/A
Surrogate Recovery (%)							
Isobutylbenzene - Extractable	%	85	97	80		5658581	
n-Dotriacontane - Extractable	%	69	97 (3)	101 (3)		5658581	
Isobutylbenzene - Volatile	%	82	92	71		5666790	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in fuel / lube range. Possible lube oil fraction.
(2) One product in fuel / lube range.
(3) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH209		HIH210		HIH211			
Sampling Date		2018/07/20		2018/07/20		2018/07/20			
COC Number		D 33394		D 33394		D 33394			
	UNITS	**2018-206-TP07-BS01**	**QC Batch**	**2018-206-TP08-BS01**	**QC Batch**	**2018-206-TP09-BS01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	5666790	<0.025	5666790	<0.025	0.025	5666790	0.010
Toluene	mg/kg	<0.025	5666790	<0.025	5666790	<0.025	0.025	5666790	0.010
Ethylbenzene	mg/kg	<0.025	5666790	<0.025	5666790	<0.025	0.025	5666790	0.025
Total Xylenes	mg/kg	<0.050	5666790	<0.050	5666790	<0.050	0.050	5666790	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5666790	<2.5	5666790	9.3	2.5	5666790	N/A
>C10-C16 Hydrocarbons	mg/kg	250	5661621	<10	5658581	2700	10	5658552	N/A
>C16-C21 Hydrocarbons	mg/kg	130	5661621	<10	5658581	310	10	5658552	N/A
>C21-<C32 Hydrocarbons	mg/kg	41	5661621	29	5658581	<15	15	5658552	N/A
Modified TPH (Tier1)	mg/kg	420	5660654	29	5654481	3000	15	5654481	N/A
Reached Baseline at C32	mg/kg	Yes	5661621	No	5658581	Yes	N/A	5658552	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5661621	COMMENT (2)	5658581	COMMENT (1)	N/A	5658552	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	97	5661621	89	5658581	109		5658552	
n-Dotriacontane - Extractable	%	115 (3)	5661621	101 (3)	5658581	95 (3)		5658552	
Isobutylbenzene - Volatile	%	72	5666790	87	5666790	74		5666790	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Weathered fuel oil fraction.
(2) Unidentified compound(s) in lube oil range. Lube oil fraction.
(3) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH211				HIH212			
Sampling Date		2018/07/20				2018/07/20			
COC Number		D 33394				D 33394			
	UNITS	**2018-206-TP09-BS01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**	**2018-206-TP010-BS01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg					<0.025	0.025	5666790	N/A
Toluene	mg/kg					<0.025	0.025	5666790	N/A
Ethylbenzene	mg/kg					<0.025	0.025	5666790	0.025
Total Xylenes	mg/kg					<0.050	0.050	5666790	N/A
C6 - C10 (less BTEX)	mg/kg					<2.5	2.5	5666790	N/A
>C10-C16 Hydrocarbons	mg/kg	2400	10	5658552	N/A	1600	10	5658581	N/A
>C16-C21 Hydrocarbons	mg/kg	320	10	5658552	N/A	310	10	5658581	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	15	5658552	N/A	55	15	5658581	N/A
Modified TPH (Tier1)	mg/kg					2000	15	5654481	N/A
Reached Baseline at C32	mg/kg					Yes	N/A	5658581	N/A
Hydrocarbon Resemblance	mg/kg					COMMENT (1)	N/A	5658581	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	93		5658552		93		5658581	
n-Dotriacontane - Extractable	%	120 (2)		5658552		86 (2)		5658581	
Isobutylbenzene - Volatile	%					64 (3)		5666790	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Weathered fuel oil fraction. Lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(3) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH432		HIH433		HIH434	HIH435			
Sampling Date		2018/07/20		2018/07/20		2018/07/20	2018/07/20			
COC Number		D 33396		D 33396		D 33396	D 33396			
	UNITS	**2018-209-SS01**	**RDL**	**2018-209-SS02**	**RDL**	**2018-209-SS03**	**2018-209-SS04**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	0.025	<0.050	0.050	<0.025	<0.025	0.025	5668106	N/A
Toluene	mg/kg	<0.025	0.025	<0.050	0.050	<0.025	<0.025	0.025	5668106	N/A
Ethylbenzene	mg/kg	<0.025	0.025	<0.050	0.050	<0.025	<0.025	0.025	5668106	0.025
Total Xylenes	mg/kg	<0.050	0.050	<0.10	0.10	<0.050	<0.050	0.050	5668106	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	2.5	<5.0	5.0	<2.5	<2.5	2.5	5668106	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	10	<10	10	<10	<10	10	5661621	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	10	<10	10	47	<10	10	5661621	N/A
>C21-<C32 Hydrocarbons	mg/kg	93	15	220	15	280	<15	15	5661621	N/A
Modified TPH (Tier1)	mg/kg	93	15	220	15	330	<15	15	5655409	N/A
Reached Baseline at C32	mg/kg	Yes	N/A	No	N/A	Yes	NA	N/A	5661621	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	COMMENT (1)	N/A	COMMENT (2)	NA	N/A	5661621	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	94		92		90	96		5661621	
n-Dotriacontane - Extractable	%	93 (3)		124 (3)		119 (3)	115 (3)		5661621	
Isobutylbenzene - Volatile	%	91		94 (4)		98	103		5668106	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in lube oil range.
(2) Unidentified compound(s) in fuel / lube range.
(3) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(4) Elevated VPH RDL(s) due to limited sample.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH437	HIH438	HIH439	HIH441	HIH460			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33396	D 33396	D 33396	D 33396	D 33397			
	UNITS	**2018-209-SS08**	**2018-209-SS09**	**2018-209-SS10**	**2018-209-SS12**	**2018-209-SS13**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5668106	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5668106	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5668106	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5668106	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	5668106	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	26	<10	<10	10	5661621	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	23	<10	<10	10	5661621	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	<15	<15	<15	15	5661621	N/A
Modified TPH (Tier1)	mg/kg	<15	<15	49	<15	<15	15	5655409	N/A
Reached Baseline at C32	mg/kg	NA	NA	Yes	NA	NA	N/A	5661621	N/A
Hydrocarbon Resemblance	mg/kg	NA	NA	COMMENT (1)	NA	NA	N/A	5661621	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	94	95	93	91	95		5661621	
n-Dotriacontane - Extractable	%	115 (2)	119 (2)	116 (2)	121 (2)	119 (2)		5661621	
Isobutylbenzene - Volatile	%	102	102	100	100 (3)	92 (3)		5668106	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Weathered fuel oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(3) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH461	HIH462	HIH463		HIH464			
Sampling Date		2018/07/20	2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33397	D 33397	D 33397		D 33397			
	UNITS	**2018-209-SS14**	**2018-209-SS15**	**2018-209-SS16**	**QC Batch**	**2018-209-SS17**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	<0.025	5668106	<0.025	0.025	5668828	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	5668106	<0.025	0.025	5668828	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	5668106	<0.025	0.025	5668828	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	5668106	<0.050	0.050	5668828	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	80	<2.5	5668106	<2.5	2.5	5668828	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	1600	<10	5661621	<10	10	5661621	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	120	<10	5661621	<10	10	5661621	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	140	86	5661621	<15	15	5661621	N/A
Modified TPH (Tier1)	mg/kg	<15	2000	86	5655409	<15	15	5655409	N/A
Reached Baseline at C32	mg/kg	NA	Yes	No	5661621	NA	N/A	5661621	N/A
Hydrocarbon Resemblance	mg/kg	NA	COMMENT (1)	COMMENT (2)	5661621	NA	N/A	5661621	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	94	115	92	5661621	93		5661621	
n-Dotriacontane - Extractable	%	118 (3)	117 (3)	122 (3)	5661621	115 (3)		5661621	
Isobutylbenzene - Volatile	%	108 (4)	75 (4)	93	5668106	123		5668828	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Weathered fuel oil fraction. Lube oil fraction.
(2) Unidentified compound(s) in lube oil range.
(3) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(4) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH464				HIH465	HIH466			
Sampling Date		2018/07/20				2018/07/20	2018/07/20			
COC Number		D 33397				D 33397	D 33397			
	UNITS	**2018-209-SS17 Lab-Dup**	**RDL**	**QC Batch**	**MDL**	**2018-209-SS18**	**2018-209-SS19**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	0.025	5668828	N/A	<0.025	<0.025	0.025	5668828	N/A
Toluene	mg/kg	<0.025	0.025	5668828	N/A	<0.025	<0.025	0.025	5668828	N/A
Ethylbenzene	mg/kg	<0.025	0.025	5668828	0.025	<0.025	<0.025	0.025	5668828	0.025
Total Xylenes	mg/kg	<0.050	0.050	5668828	N/A	<0.050	<0.050	0.050	5668828	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	2.5	5668828	N/A	<2.5	<2.5	2.5	5668828	N/A
>C10-C16 Hydrocarbons	mg/kg					<10	<10	10	5661724	N/A
>C16-C21 Hydrocarbons	mg/kg					<10	<10	10	5661724	N/A
>C21-<C32 Hydrocarbons	mg/kg					<15	<15	15	5661724	N/A
Modified TPH (Tier1)	mg/kg					<15	<15	15	5655409	N/A
Reached Baseline at C32	mg/kg					NA	NA	N/A	5661724	N/A
Hydrocarbon Resemblance	mg/kg					NA	NA	N/A	5661724	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%					99	88		5661724	
n-Dotriacontane - Extractable	%					97 (1)	89 (1)		5661724	
Isobutylbenzene - Volatile	%	122		5668828		116 (2)	120		5668828	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(2) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH467	HIH468	HIH469		HIH680			
Sampling Date		2018/07/20	2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33397	D 33397	D 33397		D 33398			
	UNITS	**2018-209-SS20**	**2018-209-SS21**	**2018-209-SS22**	**QC Batch**	**2018-209-SS24**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	<0.025	5668828	<0.025	0.025	5668828	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	5668828	<0.025	0.025	5668828	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	5668828	<0.025	0.025	5668828	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	5668828	<0.050	0.050	5668828	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	5668828	70	2.5	5668828	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	5661724	1400	10	5661724	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	5661724	95	10	5661724	N/A
>C21-<C32 Hydrocarbons	mg/kg	25	78	<15	5661724	110	15	5661724	N/A
Modified TPH (Tier1)	mg/kg	25	78	<15	5655409	1600	15	5654481	N/A
Reached Baseline at C32	mg/kg	Yes	Yes	NA	5661724	Yes	N/A	5661724	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (1)	NA	5661724	COMMENT (2)	N/A	5661724	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	102	109	90	5661724	113		5661724	
n-Dotriacontane - Extractable	%	92 (3)	108 (3)	91 (3)	5661724	87 (3)		5661724	
Isobutylbenzene - Volatile	%	118	106	119 (4)	5668828	118 (4)		5668828	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Unidentified compound(s) in lube oil range.
(2) Weathered fuel oil fraction. Lube oil fraction.
(3) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(4) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH681	HIH683	HIH685			
Sampling Date		2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33398	D 33398	D 33398			
	UNITS	**2018-209-TP06-BS01**	**2018-209-TP07-BS01**	**2018-209-TP08-BS01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons							
Benzene	mg/kg	<0.025	<0.025	<0.025	0.025	5668828	0.010
Toluene	mg/kg	<0.025	<0.025	<0.025	0.025	5668828	0.010
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	0.025	5668828	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	0.050	5668828	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	2.5	5668828	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	10	5658581	N/A
>C16-C21 Hydrocarbons	mg/kg	16	<10	<10	10	5658581	N/A
>C21-<C32 Hydrocarbons	mg/kg	220	<15	<15	15	5658581	N/A
Modified TPH (Tier1)	mg/kg	230	<15	<15	15	5654481	N/A
Reached Baseline at C32	mg/kg	Yes	NA	NA	N/A	5658581	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	NA	NA	N/A	5658581	N/A
Surrogate Recovery (%)							
Isobutylbenzene - Extractable	%	93	87	89		5658581	
n-Dotriacontane - Extractable	%	80 (2)	104 (2)	114 (2)		5658581	
Isobutylbenzene - Volatile	%	97 (3)	119	113 (3)		5668828	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.
(3) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH686				HIH688			
Sampling Date		2018/07/20				2018/07/20			
COC Number		D 33398				D 33398			
	UNITS	**2018-209-TP08-BS02**	**RDL**	**QC Batch**	**MDL**	**2018-209-TP09-BS02**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	0.025	5668121	0.010	<0.025	0.025	5668828	0.010
Toluene	mg/kg	<0.025	0.025	5668121	0.010	<0.025	0.025	5668828	0.010
Ethylbenzene	mg/kg	<0.025	0.025	5668121	0.010	<0.025	0.025	5668828	0.025
Total Xylenes	mg/kg	<0.050	0.050	5668121	0.010	<0.050	0.050	5668828	N/A
Aliphatic >C6-C8	mg/kg	<1.0	1.0	5668121	0.020				
Aliphatic >C8-C10	mg/kg	<1.0	1.0	5668121	0.080				
C6 - C10 (less BTEX)	mg/kg					5.7	2.5	5668828	N/A
>C10-C16 Hydrocarbons	mg/kg					290	10	5658581	N/A
>C8-C10 Aromatics (-EX)	mg/kg	<0.50	0.50	5668121	0.020				
>C16-C21 Hydrocarbons	mg/kg					39	10	5658581	N/A
Aliphatic >C10-C12	mg/kg	<8.0	8.0	5658436	1.6				
Aliphatic >C12-C16	mg/kg	<15	15	5658436	3.0				
>C21-<C32 Hydrocarbons	mg/kg					120	15	5658581	N/A
Aliphatic >C16-C21	mg/kg	<15	15	5658436	3.0				
Aliphatic >C21-<C32	mg/kg	<15	15	5658436	3.0				
Modified TPH (Tier1)	mg/kg					460	15	5654481	N/A
Aromatic >C10-C12	mg/kg	<4.0	4.0	5658436	0.80				
Reached Baseline at C32	mg/kg	NA	N/A	5658436	N/A	Yes	N/A	5658581	N/A
Aromatic >C12-C16	mg/kg	<15	15	5658436	3.0				
Hydrocarbon Resemblance	mg/kg	NA	N/A	5658436	N/A	COMMENT (1)	N/A	5658581	N/A
Aromatic >C16-C21	mg/kg	<15	15	5658436	3.0				
Aromatic >C21-<C32	mg/kg	<15	15	5658436	3.0				
Modified TPH (Tier 2)	mg/kg	<15	15	5655417	3.0				
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	90		5658436					
n-Dotriacontane - Extractable	%	97		5658436					
Isobutylbenzene - Extractable	%					95		5658581	
n-Dotriacontane - Extractable	%					69		5658581	
Isobutylbenzene - Volatile	%	85		5668121					
Isobutylbenzene - Volatile	%					100		5668828	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Weathered fuel oil fraction. Lube oil fraction.

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		HIH712		HJL969			
Sampling Date		2018/07/20		2018/07/19			
COC Number		D 33399		D 16963			
	UNITS	**2018-209-TP10-BS02**	**QC Batch**	**2018-203-TP02-BS01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons							
Benzene	mg/kg	<0.025	5668828	<0.025	0.025	5668828	0.010
Toluene	mg/kg	<0.025	5668828	<0.025	0.025	5668828	0.010
Ethylbenzene	mg/kg	0.045	5668828	<0.025	0.025	5668828	0.025
Total Xylenes	mg/kg	1.0	5668828	<0.050	0.050	5668828	N/A
C6 - C10 (less BTEX)	mg/kg	110	5668828	<2.5	2.5	5668828	N/A
>C10-C16 Hydrocarbons	mg/kg	1400	5658581	<10	10	5661724	N/A
>C16-C21 Hydrocarbons	mg/kg	77	5658581	<10	10	5661724	N/A
>C21-<C32 Hydrocarbons	mg/kg	100	5658581	<15	15	5661724	N/A
Modified TPH (Tier1)	mg/kg	1700	5655409	<15	15	5660654	N/A
Reached Baseline at C32	mg/kg	Yes	5658581	NA	N/A	5661724	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5658581	NA	N/A	5661724	N/A
Surrogate Recovery (%)							
Isobutylbenzene - Extractable	%	115	5658581	104		5661724	
n-Dotriacontane - Extractable	%	70	5658581	100 (2)		5661724	
Isobutylbenzene - Volatile	%	64	5668828	94		5668828	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Weathered fuel oil fraction. Lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		HIG363	HIG367	HIG388	HIG390	HIG392			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16961	D 16961	D 16962	D 16962	D 16962			
	UNITS	**2018-203-SS02**	**2018-203-SS06**	**2018-203-SS11**	**2018-203-SS13**	**2018-203-SS15**	**RDL**	**QC Batch**	**MDL**
PCBs									
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5658728	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5655381	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	95	96	98	96	106		5658728	

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

Maxxam ID		HIG393		HIG503	HIG504			
Sampling Date		2018/07/19		2018/07/19	2018/07/19			
COC Number		D 16962		D 16963	D 16963			
	UNITS	**2018-203-SS16**	**QC Batch**	**2018-203-SS21**	**2018-203-SS22**	**RDL**	**QC Batch**	**MDL**
PCBs								
Aroclor 1016	ug/g	<0.050	5658728	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1221	ug/g	<0.050	5658728	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1232	ug/g	<0.050	5658728	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1248	ug/g	<0.050	5658728	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1242	ug/g	<0.050	5658728	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1254	ug/g	0.073	5658728	<0.050	<0.050	0.050	5658728	N/A
Aroclor 1260	ug/g	<0.050	5658728	<0.050	<0.050	0.050	5658728	N/A
Calculated Total PCB	ug/g	0.073	5655381	<0.050	<0.050	0.050	5654679	N/A
Surrogate Recovery (%)								
Decachlorobiphenyl	%	106	5658728	105	106		5658728	

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

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		HIG510		HIG898		HIG906			
Sampling Date		2018/07/19		2018/07/20		2018/07/20			
COC Number		D 16963		D 33499		D 33499			
	UNITS	**2018-203-TP03-BS01**	**QC Batch**	**2018-206-SS01**	**QC Batch**	**2018-206-SS09**	**RDL**	**QC Batch**	**MDL**
PCBs									
Aroclor 1016	ug/g	<0.050	5668896	<0.050	5658728	<0.050	0.050	5668896	N/A
Aroclor 1221	ug/g	<0.050	5668896	<0.050	5658728	<0.050	0.050	5668896	N/A
Aroclor 1232	ug/g	<0.050	5668896	<0.050	5658728	<0.050	0.050	5668896	N/A
Aroclor 1248	ug/g	<0.050	5668896	<0.050	5658728	<0.050	0.050	5668896	N/A
Aroclor 1242	ug/g	<0.050	5668896	<0.050	5658728	<0.050	0.050	5668896	N/A
Aroclor 1254	ug/g	<0.050	5668896	<0.050	5658728	<0.050	0.050	5668896	N/A
Aroclor 1260	ug/g	<0.050	5668896	<0.050	5658728	<0.050	0.050	5668896	N/A
Calculated Total PCB	ug/g	<0.050	5661131	<0.050	5655381	<0.050	0.050	5655381	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	86	5668896	98	5658728	91		5668896	

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

Maxxam ID		HIG963	HIH049	HIH050	HIH205			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33500	D 33393	D 33393	D 33394			
	UNITS	**2018-206-SS11**	**2018-206-SS24**	**2018-206-TP01-BS01**	**2018-206-TP04-BS02**	**RDL**	**QC Batch**	**MDL**
PCBs								
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5654679	N/A
Surrogate Recovery (%)								
Decachlorobiphenyl	%	88	90	87	87		5668896	

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

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		HIH206		HIH209			
Sampling Date		2018/07/20		2018/07/20			
COC Number		D 33394		D 33394			
	UNITS	**2018-206-TP05-BS01**	**QC Batch**	**2018-206-TP07-BS01**	**RDL**	**QC Batch**	**MDL**
PCBs							
Aroclor 1016	ug/g	<0.050	5668896	<0.050	0.050	5666758	N/A
Aroclor 1221	ug/g	<0.050	5668896	<0.050	0.050	5666758	N/A
Aroclor 1232	ug/g	<0.050	5668896	<0.050	0.050	5666758	N/A
Aroclor 1248	ug/g	<0.050	5668896	<0.050	0.050	5666758	N/A
Aroclor 1242	ug/g	<0.050	5668896	<0.050	0.050	5666758	N/A
Aroclor 1254	ug/g	<0.050	5668896	<0.050	0.050	5666758	N/A
Aroclor 1260	ug/g	<0.050	5668896	<0.050	0.050	5666758	N/A
Calculated Total PCB	ug/g	<0.050	5654679	<0.050	0.050	5661131	N/A
Surrogate Recovery (%)							
Decachlorobiphenyl	%	87	5668896	87		5666758	

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

Maxxam ID		HIH209				HIH210	HIH211			
Sampling Date		2018/07/20				2018/07/20	2018/07/20			
COC Number		D 33394				D 33394	D 33394			
	UNITS	**2018-206-TP07-BS01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**	**2018-206-TP08-BS01**	**2018-206-TP09-BS01**	**RDL**	**QC Batch**	**MDL**
PCBs										
Aroclor 1016	ug/g	<0.050	0.050	5666758	N/A	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1221	ug/g	<0.050	0.050	5666758	N/A	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1232	ug/g	<0.050	0.050	5666758	N/A	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1248	ug/g	<0.050	0.050	5666758	N/A	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1242	ug/g	<0.050	0.050	5666758	N/A	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1254	ug/g	<0.050	0.050	5666758	N/A	<0.050	0.14	0.050	5668896	N/A
Aroclor 1260	ug/g	<0.050	0.050	5666758	N/A	<0.050	<0.050	0.050	5668896	N/A
Calculated Total PCB	ug/g					<0.050	0.14	0.050	5654679	N/A
Surrogate Recovery (%)										
Decachlorobiphenyl	%	85		5666758		88	96		5668896	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		HIH434				HIH434			
Sampling Date		2018/07/20				2018/07/20			
COC Number		D 33396				D 33396			
	UNITS	**2018-209-SS03**	**RDL**	**QC Batch**	**MDL**	**2018-209-SS03 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
PCBs									
Aroclor 1016	ug/g	<0.050	0.050	5661983	N/A	<0.050	0.050	5661983	N/A
Aroclor 1221	ug/g	<0.050	0.050	5661983	N/A	<0.050	0.050	5661983	N/A
Aroclor 1232	ug/g	<0.050	0.050	5661983	N/A	<0.050	0.050	5661983	N/A
Aroclor 1248	ug/g	<0.050	0.050	5661983	N/A	<0.050	0.050	5661983	N/A
Aroclor 1242	ug/g	<0.050	0.050	5661983	N/A	<0.050	0.050	5661983	N/A
Aroclor 1254	ug/g	<0.050	0.050	5661983	N/A	<0.050	0.050	5661983	N/A
Aroclor 1260	ug/g	<0.050	0.050	5661983	N/A	<0.050	0.050	5661983	N/A
Calculated Total PCB	ug/g	<0.050	0.050	5655379	N/A				
Surrogate Recovery (%)									
Decachlorobiphenyl	%	98		5661983		96		5661983	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Maxxam ID		HIH464	HIH465	HIH466	HIH469			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33397	D 33397	D 33397	D 33397			
	UNITS	**2018-209-SS17**	**2018-209-SS18**	**2018-209-SS19**	**2018-209-SS22**	**RDL**	**QC Batch**	**MDL**
PCBs								
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5668896	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5655379	N/A
Surrogate Recovery (%)								
Decachlorobiphenyl	%	90	92	91	88		5668896	

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

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		HIH681	HIH685			
Sampling Date		2018/07/20	2018/07/20			
COC Number		D 33398	D 33398			
	UNITS	**2018-209-TP06-BS01**	**2018-209-TP08-BS01**	**RDL**	**QC Batch**	**MDL**
PCBs						
Aroclor 1016	ug/g	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1221	ug/g	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1232	ug/g	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1248	ug/g	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1242	ug/g	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1254	ug/g	<0.050	<0.050	0.050	5668896	N/A
Aroclor 1260	ug/g	<0.050	<0.050	0.050	5668896	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	0.050	5654679	N/A
Surrogate Recovery (%)						
Decachlorobiphenyl	%	83	89		5668896	

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

RESULTS OF ANALYSES OF SEDIMENT

Maxxam ID		HIG823		HIG824		HIH402	HIH403			
Sampling Date		2018/07/19		2018/07/19		2018/07/20	2018/07/20			
COC Number		D 16965		D 16965		D 33395	D 33395			
	UNITS	**2018-203-SED01**	**QC Batch**	**2018-203-SED02**	**QC Batch**	**2018-206-SED01**	**2018-206-SED02**	**RDL**	**QC Batch**	**MDL**
Inorganics										
Moisture	%	15	5658658	42	5656573	17	23	1.0	5658488	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		HIH404		HIH716	HIH717	HIH717			
Sampling Date		2018/07/20		2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33395		D 33399	D 33399	D 33399			
	UNITS	**2018-206-SED03**	**QC Batch**	**2018-209SED01**	**2018-209SED02**	**2018-209SED02 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Inorganics									
Moisture	%	73	5658488	16	51	55	1.0	5657037	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maxxam ID		HIG823	HIG824		HIH402	HIH403			
Sampling Date		2018/07/19	2018/07/19		2018/07/20	2018/07/20			
COC Number		D 16965	D 16965		D 33395	D 33395			
	UNITS	**2018-203-SED01**	**2018-203-SED02**	**QC Batch**	**2018-206-SED01**	**2018-206-SED02**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	5200	17000	5660657	12000	16000	10	5660698	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	13	5660657	<2.0	<2.0	2.0	5660698	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	3.1	5660657	<2.0	<2.0	2.0	5660698	N/A
Acid Extractable Barium (Ba)	mg/kg	11	43	5660657	51	55	5.0	5660698	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	5660657	<2.0	<2.0	2.0	5660698	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	5660657	<2.0	<2.0	2.0	5660698	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	5660657	<50	<50	50	5660698	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	0.96	5660657	<0.30	1.1	0.30	5660698	N/A
Acid Extractable Chromium (Cr)	mg/kg	9.0	37	5660657	11	13	2.0	5660698	N/A
Acid Extractable Cobalt (Co)	mg/kg	4.0	6.1	5660657	2.8	5.6	1.0	5660698	N/A
Acid Extractable Copper (Cu)	mg/kg	3.8	270	5660657	3.3	29	2.0	5660698	N/A
Acid Extractable Iron (Fe)	mg/kg	9000	34000	5660657	6600	13000	50	5660698	N/A
Acid Extractable Lead (Pb)	mg/kg	1.7	74	5660657	2.0	34	0.50	5660698	N/A
Acid Extractable Lithium (Li)	mg/kg	5.9	8.4	5660657	4.0	4.5	2.0	5660698	N/A
Acid Extractable Manganese (Mn)	mg/kg	85	140	5660657	52	140	2.0	5660698	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.13	5660657	<0.10	<0.10	0.10	5660698	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	14	5660657	<2.0	<2.0	2.0	5660698	N/A
Acid Extractable Nickel (Ni)	mg/kg	10	21	5660657	8.5	13	2.0	5660698	N/A
Acid Extractable Rubidium (Rb)	mg/kg	<2.0	9.5	5660657	<2.0	2.7	2.0	5660698	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	5660657	<1.0	<1.0	1.0	5660698	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	5660657	<0.50	<0.50	0.50	5660698	N/A
Acid Extractable Strontium (Sr)	mg/kg	26	20	5660657	17	24	5.0	5660698	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.11	5660657	<0.10	<0.10	0.10	5660698	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	5660657	<2.0	2.5	2.0	5660698	N/A
Acid Extractable Uranium (U)	mg/kg	0.12	1.3	5660657	0.25	0.34	0.10	5660698	N/A
Acid Extractable Vanadium (V)	mg/kg	15	36	5660657	15	19	2.0	5660698	N/A
Acid Extractable Zinc (Zn)	mg/kg	17	310	5660657	15	250	5.0	5660698	N/A

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

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maxxam ID		HIH404		HIH716	HIH717			
Sampling Date		2018/07/20		2018/07/20	2018/07/20			
COC Number		D 33395		D 33399	D 33399			
	UNITS	**2018-206-SED03**	**QC Batch**	**2018-209SED01**	**2018-209SED02**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	14000	5660698	6100	7100	10	5660595	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5660698	<2.0	3.3	2.0	5660595	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5660698	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Barium (Ba)	mg/kg	76	5660698	41	80	5.0	5660595	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5660698	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5660698	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Boron (B)	mg/kg	<50	5660698	<50	<50	50	5660595	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5660698	<0.30	1.7	0.30	5660595	N/A
Acid Extractable Chromium (Cr)	mg/kg	21	5660698	9.6	17	2.0	5660595	N/A
Acid Extractable Cobalt (Co)	mg/kg	5.9	5660698	2.9	5.4	1.0	5660595	N/A
Acid Extractable Copper (Cu)	mg/kg	40	5660698	4.5	100	2.0	5660595	N/A
Acid Extractable Iron (Fe)	mg/kg	12000	5660698	6000	17000	50	5660595	N/A
Acid Extractable Lead (Pb)	mg/kg	21	5660698	2.6	38	0.50	5660595	N/A
Acid Extractable Lithium (Li)	mg/kg	5.1	5660698	5.7	4.7	2.0	5660595	N/A
Acid Extractable Manganese (Mn)	mg/kg	67	5660698	61	140	2.0	5660595	N/A
Acid Extractable Mercury (Hg)	mg/kg	0.14	5660698	<0.10	<0.10	0.10	5660595	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	2.9	5660698	<2.0	<2.0	2.0	5660595	N/A
Acid Extractable Nickel (Ni)	mg/kg	24	5660698	5.5	11	2.0	5660595	N/A
Acid Extractable Rubidium (Rb)	mg/kg	8.3	5660698	3.5	6.6	2.0	5660595	N/A
Acid Extractable Selenium (Se)	mg/kg	2.5	5660698	<1.0	<1.0	1.0	5660595	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5660698	<0.50	<0.50	0.50	5660595	N/A
Acid Extractable Strontium (Sr)	mg/kg	26	5660698	12	19	5.0	5660595	N/A
Acid Extractable Thallium (Tl)	mg/kg	0.14	5660698	<0.10	<0.10	0.10	5660595	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5660698	<2.0	3.7	2.0	5660595	N/A
Acid Extractable Uranium (U)	mg/kg	25	5660698	0.41	0.42	0.10	5660595	N/A
Acid Extractable Vanadium (V)	mg/kg	18	5660698	18	27	2.0	5660595	N/A
Acid Extractable Zinc (Zn)	mg/kg	42	5660698	18	460	5.0	5660595	N/A

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

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

Maxxam ID		HIG823		HIG824		HIH402			
Sampling Date		2018/07/19		2018/07/19		2018/07/20			
COC Number		D 16965		D 16965		D 33395			
	UNITS	**2018-203-SED01**	**QC Batch**	**2018-203-SED02**	**QC Batch**	**2018-206-SED01**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	mg/kg	<0.0050	5659039	<0.0050	5659039	0.012	0.0050	5663240	N/A
2-Methylnaphthalene	mg/kg	<0.0050	5659039	<0.0050	5659039	0.015	0.0050	5663240	N/A
Acenaphthene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Acenaphthylene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Anthracene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Benzo(a)anthracene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Benzo(a)pyrene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Benzo(b)fluoranthene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.010	5656814	<0.010	5654224	<0.010	0.010	5658681	N/A
Benzo(g,h,i)perylene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Benzo(j)fluoranthene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Benzo(k)fluoranthene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Chrysene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Dibenz(a,h)anthracene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Fluoranthene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Fluorene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Naphthalene	mg/kg	<0.0050	5659039	<0.0050	5659039	0.0070	0.0050	5663240	N/A
Perylene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Phenanthrene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Pyrene	mg/kg	<0.0050	5659039	<0.0050	5659039	<0.0050	0.0050	5663240	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	108	5659039	105	5659039	103		5663240	
D14-Terphenyl	%	101	5659039	99	5659039	97		5663240	
D8-Acenaphthylene	%	116	5659039	112	5659039	105		5663240	

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

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

Maxxam ID		HIH402				HIH403		HIH404			
Sampling Date		2018/07/20				2018/07/20		2018/07/20			
COC Number		D 33395				D 33395		D 33395			
	UNITS	**2018-206-SED01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**	**2018-206-SED02**	**RDL**	**2018-206-SED03**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons											
1-Methylnaphthalene	mg/kg	0.012	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
2-Methylnaphthalene	mg/kg	0.015	0.0050	5663240	N/A	<0.010 (1)	0.010	<0.0050	0.0050	5663240	N/A
Acenaphthene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Acenaphthylene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Anthracene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Benzo(b)fluoranthene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Benzo(b/j)fluoranthene	mg/kg					<0.010	0.010	<0.010	0.010	5654224	N/A
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Benzo(j)fluoranthene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Chrysene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	0.0071	0.0050	5663240	N/A
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Fluoranthene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Fluorene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Naphthalene	mg/kg	0.0080	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Perylene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	0.073	0.0050	5663240	N/A
Phenanthrene	mg/kg	<0.0050	0.0050	5663240	N/A	<0.0050	0.0050	<0.0050	0.0050	5663240	N/A
Pyrene	mg/kg	<0.0050	0.0050	5663240	N/A	0.0059	0.0050	<0.0050	0.0050	5663240	N/A
Surrogate Recovery (%)											
D10-Anthracene	%	103		5663240		97		98		5663240	
D14-Terphenyl	%	96		5663240		93		98		5663240	
D8-Acenaphthylene	%	105		5663240		102		98		5663240	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

Maxxam ID		HIH716		HIH717			
Sampling Date		2018/07/20		2018/07/20			
COC Number		D 33399		D 33399			
	UNITS	**2018-209SED01**	**RDL**	**2018-209SED02**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons							
1-Methylnaphthalene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	5659039	N/A
2-Methylnaphthalene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	5659039	N/A
Acenaphthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	5659039	N/A
Acenaphthylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	5659039	N/A
Anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	5659039	N/A
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	5659039	N/A
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	0.015	0.0050	5659039	N/A
Benzo(b)fluoranthene	mg/kg	<0.0050	0.0050	0.056	0.0050	5659039	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.010	0.010	0.056	0.010	5654224	N/A
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	0.037	0.0050	5659039	N/A
Benzo(j)fluoranthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	5659039	N/A
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	0.010	0.0050	5659039	N/A
Chrysene	mg/kg	<0.0050	0.0050	0.10	0.0050	5659039	N/A
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	5659039	N/A
Fluoranthene	mg/kg	<0.0050	0.0050	0.018	0.0050	5659039	N/A
Fluorene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	5659039	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	0.011	0.0050	5659039	N/A
Naphthalene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	5659039	N/A
Perylene	mg/kg	<0.0050	0.0050	0.011	0.0050	5659039	N/A
Phenanthrene	mg/kg	<0.0050	0.0050	<0.014 (1)	0.014	5659039	N/A
Pyrene	mg/kg	<0.0050	0.0050	0.037	0.0050	5659039	N/A
Surrogate Recovery (%)							
D10-Anthracene	%	107		82		5659039	
D14-Terphenyl	%	105		78		5659039	
D8-Acenaphthylene	%	116		117		5659039	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PAH RDL(s) due to matrix / co-extractive interference.

ATLANTIC RBCA HYDROCARBONS (SEDIMENT)

Maxxam ID		HIG823		HIG824		HIH402			
Sampling Date		2018/07/19		2018/07/19		2018/07/20			
COC Number		D 16965		D 16965		D 33395			
	UNITS	**2018-203-SED01**	**QC Batch**	**2018-203-SED02**	**QC Batch**	**2018-206-SED01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	5666779	<0.025	5666779	<0.025	0.025	5668106	N/A
Toluene	mg/kg	<0.025	5666779	<0.025	5666779	<0.025	0.025	5668106	N/A
Ethylbenzene	mg/kg	<0.025	5666779	<0.025	5666779	<0.025	0.025	5668106	0.025
Total Xylenes	mg/kg	<0.050	5666779	<0.050	5666779	<0.050	0.050	5668106	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5666779	<2.5	5666779	<2.5	2.5	5668106	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5661621	<10	5658559	<10	10	5661621	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	5661621	71	5658559	<10	10	5661621	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	5661621	490	5658559	<15	15	5661621	N/A
Modified TPH (Tier1)	mg/kg	<15	5656191	560	5654481	<15	15	5654481	N/A
Reached Baseline at C32	mg/kg	NA	5661621	No	5658559	NA	N/A	5661621	N/A
Hydrocarbon Resemblance	mg/kg	NA	5661621	COMMENT (1)	5658559	NA	N/A	5661621	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	92	5661621	100	5658559	92		5661621	
n-Dotriacontane - Extractable	%	108 (2)	5661621	114 (2)	5658559	110 (2)		5661621	
Isobutylbenzene - Volatile	%	101	5666779	89	5666779	99		5668106	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) One product in fuel oil range. Lube oil fraction.
(2) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

ATLANTIC RBCA HYDROCARBONS (SEDIMENT)

Maxxam ID		HIH403	HIH404		HIH716	HIH717			
Sampling Date		2018/07/20	2018/07/20		2018/07/20	2018/07/20			
COC Number		D 33395	D 33395		D 33399	D 33399			
	UNITS	**2018-206-SED02**	**2018-206-SED03**	**QC Batch**	**2018-209SED01**	**2018-209SED02**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	5668106	<0.025	<0.025	0.025	5668828	N/A
Toluene	mg/kg	0.17	<0.025	5668106	<0.025	<0.025	0.025	5668828	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5668106	<0.025	<0.025	0.025	5668828	0.025
Total Xylenes	mg/kg	0.12	<0.050	5668106	<0.050	<0.050	0.050	5668828	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5668106	<2.5	<2.5	2.5	5668828	N/A
>C10-C16 Hydrocarbons	mg/kg	31	43	5661621	<10	110	10	5661724	N/A
>C16-C21 Hydrocarbons	mg/kg	63	120	5661621	<10	180	10	5661724	N/A
>C21-<C32 Hydrocarbons	mg/kg	64	520	5661621	<15	1800	15	5661724	N/A
Modified TPH (Tier1)	mg/kg	160	680	5654481	<15	2100	15	5655409	N/A
Reached Baseline at C32	mg/kg	Yes	No	5661621	NA	No	N/A	5661724	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (2)	5661621	NA	COMMENT (2)	N/A	5661724	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	0.57 (3)	95	5661621	92	111		5661724	
n-Dotriacontane - Extractable	%	7.7 (4)	116 (5)	5661621	91 (5)	95 (5)		5661724	
Isobutylbenzene - Volatile	%	93	97	5668106	120 (6)	103		5668828	

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Weathered fuel oil fraction. Lube oil fraction. Unidentified compound(s) in lube oil range.

(2) One product in fuel oil range. Lube oil fraction.

(3) TEH Surrogate(s): results are outside acceptance limit. Sample was past recommended hold time for reanalysis.

(4) TEH surrogate(s) unavailable; sample was past recommended hold time for reanalysis. TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

(5) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

(6) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

POLYCHLORINATED BIPHENYLS BY GC-ECD (SEDIMENT)

Maxxam ID		HIG823		HIG824				HIG824			
Sampling Date		2018/07/19		2018/07/19				2018/07/19			
COC Number		D 16965		D 16965				D 16965			
	UNITS	**2018-203-SED01**	**QC Batch**	**2018-203-SED02**	**RDL**	**QC Batch**	**MDL**	**2018-203-SED02 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
PCBs											
Aroclor 1016	ug/g	<0.050	5668896	<0.050	0.050	5668905	N/A	<0.050	0.050	5668905	N/A
Aroclor 1221	ug/g	<0.050	5668896	<0.050	0.050	5668905	N/A	<0.050	0.050	5668905	N/A
Aroclor 1232	ug/g	<0.050	5668896	<0.050	0.050	5668905	N/A	<0.050	0.050	5668905	N/A
Aroclor 1248	ug/g	<0.050	5668896	<0.050	0.050	5668905	N/A	<0.050	0.050	5668905	N/A
Aroclor 1242	ug/g	<0.050	5668896	<0.050	0.050	5668905	N/A	<0.050	0.050	5668905	N/A
Aroclor 1254	ug/g	<0.050	5668896	0.68	0.050	5668905	N/A	0.71	0.050	5668905	N/A
Aroclor 1260	ug/g	<0.050	5668896	<0.050	0.050	5668905	N/A	<0.050	0.050	5668905	N/A
Calculated Total PCB	ug/g	<0.050	5656402	0.68	0.050	5654679	N/A				
Surrogate Recovery (%)											
Decachlorobiphenyl	%	91	5668896	95		5668905		96		5668905	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Maxxam ID		HIH402	HIH403	HIH404		HIH716			
Sampling Date		2018/07/20	2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33395	D 33395	D 33395		D 33399			
	UNITS	**2018-206-SED01**	**2018-206-SED02**	**2018-206-SED03**	**QC Batch**	**2018-209SED01**	**RDL**	**QC Batch**	**MDL**
PCBs									
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	5668896	<0.050	0.050	5668905	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	5668896	<0.050	0.050	5668905	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	5668896	<0.050	0.050	5668905	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	5668896	<0.050	0.050	5668905	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	5668896	<0.050	0.050	5668905	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	5668896	<0.050	0.050	5668905	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	5668896	<0.050	0.050	5668905	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	5654679	<0.050	0.050	5654679	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	93	94	92	5668896	99		5668905	

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

POLYCHLORINATED BIPHENYLS BY GC-ECD (SEDIMENT)

Maxxam ID		HIH717			
Sampling Date		2018/07/20			
COC Number		D 33399			
	UNITS	**2018-209SED02**	**RDL**	**QC Batch**	**MDL**
PCBs					
Aroclor 1016	ug/g	<0.050	0.050	5668905	N/A
Aroclor 1221	ug/g	<0.050	0.050	5668905	N/A
Aroclor 1232	ug/g	<0.050	0.050	5668905	N/A
Aroclor 1248	ug/g	<0.050	0.050	5668905	N/A
Aroclor 1242	ug/g	<0.050	0.050	5668905	N/A
Aroclor 1254	ug/g	0.92	0.050	5668905	N/A
Aroclor 1260	ug/g	<0.050	0.050	5668905	N/A
Calculated Total PCB	ug/g	0.92	0.050	5654679	N/A
Surrogate Recovery (%)					
Decachlorobiphenyl	%	84		5668905	

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

MERCURY BY COLD VAPOUR AA (VEGETATION)

Maxxam ID		HIG819	HIG820	HIG821	HIG822	HIH213			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19	2018/07/20			
COC Number		D 16965	D 16965	D 16965	D 16965	D 33394			
	UNITS	**2018-203-VEG01**	**2018-203-VEG02**	**2018-203-VEG03**	**2018-203-VEG04**	**2018-206-VEG01**	**RDL**	**QC Batch**	**MDL**
Metals									
Mercury (Hg)	mg/kg	<0.030 (1)	<0.030 (1)	<0.030 (1)	<0.030 (1)	<0.030 (1)	0.030	5671323	N/A

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

Maxxam ID		HIH214	HIH214	HIH713	HIH714	HIH715			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33394	D 33394	D 33399	D 33399	D 33399			
	UNITS	**2018-206-VEG02**	**2018-206-VEG02 Lab-Dup**	**2018-209-VEG01**	**2018-209-VEG03**	**2018-209-VEG04**	**RDL**	**QC Batch**	**MDL**
Metals									
Mercury (Hg)	mg/kg	<0.030 (1)	<0.030 (1)	<0.030 (1)	0.043 (1)	<0.030 (1)	0.030	5671323	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Elevated RDL due to sample matrix.

Maxxam ID		HIH738	HIH739	HIH740	HIQ816	HJX511			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/20	2018/07/20			
COC Number		D 33494	D 33494	D 33494	D 16961	D 16961			
	UNITS	**2018-VEG09**	**2018-VEG10**	**2018-VEG11**	**2018-206-VEG03**	**2018-206-VEG04**	**RDL**	**QC Batch**	**MDL**
Metals									
Mercury (Hg)	mg/kg	0.031 (1)	0.034 (1)	<0.030 (1)	<0.030 (1)	<0.030 (1)	0.030	5671323	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (VEGETATION)

Maxxam ID		HIG819	HIG820	HIG821	HIG822			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19			
COC Number		D 16965	D 16965	D 16965	D 16965			
	UNITS	**2018-203-VEG01**	**2018-203-VEG02**	**2018-203-VEG03**	**2018-203-VEG04**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	160	230	40	62	10	5662843	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Barium (Ba)	mg/kg	110	160	61	71	5.0	5662843	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Boron (B)	mg/kg	10	14	11	16	5.0	5662843	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	0.73	0.67	0.47	0.30	5662843	N/A
Acid Extractable Chromium (Cr)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Cobalt (Co)	mg/kg	<1.0	<1.0	<1.0	<1.0	1.0	5662843	N/A
Acid Extractable Copper (Cu)	mg/kg	3.5	10	5.4	7.1	2.0	5662843	N/A
Acid Extractable Iron (Fe)	mg/kg	160	240	52	250	50	5662843	N/A
Acid Extractable Lead (Pb)	mg/kg	1.8	1.6	1.7	3.5	0.50	5662843	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Manganese (Mn)	mg/kg	310	240	980	320	2.0	5662843	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	2.5	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.6	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Selenium (Se)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	0.50	5662843	N/A
Acid Extractable Strontium (Sr)	mg/kg	18	28	12	11	5.0	5662843	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	5662843	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	5662843	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Zinc (Zn)	mg/kg	77	240	120	92	5.0	5662843	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (VEGETATION)

Maxxam ID		HIH213		HIH214	HIH214			
Sampling Date		2018/07/20		2018/07/20	2018/07/20			
COC Number		D 33394		D 33394	D 33394			
	UNITS	**2018-206-VEG01**	**QC Batch**	**2018-206-VEG02**	**2018-206-VEG02 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	930	5662843	1700	1900	10	5670376	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Barium (Ba)	mg/kg	82	5662843	100	100	5.0	5670376	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Boron (B)	mg/kg	12	5662843	9.5	9.6	5.0	5670376	N/A
Acid Extractable Cadmium (Cd)	mg/kg	0.71	5662843	0.44	0.44	0.30	5670376	N/A
Acid Extractable Chromium (Cr)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Cobalt (Co)	mg/kg	<1.0	5662843	<1.0	<1.0	1.0	5670376	N/A
Acid Extractable Copper (Cu)	mg/kg	8.8	5662843	7.8	7.0	2.0	5670376	N/A
Acid Extractable Iron (Fe)	mg/kg	530	5662843	950	1000	50	5670376	N/A
Acid Extractable Lead (Pb)	mg/kg	2.3	5662843	2.6	2.6	0.50	5670376	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Manganese (Mn)	mg/kg	360	5662843	200	200	2.0	5670376	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Nickel (Ni)	mg/kg	<2.0	5662843	2.3	2.4	2.0	5670376	N/A
Acid Extractable Selenium (Se)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5662843	<0.50	<0.50	0.50	5670376	N/A
Acid Extractable Strontium (Sr)	mg/kg	15	5662843	26	26	5.0	5670376	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5662843	<0.10	<0.10	0.10	5670376	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	5662843	<0.10	<0.10	0.10	5670376	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Zinc (Zn)	mg/kg	170	5662843	150	160	5.0	5670376	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

ELEMENTS BY ATOMIC SPECTROSCOPY (VEGETATION)

Maxxam ID		HIH713	HIH714	HIH715	HIH738	HIH739			
Sampling Date		2018/07/20	2018/07/20	2018/07/20	2018/07/19	2018/07/19			
COC Number		D 33399	D 33399	D 33399	D 33494	D 33494			
	UNITS	**2018-209-VEG01**	**2018-209-VEG03**	**2018-209-VEG04**	**2018-VEG09**	**2018-VEG10**	**RDL**	**QC Batch**	**MDL**
Metals									
Acid Extractable Aluminum (Al)	mg/kg	86	820	790	97	340	10	5662843	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Barium (Ba)	mg/kg	36	78	100	56	56	5.0	5662843	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Boron (B)	mg/kg	8.3	<5.0	7.8	15	5.4	5.0	5662843	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	3.8	0.59	0.30	5662843	N/A
Acid Extractable Chromium (Cr)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Cobalt (Co)	mg/kg	1.5	<1.0	<1.0	<1.0	<1.0	1.0	5662843	N/A
Acid Extractable Copper (Cu)	mg/kg	8.2	6.0	5.0	6.0	33	2.0	5662843	N/A
Acid Extractable Iron (Fe)	mg/kg	110	1300	870	140	640	50	5662843	N/A
Acid Extractable Lead (Pb)	mg/kg	0.70	2.1	2.7	1.6	5.1	0.50	5662843	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Manganese (Mn)	mg/kg	240	420	160	310	87	2.0	5662843	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	4.1	<2.0	<2.0	8.2	2.0	5662843	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.6	<2.0	3.5	2.2	<2.0	2.0	5662843	N/A
Acid Extractable Selenium (Se)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5662843	N/A
Acid Extractable Strontium (Sr)	mg/kg	23	19	24	13	10	5.0	5662843	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5662843	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5662843	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	2.3	<2.0	<2.0	<2.0	2.0	5662843	N/A
Acid Extractable Zinc (Zn)	mg/kg	61	51	84	150	170	5.0	5662843	N/A

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

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

ELEMENTS BY ATOMIC SPECTROSCOPY (VEGETATION)

Maxxam ID		HIH740		HIQ816	HJX511			
Sampling Date		2018/07/19		2018/07/20	2018/07/20			
COC Number		D 33494		D 16961	D 16961			
	UNITS	**2018-VEG11**	**QC Batch**	**2018-206-VEG03**	**2018-206-VEG04**	**RDL**	**QC Batch**	**MDL**
Metals								
Acid Extractable Aluminum (Al)	mg/kg	810	5662843	94	77	10	5670376	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Barium (Ba)	mg/kg	70	5662843	22	14	5.0	5670376	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Boron (B)	mg/kg	8.9	5662843	13	13	5.0	5670376	N/A
Acid Extractable Cadmium (Cd)	mg/kg	1.1	5662843	0.60	0.38	0.30	5670376	N/A
Acid Extractable Chromium (Cr)	mg/kg	3.8	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Cobalt (Co)	mg/kg	<1.0	5662843	<1.0	1.9	1.0	5670376	N/A
Acid Extractable Copper (Cu)	mg/kg	130	5662843	6.0	5.7	2.0	5670376	N/A
Acid Extractable Iron (Fe)	mg/kg	2000	5662843	710	190	50	5670376	N/A
Acid Extractable Lead (Pb)	mg/kg	12	5662843	8.8	1.3	0.50	5670376	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Manganese (Mn)	mg/kg	130	5662843	230	110	2.0	5670376	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	2.2	5662843	2.4	<2.0	2.0	5670376	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.1	5662843	2.3	<2.0	2.0	5670376	N/A
Acid Extractable Selenium (Se)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Silver (Ag)	mg/kg	0.61	5662843	<0.50	<0.50	0.50	5670376	N/A
Acid Extractable Strontium (Sr)	mg/kg	11	5662843	31	32	5.0	5670376	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5662843	<0.10	<0.10	0.10	5670376	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	5662843	<0.10	0.12	0.10	5670376	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	5662843	<2.0	<2.0	2.0	5670376	N/A
Acid Extractable Zinc (Zn)	mg/kg	260	5662843	86	89	5.0	5670376	N/A

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

POLYCHLORINATED BIPHENYLS BY GC-ECD (VEGETATION)

Maxxam ID		HIG819	HIG820	HIG821	HIG822	HIH213			
Sampling Date		2018/07/19	2018/07/19	2018/07/19	2018/07/19	2018/07/20			
COC Number		D 16965	D 16965	D 16965	D 16965	D 33394			
	UNITS	**2018-203-VEG01**	**2018-203-VEG02**	**2018-203-VEG03**	**2018-203-VEG04**	**2018-206-VEG01**	**RDL**	**QC Batch**	**MDL**
PCBs									
Aroclor 1016	ug/g	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1221	ug/g	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1232	ug/g	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1248	ug/g	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1242	ug/g	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1254	ug/g	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1260	ug/g	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	5668905	N/A
Calculated Total PCB	ug/g	<0.25	<0.25	<0.25	<0.25	<0.25	0.25	5654679	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	100 (1)	102 (1)	99 (1)	99 (1)	96 (1)		5668905	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PCB RDL due to matrix / co-extractive interference.

Maxxam ID		HIH214	HIH713	HIH714		HIH715			
Sampling Date		2018/07/20	2018/07/20	2018/07/20		2018/07/20			
COC Number		D 33394	D 33399	D 33399		D 33399			
	UNITS	**2018-206-VEG02**	**2018-209-VEG01**	**2018-209-VEG03**	**QC Batch**	**2018-209-VEG04**	**RDL**	**QC Batch**	**MDL**
PCBs									
Aroclor 1016	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	0.25	5668905	N/A
Aroclor 1221	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	0.25	5668905	N/A
Aroclor 1232	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	0.25	5668905	N/A
Aroclor 1248	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	0.25	5668905	N/A
Aroclor 1242	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	0.25	5668905	N/A
Aroclor 1254	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	0.25	5668905	N/A
Aroclor 1260	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	0.25	5668905	N/A
Calculated Total PCB	ug/g	<0.25	<0.25	<0.25	5654679	<0.25	0.25	5655379	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	97 (1)	97 (1)	100 (1)	5668905	99 (1)		5668905	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PCB RDL due to matrix / co-extractive interference.

POLYCHLORINATED BIPHENYLS BY GC-ECD (VEGETATION)

Maxxam ID		HIH738	HIH739	HIH740		HIQ816	HJX511			
Sampling Date		2018/07/19	2018/07/19	2018/07/19		2018/07/20	2018/07/20			
COC Number		D 33494	D 33494	D 33494		D 16961	D 16961			
	UNITS	**2018-VEG09**	**2018-VEG10**	**2018-VEG11**	**QC Batch**	**2018-206-VEG03**	**2018-206-VEG04**	**RDL**	**QC Batch**	**MDL**
PCBs										
Aroclor 1016	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1221	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1232	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1248	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1242	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1254	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	<0.25	0.25	5668905	N/A
Aroclor 1260	ug/g	<0.25	<0.25	<0.25	5668905	<0.25	<0.25	0.25	5668905	N/A
Calculated Total PCB	ug/g	<0.25	<0.25	<0.25	5654679	<0.25	<0.25	0.25	5663174	N/A
Surrogate Recovery (%)										
Decachlorobiphenyl	%	95 (1)	100 (1)	99 (1)	5668905	98 (1)	97 (1)		5668905	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated PCB RDL due to matrix / co-extractive interference.

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

RESULTS OF ANALYSES OF WATER

Maxxam ID		HIG825		HIG826		HIH405			
Sampling Date		2018/07/19		2018/07/19		2018/07/20			
COC Number		D 16965		D 16965		D 33395			
	UNITS	**2018-203-SW01**	**QC Batch**	**2018-203-SW02**	**QC Batch**	**2018-206-SW01**	**RDL**	**QC Batch**	**MDL**
Calculated Parameters									
Anion Sum	me/L	0.270	5655375	0.00	5655375	0.120	N/A	5655375	N/A
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	11	5655350	<1.0	5655350	6.1	1.0	5655350	0.20
Calculated TDS	mg/L	18	5655406	2.0	5655406	7.0	1.0	5655406	0.20
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	5655350	<1.0	5655350	<1.0	1.0	5655350	0.20
Cation Sum	me/L	0.250	5655375	0.0400	5655375	0.130	N/A	5655375	N/A
Hardness (CaCO3)	mg/L	8.5	5655370	<1.0	5655370	5.4	1.0	5655370	1.0
Ion Balance (% Difference)	%	3.85	5655372	100	5655372	4.00	N/A	5655372	N/A
Langelier Index (@ 20C)	N/A	-2.73	5655402	NC	5655402	-3.41		5655402	
Langelier Index (@ 4C)	N/A	-2.99	5655405	NC	5655405	-3.66		5655405	
Nitrate (N)	mg/L	<0.050	5655378	<0.050	5655378	<0.050	0.050	5655378	N/A
Saturation pH (@ 20C)	N/A	9.83	5655402	NC	5655402	10.2		5655402	
Saturation pH (@ 4C)	N/A	10.1	5655405	NC	5655405	10.4		5655405	
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	11	5660686	<5.0	5660686	6.1	5.0	5660686	N/A
Dissolved Chloride (Cl-)	mg/L	1.6	5660689	<1.0	5660689	<1.0	1.0	5660689	N/A
Colour	TCU	21	5660695	13	5660695	<5.0	5.0	5660695	N/A
Nitrate + Nitrite (N)	mg/L	<0.050	5660699	<0.050	5660699	<0.050	0.050	5660699	N/A
Nitrite (N)	mg/L	<0.010	5660706	<0.010	5660706	<0.010	0.010	5660706	N/A
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	5661193	<0.050	5661193	<0.050	0.050	5661193	N/A
Total Organic Carbon (C)	mg/L	3.5	5663554	3.7	5663339	2.0	0.50	5663554	N/A
Orthophosphate (P)	mg/L	<0.010	5660697	<0.010	5660697	<0.010	0.010	5660697	N/A
pH	pH	7.09	5660649	6.49	5660649	6.77	N/A	5660649	N/A
Reactive Silica (SiO2)	mg/L	4.5	5660694	0.84	5660694	1.0	0.50	5660694	N/A
Dissolved Sulphate (SO4)	mg/L	<2.0	5660693	<2.0	5660693	<2.0	2.0	5660693	N/A
Turbidity	NTU	0.50	5668282	0.63	5668282	1.1	0.10	5668282	0.10
Conductivity	uS/cm	27	5660652	4.6	5660652	13	1.0	5660652	N/A

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		HIH406				HIH406			
Sampling Date		2018/07/20				2018/07/20			
COC Number		D 33395				D 33395			
	UNITS	**2018-206-SW02**	**RDL**	**QC Batch**	**MDL**	**2018-206-SW02 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Calculated Parameters									
Anion Sum	me/L	0.230	N/A	5655375	N/A				
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	11	1.0	5655350	0.20				
Calculated TDS	mg/L	19	1.0	5655406	0.20				
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5655350	0.20				
Cation Sum	me/L	0.250	N/A	5655375	N/A				
Hardness (CaCO3)	mg/L	9.7	1.0	5655370	1.0				
Ion Balance (% Difference)	%	4.17	N/A	5655372	N/A				
Langelier Index (@ 20C)	N/A	-2.89		5655402					
Langelier Index (@ 4C)	N/A	-3.14		5655405					
Nitrate (N)	mg/L	0.12	0.050	5655378	N/A				
Saturation pH (@ 20C)	N/A	9.71		5655402					
Saturation pH (@ 4C)	N/A	9.97		5655405					
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	11	5.0	5660686	N/A				
Dissolved Chloride (Cl-)	mg/L	<1.0	1.0	5660689	N/A				
Colour	TCU	13	5.0	5660695	N/A				
Nitrate + Nitrite (N)	mg/L	0.13	0.050	5660699	N/A				
Nitrite (N)	mg/L	0.010	0.010	5660706	N/A				
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	5658956	N/A	<0.050	0.050	5658956	N/A
Total Organic Carbon (C)	mg/L	3.5	0.50	5663339	N/A				
Orthophosphate (P)	mg/L	<0.010	0.010	5660697	N/A				
pH	pH	6.83	N/A	5666078	N/A				
Reactive Silica (SiO2)	mg/L	6.9	0.50	5660694	N/A				
Dissolved Sulphate (SO4)	mg/L	<2.0	2.0	5660693	N/A				
Turbidity	NTU	0.64	0.10	5668282	0.10				
Conductivity	uS/cm	28	1.0	5666080	N/A				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

RESULTS OF ANALYSES OF WATER

Maxxam ID		HIH407			HIH718			
Sampling Date		2018/07/20			2018/07/20			
COC Number		D 33395			D 33399			
	UNITS	**2018-206-SW03**	**RDL**	**QC Batch**	**2018-209-SW01**	**RDL**	**QC Batch**	**MDL**
Calculated Parameters								
Anion Sum	me/L	0.130	N/A	5655375	0.170	N/A	5655375	N/A
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	6.7	1.0	5655350	7.1	1.0	5655350	0.20
Calculated TDS	mg/L	14	1.0	5655406	15	1.0	5655406	0.20
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5655350	<1.0	1.0	5655350	0.20
Cation Sum	me/L	0.190	N/A	5655375	0.230	N/A	5655375	N/A
Hardness (CaCO3)	mg/L	6.9	1.0	5655370	8.2	1.0	5655370	1.0
Ion Balance (% Difference)	%	18.8	N/A	5655372	15.0	N/A	5655372	N/A
Langelier Index (@ 20C)	N/A	-3.65		5655402	-3.37		5655402	
Langelier Index (@ 4C)	N/A	-3.90		5655405	-3.62		5655405	
Nitrate (N)	mg/L	<0.050	0.050	5655378	<0.050	0.050	5655378	N/A
Saturation pH (@ 20C)	N/A	10.1		5655402	10.1		5655402	
Saturation pH (@ 4C)	N/A	10.4		5655405	10.3		5655405	
Inorganics								
Total Alkalinity (Total as CaCO3)	mg/L	6.7	5.0	5660686	7.1	5.0	5660686	N/A
Dissolved Chloride (Cl-)	mg/L	<1.0	1.0	5660689	1.0	1.0	5660689	N/A
Colour	TCU	26	5.0	5660695	26	5.0	5660695	N/A
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	5660699	<0.050	0.050	5660699	N/A
Nitrite (N)	mg/L	<0.010	0.010	5660706	<0.010	0.010	5660706	N/A
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	5661193	<0.050	0.050	5661197	N/A
Total Organic Carbon (C)	mg/L	4.4	0.50	5663339	6.1 (1)	5.0	5663554	N/A
Orthophosphate (P)	mg/L	<0.010	0.010	5660697	<0.010	0.010	5660697	N/A
pH	pH	6.46	N/A	5666078	6.70	N/A	5666078	N/A
Reactive Silica (SiO2)	mg/L	6.1	0.50	5660694	4.8	0.50	5660694	N/A
Dissolved Sulphate (SO4)	mg/L	<2.0	2.0	5660693	<2.0	2.0	5660693	N/A
Turbidity	NTU	0.71	0.10	5668282	5.6	0.10	5668279	0.10
Conductivity	uS/cm	19	1.0	5666080	18	1.0	5666080	N/A

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

RESULTS OF ANALYSES OF WATER

Maxxam ID		HIH718				HIH719			
Sampling Date		2018/07/20				2018/07/20			
COC Number		D 33399				D 33399			
	UNITS	**2018-209-SW01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**	**2018-209-SW02**	**RDL**	**QC Batch**	**MDL**
Calculated Parameters									
Anion Sum	me/L					0.640	N/A	5655375	N/A
Bicarb. Alkalinity (calc. as CaCO3)	mg/L					30	1.0	5655350	0.20
Calculated TDS	mg/L					47	1.0	5655406	0.20
Carb. Alkalinity (calc. as CaCO3)	mg/L					<1.0	1.0	5655350	0.20
Cation Sum	me/L					1.03	N/A	5655375	N/A
Hardness (CaCO3)	mg/L					23	1.0	5655370	1.0
Ion Balance (% Difference)	%					23.4	N/A	5655372	N/A
Langelier Index (@ 20C)	N/A					-2.36		5655402	
Langelier Index (@ 4C)	N/A					-2.61		5655405	
Nitrate (N)	mg/L					0.095	0.050	5655378	N/A
Saturation pH (@ 20C)	N/A					9.28		5655402	
Saturation pH (@ 4C)	N/A					9.53		5655405	
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L					30	5.0	5660686	N/A
Dissolved Chloride (Cl-)	mg/L					1.3	1.0	5660689	N/A
Colour	TCU					53	25	5660695	N/A
Nitrate + Nitrite (N)	mg/L					0.095	0.050	5660699	N/A
Nitrite (N)	mg/L					<0.010	0.010	5660706	N/A
Nitrogen (Ammonia Nitrogen)	mg/L					0.066	0.050	5661197	N/A
Total Organic Carbon (C)	mg/L					6.7	0.50	5663339	N/A
Orthophosphate (P)	mg/L					<0.010	0.010	5660697	N/A
pH	pH	6.56	N/A	5666078	N/A	6.92	N/A	5666078	N/A
Reactive Silica (SiO2)	mg/L					4.0	0.50	5660694	N/A
Dissolved Sulphate (SO4)	mg/L					<2.0	2.0	5660693	N/A
Turbidity	NTU	5.2	0.10	5668279	0.10	6.7	0.10	5668282	0.10
Conductivity	uS/cm	18	1.0	5666080	N/A	66	1.0	5666080	N/A

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		HIG825	HIG826	HIH405	HIH406	HIH407			
Sampling Date		2018/07/19	2018/07/19	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 16965	D 16965	D 33395	D 33395	D 33395			
	UNITS	**2018-203-SW01**	**2018-203-SW02**	**2018-206-SW01**	**2018-206-SW02**	**2018-206-SW03**	**RDL**	**QC Batch**	**MDL**
Metals									
Total Aluminum (Al)	ug/L	220	110	56	100	120	5.0	5663284	N/A
Total Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5663284	N/A
Total Arsenic (As)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5663284	N/A
Total Barium (Ba)	ug/L	3.6	<1.0	5.7	31	1.8	1.0	5663284	N/A
Total Beryllium (Be)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5663284	N/A
Total Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5663284	N/A
Total Boron (B)	ug/L	<50	<50	<50	<50	<50	50	5663284	N/A
Total Cadmium (Cd)	ug/L	0.035	0.038	<0.010	0.41	0.029	0.010	5663284	N/A
Total Calcium (Ca)	ug/L	2500	320	1900	3300	2200	100	5663284	N/A
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5663284	N/A
Total Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	5663284	N/A
Total Copper (Cu)	ug/L	<2.0	13	<2.0	3.6	<2.0	2.0	5663284	N/A
Total Iron (Fe)	ug/L	160	<50	97	310	80	50	5663284	N/A
Total Lead (Pb)	ug/L	<0.50	<0.50	<0.50	0.81	<0.50	0.50	5663284	N/A
Total Magnesium (Mg)	ug/L	510	<100	140	360	350	100	5663284	N/A
Total Manganese (Mn)	ug/L	6.4	5.6	<2.0	53	<2.0	2.0	5663284	N/A
Total Molybdenum (Mo)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5663284	N/A
Total Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5663284	N/A
Total Phosphorus (P)	ug/L	<100	<100	<100	<100	<100	100	5663284	N/A
Total Potassium (K)	ug/L	390	160	<100	200	120	100	5663284	N/A
Total Selenium (Se)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5663284	N/A
Total Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5663284	N/A
Total Sodium (Na)	ug/L	1400	340	450	1000	1000	100	5663284	N/A
Total Strontium (Sr)	ug/L	15	<2.0	6.2	21	8.7	2.0	5663284	N/A
Total Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5663284	N/A
Total Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5663284	N/A
Total Titanium (Ti)	ug/L	5.2	<2.0	<2.0	8.2	3.1	2.0	5663284	N/A
Total Uranium (U)	ug/L	<0.10	<0.10	<0.10	<0.10	0.38	0.10	5663284	N/A
Total Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5663284	N/A
Total Zinc (Zn)	ug/L	<5.0	8.9	<5.0	250	<5.0	5.0	5663284	N/A

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

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		HIH718	HIH719			
Sampling Date		2018/07/20	2018/07/20			
COC Number		D 33399	D 33399			
	UNITS	**2018-209-SW01**	**2018-209-SW02**	**RDL**	**QC Batch**	**MDL**
Metals						
Total Aluminum (Al)	ug/L	990	610	5.0	5663284	N/A
Total Antimony (Sb)	ug/L	<1.0	<1.0	1.0	5663284	N/A
Total Arsenic (As)	ug/L	<1.0	1.1	1.0	5663284	N/A
Total Barium (Ba)	ug/L	12	37	1.0	5663284	N/A
Total Beryllium (Be)	ug/L	<1.0	<1.0	1.0	5663284	N/A
Total Bismuth (Bi)	ug/L	<2.0	<2.0	2.0	5663284	N/A
Total Boron (B)	ug/L	<50	<50	50	5663284	N/A
Total Cadmium (Cd)	ug/L	<0.010	0.83	0.010	5663284	N/A
Total Calcium (Ca)	ug/L	2200	3600	100	5663284	N/A
Total Chromium (Cr)	ug/L	1.4	3.6	1.0	5663284	N/A
Total Cobalt (Co)	ug/L	<0.40	1.6	0.40	5663284	N/A
Total Copper (Cu)	ug/L	<2.0	150	2.0	5663284	N/A
Total Iron (Fe)	ug/L	670	11000	50	5663284	N/A
Total Lead (Pb)	ug/L	<0.50	17	0.50	5663284	N/A
Total Magnesium (Mg)	ug/L	640	3500	100	5663284	N/A
Total Manganese (Mn)	ug/L	9.6	79	2.0	5663284	N/A
Total Molybdenum (Mo)	ug/L	<2.0	<2.0	2.0	5663284	N/A
Total Nickel (Ni)	ug/L	<2.0	5.1	2.0	5663284	N/A
Total Phosphorus (P)	ug/L	140	120	100	5663284	N/A
Total Potassium (K)	ug/L	200	2700	100	5663284	N/A
Total Selenium (Se)	ug/L	<1.0	<1.0	1.0	5663284	N/A
Total Silver (Ag)	ug/L	<0.10	<0.10	0.10	5663284	N/A
Total Sodium (Na)	ug/L	870	2000	100	5663284	N/A
Total Strontium (Sr)	ug/L	12	30	2.0	5663284	N/A
Total Thallium (Tl)	ug/L	<0.10	<0.10	0.10	5663284	N/A
Total Tin (Sn)	ug/L	<2.0	<2.0	2.0	5663284	N/A
Total Titanium (Ti)	ug/L	61	19	2.0	5663284	N/A
Total Uranium (U)	ug/L	<0.10	<0.10	0.10	5663284	N/A
Total Vanadium (V)	ug/L	<2.0	<2.0	2.0	5663284	N/A
Total Zinc (Zn)	ug/L	<5.0	480	5.0	5663284	N/A

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

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		HIG825	HIG826	HIH405	HIH406	HIH407			
Sampling Date		2018/07/19	2018/07/19	2018/07/20	2018/07/20	2018/07/20			
COC Number		D 16965	D 16965	D 33395	D 33395	D 33395			
	UNITS	**2018-203-SW01**	**2018-203-SW02**	**2018-206-SW01**	**2018-206-SW02**	**2018-206-SW03**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5658977	N/A
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5658977	N/A
Acenaphthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Acenaphthylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5654722	N/A
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Chrysene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Fluorene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Naphthalene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5658977	N/A
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Phenanthrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5658977	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	76	76	79	58	88		5658977	
D14-Terphenyl	%	74	73	80	77	87		5658977	
D8-Acenaphthylene	%	62	64	71	52	79		5658977	

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

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		HIH718		HIH719			
Sampling Date		2018/07/20		2018/07/20			
COC Number		D 33399		D 33399			
	UNITS	**2018-209-SW01**	**QC Batch**	**2018-209-SW02**	**RDL**	**QC Batch**	**MDL**
Polyaromatic Hydrocarbons							
1-Methylnaphthalene	ug/L	<0.050	5658977	<0.050	0.050	5673136	N/A
2-Methylnaphthalene	ug/L	<0.050	5658977	<0.050	0.050	5673136	N/A
Acenaphthene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Acenaphthylene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Anthracene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Benzo(a)anthracene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Benzo(a)pyrene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Benzo(b)fluoranthene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Benzo(b/j)fluoranthene	ug/L	<0.020	5654722	<0.020	0.020	5654722	N/A
Benzo(g,h,i)perylene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Benzo(j)fluoranthene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Benzo(k)fluoranthene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Chrysene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Dibenz(a,h)anthracene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Fluoranthene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Fluorene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Naphthalene	ug/L	<0.20	5658977	<0.20	0.20	5673136	N/A
Perylene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Phenanthrene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Pyrene	ug/L	<0.010	5658977	<0.010	0.010	5673136	N/A
Surrogate Recovery (%)							
D10-Anthracene	%	85	5658977	41 (1)		5673136	
D14-Terphenyl	%	84	5658977	85		5673136	
D8-Acenaphthylene	%	74	5658977	31 (1)		5673136	

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

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		HIG825	HIG826	HIH405	HIH406			
Sampling Date		2018/07/19	2018/07/19	2018/07/20	2018/07/20			
COC Number		D 16965	D 16965	D 33395	D 33395			
	UNITS	**2018-203-SW01**	**2018-203-SW02**	**2018-206-SW01**	**2018-206-SW02**	**RDL**	**QC Batch**	**MDL**
Chlorobenzenes								
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	N/A
1,3-Dichlorobenzene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
1,4-Dichlorobenzene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
Chlorobenzene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
Volatile Organics								
1,1,1-Trichloroethane	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	N/A
1,1,2-Trichloroethane	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
1,1-Dichloroethane	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	5655211	N/A
1,1-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	1.0
1,2-Dichloroethane	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
1,2-Dichloropropane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	N/A
Benzene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
Bromodichloromethane	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	0.20
Bromoform	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	0.20
Bromomethane	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	N/A
Carbon Tetrachloride	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	N/A
Chloroethane	ug/L	<8.0	<8.0	<8.0	<8.0	8.0	5655211	N/A
Chloroform	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	0.20
Chloromethane	ug/L	<8.0	<8.0	<8.0	<8.0	8.0	5655211	N/A
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	N/A
cis-1,3-Dichloropropene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	N/A
Dibromochloromethane	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	0.20
Ethylbenzene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	5655211	0.50
Methyl t-butyl ether (MTBE)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	5655211	N/A
Methylene Chloride(Dichloromethane)	ug/L	<3.0	<3.0	<3.0	<3.0	3.0	5655211	N/A
o-Xylene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
p+m-Xylene	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	5655211	N/A
Styrene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
Tetrachloroethylene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
Toluene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
Total Trihalomethanes	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A

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

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		HIG825	HIG826	HIH405	HIH406			
Sampling Date		2018/07/19	2018/07/19	2018/07/20	2018/07/20			
COC Number		D 16965	D 16965	D 33395	D 33395			
	UNITS	**2018-203-SW01**	**2018-203-SW02**	**2018-206-SW01**	**2018-206-SW02**	**RDL**	**QC Batch**	**MDL**
Total Xylenes	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	1.0
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	N/A
trans-1,3-Dichloropropene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	N/A
Trichloroethylene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	5655211	N/A
Trichlorofluoromethane (FREON 11)	ug/L	<8.0	<8.0	<8.0	<8.0	8.0	5655211	N/A
Vinyl Chloride	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	5655211	2.0
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	98	98	98	97		5655211	
D4-1,2-Dichloroethane	%	99	102	102	105		5655211	
D8-Toluene	%	100	99	99	98		5655211	

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

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		HIH407	HIH718	HIH719			
Sampling Date		2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33395	D 33399	D 33399			
	UNITS	**2018-206-SW03**	**2018-209-SW01**	**2018-209-SW02**	**RDL**	**QC Batch**	**MDL**
Chlorobenzenes							
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	5655211	N/A
1,3-Dichlorobenzene	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
1,4-Dichlorobenzene	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
Chlorobenzene	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
Volatile Organics							
1,1,1-Trichloroethane	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	<0.50	0.50	5655211	N/A
1,1,2-Trichloroethane	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
1,1-Dichloroethane	ug/L	<2.0	<2.0	<2.0	2.0	5655211	N/A
1,1-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	0.50	5655211	1.0
1,2-Dichloroethane	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
1,2-Dichloropropane	ug/L	<0.50	<0.50	<0.50	0.50	5655211	N/A
Benzene	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
Bromodichloromethane	ug/L	<1.0	<1.0	<1.0	1.0	5655211	0.20
Bromoform	ug/L	<1.0	<1.0	<1.0	1.0	5655211	0.20
Bromomethane	ug/L	<0.50	<0.50	<0.50	0.50	5655211	N/A
Carbon Tetrachloride	ug/L	<0.50	<0.50	<0.50	0.50	5655211	N/A
Chloroethane	ug/L	<8.0	<8.0	<8.0	8.0	5655211	N/A
Chloroform	ug/L	<1.0	<1.0	<1.0	1.0	5655211	0.20
Chloromethane	ug/L	<8.0	<8.0	<8.0	8.0	5655211	N/A
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	0.50	5655211	N/A
cis-1,3-Dichloropropene	ug/L	<0.50	<0.50	<0.50	0.50	5655211	N/A
Dibromochloromethane	ug/L	<1.0	<1.0	<1.0	1.0	5655211	0.20
Ethylbenzene	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
Ethylene Dibromide	ug/L	<0.20	<0.20	<0.20	0.20	5655211	0.50
Methyl t-butyl ether (MTBE)	ug/L	<2.0	<2.0	<2.0	2.0	5655211	N/A
Methylene Chloride(Dichloromethane)	ug/L	<3.0	<3.0	<3.0	3.0	5655211	N/A
o-Xylene	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
p+m-Xylene	ug/L	<2.0	<2.0	<2.0	2.0	5655211	N/A
Styrene	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
Tetrachloroethylene	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
Toluene	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
Total Trihalomethanes	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A

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

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		HIH407	HIH718	HIH719			
Sampling Date		2018/07/20	2018/07/20	2018/07/20			
COC Number		D 33395	D 33399	D 33399			
	UNITS	**2018-206-SW03**	**2018-209-SW01**	**2018-209-SW02**	**RDL**	**QC Batch**	**MDL**
Total Xylenes	ug/L	<1.0	<1.0	<1.0	1.0	5655211	1.0
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	<0.50	0.50	5655211	N/A
trans-1,3-Dichloropropene	ug/L	<0.50	<0.50	<0.50	0.50	5655211	N/A
Trichloroethylene	ug/L	<1.0	<1.0	<1.0	1.0	5655211	N/A
Trichlorofluoromethane (FREON 11)	ug/L	<8.0	<8.0	<8.0	8.0	5655211	N/A
Vinyl Chloride	ug/L	<0.50	<0.50	<0.50	0.50	5655211	2.0
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	97	97	97		5655211	
D4-1,2-Dichloroethane	%	104	101	106		5655211	
D8-Toluene	%	98	98	98		5655211	

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

Maxxam Job #: B8I9887
Report Date: 2018/08/24

Stantec Consulting Ltd
Client Project #: 121414998.200.001
Site Location: MCL SITES
Sampler Initials: RP

ATLANTIC RBCA HYDROCARBONS (WATER)

Maxxam ID		HIG825				HIG825			
Sampling Date		2018/07/19				2018/07/19			
COC Number		D 16965				D 16965			
	UNITS	**2018-203-SW01**	**RDL**	**QC Batch**	**MDL**	**2018-203-SW01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/L	<0.0010	0.0010	5658362	N/A	<0.0010	0.0010	5658362	N/A
Toluene	mg/L	<0.0010	0.0010	5658362	N/A	<0.0010	0.0010	5658362	N/A
Ethylbenzene	mg/L	<0.0010	0.0010	5658362	N/A	<0.0010	0.0010	5658362	N/A
Total Xylenes	mg/L	<0.0020	0.0020	5658362	N/A	<0.0020	0.0020	5658362	N/A
C6 - C10 (less BTEX)	mg/L	<0.010	0.010	5658362	N/A	<0.010	0.010	5658362	N/A
>C10-C16 Hydrocarbons	mg/L	<0.050	0.050	5661767	N/A				
>C16-C21 Hydrocarbons	mg/L	<0.050	0.050	5661767	N/A				
>C21-<C32 Hydrocarbons	mg/L	<0.10	0.10	5661767	N/A				
Modified TPH (Tier1)	mg/L	<0.10	0.10	5655413	N/A				
Reached Baseline at C32	mg/L	NA	N/A	5661767	N/A				
Hydrocarbon Resemblance	mg/L	NA	N/A	5661767	N/A				
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	102		5661767					
n-Dotriacontane - Extractable	%	104		5661767					
Isobutylbenzene - Volatile	%	99		5658362		83		5658362	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

ATLANTIC RBCA HYDROCARBONS (WATER)

Maxxam ID		HIG826		HIH405				HIH405			
Sampling Date		2018/07/19		2018/07/20				2018/07/20			
COC Number		D 16965		D 33395				D 33395			
	UNITS	**2018-203-SW02**	**QC Batch**	**2018-206-SW01**	**RDL**	**QC Batch**	**MDL**	**2018-206-SW01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons											
Benzene	mg/L	<0.0010	5658362	<0.0010	0.0010	5658362	N/A				
Toluene	mg/L	<0.0010	5658362	<0.0010	0.0010	5658362	N/A				
Ethylbenzene	mg/L	<0.0010	5658362	<0.0010	0.0010	5658362	N/A				
Total Xylenes	mg/L	<0.0020	5658362	<0.0020	0.0020	5658362	N/A				
C6 - C10 (less BTEX)	mg/L	<0.010	5658362	<0.010	0.010	5658362	N/A				
>C10-C16 Hydrocarbons	mg/L	<0.050	5661767	<0.050	0.050	5662934	N/A	<0.050	0.050	5662934	N/A
>C16-C21 Hydrocarbons	mg/L	<0.050	5661767	<0.050	0.050	5662934	N/A	<0.050	0.050	5662934	N/A
>C21-<C32 Hydrocarbons	mg/L	<0.10	5661767	<0.10	0.10	5662934	N/A	<0.10	0.10	5662934	N/A
Modified TPH (Tier1)	mg/L	<0.10	5655413	<0.10	0.10	5655413	N/A				
Reached Baseline at C32	mg/L	NA	5661767	NA	N/A	5662934	N/A				
Hydrocarbon Resemblance	mg/L	NA	5661767	NA	N/A	5662934	N/A				
Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%	106	5661767	118		5662934		113		5662934	
n-Dotriacontane - Extractable	%	107	5661767	120		5662934		109		5662934	
Isobutylbenzene - Volatile	%	93	5658362	83		5658362					

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

ATLANTIC RBCA HYDROCARBONS (WATER)

Maxxam ID		HIH406		HIH407		HIH718			
Sampling Date		2018/07/20		2018/07/20		2018/07/20			
COC Number		D 33395		D 33395		D 33399			
	UNITS	**2018-206-SW02**	**QC Batch**	**2018-206-SW03**	**QC Batch**	**2018-209-SW01**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons									
Benzene	mg/L	<0.0010	5658362	<0.0010	5658362	<0.0010	0.0010	5658840	N/A
Toluene	mg/L	<0.0010	5658362	<0.0010	5658362	<0.0010	0.0010	5658840	N/A
Ethylbenzene	mg/L	<0.0010	5658362	<0.0010	5658362	<0.0010	0.0010	5658840	N/A
Total Xylenes	mg/L	<0.0020	5658362	<0.0020	5658362	<0.0020	0.0020	5658840	N/A
C6 - C10 (less BTEX)	mg/L	<0.010	5658362	<0.010	5658362	<0.010	0.010	5658840	N/A
>C10-C16 Hydrocarbons	mg/L	<0.050	5662934	<0.050	5662934	<0.050	0.050	5662934	N/A
>C16-C21 Hydrocarbons	mg/L	<0.050	5662934	<0.050	5662934	<0.050	0.050	5662934	N/A
>C21-<C32 Hydrocarbons	mg/L	<0.10	5662934	<0.10	5662934	<0.10	0.10	5662934	N/A
Modified TPH (Tier1)	mg/L	<0.10	5655413	<0.10	5655415	<0.10	0.10	5655415	N/A
Reached Baseline at C32	mg/L	NA	5662934	NA	5662934	NA	N/A	5662934	N/A
Hydrocarbon Resemblance	mg/L	NA	5662934	NA	5662934	NA	N/A	5662934	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	104	5662934	111	5662934	100		5662934	
n-Dotriacontane - Extractable	%	101	5662934	108	5662934	96		5662934	
Isobutylbenzene - Volatile	%	85	5658362	95	5658362	84		5658840	

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

ATLANTIC RBCA HYDROCARBONS (WATER)

Maxxam ID		HIH719			
Sampling Date		2018/07/20			
COC Number		D 33399			
	UNITS	**2018-209-SW02**	**RDL**	**QC Batch**	**MDL**
Petroleum Hydrocarbons					
Benzene	mg/L	<0.0010	0.0010	5658840	N/A
Toluene	mg/L	<0.0010	0.0010	5658840	N/A
Ethylbenzene	mg/L	<0.0010	0.0010	5658840	N/A
Total Xylenes	mg/L	<0.0020	0.0020	5658840	N/A
C6 - C10 (less BTEX)	mg/L	<0.010	0.010	5658840	N/A
>C10-C16 Hydrocarbons	mg/L	0.074	0.050	5662934	N/A
>C16-C21 Hydrocarbons	mg/L	0.13	0.050	5662934	N/A
>C21-<C32 Hydrocarbons	mg/L	0.40	0.10	5662934	N/A
Modified TPH (Tier1)	mg/L	0.60	0.10	5655415	N/A
Reached Baseline at C32	mg/L	No	N/A	5662934	N/A
Hydrocarbon Resemblance	mg/L	COMMENT (1)	N/A	5662934	N/A
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	107		5662934	
n-Dotriacontane - Extractable	%	97		5662934	
Isobutylbenzene - Volatile	%	93		5658840	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Weathered fuel oil fraction. Lube oil fraction.

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		HIG825				HIG825			
Sampling Date		2018/07/19				2018/07/19			
COC Number		D 16965				D 16965			
	UNITS	**2018-203-SW01**	**RDL**	**QC Batch**	**MDL**	**2018-203-SW01 Lab-Dup**	**RDL**	**QC Batch**	**MDL**
PCBs									
Aroclor 1016	ug/L	<0.050	0.050	5657555	N/A	<0.050	0.050	5657555	N/A
Aroclor 1221	ug/L	<0.050	0.050	5657555	N/A	<0.050	0.050	5657555	N/A
Aroclor 1232	ug/L	<0.050	0.050	5657555	N/A	<0.050	0.050	5657555	N/A
Aroclor 1248	ug/L	<0.050	0.050	5657555	N/A	<0.050	0.050	5657555	N/A
Aroclor 1242	ug/L	<0.050	0.050	5657555	N/A	<0.050	0.050	5657555	N/A
Aroclor 1254	ug/L	<0.050	0.050	5657555	N/A	<0.050	0.050	5657555	N/A
Aroclor 1260	ug/L	<0.050	0.050	5657555	N/A	<0.050	0.050	5657555	N/A
Calculated Total PCB	ug/L	<0.050	0.050	5655383	N/A				
Surrogate Recovery (%)									
Decachlorobiphenyl	%	73		5657555		76		5657555	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Maxxam ID		HIG826		HIH405	HIH406	HIH407			
Sampling Date		2018/07/19		2018/07/20	2018/07/20	2018/07/20			
COC Number		D 16965		D 33395	D 33395	D 33395			
	UNITS	**2018-203-SW02**	**QC Batch**	**2018-206-SW01**	**2018-206-SW02**	**2018-206-SW03**	**RDL**	**QC Batch**	**MDL**
PCBs									
Aroclor 1016	ug/L	<0.050	5657555	<0.050	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1221	ug/L	<0.050	5657555	<0.050	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1232	ug/L	<0.050	5657555	<0.050	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1248	ug/L	<0.050	5657555	<0.050	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1242	ug/L	<0.050	5657555	<0.050	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1254	ug/L	<0.050	5657555	<0.050	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1260	ug/L	<0.050	5657555	<0.050	<0.050	<0.050	0.050	5666290	N/A
Calculated Total PCB	ug/L	<0.050	5655383	<0.050	<0.050	<0.050	0.050	5655383	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	64	5657555	78	76	79		5666290	

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

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		HIH718	HIH719			
Sampling Date		2018/07/20	2018/07/20			
COC Number		D 33399	D 33399			
	UNITS	**2018-209-SW01**	**2018-209-SW02**	**RDL**	**QC Batch**	**MDL**
PCBs						
Aroclor 1016	ug/L	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1221	ug/L	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1232	ug/L	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1248	ug/L	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1242	ug/L	<0.050	<0.050	0.050	5666290	N/A
Aroclor 1254	ug/L	<0.050	0.15	0.050	5666290	N/A
Aroclor 1260	ug/L	<0.050	<0.050	0.050	5666290	N/A
Calculated Total PCB	ug/L	<0.050	0.15	0.050	5655383	N/A
Surrogate Recovery (%)						
Decachlorobiphenyl	%	91	66		5666290	

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

TEST SUMMARY

Maxxam ID: HIG362
Sample ID: 2018-203-SS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658534	2018/08/01	2018/08/01	Bryon Angevine
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

Maxxam ID: HIG362 Dup
Sample ID: 2018-203-SS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

Maxxam ID: HIG363
Sample ID: 2018-203-SS02
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5658728	2018/08/01	2018/08/02	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655381	N/A	2018/08/02	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

Maxxam ID: HIG364
Sample ID: 2018-203-SS03
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

TEST SUMMARY

Maxxam ID: HIG365
Sample ID: 2018-203-SS04
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

Maxxam ID: HIG366
Sample ID: 2018-203-SS05
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

Maxxam ID: HIG367
Sample ID: 2018-203-SS06
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5658728	2018/08/01	2018/08/02	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655381	N/A	2018/08/02	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

Maxxam ID: HIG367 Dup
Sample ID: 2018-203-SS06
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine

Maxxam ID: HIG368
Sample ID: 2018-203-SS07
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

TEST SUMMARY

Maxxam ID: HIG369
Sample ID: 2018-203-SS08
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658534	2018/08/01	2018/08/01	Bryon Angevine
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

Maxxam ID: HIG370
Sample ID: 2018-203-SS09
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

Maxxam ID: HIG371
Sample ID: 2018-203-SS10
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658534	2018/08/01	2018/08/01	Bryon Angevine
Moisture	BAL	5656226	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

Maxxam ID: HIG388
Sample ID: 2018-203-SS11
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658534	2018/08/01	2018/08/01	Bryon Angevine
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5658728	2018/08/01	2018/08/02	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655381	N/A	2018/08/02	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

TEST SUMMARY

Maxxam ID: HIG389
Sample ID: 2018-203-SS12
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658534	2018/08/01	2018/08/01	Bryon Angevine
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/07	Jacob Henley

Maxxam ID: HIG390
Sample ID: 2018-203-SS13
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658534	2018/08/01	2018/08/01	Bryon Angevine
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5658728	2018/08/01	2018/08/02	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655381	N/A	2018/08/02	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIG391
Sample ID: 2018-203-SS14
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIG392
Sample ID: 2018-203-SS15
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5658728	2018/07/31	2018/08/02	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655381	N/A	2018/08/02	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665044	N/A	2018/08/08	Jacob Henley

TEST SUMMARY

Maxxam ID: HIG393
Sample ID: 2018-203-SS16
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5658728	2018/08/01	2018/08/02	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655381	N/A	2018/08/02	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG393 Dup
Sample ID: 2018-203-SS16
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG394
Sample ID: 2018-203-SS17
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG395
Sample ID: 2018-203-SS18
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661982	2018/08/02	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5661703	N/A	2018/08/03	Shane Miller
Asbestos BULK (RDL<0.25%) (Sub fr Bed.)		5657046	N/A	2018/08/02	Eric Dearman
ModTPH (T1) Calc. for Soil	CALC	5661762	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

TEST SUMMARY

Maxxam ID: HIG396
Sample ID: 2018-203-SS19
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655411	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG397
Sample ID: 2018-203-SS20
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5658534	2018/08/01	2018/08/01	Bryon Angevine

Maxxam ID: HIG503
Sample ID: 2018-203-SS21
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5658728	2018/08/01	2018/08/02	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/02	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG504
Sample ID: 2018-203-SS22
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5658728	2018/08/01	2018/08/02	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/02	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

TEST SUMMARY

Maxxam ID: HIG504 Dup
Sample ID: 2018-203-SS22
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum

Maxxam ID: HIG505
Sample ID: 2018-203-SS23
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG506
Sample ID: 2018-203-SS24
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Moisture	BAL	5656285	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG507
Sample ID: 2018-203-TP01-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Moisture	BAL	5660945	N/A	2018/08/03	Shane Miller
ModTPH (T1) Calc. for Soil	CALC	5660654	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666492	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG507 Dup
Sample ID: 2018-203-TP01-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer

Maxxam ID: HIG508
Sample ID: 2018-203-TP01-BS02
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine

TEST SUMMARY

Maxxam ID: HIG509
Sample ID: 2018-203-TP02-BS02
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine

Maxxam ID: HIG510
Sample ID: 2018-203-TP03-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661982	2018/08/02	2018/08/04	Marley Gidney
Moisture	BAL	5661703	N/A	2018/08/03	Shane Miller
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/02	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5661131	N/A	2018/08/09	Automated Statchk
Asbestos BULK (RDL<0.25%) (Sub fr Bed.)		5657046	N/A	2018/08/02	Eric Dearman
ModTPH (T1) Calc. for Soil	CALC	5661762	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG511
Sample ID: 2018-203-TP03-BS02
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine

Maxxam ID: HIG617
Sample ID: 2018-203-TP04-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG617 Dup
Sample ID: 2018-203-TP04-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar

TEST SUMMARY

Maxxam ID: HIG618
Sample ID: 2018-203-TP05-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG619
Sample ID: 2018-203-TP05-BS02
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine

Maxxam ID: HIG620
Sample ID: 2018-203-TP06-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG621
Sample ID: 2018-203-TP06-BS02
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine

Maxxam ID: HIG622
Sample ID: 2018-203-TP07-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5665085	N/A	2018/08/07	Shawn Helmkay

TEST SUMMARY

Maxxam ID: HIG623
Sample ID: 2018-203-TP08-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666492	N/A	2018/08/07	Shawn Helmkay

Maxxam ID: HIG624
Sample ID: 2018-203-TP09-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (AA PIRI)	GC/FID	5658436	2018/08/01	2018/08/03	Bria Harvey
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T2) Calc. for Soil	CALC	5656261	N/A	2018/08/10	Kevin MacDonald
VPH in Soil (PIRI2) - Field Preserved	PTGC/MS	5668121	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG624 Dup
Sample ID: 2018-203-TP09-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (AA PIRI)	GC/FID	5658436	2018/08/01	2018/08/04	Bria Harvey

Maxxam ID: HIG625
Sample ID: 2018-203-TP10-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG625 Dup
Sample ID: 2018-203-TP10-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

TEST SUMMARY

Maxxam ID: HIG626
Sample ID: 2018-203-TP11-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG819
Sample ID: 2018-203-VEG01
Matrix: Vegetation

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/02	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIG820
Sample ID: 2018-203-VEG02
Matrix: Vegetation

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/02	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIG821
Sample ID: 2018-203-VEG03
Matrix: Vegetation

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/02	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIG822
Sample ID: 2018-203-VEG04
Matrix: Vegetation

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/02	2018/08/09	Chloe Bramble

TEST SUMMARY

Maxxam ID: HIG822
Sample ID: 2018-203-VEG04
Matrix: Vegetation

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIG823
Sample ID: 2018-203-SED01
Matrix: SEDIMENT

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (LL soil)	CALC	5656814	N/A	2018/08/09	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5658658	N/A	2018/08/02	Selina Dunbar
PAH in sediment by GC/MS (Low Level)	GC/MS	5659039	2018/08/01	2018/08/08	Alan Stewart
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/02	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5656402	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5656191	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG824
Sample ID: 2018-203-SED02
Matrix: SEDIMENT

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (LL soil)	CALC	5654224	N/A	2018/08/09	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658559	2018/07/31	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
PAH in sediment by GC/MS (Low Level)	GC/MS	5659039	2018/08/01	2018/08/08	Alan Stewart
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/02	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG824 Dup
Sample ID: 2018-203-SED02
Matrix: SEDIMENT

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/02	2018/08/09	Chloe Bramble

Maxxam ID: HIG825
Sample ID: 2018-203-SW01
Matrix: Water

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5655350	N/A	2018/08/02	Automated Statchk

TEST SUMMARY

Maxxam ID: HIG825
Sample ID: 2018-203-SW01
Matrix: Water

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	KONE	5660686	N/A	2018/08/02	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5654722	N/A	2018/08/09	Automated Statchk
Chloride	KONE	5660689	N/A	2018/08/03	Mary Clancey
Colour	KONE	5660695	N/A	2018/08/02	Mary Clancey
Conductance - water	AT	5660652	N/A	2018/08/02	Nicholas Hutchinson
TEH in Water (PIRI)	GC/FID	5661767	2018/08/02	2018/08/03	Marley Gidney
Hardness (calculated as CaCO3)		5655370	N/A	2018/08/07	Automated Statchk
Metals Water Total MS	CICP/MS	5663284	2018/08/03	2018/08/04	Bryon Angevine
Ion Balance (% Difference)	CALC	5655372	N/A	2018/08/07	Automated Statchk
Anion and Cation Sum	CALC	5655375	N/A	2018/08/07	Automated Statchk
Nitrogen Ammonia - water	KONE	5661193	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrate + Nitrite	KONE	5660699	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrite	KONE	5660706	N/A	2018/08/03	Mary Clancey
Nitrogen - Nitrate (as N)	CALC	5655378	N/A	2018/08/03	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5658977	2018/07/26	2018/08/07	Kelly Gale
PCBs in water by GC/ECD	GC/ECD	5657555	2018/07/26	2018/08/02	Chloe Bramble
PCB Aroclor sum (water)	CALC	5655383	N/A	2018/08/02	Automated Statchk
pH	AT	5660649	N/A	2018/08/02	Nicholas Hutchinson
Phosphorus - ortho	KONE	5660697	N/A	2018/08/02	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5658362	N/A	2018/08/01	Jackie Pia
Sat. pH and Langelier Index (@ 20C)	CALC	5655402	N/A	2018/08/07	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5655405	N/A	2018/08/07	Automated Statchk
Reactive Silica	KONE	5660694	N/A	2018/08/03	Mary Clancey
Sulphate	KONE	5660693	N/A	2018/08/03	Mary Clancey
Total Dissolved Solids (TDS calc)	CALC	5655406	N/A	2018/08/07	Automated Statchk
Organic carbon - Total (TOC)	TOCV/NDIR	5663554	N/A	2018/08/04	Luke MacPherson
ModTPH (T1) Calc. for Water	CALC	5655413	N/A	2018/08/07	Automated Statchk
Turbidity	TURB	5668282	N/A	2018/08/08	Nicholas Hutchinson
Volatile Organic Compounds in Water	HS/MS	5655211	N/A	2018/07/31	Amanda Swales

Maxxam ID: HIG825 Dup
Sample ID: 2018-203-SW01
Matrix: Water

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in water by GC/ECD	GC/ECD	5657555	2018/07/26	2018/08/02	Chloe Bramble
VPH in Water (PIRI)	PTGC/MS	5658362	N/A	2018/08/01	Jackie Pia

Maxxam ID: HIG826
Sample ID: 2018-203-SW02
Matrix: Water

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5655350	N/A	2018/08/02	Automated Statchk

TEST SUMMARY

Maxxam ID: HIG826
Sample ID: 2018-203-SW02
Matrix: Water

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	KONE	5660686	N/A	2018/08/02	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5654722	N/A	2018/08/09	Automated Statchk
Chloride	KONE	5660689	N/A	2018/08/03	Mary Clancey
Colour	KONE	5660695	N/A	2018/08/02	Mary Clancey
Conductance - water	AT	5660652	N/A	2018/08/02	Nicholas Hutchinson
TEH in Water (PIRI)	GC/FID	5661767	2018/08/02	2018/08/03	Marley Gidney
Hardness (calculated as CaCO3)		5655370	N/A	2018/08/07	Automated Statchk
Metals Water Total MS	CICP/MS	5663284	2018/08/03	2018/08/04	Bryon Angevine
Ion Balance (% Difference)	CALC	5655372	N/A	2018/08/07	Automated Statchk
Anion and Cation Sum	CALC	5655375	N/A	2018/08/07	Automated Statchk
Nitrogen Ammonia - water	KONE	5661193	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrate + Nitrite	KONE	5660699	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrite	KONE	5660706	N/A	2018/08/03	Mary Clancey
Nitrogen - Nitrate (as N)	CALC	5655378	N/A	2018/08/03	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5658977	2018/07/26	2018/08/07	Kelly Gale
PCBs in water by GC/ECD	GC/ECD	5657555	2018/07/26	2018/08/02	Chloe Bramble
PCB Aroclor sum (water)	CALC	5655383	N/A	2018/08/02	Automated Statchk
pH	AT	5660649	N/A	2018/08/02	Nicholas Hutchinson
Phosphorus - ortho	KONE	5660697	N/A	2018/08/02	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5658362	N/A	2018/08/01	Jackie Pia
Sat. pH and Langelier Index (@ 20C)	CALC	5655402	N/A	2018/08/07	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5655405	N/A	2018/08/07	Automated Statchk
Reactive Silica	KONE	5660694	N/A	2018/08/03	Mary Clancey
Sulphate	KONE	5660693	N/A	2018/08/03	Mary Clancey
Total Dissolved Solids (TDS calc)	CALC	5655406	N/A	2018/08/07	Automated Statchk
Organic carbon - Total (TOC)	TOCV/NDIR	5663339	N/A	2018/08/03	Luke MacPherson
ModTPH (T1) Calc. for Water	CALC	5655413	N/A	2018/08/07	Automated Statchk
Turbidity	TURB	5668282	N/A	2018/08/08	Nicholas Hutchinson
Volatile Organic Compounds in Water	HS/MS	5655211	N/A	2018/07/31	Amanda Swales

Maxxam ID: HIG898
Sample ID: 2018-206-SS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5658728	2018/08/01	2018/08/02	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655381	N/A	2018/08/02	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

TEST SUMMARY

Maxxam ID: HIG899
Sample ID: 2018-206-SS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG900
Sample ID: 2018-206-SS03
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG901
Sample ID: 2018-206-SS04
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG902
Sample ID: 2018-206-SS05
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5656573	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

TEST SUMMARY

Maxxam ID: HIG902 Dup
Sample ID: 2018-206-SS05
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum

Maxxam ID: HIG903
Sample ID: 2018-206-SS06
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655353	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG904
Sample ID: 2018-206-SS07
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG905
Sample ID: 2018-206-SS08
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661982	2018/08/02	2018/08/04	Marley Gidney
Moisture	BAL	5661703	N/A	2018/08/03	Shane Miller
Asbestos BULK (RDL<0.25%) (Sub fr Bed.)		5657046	N/A	2018/08/02	Eric Dearman
ModTPH (T1) Calc. for Soil	CALC	5661762	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG906
Sample ID: 2018-206-SS09
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar

TEST SUMMARY

Maxxam ID: HIG906
Sample ID: 2018-206-SS09
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655381	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/08	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666779	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG907
Sample ID: 2018-206-SS10
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5653620	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIG907 Dup
Sample ID: 2018-206-SS10
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIG963
Sample ID: 2018-206-SS11
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (AA PIRI)	GC/FID	5658436	2018/08/01	2018/08/04	Bria Harvey
Moisture	BAL	5656628	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T2) Calc. for Soil	CALC	5655417	N/A	2018/08/10	Eric Dearman
VPH in Soil (PIRI2) - Field Preserved	PTGC/MS	5668121	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIG964
Sample ID: 2018-206-SS12
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658559	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Moisture	BAL	5656628	N/A	2018/08/01	Selina Dunbar

TEST SUMMARY

Maxxam ID: HIG964 **Collected:** 2018/07/20
Sample ID: 2018-206-SS12 **Shipped:**
Matrix: Soil **Received:** 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIG965 **Collected:** 2018/07/20
Sample ID: 2018-206-SS13 **Shipped:**
Matrix: Soil **Received:** 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5656628	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIG966 **Collected:** 2018/07/20
Sample ID: 2018-206-SS14 **Shipped:**
Matrix: Soil **Received:** 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/10	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5660945	N/A	2018/08/03	Shane Miller
ModTPH (T1) Calc. for Soil	CALC	5660654	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIG966 Dup **Collected:** 2018/07/20
Sample ID: 2018-206-SS14 **Shipped:**
Matrix: Soil **Received:** 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIG967 **Collected:** 2018/07/20
Sample ID: 2018-206-SS15 **Shipped:**
Matrix: Soil **Received:** 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Moisture	BAL	5656628	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

TEST SUMMARY

Maxxam ID: HIG968
Sample ID: 2018-206-SS16
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Moisture	BAL	5656628	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIG969
Sample ID: 2018-206-SS17
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5656628	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates

Maxxam ID: HIG969 Dup
Sample ID: 2018-206-SS17
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/02	2018/08/02	Bryon Angevine

Maxxam ID: HIG969 Dup2
Sample ID: 2018-206-SS17
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/07	2018/08/07	Bryon Angevine

Maxxam ID: HIG970
Sample ID: 2018-206-SS18
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5656628	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

TEST SUMMARY

Maxxam ID: HIG971 **Collected:** 2018/07/20
Sample ID: 2018-206-SS19 **Shipped:**
Matrix: Soil **Received:** 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661982	2018/08/02	2018/08/07	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5661289	N/A	2018/08/03	Selina Dunbar
Asbestos BULK (RDL<0.25%) (Sub fr Bed.)		5657046	N/A	2018/08/02	Eric Dearman
ModTPH (T1) Calc. for Soil	CALC	5661762	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIG972 **Collected:** 2018/07/20
Sample ID: 2018-206-SS20 **Shipped:**
Matrix: Soil **Received:** 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/09	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5656628	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIG972 Dup **Collected:** 2018/07/20
Sample ID: 2018-206-SS20 **Shipped:**
Matrix: Soil **Received:** 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/09	Michelle Shearer

Maxxam ID: HIH047 **Collected:** 2018/07/20
Sample ID: 2018-206-SS21 **Shipped:**
Matrix: Soil **Received:** 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH047 Dup **Collected:** 2018/07/20
Sample ID: 2018-206-SS21 **Shipped:**
Matrix: Soil **Received:** 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar

TEST SUMMARY

Maxxam ID: HIH048
Sample ID: 2018-206-SS22
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/11	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH049
Sample ID: 2018-206-SS24
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (AA PIRI)	GC/FID	5658436	2018/08/01	2018/08/04	Bria Harvey
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/11	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T2) Calc. for Soil	CALC	5655417	N/A	2018/08/10	Eric Dearman
VPH in Soil (PIRI2) - Field Preserved	PTGC/MS	5668121	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIH050
Sample ID: 2018-206-TP01-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH051
Sample ID: 2018-206-TP01-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/11	Lisa Gates

TEST SUMMARY

Maxxam ID: HIH052
Sample ID: 2018-206-TP02-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH053
Sample ID: 2018-206-TP02-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/11	Lisa Gates

Maxxam ID: HIH054
Sample ID: 2018-206-TP03-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH055
Sample ID: 2018-206-TP04-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/11	Lisa Gates

Maxxam ID: HIH205
Sample ID: 2018-206-TP04-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

TEST SUMMARY

Maxxam ID: HIH205
Sample ID: 2018-206-TP04-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH206
Sample ID: 2018-206-TP05-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH207
Sample ID: 2018-206-TP05-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/03	Automated Statchk
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5659288	2018/08/01	2018/08/02	Kelly Gale

Maxxam ID: HIH207 Dup
Sample ID: 2018-206-TP05-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds by GCMS (SIM)	GC/MS	5659288	2018/08/01	2018/08/02	Kelly Gale

Maxxam ID: HIH208
Sample ID: 2018-206-TP06-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/09	Jacob Henley

TEST SUMMARY

Maxxam ID: HIH209
Sample ID: 2018-206-TP07-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Moisture	BAL	5660945	N/A	2018/08/03	Shane Miller
PCBs in soil by GC/ECD	GC/ECD	5666758	2018/08/07	2018/08/08	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5661131	N/A	2018/08/08	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5660654	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH209 Dup
Sample ID: 2018-206-TP07-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in soil by GC/ECD	GC/ECD	5666758	2018/08/07	2018/08/08	Chloe Bramble

Maxxam ID: HIH210
Sample ID: 2018-206-TP08-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH211
Sample ID: 2018-206-TP09-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/09	Jacob Henley

TEST SUMMARY

Maxxam ID: HIH211 Dup
Sample ID: 2018-206-TP09-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658552	2018/08/01	2018/08/04	Marley Gidney

Maxxam ID: HIH212
Sample ID: 2018-206-TP010-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine
Moisture	BAL	5657130	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5666790	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH213
Sample ID: 2018-206-VEG01
Matrix: Vegetation

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/03	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIH214
Sample ID: 2018-206-VEG02
Matrix: Vegetation

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5670376	2018/08/09	2018/08/09	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIH214 Dup
Sample ID: 2018-206-VEG02
Matrix: Vegetation

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5670376	2018/08/09	2018/08/09	Cassandra Hartery

TEST SUMMARY

Maxxam ID: HIH402
Sample ID: 2018-206-SED01
Matrix: SEDIMENT

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5654210	N/A	2018/08/13	Automated Statchk
Benzo(b/j)fluoranthene Sum (LL soil)	CALC	5658681	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar
PAH in sediment by GC/MS (Low Level)	GC/MS	5663240	2018/08/03	2018/08/12	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH402 Dup
Sample ID: 2018-206-SED01
Matrix: SEDIMENT

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH in sediment by GC/MS (Low Level)	GC/MS	5663240	2018/08/03	2018/08/13	Lisa Gates

Maxxam ID: HIH403
Sample ID: 2018-206-SED02
Matrix: SEDIMENT

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5654210	N/A	2018/08/13	Automated Statchk
Benzo(b/j)fluoranthene Sum (LL soil)	CALC	5654224	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/10	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar
PAH in sediment by GC/MS (Low Level)	GC/MS	5663240	2018/08/03	2018/08/13	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH404
Sample ID: 2018-206-SED03
Matrix: SEDIMENT

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
Benzo(b/j)fluoranthene Sum (LL soil)	CALC	5654224	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar

TEST SUMMARY

Maxxam ID: HIH404
Sample ID: 2018-206-SED03
Matrix: SEDIMENT

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH in sediment by GC/MS (Low Level)	GC/MS	5663240	2018/08/03	2018/08/13	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH405
Sample ID: 2018-206-SW01
Matrix: Water

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5655350	N/A	2018/08/02	Automated Statchk
Alkalinity	KONE	5660686	N/A	2018/08/03	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5654722	N/A	2018/08/09	Automated Statchk
Chloride	KONE	5660689	N/A	2018/08/02	Mary Clancey
Colour	KONE	5660695	N/A	2018/08/02	Mary Clancey
Conductance - water	AT	5660652	N/A	2018/08/02	Nicholas Hutchinson
TEH in Water (PIRI)	GC/FID	5662934	2018/08/03	2018/08/09	Marsha (Skinner) Harnum
Hardness (calculated as CaCO3)		5655370	N/A	2018/08/07	Automated Statchk
Metals Water Total MS	CICP/MS	5663284	2018/08/03	2018/08/04	Bryon Angevine
Ion Balance (% Difference)	CALC	5655372	N/A	2018/08/07	Automated Statchk
Anion and Cation Sum	CALC	5655375	N/A	2018/08/07	Automated Statchk
Nitrogen Ammonia - water	KONE	5661193	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrate + Nitrite	KONE	5660699	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrite	KONE	5660706	N/A	2018/08/03	Mary Clancey
Nitrogen - Nitrate (as N)	CALC	5655378	N/A	2018/08/03	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5658977	2018/07/26	2018/08/07	Kelly Gale
PCBs in water by GC/ECD	GC/ECD	5666290	2018/07/26	2018/08/08	Chloe Bramble
PCB Aroclor sum (water)	CALC	5655383	N/A	2018/08/08	Automated Statchk
pH	AT	5660649	N/A	2018/08/02	Nicholas Hutchinson
Phosphorus - ortho	KONE	5660697	N/A	2018/08/02	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5658362	N/A	2018/08/01	Jackie Pia
Sat. pH and Langelier Index (@ 20C)	CALC	5655402	N/A	2018/08/07	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5655405	N/A	2018/08/07	Automated Statchk
Reactive Silica	KONE	5660694	N/A	2018/08/03	Mary Clancey
Sulphate	KONE	5660693	N/A	2018/08/03	Mary Clancey
Total Dissolved Solids (TDS calc)	CALC	5655406	N/A	2018/08/07	Automated Statchk
Organic carbon - Total (TOC)	TOCV/NDIR	5663554	N/A	2018/08/04	Luke MacPherson
ModTPH (T1) Calc. for Water	CALC	5655413	N/A	2018/08/10	Automated Statchk
Turbidity	TURB	5668282	N/A	2018/08/08	Nicholas Hutchinson
Volatile Organic Compounds in Water	HS/MS	5655211	N/A	2018/07/31	Amanda Swales

TEST SUMMARY

Maxxam ID: HIH405 Dup
Sample ID: 2018-206-SW01
Matrix: Water

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Water (PIRI)	GC/FID	5662934	2018/08/03	2018/08/09	Marsha (Skinner) Harnum

Maxxam ID: HIH406
Sample ID: 2018-206-SW02
Matrix: Water

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5655350	N/A	2018/08/08	Automated Statchk
Alkalinity	KONE	5660686	N/A	2018/08/03	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5654722	N/A	2018/08/09	Automated Statchk
Chloride	KONE	5660689	N/A	2018/08/02	Mary Clancey
Colour	KONE	5660695	N/A	2018/08/02	Mary Clancey
Conductance - water	AT	5666080	N/A	2018/08/07	Nicholas Hutchinson
TEH in Water (PIRI)	GC/FID	5662934	2018/08/03	2018/08/09	Marsha (Skinner) Harnum
Hardness (calculated as CaCO3)		5655370	N/A	2018/08/07	Automated Statchk
Metals Water Total MS	CICP/MS	5663284	2018/08/03	2018/08/04	Bryon Angevine
Ion Balance (% Difference)	CALC	5655372	N/A	2018/08/08	Automated Statchk
Anion and Cation Sum	CALC	5655375	N/A	2018/08/08	Automated Statchk
Nitrogen Ammonia - water	KONE	5658956	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrate + Nitrite	KONE	5660699	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrite	KONE	5660706	N/A	2018/08/03	Mary Clancey
Nitrogen - Nitrate (as N)	CALC	5655378	N/A	2018/08/03	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5658977	2018/07/26	2018/08/07	Kelly Gale
PCBs in water by GC/ECD	GC/ECD	5666290	2018/07/26	2018/08/08	Chloe Bramble
PCB Aroclor sum (water)	CALC	5655383	N/A	2018/08/08	Automated Statchk
pH	AT	5666078	N/A	2018/08/07	Nicholas Hutchinson
Phosphorus - ortho	KONE	5660697	N/A	2018/08/02	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5658362	N/A	2018/08/01	Jackie Pia
Sat. pH and Langelier Index (@ 20C)	CALC	5655402	N/A	2018/08/08	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5655405	N/A	2018/08/08	Automated Statchk
Reactive Silica	KONE	5660694	N/A	2018/08/03	Mary Clancey
Sulphate	KONE	5660693	N/A	2018/08/03	Mary Clancey
Total Dissolved Solids (TDS calc)	CALC	5655406	N/A	2018/08/07	Automated Statchk
Organic carbon - Total (TOC)	TOCV/NDIR	5663339	N/A	2018/08/03	Luke MacPherson
ModTPH (T1) Calc. for Water	CALC	5655413	N/A	2018/08/10	Automated Statchk
Turbidity	TURB	5668282	N/A	2018/08/08	Nicholas Hutchinson
Volatile Organic Compounds in Water	HS/MS	5655211	N/A	2018/07/31	Amanda Swales

Maxxam ID: HIH406 Dup
Sample ID: 2018-206-SW02
Matrix: Water

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrogen Ammonia - water	KONE	5658956	N/A	2018/08/02	Mary Clancey

TEST SUMMARY

Maxxam ID: HIH407
Sample ID: 2018-206-SW03
Matrix: Water

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5655350	N/A	2018/08/08	Automated Statchk
Alkalinity	KONE	5660686	N/A	2018/08/03	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5654722	N/A	2018/08/09	Automated Statchk
Chloride	KONE	5660689	N/A	2018/08/02	Mary Clancey
Colour	KONE	5660695	N/A	2018/08/02	Mary Clancey
Conductance - water	AT	5666080	N/A	2018/08/07	Nicholas Hutchinson
TEH in Water (PIRI)	GC/FID	5662934	2018/08/03	2018/08/09	Marsha (Skinner) Harnum
Hardness (calculated as CaCO3)		5655370	N/A	2018/08/07	Automated Statchk
Metals Water Total MS	CICP/MS	5663284	2018/08/03	2018/08/04	Bryon Angevine
Ion Balance (% Difference)	CALC	5655372	N/A	2018/08/08	Automated Statchk
Anion and Cation Sum	CALC	5655375	N/A	2018/08/08	Automated Statchk
Nitrogen Ammonia - water	KONE	5661193	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrate + Nitrite	KONE	5660699	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrite	KONE	5660706	N/A	2018/08/03	Mary Clancey
Nitrogen - Nitrate (as N)	CALC	5655378	N/A	2018/08/03	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5658977	2018/07/26	2018/08/07	Kelly Gale
PCBs in water by GC/ECD	GC/ECD	5666290	2018/07/26	2018/08/08	Chloe Bramble
PCB Aroclor sum (water)	CALC	5655383	N/A	2018/08/08	Automated Statchk
pH	AT	5666078	N/A	2018/08/07	Nicholas Hutchinson
Phosphorus - ortho	KONE	5660697	N/A	2018/08/02	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5658362	N/A	2018/08/01	Jackie Pia
Sat. pH and Langelier Index (@ 20C)	CALC	5655402	N/A	2018/08/08	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5655405	N/A	2018/08/08	Automated Statchk
Reactive Silica	KONE	5660694	N/A	2018/08/03	Mary Clancey
Sulphate	KONE	5660693	N/A	2018/08/03	Mary Clancey
Total Dissolved Solids (TDS calc)	CALC	5655406	N/A	2018/08/07	Automated Statchk
Organic carbon - Total (TOC)	TOCV/NDIR	5663339	N/A	2018/08/03	Luke MacPherson
ModTPH (T1) Calc. for Water	CALC	5655415	N/A	2018/08/10	Automated Statchk
Turbidity	TURB	5668282	N/A	2018/08/08	Nicholas Hutchinson
Volatile Organic Compounds in Water	HS/MS	5655211	N/A	2018/07/31	Amanda Swales

Maxxam ID: HIH432
Sample ID: 2018-209-SS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/02	2018/08/03	Bryon Angevine
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

TEST SUMMARY

Maxxam ID: HIH433
Sample ID: 2018-209-SS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH434
Sample ID: 2018-209-SS03
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5661983	2018/08/02	2018/08/02	Alan Stewart
PCB Aroclor sum (soil)	CALC	5655379	N/A	2018/08/03	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH434 Dup
Sample ID: 2018-209-SS03
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5661983	2018/08/02	2018/08/02	Alan Stewart

Maxxam ID: HIH435
Sample ID: 2018-209-SS04
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

TEST SUMMARY

Maxxam ID: HIH436
Sample ID: 2018-209-SS07
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine

Maxxam ID: HIH437
Sample ID: 2018-209-SS08
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH438
Sample ID: 2018-209-SS09
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/02	2018/08/03	Bryon Angevine
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH439
Sample ID: 2018-209-SS10
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Moisture	BAL	5658488	N/A	2018/08/02	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH440
Sample ID: 2018-209-SS11
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Asbestos BULK (RDL<0.25%) (Sub fr Bed.)		5657046	N/A	2018/08/02	Eric Dearman

TEST SUMMARY

Maxxam ID: HIH441
Sample ID: 2018-209-SS12
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH460
Sample ID: 2018-209-SS13
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH460 Dup
Sample ID: 2018-209-SS13
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar

Maxxam ID: HIH461
Sample ID: 2018-209-SS14
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH462
Sample ID: 2018-209-SS15
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates

TEST SUMMARY

Maxxam ID: HIH462
Sample ID: 2018-209-SS15
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH463
Sample ID: 2018-209-SS16
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668106	N/A	2018/08/08	Jacob Henley

Maxxam ID: HIH464
Sample ID: 2018-209-SS17
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661621	2018/08/02	2018/08/08	Michelle Shearer
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655379	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIH464 Dup
Sample ID: 2018-209-SS17
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIH465
Sample ID: 2018-209-SS18
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/09	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655379	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

TEST SUMMARY

Maxxam ID: HIH466
Sample ID: 2018-209-SS19
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/09	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/02	2018/08/03	Bryon Angevine
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655379	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIH467
Sample ID: 2018-209-SS20
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/10	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/02	2018/08/03	Bryon Angevine
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIH468
Sample ID: 2018-209-SS21
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/10	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIH468 Dup
Sample ID: 2018-209-SS21
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5663204	2018/08/03	2018/08/03	Bryon Angevine
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates

TEST SUMMARY

Maxxam ID: HIH469
Sample ID: 2018-209-SS22
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/09	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660698	2018/08/02	2018/08/03	Bryon Angevine
Moisture	BAL	5658910	N/A	2018/08/02	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655379	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIH679
Sample ID: 2018-209-SS23
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5660657	2018/08/03	2018/08/04	Bryon Angevine

Maxxam ID: HIH680
Sample ID: 2018-209-SS24
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5654210	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/10	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIH681
Sample ID: 2018-209-TP06-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

TEST SUMMARY

Maxxam ID: HIH682
Sample ID: 2018-209-TP06-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5654210	N/A	2018/08/13	Automated Statchk
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates

Maxxam ID: HIH683
Sample ID: 2018-209-TP07-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5654210	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/10	Jacob Henley

Maxxam ID: HIH684
Sample ID: 2018-209-TP07-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine

Maxxam ID: HIH685
Sample ID: 2018-209-TP08-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5654210	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/07	Marsha (Skinner) Harnum
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5668896	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIH686
Sample ID: 2018-209-TP08-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (AA PIRI)	GC/FID	5658436	2018/08/01	2018/08/04	Bria Harvey
Metals Solids Acid Extr. ICPMS	ICP/MS	5658703	2018/08/01	2018/08/02	Bryon Angevine
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar

TEST SUMMARY

Maxxam ID: HIH686
Sample ID: 2018-209-TP08-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ModTPH (T2) Calc. for Soil	CALC	5655417	N/A	2018/08/10	Eric Dearman
VPH in Soil (PIRI2) - Field Preserved	PTGC/MS	5668121	N/A	2018/08/08	Shawn Helmkay

Maxxam ID: HIH687
Sample ID: 2018-209-TP09-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine

Maxxam ID: HIH688
Sample ID: 2018-209-TP09-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5654210	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5670804	2018/08/03	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5654481	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIH711
Sample ID: 2018-209-TP10-BS01
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5655351	N/A	2018/08/14	Automated Statchk
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
PAH Compounds by GCMS (SIM)	GC/MS	5673992	2018/08/03	2018/08/13	Lisa Gates

Maxxam ID: HIH712
Sample ID: 2018-209-TP10-BS02
Matrix: Soil

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5658581	2018/08/01	2018/08/08	Marsha (Skinner) Harnum
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

TEST SUMMARY

Maxxam ID: HIH713
Sample ID: 2018-209-VEG01
Matrix: Vegetation

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/03	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIH714
Sample ID: 2018-209-VEG03
Matrix: Vegetation

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/03	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIH715
Sample ID: 2018-209-VEG04
Matrix: Vegetation

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/03	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5655379	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIH716
Sample ID: 2018-209SED01
Matrix: SEDIMENT

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (LL soil)	CALC	5654224	N/A	2018/08/09	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/09	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
PAH in sediment by GC/MS (Low Level)	GC/MS	5659039	2018/08/01	2018/08/08	Alan Stewart
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

TEST SUMMARY

Maxxam ID: HIH717
Sample ID: 2018-209SED02
Matrix: SEDIMENT

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (LL soil)	CALC	5654224	N/A	2018/08/09	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/10	Michelle Shearer
Metals Solids Acid Extr. ICPMS	ICP/MS	5660595	2018/08/02	2018/08/02	Bryon Angevine
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar
PAH in sediment by GC/MS (Low Level)	GC/MS	5659039	2018/08/01	2018/08/08	Alan Stewart
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5655409	N/A	2018/08/10	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HIH717 Dup
Sample ID: 2018-209SED02
Matrix: SEDIMENT

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5657037	N/A	2018/08/01	Selina Dunbar

Maxxam ID: HIH718
Sample ID: 2018-209-SW01
Matrix: Water

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5655350	N/A	2018/08/08	Automated Statchk
Alkalinity	KONE	5660686	N/A	2018/08/03	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5654722	N/A	2018/08/09	Automated Statchk
Chloride	KONE	5660689	N/A	2018/08/02	Mary Clancey
Colour	KONE	5660695	N/A	2018/08/02	Mary Clancey
Conductance - water	AT	5666080	N/A	2018/08/07	Nicholas Hutchinson
TEH in Water (PIRI)	GC/FID	5662934	2018/08/03	2018/08/09	Marsha (Skinner) Harnum
Hardness (calculated as CaCO3)		5655370	N/A	2018/08/07	Automated Statchk
Metals Water Total MS	CICP/MS	5663284	2018/08/03	2018/08/04	Bryon Angevine
Ion Balance (% Difference)	CALC	5655372	N/A	2018/08/08	Automated Statchk
Anion and Cation Sum	CALC	5655375	N/A	2018/08/08	Automated Statchk
Nitrogen Ammonia - water	KONE	5661197	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrate + Nitrite	KONE	5660699	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrite	KONE	5660706	N/A	2018/08/03	Mary Clancey
Nitrogen - Nitrate (as N)	CALC	5655378	N/A	2018/08/03	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5658977	2018/08/01	2018/08/07	Kelly Gale
PCBs in water by GC/ECD	GC/ECD	5666290	2018/07/26	2018/08/08	Chloe Bramble
PCB Aroclor sum (water)	CALC	5655383	N/A	2018/08/08	Automated Statchk
pH	AT	5666078	N/A	2018/08/07	Nicholas Hutchinson
Phosphorus - ortho	KONE	5660697	N/A	2018/08/02	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5658840	N/A	2018/08/02	Jackie Pia
Sat. pH and Langelier Index (@ 20C)	CALC	5655402	N/A	2018/08/08	Automated Statchk

TEST SUMMARY

Maxxam ID: HIH718
Sample ID: 2018-209-SW01
Matrix: Water

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sat. pH and Langelier Index (@ 4C)	CALC	5655405	N/A	2018/08/08	Automated Statchk
Reactive Silica	KONE	5660694	N/A	2018/08/03	Mary Clancey
Sulphate	KONE	5660693	N/A	2018/08/03	Mary Clancey
Total Dissolved Solids (TDS calc)	CALC	5655406	N/A	2018/08/07	Automated Statchk
Organic carbon - Total (TOC)	TOCV/NDIR	5663554	N/A	2018/08/04	Luke MacPherson
ModTPH (T1) Calc. for Water	CALC	5655415	N/A	2018/08/10	Automated Statchk
Turbidity	TURB	5668279	N/A	2018/08/08	Nicholas Hutchinson
Volatile Organic Compounds in Water	HS/MS	5655211	N/A	2018/07/31	Amanda Swales

Maxxam ID: HIH718 Dup
Sample ID: 2018-209-SW01
Matrix: Water

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductance - water	AT	5666080	N/A	2018/08/07	Nicholas Hutchinson
pH	AT	5666078	N/A	2018/08/07	Nicholas Hutchinson
Turbidity	TURB	5668279	N/A	2018/08/08	Nicholas Hutchinson

Maxxam ID: HIH719
Sample ID: 2018-209-SW02
Matrix: Water

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5655350	N/A	2018/08/08	Automated Statchk
Alkalinity	KONE	5660686	N/A	2018/08/03	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5654722	N/A	2018/08/11	Automated Statchk
Chloride	KONE	5660689	N/A	2018/08/02	Mary Clancey
Colour	KONE	5660695	N/A	2018/08/02	Mary Clancey
Conductance - water	AT	5666080	N/A	2018/08/07	Nicholas Hutchinson
TEH in Water (PIRI)	GC/FID	5662934	2018/08/03	2018/08/09	Marsha (Skinner) Harnum
Hardness (calculated as CaCO3)		5655370	N/A	2018/08/07	Automated Statchk
Metals Water Total MS	CICP/MS	5663284	2018/08/03	2018/08/04	Bryon Angevine
Ion Balance (% Difference)	CALC	5655372	N/A	2018/08/08	Automated Statchk
Anion and Cation Sum	CALC	5655375	N/A	2018/08/08	Automated Statchk
Nitrogen Ammonia - water	KONE	5661197	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrate + Nitrite	KONE	5660699	N/A	2018/08/02	Mary Clancey
Nitrogen - Nitrite	KONE	5660706	N/A	2018/08/03	Mary Clancey
Nitrogen - Nitrate (as N)	CALC	5655378	N/A	2018/08/03	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5673136	2018/07/26	2018/08/11	Robin Smith-Armstrong
PCBs in water by GC/ECD	GC/ECD	5666290	2018/07/26	2018/08/08	Chloe Bramble
PCB Aroclor sum (water)	CALC	5655383	N/A	2018/08/08	Automated Statchk
pH	AT	5666078	N/A	2018/08/07	Nicholas Hutchinson
Phosphorus - ortho	KONE	5660697	N/A	2018/08/02	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5658840	N/A	2018/08/02	Jackie Pia

TEST SUMMARY

Maxxam ID: HIH719
Sample ID: 2018-209-SW02
Matrix: Water

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sat. pH and Langelier Index (@ 20C)	CALC	5655402	N/A	2018/08/08	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5655405	N/A	2018/08/08	Automated Statchk
Reactive Silica	KONE	5660694	N/A	2018/08/03	Mary Clancey
Sulphate	KONE	5660693	N/A	2018/08/03	Mary Clancey
Total Dissolved Solids (TDS calc)	CALC	5655406	N/A	2018/08/07	Automated Statchk
Organic carbon - Total (TOC)	TOCV/NDIR	5663339	N/A	2018/08/03	Luke MacPherson
ModTPH (T1) Calc. for Water	CALC	5655415	N/A	2018/08/10	Automated Statchk
Turbidity	TURB	5668282	N/A	2018/08/09	Nicholas Hutchinson
Volatile Organic Compounds in Water	HS/MS	5655211	N/A	2018/07/31	Amanda Swales

Maxxam ID: HIH738
Sample ID: 2018-VEG09
Matrix: Vegetation

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/02	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIH739
Sample ID: 2018-VEG10
Matrix: Vegetation

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/02	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

Maxxam ID: HIH740
Sample ID: 2018-VEG11
Matrix: Vegetation

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5662843	2018/08/03	2018/08/08	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/02	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5654679	N/A	2018/08/09	Automated Statchk

TEST SUMMARY

Maxxam ID: HIQ816
Sample ID: 2018-206-VEG03
Matrix: Vegetation

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5670376	2018/08/09	2018/08/09	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5663174	N/A	2018/08/09	Automated Statchk

Maxxam ID: HJL969
Sample ID: 2018-203-TP02-BS01
Matrix: Soil

Collected: 2018/07/19
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5661061	N/A	2018/08/13	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5661724	2018/08/02	2018/08/09	Michelle Shearer
Moisture	BAL	5660945	N/A	2018/08/03	Shane Miller
PAH Compounds by GCMS (SIM)	GC/MS	5661854	2018/08/02	2018/08/12	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5660654	N/A	2018/08/09	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5668828	N/A	2018/08/09	Jacob Henley

Maxxam ID: HJX511
Sample ID: 2018-206-VEG04
Matrix: Vegetation

Collected: 2018/07/20
Shipped:
Received: 2018/07/26

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (CVAA)	CV/AA	5671323	2018/08/09	2018/08/10	Cody Cleary
Metals in Terrestrial Biota	FICP/MS	5670376	2018/08/09	2018/08/09	Cassandra Hartery
PCBs in soil by GC/ECD	GC/ECD	5668905	2018/08/08	2018/08/09	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5663174	N/A	2018/08/09	Automated Statchk

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.0°C
Package 2	5.0°C
Package 3	7.7°C
Package 4	4.7°C
Package 5	4.3°C
Package 6	3.3°C
Package 7	1.0°C
Package 8	5.0°C
Package 9	14.7°C
Package 10	8.3°C
Package 11	4.7°C
Package 12	7.0°C
Package 13	10.0°C
Package 14	9.3°C
Package 15	14.3°C
Package 16	7.0°C
Package 17	9.0°C
Package 18	5.0°C
Package 19	7.0°C
Package 20	0.0°C

Vegetation samples: samples dried prior to analysis. No moisture correction applied.

Accredited procedures were used for analysis of PCB in Vegetation. However the accreditation does not extend to the matrix being prepared and analyzed.

Samples HIG906, HIG963, HIH050, HIH205, HIH206, HIH210, HIH211, HIH214, HIH402, HIH403, HIH404, HIH464, HIH465, HIH466, HIH469, HIH681, HIH685, HIH716, HIH717, HJX511, HIQ816 exceeded the 14 day recommended hold time for PCB analysis. No impact on data expected. 2018/08/08 MMC

Revised Report: Report reissued due to IT related error KN1 2018/08/24

Sample HIG826 [2018-203-SW02] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample HIH407 [2018-206-SW03] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample HIH718 [2018-209-SW01] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample HIH719 [2018-209-SW02] : RCAp Ion Balance acceptable. Low ionic strength sample.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5655211	4-Bromofluorobenzene	2018/07/31	102	70 - 130	103	70 - 130	98	%				
5655211	D4-1,2-Dichloroethane	2018/07/31	100	70 - 130	95	70 - 130	99	%				
5655211	D8-Toluene	2018/07/31	100	70 - 130	103	70 - 130	101	%				
5657555	Decachlorobiphenyl	2018/08/02	70	30 - 130	88	30 - 130	90	%				
5658362	Isobutylbenzene - Volatile	2018/08/01	83	70 - 130	95	70 - 130	91	%				
5658436	Isobutylbenzene - Extractable	2018/08/03					81	%				
5658436	n-Dotriacontane - Extractable	2018/08/03					88	%				
5658552	Isobutylbenzene - Extractable	2018/08/04	93	60 - 130	91	60 - 130	92	%				
5658552	n-Dotriacontane - Extractable	2018/08/04	122 (1)	60 - 130	103 (1)	60 - 130	109 (1)					
5658559	Isobutylbenzene - Extractable	2018/08/07	97	60 - 130	85	60 - 130	87	%				
5658559	n-Dotriacontane - Extractable	2018/08/07	122 (1)	60 - 130	86 (1)	60 - 130	79 (1)					
5658581	Isobutylbenzene - Extractable	2018/08/07	92	60 - 130	90	60 - 130	88	%				
5658581	n-Dotriacontane - Extractable	2018/08/07	113 (1)	60 - 130	110 (1)	60 - 130	101 (1)					
5658728	Decachlorobiphenyl	2018/08/02	98	70 - 130	95	70 - 130	94	%				
5658840	Isobutylbenzene - Volatile	2018/08/02	85	70 - 130	98	70 - 130	99	%				
5658977	D10-Anthracene	2018/08/06	75	50 - 130	93	50 - 130	93	%				
5658977	D14-Terphenyl	2018/08/06	76	50 - 130	89	50 - 130	89	%				
5658977	D8-Acenaphthylene	2018/08/06	67	50 - 130	81	50 - 130	78	%				
5659039	D10-Anthracene	2018/08/07	104	50 - 130	85	50 - 130	83	%				
5659039	D14-Terphenyl	2018/08/07	95	50 - 130	81	50 - 130	110	%				
5659039	D8-Acenaphthylene	2018/08/07	105	50 - 130	125	50 - 130	125	%				
5659288	D10-Anthracene	2018/08/02	84	50 - 130	78	50 - 130	101	%				
5659288	D14-Terphenyl (FS)	2018/08/02	83	50 - 130	103	50 - 130	98	%				
5659288	D8-Acenaphthylene	2018/08/02	89	50 - 130	98	50 - 130	91	%				
5661621	Isobutylbenzene - Extractable	2018/08/08	92	60 - 130	96	60 - 130	89	%				
5661621	n-Dotriacontane - Extractable	2018/08/08	115 (1)	60 - 130	113 (1)	60 - 130	102 (1)					
5661724	Isobutylbenzene - Extractable	2018/08/09	92	60 - 130	100	60 - 130	100	%				
5661724	n-Dotriacontane - Extractable	2018/08/09	94 (1)	60 - 130	102 (1)	60 - 130	100 (1)					
5661767	Isobutylbenzene - Extractable	2018/08/03	121	70 - 130	88	70 - 130	90	%				
5661767	n-Dotriacontane - Extractable	2018/08/03	105	70 - 130	96	70 - 130	88	%				
5661854	D10-Anthracene	2018/08/12	81	50 - 130	90	50 - 130	98	%				

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5661854	D14-Terphenyl (FS)	2018/08/12	88	50 - 130	90	50 - 130	97	%				
5661854	D8-Acenaphthylene	2018/08/12	97	50 - 130	99	50 - 130	99	%				
5661982	Isobutylbenzene - Extractable	2018/08/04	89	60 - 130	88	60 - 130	81	%				
5661982	n-Dotriacontane - Extractable	2018/08/04	93	60 - 130	88 (1)	60 - 130	81 (1)					
5661983	Decachlorobiphenyl	2018/08/02	93	70 - 130	99	70 - 130	97	%				
5662934	Isobutylbenzene - Extractable	2018/08/09	112	70 - 130	95	70 - 130	97	%				
5662934	n-Dotriacontane - Extractable	2018/08/09	117	70 - 130	102	70 - 130	99	%				
5663240	D10-Anthracene	2018/08/12	99	50 - 130	100	50 - 130	104	%				
5663240	D14-Terphenyl	2018/08/12	94	50 - 130	94	50 - 130	96	%				
5663240	D8-Acenaphthylene	2018/08/12	102	50 - 130	104	50 - 130	100	%				
5665044	Isobutylbenzene - Volatile	2018/08/07	101	60 - 130	92	60 - 130	109	%				
5665085	Isobutylbenzene - Volatile	2018/08/07	90	60 - 130	92	60 - 130	94	%				
5666290	Decachlorobiphenyl	2018/08/08	81	30 - 130	96	30 - 130	75	%				
5666492	Isobutylbenzene - Volatile	2018/08/07	114	60 - 130	110	60 - 130	115	%				
5666758	Decachlorobiphenyl	2018/08/08	84	70 - 130	91	70 - 130	91	%				
5666779	Isobutylbenzene - Volatile	2018/08/08	108	60 - 130	74	60 - 130	95	%				
5666790	Isobutylbenzene - Volatile	2018/08/08	64	60 - 130	65	60 - 130	94	%				
5668106	Isobutylbenzene - Volatile	2018/08/08	63	60 - 130	87	60 - 130	98	%				
5668121	Isobutylbenzene - Volatile	2018/08/08			87	60 - 130	98	%				
5668828	Isobutylbenzene - Volatile	2018/08/08	104	60 - 130	112	60 - 130	111	%				
5668896	Decachlorobiphenyl	2018/08/09	93	70 - 130	93	70 - 130	94	%				
5668905	Decachlorobiphenyl	2018/08/09	97	70 - 130	97	70 - 130	98	%				
5670804	D10-Anthracene	2018/08/11	120	50 - 130	110	50 - 130	115	%				
5670804	D14-Terphenyl (FS)	2018/08/11	105	50 - 130	98	50 - 130	104	%				
5670804	D8-Acenaphthylene	2018/08/11	103	50 - 130	98	50 - 130	100	%				
5673136	D10-Anthracene	2018/08/11	76	50 - 130	89	50 - 130	85	%				
5673136	D14-Terphenyl	2018/08/11	85	50 - 130	88	50 - 130	97	%				
5673136	D8-Acenaphthylene	2018/08/11	75	50 - 130	84	50 - 130	77	%				
5673992	D10-Anthracene	2018/08/13	110	50 - 130	111	50 - 130	119	%				
5673992	D14-Terphenyl (FS)	2018/08/13	108	50 - 130	104	50 - 130	110	%				
5673992	D8-Acenaphthylene	2018/08/13	94	50 - 130	95	50 - 130	102	%				

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5655211	1,1,1-Trichloroethane	2018/07/31	92	70 - 130	91	70 - 130	<1.0	ug/L	NC	40		
5655211	1,1,2,2-Tetrachloroethane	2018/07/31	97	70 - 130	92	70 - 130	<0.50	ug/L	NC	40		
5655211	1,1,2-Trichloroethane	2018/07/31	99	70 - 130	94	70 - 130	<1.0	ug/L	NC	40		
5655211	1,1-Dichloroethane	2018/07/31	105	70 - 130	102	70 - 130	<2.0	ug/L	NC	40		
5655211	1,1-Dichloroethylene	2018/07/31	91	70 - 130	91	70 - 130	<0.50	ug/L	NC	40		
5655211	1,2-Dichlorobenzene	2018/07/31	92	70 - 130	92	70 - 130	<0.50	ug/L	NC	40		
5655211	1,2-Dichloroethane	2018/07/31	97	70 - 130	92	70 - 130	<1.0	ug/L	NC	40		
5655211	1,2-Dichloropropane	2018/07/31	94	70 - 130	92	70 - 130	<0.50	ug/L	NC	40		
5655211	1,3-Dichlorobenzene	2018/07/31	92	70 - 130	94	70 - 130	<1.0	ug/L	NC	40		
5655211	1,4-Dichlorobenzene	2018/07/31	96	70 - 130	97	70 - 130	<1.0	ug/L	NC	40		
5655211	Benzene	2018/07/31	96	70 - 130	95	70 - 130	<1.0	ug/L	NC	40		
5655211	Bromodichloromethane	2018/07/31	90	70 - 130	86	70 - 130	<1.0	ug/L	NC	40		
5655211	Bromoform	2018/07/31	97	70 - 130	93	70 - 130	<1.0	ug/L	NC	40		
5655211	Bromomethane	2018/07/31	92	60 - 140	91	60 - 140	<0.50	ug/L	NC	40		
5655211	Carbon Tetrachloride	2018/07/31	88	70 - 130	88	70 - 130	<0.50	ug/L	NC	40		
5655211	Chlorobenzene	2018/07/31	94	70 - 130	96	70 - 130	<1.0	ug/L	NC	40		
5655211	Chloroethane	2018/07/31	94	60 - 140	92	60 - 140	<8.0	ug/L	NC	40		
5655211	Chloroform	2018/07/31	89	70 - 130	86	70 - 130	<1.0	ug/L	NC	40		
5655211	Chloromethane	2018/07/31	88	60 - 140	86	60 - 140	<8.0	ug/L	NC	40		
5655211	cis-1,2-Dichloroethylene	2018/07/31	106	70 - 130	103	70 - 130	<0.50	ug/L	NC	40		
5655211	cis-1,3-Dichloropropene	2018/07/31	89	70 - 130	97	70 - 130	<0.50	ug/L	NC	40		
5655211	Dibromochloromethane	2018/07/31	96	70 - 130	92	70 - 130	<1.0	ug/L	NC	40		
5655211	Ethylbenzene	2018/07/31	107	70 - 130	112	70 - 130	<1.0	ug/L	NC	40		
5655211	Ethylene Dibromide	2018/07/31	104	70 - 130	99	70 - 130	<0.20	ug/L	NC	40		
5655211	Methyl t-butyl ether (MTBE)	2018/07/31	101	70 - 130	104	70 - 130	<2.0	ug/L	NC	40		
5655211	Methylene Chloride(Dichloromethane)	2018/07/31	99	70 - 130	94	70 - 130	<3.0	ug/L	NC	40		
5655211	o-Xylene	2018/07/31	115	70 - 130	116	70 - 130	<1.0	ug/L	NC	40		
5655211	p+m-Xylene	2018/07/31	115	70 - 130	119	70 - 130	<2.0	ug/L	NC	40		
5655211	Styrene	2018/07/31	115	70 - 130	119	70 - 130	<1.0	ug/L	NC	40		
5655211	Tetrachloroethylene	2018/07/31	94	70 - 130	93	70 - 130	<1.0	ug/L	NC	40		
5655211	Toluene	2018/07/31	104	70 - 130	106	70 - 130	<1.0	ug/L	NC	40		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5655211	Total Trihalomethanes	2018/07/31					<1.0	ug/L	NC	40		
5655211	Total Xylenes	2018/07/31					<1.0	ug/L	NC	40		
5655211	trans-1,2-Dichloroethylene	2018/07/31	92	70 - 130	91	70 - 130	<0.50	ug/L	NC	40		
5655211	trans-1,3-Dichloropropene	2018/07/31	90	70 - 130	97	70 - 130	<0.50	ug/L	NC	40		
5655211	Trichloroethylene	2018/07/31	96	70 - 130	95	70 - 130	<1.0	ug/L	NC	40		
5655211	Trichlorofluoromethane (FREON 11)	2018/07/31	96	60 - 140	94	60 - 140	<8.0	ug/L	NC	40		
5655211	Vinyl Chloride	2018/07/31	90	60 - 140	87	60 - 140	<0.50	ug/L	NC	40		
5656226	Moisture	2018/08/01							6.6	25		
5656285	Moisture	2018/08/01							2.0	25		
5656573	Moisture	2018/08/01							1.8	25		
5656628	Moisture	2018/08/01							0	25		
5657037	Moisture	2018/08/01							8.3	25		
5657130	Moisture	2018/08/01							16	25		
5657555	Aroclor 1016	2018/08/02					<0.050	ug/L	NC	40		
5657555	Aroclor 1221	2018/08/02					<0.050	ug/L	NC	40		
5657555	Aroclor 1232	2018/08/02					<0.050	ug/L	NC	40		
5657555	Aroclor 1242	2018/08/02					<0.050	ug/L	NC	40		
5657555	Aroclor 1248	2018/08/02					<0.050	ug/L	NC	40		
5657555	Aroclor 1254	2018/08/02	90	70 - 130	90	70 - 130	<0.050	ug/L	NC	40		
5657555	Aroclor 1260	2018/08/02					<0.050	ug/L	NC	40		
5658362	Benzene	2018/08/01	110	70 - 130	113	70 - 130	<0.0010	mg/L	NC	40		
5658362	C6 - C10 (less BTEX)	2018/08/01					<0.010	mg/L	NC	40		
5658362	Ethylbenzene	2018/08/01	117	70 - 130	114	70 - 130	<0.0010	mg/L	NC	40		
5658362	Toluene	2018/08/01	114	70 - 130	112	70 - 130	<0.0010	mg/L	NC	40		
5658362	Total Xylenes	2018/08/01	112	70 - 130	110	70 - 130	<0.0020	mg/L	NC	40		
5658436	Aliphatic >C10-C12	2018/08/04			88	60 - 130	<8.0	mg/kg	NC	50		
5658436	Aliphatic >C12-C16	2018/08/04			85	60 - 130	<15	mg/kg	9.3	50		
5658436	Aliphatic >C16-C21	2018/08/04			93	60 - 130	<15	mg/kg	14	50		
5658436	Aliphatic >C21-<C32	2018/08/04			98	60 - 130	<15	mg/kg	8.5	50		
5658436	Aromatic >C10-C12	2018/08/04			115	60 - 130	<4.0	mg/kg	NC	50		
5658436	Aromatic >C12-C16	2018/08/04			97	60 - 130	<15	mg/kg	12	50		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5658436	Aromatic >C16-C21	2018/08/04			93	60 - 130	<15	mg/kg	23	50		
5658436	Aromatic >C21-<C32	2018/08/04			98	60 - 130	<15	mg/kg	16	50		
5658488	Moisture	2018/08/02							5.7	25		
5658534	Acid Extractable Aluminum (Al)	2018/08/01					<10	mg/kg	5.6	35		
5658534	Acid Extractable Antimony (Sb)	2018/08/01	99	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5658534	Acid Extractable Arsenic (As)	2018/08/01	102	75 - 125	100	75 - 125	<2.0	mg/kg	14	35		
5658534	Acid Extractable Barium (Ba)	2018/08/01	77	75 - 125	99	75 - 125	<5.0	mg/kg	9.6	35		
5658534	Acid Extractable Beryllium (Be)	2018/08/01	105	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5658534	Acid Extractable Bismuth (Bi)	2018/08/01	104	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5658534	Acid Extractable Boron (B)	2018/08/01	111	75 - 125	103	75 - 125	<50	mg/kg	NC	35		
5658534	Acid Extractable Cadmium (Cd)	2018/08/01	101	75 - 125	99	75 - 125	<0.30	mg/kg	NC	35		
5658534	Acid Extractable Chromium (Cr)	2018/08/01	108	75 - 125	100	75 - 125	<2.0	mg/kg	0.78	35		
5658534	Acid Extractable Cobalt (Co)	2018/08/01	103	75 - 125	102	75 - 125	<1.0	mg/kg	14	35		
5658534	Acid Extractable Copper (Cu)	2018/08/01	105	75 - 125	98	75 - 125	<2.0	mg/kg	24	35		
5658534	Acid Extractable Iron (Fe)	2018/08/01					<50	mg/kg	14	35		
5658534	Acid Extractable Lead (Pb)	2018/08/01	97	75 - 125	99	75 - 125	<0.50	mg/kg	8.6	35		
5658534	Acid Extractable Lithium (Li)	2018/08/01	107	75 - 125	98	75 - 125	<2.0	mg/kg	3.9	35		
5658534	Acid Extractable Manganese (Mn)	2018/08/01	NC	75 - 125	98	75 - 125	<2.0	mg/kg	13	35		
5658534	Acid Extractable Mercury (Hg)	2018/08/01	98	75 - 125	110	75 - 125	<0.10	mg/kg	NC	35		
5658534	Acid Extractable Molybdenum (Mo)	2018/08/01	NC	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5658534	Acid Extractable Nickel (Ni)	2018/08/01	102	75 - 125	100	75 - 125	<2.0	mg/kg	11	35		
5658534	Acid Extractable Rubidium (Rb)	2018/08/01	100	75 - 125	98	75 - 125	<2.0	mg/kg	1.3	35		
5658534	Acid Extractable Selenium (Se)	2018/08/01	103	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35		
5658534	Acid Extractable Silver (Ag)	2018/08/01	101	75 - 125	98	75 - 125	<0.50	mg/kg	NC	35		
5658534	Acid Extractable Strontium (Sr)	2018/08/01	NC	75 - 125	101	75 - 125	<5.0	mg/kg	11	35		
5658534	Acid Extractable Thallium (Tl)	2018/08/01	102	75 - 125	101	75 - 125	<0.10	mg/kg	NC	35		
5658534	Acid Extractable Tin (Sn)	2018/08/01	124	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5658534	Acid Extractable Uranium (U)	2018/08/01	102	75 - 125	99	75 - 125	<0.10	mg/kg	21	35		
5658534	Acid Extractable Vanadium (V)	2018/08/01	104	75 - 125	101	75 - 125	<2.0	mg/kg	2.9	35		
5658534	Acid Extractable Zinc (Zn)	2018/08/01	100	75 - 125	95	75 - 125	<5.0	mg/kg	5.2	35		
5658552	>C10-C16 Hydrocarbons	2018/08/04	NC	30 - 130	89	60 - 130	<10	mg/kg	11	50		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5658552	>C16-C21 Hydrocarbons	2018/08/04	73	30 - 130	77	60 - 130	<10	mg/kg	4.0	50		
5658552	>C21-<C32 Hydrocarbons	2018/08/04	91	30 - 130	92	60 - 130	<15	mg/kg	NC	50		
5658559	>C10-C16 Hydrocarbons	2018/08/07	94	30 - 130	87	60 - 130	<10	mg/kg	NC	50		
5658559	>C16-C21 Hydrocarbons	2018/08/07	84	30 - 130	83	60 - 130	<10	mg/kg	NC	50		
5658559	>C21-<C32 Hydrocarbons	2018/08/07	91	30 - 130	88	60 - 130	<15	mg/kg	0.55	50		
5658581	>C10-C16 Hydrocarbons	2018/08/07	97	30 - 130	95	60 - 130	<10	mg/kg	NC	50		
5658581	>C16-C21 Hydrocarbons	2018/08/07	84	30 - 130	82	60 - 130	<10	mg/kg	NC	50		
5658581	>C21-<C32 Hydrocarbons	2018/08/07	96	30 - 130	97	60 - 130	<15	mg/kg	NC	50		
5658658	Moisture	2018/08/02							3.4	25		
5658703	Acid Extractable Aluminum (Al)	2018/08/02					<10	mg/kg	3.0	35		
5658703	Acid Extractable Antimony (Sb)	2018/08/02	101	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5658703	Acid Extractable Arsenic (As)	2018/08/02	98	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5658703	Acid Extractable Barium (Ba)	2018/08/02	101	75 - 125	109	75 - 125	<5.0	mg/kg	12	35		
5658703	Acid Extractable Beryllium (Be)	2018/08/02	102	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5658703	Acid Extractable Bismuth (Bi)	2018/08/02	103	75 - 125	107	75 - 125	<2.0	mg/kg	NC	35		
5658703	Acid Extractable Boron (B)	2018/08/02	99	75 - 125	107	75 - 125	<50	mg/kg	NC	35		
5658703	Acid Extractable Cadmium (Cd)	2018/08/02	100	75 - 125	103	75 - 125	<0.30	mg/kg	NC	35		
5658703	Acid Extractable Chromium (Cr)	2018/08/02	93	75 - 125	103	75 - 125	<2.0	mg/kg	22	35		
5658703	Acid Extractable Cobalt (Co)	2018/08/02	99	75 - 125	103	75 - 125	<1.0	mg/kg	13	35		
5658703	Acid Extractable Copper (Cu)	2018/08/02	96	75 - 125	100	75 - 125	<2.0	mg/kg	9.1	35		
5658703	Acid Extractable Iron (Fe)	2018/08/02					<50	mg/kg	6.6	35		
5658703	Acid Extractable Lead (Pb)	2018/08/02	101	75 - 125	105	75 - 125	<0.50	mg/kg	7.8	35		
5658703	Acid Extractable Lithium (Li)	2018/08/02	101	75 - 125	102	75 - 125	<2.0	mg/kg	5.4	35		
5658703	Acid Extractable Manganese (Mn)	2018/08/02	NC	75 - 125	103	75 - 125	<2.0	mg/kg	3.5	35		
5658703	Acid Extractable Mercury (Hg)	2018/08/02	96	75 - 125	112	75 - 125	<0.10	mg/kg	NC	35		
5658703	Acid Extractable Molybdenum (Mo)	2018/08/02	102	75 - 125	113	75 - 125	<2.0	mg/kg	NC	35		
5658703	Acid Extractable Nickel (Ni)	2018/08/02	97	75 - 125	103	75 - 125	<2.0	mg/kg	15	35		
5658703	Acid Extractable Rubidium (Rb)	2018/08/02	98	75 - 125	102	75 - 125	<2.0	mg/kg	0.46	35		
5658703	Acid Extractable Selenium (Se)	2018/08/02	96	75 - 125	100	75 - 125	<1.0	mg/kg	NC	35		
5658703	Acid Extractable Silver (Ag)	2018/08/02	101	75 - 125	105	75 - 125	<0.50	mg/kg	NC	35		
5658703	Acid Extractable Strontium (Sr)	2018/08/02	102	75 - 125	103	75 - 125	<5.0	mg/kg	2.3	35		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5658703	Acid Extractable Thallium (Tl)	2018/08/02	103	75 - 125	107	75 - 125	<0.10	mg/kg	NC	35		
5658703	Acid Extractable Tin (Sn)	2018/08/02	104	75 - 125	109	75 - 125	<2.0	mg/kg	NC	35		
5658703	Acid Extractable Uranium (U)	2018/08/02	100	75 - 125	103	75 - 125	<0.10	mg/kg	5.7	35		
5658703	Acid Extractable Vanadium (V)	2018/08/02	90	75 - 125	104	75 - 125	<2.0	mg/kg	16	35		
5658703	Acid Extractable Zinc (Zn)	2018/08/02	98	75 - 125	101	75 - 125	<5.0	mg/kg	11	35		
5658728	Aroclor 1016	2018/08/02					<0.050	ug/g	NC	50		
5658728	Aroclor 1221	2018/08/02					<0.050	ug/g	NC	50		
5658728	Aroclor 1232	2018/08/02					<0.050	ug/g	NC	50		
5658728	Aroclor 1242	2018/08/02					<0.050	ug/g	NC	50		
5658728	Aroclor 1248	2018/08/02					<0.050	ug/g	NC	50		
5658728	Aroclor 1254	2018/08/02	93	70 - 130	94	70 - 130	<0.050	ug/g	NC	50		
5658728	Aroclor 1260	2018/08/02			0	N/A	<0.050	ug/g	NC	50		
5658840	Benzene	2018/08/02	115	70 - 130	113	70 - 130	<0.0010	mg/L	NC	40		
5658840	C6 - C10 (less BTEX)	2018/08/02					<0.010	mg/L	NC	40		
5658840	Ethylbenzene	2018/08/02	116	70 - 130	111	70 - 130	<0.0010	mg/L	NC	40		
5658840	Toluene	2018/08/02	115	70 - 130	109	70 - 130	<0.0010	mg/L	NC	40		
5658840	Total Xylenes	2018/08/02	113	70 - 130	108	70 - 130	<0.0020	mg/L	NC	40		
5658910	Moisture	2018/08/02							9.3	25		
5658956	Nitrogen (Ammonia Nitrogen)	2018/08/02	92	80 - 120	108	80 - 120	<0.050	mg/L	NC	20		
5658977	1-Methylnaphthalene	2018/08/06	73	50 - 130	86	50 - 130	<0.050	ug/L	NC	40		
5658977	2-Methylnaphthalene	2018/08/06	79	50 - 130	93	50 - 130	<0.050	ug/L	NC	40		
5658977	Acenaphthene	2018/08/06	77	50 - 130	92	50 - 130	<0.010	ug/L	NC	40		
5658977	Acenaphthylene	2018/08/06	82	50 - 130	94	50 - 130	<0.010	ug/L	NC	40		
5658977	Anthracene	2018/08/06	83	50 - 130	95	50 - 130	<0.010	ug/L	NC	40		
5658977	Benzo(a)anthracene	2018/08/06	80	50 - 130	90	50 - 130	<0.010	ug/L	NC	40		
5658977	Benzo(a)pyrene	2018/08/06	85	50 - 130	106	50 - 130	<0.010	ug/L	NC	40		
5658977	Benzo(b)fluoranthene	2018/08/06	97	50 - 130	116	50 - 130	<0.010	ug/L	NC	40		
5658977	Benzo(g,h,i)perylene	2018/08/06	103	50 - 130	120	50 - 130	<0.010	ug/L	NC	40		
5658977	Benzo(j)fluoranthene	2018/08/06	83	50 - 130	106	50 - 130	<0.010	ug/L	NC	40		
5658977	Benzo(k)fluoranthene	2018/08/06	98	50 - 130	114	50 - 130	<0.010	ug/L	NC	40		
5658977	Chrysene	2018/08/06	85	50 - 130	96	50 - 130	<0.010	ug/L	NC	40		

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5658977	Dibenz(a,h)anthracene	2018/08/06	98	50 - 130	114	50 - 130	<0.010	ug/L	NC	40		
5658977	Fluoranthene	2018/08/06	78	50 - 130	92	50 - 130	<0.010	ug/L	NC	40		
5658977	Fluorene	2018/08/06	88	50 - 130	103	50 - 130	<0.010	ug/L	NC	40		
5658977	Indeno(1,2,3-cd)pyrene	2018/08/06	91	50 - 130	108	50 - 130	<0.010	ug/L	NC	40		
5658977	Naphthalene	2018/08/06	73	50 - 130	88	50 - 130	<0.20	ug/L	NC	40		
5658977	Perylene	2018/08/06	87	50 - 130	106	50 - 130	<0.010	ug/L	NC	40		
5658977	Phenanthrene	2018/08/06	83	50 - 130	98	50 - 130	<0.010	ug/L	NC	40		
5658977	Pyrene	2018/08/06	80	50 - 130	95	50 - 130	<0.010	ug/L	NC	40		
5659039	1-Methylnaphthalene	2018/08/07	96	50 - 130	112	50 - 130	<0.0050	mg/kg	NC	50		
5659039	2-Methylnaphthalene	2018/08/07	107	50 - 130	125	50 - 130	<0.0050	mg/kg	NC	50		
5659039	Acenaphthene	2018/08/07	104	50 - 130	127	50 - 130	<0.0050	mg/kg	NC	50		
5659039	Acenaphthylene	2018/08/07	113	50 - 130	126	50 - 130	<0.0050	mg/kg	NC	50		
5659039	Anthracene	2018/08/07	102	50 - 130	78	50 - 130	<0.0050	mg/kg	NC	50		
5659039	Benzo(a)anthracene	2018/08/07	121	50 - 130	76	50 - 130	<0.0050	mg/kg	41	50		
5659039	Benzo(a)pyrene	2018/08/07	112	50 - 130	118	50 - 130	<0.0050	mg/kg	18	50		
5659039	Benzo(b)fluoranthene	2018/08/07	132 (2)	50 - 130	137 (3)	50 - 130	<0.0050	mg/kg	29	50		
5659039	Benzo(g,h,i)perylene	2018/08/07	116	50 - 130	118	50 - 130	<0.0050	mg/kg	20	50		
5659039	Benzo(j)fluoranthene	2018/08/07	110	50 - 130	116	50 - 130	<0.0050	mg/kg	19	50		
5659039	Benzo(k)fluoranthene	2018/08/07	122	50 - 130	130	50 - 130	<0.0050	mg/kg	28	50		
5659039	Chrysene	2018/08/07	117	50 - 130	82	50 - 130	<0.0050	mg/kg	55 (4)	50		
5659039	Dibenz(a,h)anthracene	2018/08/07	111	50 - 130	106	50 - 130	<0.0050	mg/kg	NC	50		
5659039	Fluoranthene	2018/08/07	104	50 - 130	81	50 - 130	<0.0050	mg/kg	31	50		
5659039	Fluorene	2018/08/07	111	50 - 130	127	50 - 130	<0.0050	mg/kg	NC	50		
5659039	Indeno(1,2,3-cd)pyrene	2018/08/07	106	50 - 130	100	50 - 130	<0.0050	mg/kg	25	50		
5659039	Naphthalene	2018/08/07	101	50 - 130	120	50 - 130	<0.0050	mg/kg	NC	50		
5659039	Perylene	2018/08/07	95	50 - 130	111	50 - 130	<0.0050	mg/kg	NC	50		
5659039	Phenanthrene	2018/08/07	101	50 - 130	101	50 - 130	<0.0050	mg/kg	61 (4)	50		
5659039	Pyrene	2018/08/07	92	50 - 130	79	50 - 130	<0.0050	mg/kg	35	50		
5659288	1-Methylnaphthalene	2018/08/02	89	50 - 130	85	50 - 130	<0.010	mg/kg	NC	50		
5659288	2-Methylnaphthalene	2018/08/02	96	50 - 130	94	50 - 130	<0.010	mg/kg	NC	50		
5659288	Acenaphthene	2018/08/02	103	50 - 130	104	50 - 130	<0.010	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5659288	Acenaphthylene	2018/08/02	93	50 - 130	104	50 - 130	<0.010	mg/kg	NC	50		
5659288	Anthracene	2018/08/02	91	50 - 130	91	50 - 130	<0.010	mg/kg	NC	50		
5659288	Benzo(a)anthracene	2018/08/02	84	50 - 130	97	50 - 130	<0.010	mg/kg	NC	50		
5659288	Benzo(a)pyrene	2018/08/02	107	50 - 130	107	50 - 130	<0.010	mg/kg	NC	50		
5659288	Benzo(b)fluoranthene	2018/08/02	111	50 - 130	119	50 - 130	<0.010	mg/kg	NC	50		
5659288	Benzo(g,h,i)perylene	2018/08/02	116	50 - 130	119	50 - 130	<0.010	mg/kg	NC	50		
5659288	Benzo(j)fluoranthene	2018/08/02	99	50 - 130	114	50 - 130	<0.010	mg/kg	NC	50		
5659288	Benzo(k)fluoranthene	2018/08/02	102	50 - 130	114	50 - 130	<0.010	mg/kg	NC	50		
5659288	Chrysene	2018/08/02	84	50 - 130	93	50 - 130	<0.010	mg/kg	NC	50		
5659288	Dibenz(a,h)anthracene	2018/08/02	95	50 - 130	96	50 - 130	<0.010	mg/kg	NC	50		
5659288	Fluoranthene	2018/08/02	84	50 - 130	94	50 - 130	<0.010	mg/kg	NC	50		
5659288	Fluorene	2018/08/02	107	50 - 130	109	50 - 130	<0.010	mg/kg	NC	50		
5659288	Indeno(1,2,3-cd)pyrene	2018/08/02	90	50 - 130	94	50 - 130	<0.010	mg/kg	NC	50		
5659288	Naphthalene	2018/08/02	97	50 - 130	91	50 - 130	<0.010	mg/kg	NC	50		
5659288	Perylene	2018/08/02	106	50 - 130	107	50 - 130	<0.010	mg/kg	NC	50		
5659288	Phenanthrene	2018/08/02	85	50 - 130	88	50 - 130	<0.010	mg/kg	NC	50		
5659288	Pyrene	2018/08/02	80	50 - 130	98	50 - 130	<0.010	mg/kg	NC	50		
5660595	Acid Extractable Aluminum (Al)	2018/08/02					<10	mg/kg	0.22	35		
5660595	Acid Extractable Antimony (Sb)	2018/08/02	92	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5660595	Acid Extractable Arsenic (As)	2018/08/02	105	75 - 125	104	75 - 125	<2.0	mg/kg	9.8	35		
5660595	Acid Extractable Barium (Ba)	2018/08/02	NC	75 - 125	102	75 - 125	<5.0	mg/kg	5.3	35		
5660595	Acid Extractable Beryllium (Be)	2018/08/02	103	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5660595	Acid Extractable Bismuth (Bi)	2018/08/02	103	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35		
5660595	Acid Extractable Boron (B)	2018/08/02	94	75 - 125	105	75 - 125	<50	mg/kg	NC	35		
5660595	Acid Extractable Cadmium (Cd)	2018/08/02	102	75 - 125	102	75 - 125	<0.30	mg/kg	NC	35		
5660595	Acid Extractable Chromium (Cr)	2018/08/02	110	75 - 125	103	75 - 125	<2.0	mg/kg	6.1	35		
5660595	Acid Extractable Cobalt (Co)	2018/08/02	109	75 - 125	103	75 - 125	<1.0	mg/kg	19	35		
5660595	Acid Extractable Copper (Cu)	2018/08/02	114	75 - 125	101	75 - 125	<2.0	mg/kg	32	35		
5660595	Acid Extractable Iron (Fe)	2018/08/02					<50	mg/kg	8.7	35		
5660595	Acid Extractable Lead (Pb)	2018/08/02	101	75 - 125	102	75 - 125	<0.50	mg/kg	4.9	35		
5660595	Acid Extractable Lithium (Li)	2018/08/02	99	75 - 125	102	75 - 125	<2.0	mg/kg	5.3	35		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5660595	Acid Extractable Manganese (Mn)	2018/08/02	NC	75 - 125	104	75 - 125	<2.0	mg/kg	54 (5)	35		
5660595	Acid Extractable Mercury (Hg)	2018/08/02	97	75 - 125	112	75 - 125	<0.10	mg/kg	NC	35		
5660595	Acid Extractable Molybdenum (Mo)	2018/08/02	109	75 - 125	105	75 - 125	<2.0	mg/kg	152 (5)	35		
5660595	Acid Extractable Nickel (Ni)	2018/08/02	118	75 - 125	103	75 - 125	<2.0	mg/kg	11	35		
5660595	Acid Extractable Rubidium (Rb)	2018/08/02	101	75 - 125	101	75 - 125	<2.0	mg/kg	9.7	35		
5660595	Acid Extractable Selenium (Se)	2018/08/02	103	75 - 125	106	75 - 125	<1.0	mg/kg	NC	35		
5660595	Acid Extractable Silver (Ag)	2018/08/02	102	75 - 125	102	75 - 125	<0.50	mg/kg	NC	35		
5660595	Acid Extractable Strontium (Sr)	2018/08/02	108	75 - 125	103	75 - 125	<5.0	mg/kg	NC	35		
5660595	Acid Extractable Thallium (Tl)	2018/08/02	101	75 - 125	101	75 - 125	<0.10	mg/kg	NC	35		
5660595	Acid Extractable Tin (Sn)	2018/08/02	104	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5660595	Acid Extractable Uranium (U)	2018/08/02	101	75 - 125	102	75 - 125	<0.10	mg/kg	8.1	35		
5660595	Acid Extractable Vanadium (V)	2018/08/02	106	75 - 125	105	75 - 125	<2.0	mg/kg	2.0	35		
5660595	Acid Extractable Zinc (Zn)	2018/08/02	NC	75 - 125	104	75 - 125	<5.0	mg/kg	0.054	35		
5660649	pH	2018/08/02							0.83	N/A	100	97 - 103
5660652	Conductivity	2018/08/02			101	80 - 120	<1.0	uS/cm	0.67	25		
5660657	Acid Extractable Aluminum (Al)	2018/08/04					<10	mg/kg	11	35		
5660657	Acid Extractable Antimony (Sb)	2018/08/04	101	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5660657	Acid Extractable Arsenic (As)	2018/08/04	101	75 - 125	102	75 - 125	<2.0	mg/kg	9.3	35		
5660657	Acid Extractable Barium (Ba)	2018/08/04	92	75 - 125	97	75 - 125	<5.0	mg/kg	7.0	35		
5660657	Acid Extractable Beryllium (Be)	2018/08/04	100	75 - 125	96	75 - 125	<2.0	mg/kg	NC	35		
5660657	Acid Extractable Bismuth (Bi)	2018/08/04	102	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5660657	Acid Extractable Boron (B)	2018/08/04	100	75 - 125	97	75 - 125	<50	mg/kg	NC	35		
5660657	Acid Extractable Cadmium (Cd)	2018/08/04	101	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35		
5660657	Acid Extractable Chromium (Cr)	2018/08/04	57 (6)	75 - 125	99	75 - 125	<2.0	mg/kg	55 (7)	35		
5660657	Acid Extractable Cobalt (Co)	2018/08/04	99	75 - 125	100	75 - 125	<1.0	mg/kg	7.5	35		
5660657	Acid Extractable Copper (Cu)	2018/08/04	97	75 - 125	99	75 - 125	<2.0	mg/kg	7.2	35		
5660657	Acid Extractable Iron (Fe)	2018/08/04					<50	mg/kg	4.4	35		
5660657	Acid Extractable Lead (Pb)	2018/08/04	100	75 - 125	100	75 - 125	<0.50	mg/kg	10	35		
5660657	Acid Extractable Lithium (Li)	2018/08/04	105	75 - 125	100	75 - 125	<2.0	mg/kg	0.25	35		
5660657	Acid Extractable Manganese (Mn)	2018/08/04	NC	75 - 125	101	75 - 125	<2.0	mg/kg	2.0	35		
5660657	Acid Extractable Mercury (Hg)	2018/08/04	96	75 - 125	103	75 - 125	<0.10	mg/kg	NC	35		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5660657	Acid Extractable Molybdenum (Mo)	2018/08/04	101	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5660657	Acid Extractable Nickel (Ni)	2018/08/04	94	75 - 125	101	75 - 125	<2.0	mg/kg	13	35		
5660657	Acid Extractable Rubidium (Rb)	2018/08/04	101	75 - 125	100	75 - 125	<2.0	mg/kg	19	35		
5660657	Acid Extractable Selenium (Se)	2018/08/04	101	75 - 125	101	75 - 125	<1.0	mg/kg	NC	35		
5660657	Acid Extractable Silver (Ag)	2018/08/04	101	75 - 125	99	75 - 125	<0.50	mg/kg	NC	35		
5660657	Acid Extractable Strontium (Sr)	2018/08/04	119	75 - 125	105	75 - 125	<5.0	mg/kg	13	35		
5660657	Acid Extractable Thallium (Tl)	2018/08/04	104	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35		
5660657	Acid Extractable Tin (Sn)	2018/08/04	103	75 - 125	98	75 - 125	<2.0	mg/kg	NC	35		
5660657	Acid Extractable Uranium (U)	2018/08/04	101	75 - 125	100	75 - 125	<0.10	mg/kg	23	35		
5660657	Acid Extractable Vanadium (V)	2018/08/04	77	75 - 125	100	75 - 125	<2.0	mg/kg	31	35		
5660657	Acid Extractable Zinc (Zn)	2018/08/04	94	75 - 125	101	75 - 125	<5.0	mg/kg	7.1	35		
5660686	Total Alkalinity (Total as CaCO3)	2018/08/02	NC	80 - 120	108	80 - 120	<5.0	mg/L	2.8	25		
5660689	Dissolved Chloride (Cl-)	2018/08/03	97	N/A	101	80 - 120	<1.0	mg/L	NC	25	109	N/A
5660693	Dissolved Sulphate (SO4)	2018/08/02	99	80 - 120	102	80 - 120	<2.0	mg/L	1.7	25		
5660694	Reactive Silica (SiO2)	2018/08/03	NC	80 - 120	96	80 - 120	<0.50	mg/L	0.52	25		
5660695	Colour	2018/08/02			107	80 - 120	<5.0	TCU	5.8	20		
5660697	Orthophosphate (P)	2018/08/02	93	80 - 120	101	80 - 120	<0.010	mg/L	NC	25		
5660698	Acid Extractable Aluminum (Al)	2018/08/02					<10	mg/kg	6.3	35		
5660698	Acid Extractable Antimony (Sb)	2018/08/02	99	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35		
5660698	Acid Extractable Arsenic (As)	2018/08/02	103	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5660698	Acid Extractable Barium (Ba)	2018/08/02	NC	75 - 125	100	75 - 125	<5.0	mg/kg	1.6	35		
5660698	Acid Extractable Beryllium (Be)	2018/08/02	100	75 - 125	101	75 - 125	<2.0	mg/kg	31	35		
5660698	Acid Extractable Bismuth (Bi)	2018/08/02	104	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5660698	Acid Extractable Boron (B)	2018/08/02	97	75 - 125	102	75 - 125	<50	mg/kg	NC	35		
5660698	Acid Extractable Cadmium (Cd)	2018/08/02	105	75 - 125	102	75 - 125	<0.30	mg/kg	6.9	35		
5660698	Acid Extractable Chromium (Cr)	2018/08/02	101	75 - 125	101	75 - 125	<2.0	mg/kg	8.8	35		
5660698	Acid Extractable Cobalt (Co)	2018/08/02	100	75 - 125	100	75 - 125	<1.0	mg/kg	6.9	35		
5660698	Acid Extractable Copper (Cu)	2018/08/02	NC	75 - 125	98	75 - 125	<2.0	mg/kg	58 (8)	35		
5660698	Acid Extractable Iron (Fe)	2018/08/02					<50	mg/kg	41 (8)	35		
5660698	Acid Extractable Lead (Pb)	2018/08/02	100	75 - 125	102	75 - 125	<0.50	mg/kg	9.1	35		
5660698	Acid Extractable Lithium (Li)	2018/08/02	104	75 - 125	100	75 - 125	<2.0	mg/kg	7.0	35		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5660698	Acid Extractable Manganese (Mn)	2018/08/02	NC	75 - 125	102	75 - 125	<2.0	mg/kg	22	35		
5660698	Acid Extractable Mercury (Hg)	2018/08/02	99	75 - 125	108	75 - 125	<0.10	mg/kg	NC	35		
5660698	Acid Extractable Molybdenum (Mo)	2018/08/02	94	75 - 125	98	75 - 125	<2.0	mg/kg	NC	35		
5660698	Acid Extractable Nickel (Ni)	2018/08/02	100	75 - 125	103	75 - 125	<2.0	mg/kg	11	35		
5660698	Acid Extractable Rubidium (Rb)	2018/08/02	105	75 - 125	102	75 - 125	<2.0	mg/kg	7.4	35		
5660698	Acid Extractable Selenium (Se)	2018/08/02	105	75 - 125	103	75 - 125	<1.0	mg/kg	12	35		
5660698	Acid Extractable Silver (Ag)	2018/08/02	98	75 - 125	105	75 - 125	<0.50	mg/kg	12	35		
5660698	Acid Extractable Strontium (Sr)	2018/08/02	109	75 - 125	105	75 - 125	<5.0	mg/kg	8.8	35		
5660698	Acid Extractable Thallium (Tl)	2018/08/02	103	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35		
5660698	Acid Extractable Tin (Sn)	2018/08/02	NC	75 - 125	104	75 - 125	<2.0	mg/kg	77 (8)	35		
5660698	Acid Extractable Uranium (U)	2018/08/02	105	75 - 125	102	75 - 125	<0.10	mg/kg	22	35		
5660698	Acid Extractable Vanadium (V)	2018/08/02	106	75 - 125	101	75 - 125	<2.0	mg/kg	7.9	35		
5660698	Acid Extractable Zinc (Zn)	2018/08/02	NC	75 - 125	104	75 - 125	<5.0	mg/kg	25	35		
5660699	Nitrate + Nitrite (N)	2018/08/02	92	80 - 120	95	80 - 120	<0.050	mg/L	NC	25		
5660706	Nitrite (N)	2018/08/03	97	80 - 120	89	80 - 120	<0.010	mg/L	NC	20		
5660945	Moisture	2018/08/03							1.2	25		
5661193	Nitrogen (Ammonia Nitrogen)	2018/08/02	108	80 - 120	99	80 - 120	<0.050	mg/L	NC	20		
5661197	Nitrogen (Ammonia Nitrogen)	2018/08/03	104	80 - 120	101	80 - 120	<0.050	mg/L	NC	20		
5661289	Moisture	2018/08/03							5.0	25		
5661621	>C10-C16 Hydrocarbons	2018/08/08	93	30 - 130	101	60 - 130	<10	mg/kg	NC	50		
5661621	>C16-C21 Hydrocarbons	2018/08/08	86	30 - 130	94	60 - 130	<10	mg/kg	NC	50		
5661621	>C21-<C32 Hydrocarbons	2018/08/08	86	30 - 130	94	60 - 130	<15	mg/kg	NC	50		
5661703	Moisture	2018/08/03							4.0	25		
5661724	>C10-C16 Hydrocarbons	2018/08/09	95	30 - 130	102	60 - 130	<10	mg/kg	NC	50		
5661724	>C16-C21 Hydrocarbons	2018/08/09	83	30 - 130	85	60 - 130	<10	mg/kg	NC	50		
5661724	>C21-<C32 Hydrocarbons	2018/08/09	93	30 - 130	97	60 - 130	<15	mg/kg	NC	50		
5661767	>C10-C16 Hydrocarbons	2018/08/03	NC	70 - 130	92	70 - 130	<0.050	mg/L	0.19	40		
5661767	>C16-C21 Hydrocarbons	2018/08/03	93	70 - 130	93	70 - 130	<0.050	mg/L	2.1	40		
5661767	>C21-<C32 Hydrocarbons	2018/08/03	101	70 - 130	104	70 - 130	<0.10	mg/L	NC	40		
5661854	1-Methylnaphthalene	2018/08/12	95	50 - 130	93	50 - 130	<0.010	mg/kg	NC	50		
5661854	2-Methylnaphthalene	2018/08/12	102	50 - 130	97	50 - 130	<0.010	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5661854	Acenaphthene	2018/08/12	100	50 - 130	99	50 - 130	<0.010	mg/kg	NC	50		
5661854	Acenaphthylene	2018/08/12	103	50 - 130	104	50 - 130	<0.010	mg/kg	NC	50		
5661854	Anthracene	2018/08/12	106	50 - 130	107	50 - 130	<0.010	mg/kg	NC	50		
5661854	Benzo(a)anthracene	2018/08/12	95	50 - 130	103	50 - 130	<0.010	mg/kg	NC	50		
5661854	Benzo(a)pyrene	2018/08/12	77	50 - 130	94	50 - 130	<0.010	mg/kg	NC	50		
5661854	Benzo(b)fluoranthene	2018/08/12	101	50 - 130	108	50 - 130	<0.010	mg/kg	NC	50		
5661854	Benzo(g,h,i)perylene	2018/08/12	74	50 - 130	100	50 - 130	<0.010	mg/kg	NC	50		
5661854	Benzo(j)fluoranthene	2018/08/12	90	50 - 130	103	50 - 130	<0.010	mg/kg	NC	50		
5661854	Benzo(k)fluoranthene	2018/08/12	91	50 - 130	106	50 - 130	<0.010	mg/kg	NC	50		
5661854	Chrysene	2018/08/12	93	50 - 130	102	50 - 130	<0.010	mg/kg	NC	50		
5661854	Dibenz(a,h)anthracene	2018/08/12	78	50 - 130	92	50 - 130	<0.010	mg/kg	NC	50		
5661854	Fluoranthene	2018/08/12	95	50 - 130	103	50 - 130	<0.010	mg/kg	NC	50		
5661854	Fluorene	2018/08/12	107	50 - 130	106	50 - 130	<0.010	mg/kg	NC	50		
5661854	Indeno(1,2,3-cd)pyrene	2018/08/12	72	50 - 130	89	50 - 130	<0.010	mg/kg	NC	50		
5661854	Naphthalene	2018/08/12	91	50 - 130	90	50 - 130	<0.010	mg/kg	NC	50		
5661854	Perylene	2018/08/12	80	50 - 130	100	50 - 130	<0.010	mg/kg	NC	50		
5661854	Phenanthrene	2018/08/12	99	50 - 130	104	50 - 130	<0.010	mg/kg	NC	50		
5661854	Pyrene	2018/08/12	92	50 - 130	100	50 - 130	<0.010	mg/kg	NC	50		
5661982	>C10-C16 Hydrocarbons	2018/08/04	94	30 - 130	91	60 - 130	<10	mg/kg	NC	50		
5661982	>C16-C21 Hydrocarbons	2018/08/04	95	30 - 130	88	60 - 130	<10	mg/kg	NC	50		
5661982	>C21-<C32 Hydrocarbons	2018/08/04	103	30 - 130	100	60 - 130	<15	mg/kg	NC	50		
5661983	Aroclor 1016	2018/08/02					<0.050	ug/g	NC	50		
5661983	Aroclor 1221	2018/08/02					<0.050	ug/g	NC	50		
5661983	Aroclor 1232	2018/08/02					<0.050	ug/g	NC	50		
5661983	Aroclor 1242	2018/08/02					<0.050	ug/g	NC	50		
5661983	Aroclor 1248	2018/08/02					<0.050	ug/g	NC	50		
5661983	Aroclor 1254	2018/08/02	97	70 - 130	103	70 - 130	<0.050	ug/g	NC	50		
5661983	Aroclor 1260	2018/08/02					<0.050	ug/g	NC	50		
5662843	Acid Extractable Aluminum (Al)	2018/08/08					<10	mg/kg	1.7	35		
5662843	Acid Extractable Antimony (Sb)	2018/08/08	101	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5662843	Acid Extractable Arsenic (As)	2018/08/08	105	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5662843	Acid Extractable Barium (Ba)	2018/08/08	105	75 - 125	98	75 - 125	<5.0	mg/kg	0.56	35		
5662843	Acid Extractable Beryllium (Be)	2018/08/08	105	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5662843	Acid Extractable Boron (B)	2018/08/08	105	75 - 125	100	75 - 125	<5.0	mg/kg	1.5	35		
5662843	Acid Extractable Cadmium (Cd)	2018/08/08	106	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35		
5662843	Acid Extractable Chromium (Cr)	2018/08/08	107	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5662843	Acid Extractable Cobalt (Co)	2018/08/08	108	75 - 125	101	75 - 125	<1.0	mg/kg	NC	35		
5662843	Acid Extractable Copper (Cu)	2018/08/08	107	75 - 125	100	75 - 125	<2.0	mg/kg	0.087	35		
5662843	Acid Extractable Iron (Fe)	2018/08/08					<50	mg/kg	7.8	35		
5662843	Acid Extractable Lead (Pb)	2018/08/08	107	75 - 125	100	75 - 125	<0.50	mg/kg	31	35		
5662843	Acid Extractable Lithium (Li)	2018/08/08	112	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5662843	Acid Extractable Manganese (Mn)	2018/08/08	NC	75 - 125	100	75 - 125	<2.0	mg/kg	0.27	35		
5662843	Acid Extractable Molybdenum (Mo)	2018/08/08	111	75 - 125	97	75 - 125	<2.0	mg/kg	NC	35		
5662843	Acid Extractable Nickel (Ni)	2018/08/08	109	75 - 125	103	75 - 125	<2.0	mg/kg	2.7	35		
5662843	Acid Extractable Selenium (Se)	2018/08/08	101	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5662843	Acid Extractable Silver (Ag)	2018/08/08	110	75 - 125	101	75 - 125	<0.50	mg/kg	NC	35		
5662843	Acid Extractable Strontium (Sr)	2018/08/08	111	75 - 125	99	75 - 125	<5.0	mg/kg	5.2	35		
5662843	Acid Extractable Thallium (Tl)	2018/08/08	104	75 - 125	101	75 - 125	<0.10	mg/kg	NC	35		
5662843	Acid Extractable Uranium (U)	2018/08/08	107	75 - 125	100	75 - 125	<0.10	mg/kg	NC	35		
5662843	Acid Extractable Vanadium (V)	2018/08/08	109	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5662843	Acid Extractable Zinc (Zn)	2018/08/08	NC	75 - 125	98	75 - 125	<5.0	mg/kg	0.19	35		
5662934	>C10-C16 Hydrocarbons	2018/08/09	96	70 - 130	93	70 - 130	<0.050	mg/L	NC	40		
5662934	>C16-C21 Hydrocarbons	2018/08/09	94	70 - 130	91	70 - 130	<0.050	mg/L	NC	40		
5662934	>C21-<C32 Hydrocarbons	2018/08/09	103	70 - 130	99	70 - 130	<0.10	mg/L	NC	40		
5663204	Acid Extractable Aluminum (Al)	2018/08/03					<10	mg/kg	8.8	35		
5663204	Acid Extractable Antimony (Sb)	2018/08/03	105	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5663204	Acid Extractable Arsenic (As)	2018/08/03	110	75 - 125	102	75 - 125	<2.0	mg/kg	12	35		
5663204	Acid Extractable Barium (Ba)	2018/08/03	NC	75 - 125	99	75 - 125	<5.0	mg/kg	4.5	35		
5663204	Acid Extractable Beryllium (Be)	2018/08/03	107	75 - 125	95	75 - 125	<2.0	mg/kg	NC	35		
5663204	Acid Extractable Bismuth (Bi)	2018/08/03	114	75 - 125	107	75 - 125	<2.0	mg/kg	NC	35		
5663204	Acid Extractable Boron (B)	2018/08/03	100	75 - 125	101	75 - 125	<50	mg/kg	NC	35		
5663204	Acid Extractable Cadmium (Cd)	2018/08/03	112	75 - 125	101	75 - 125	<0.30	mg/kg	NC	35		

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	**Parameter**	**Date**	**% Recovery**	**QC Limits**	**% Recovery**	**QC Limits**	**Value**	**UNITS**	**Value (%)**	**QC Limits**	**% Recovery**	**QC Limits**
5663204	Acid Extractable Chromium (Cr)	2018/08/03	108	75 - 125	98	75 - 125	<2.0	mg/kg	7.7	35		
5663204	Acid Extractable Cobalt (Co)	2018/08/03	108	75 - 125	99	75 - 125	<1.0	mg/kg	15	35		
5663204	Acid Extractable Copper (Cu)	2018/08/03	108	75 - 125	97	75 - 125	<2.0	mg/kg	8.4	35		
5663204	Acid Extractable Iron (Fe)	2018/08/03					<50	mg/kg	8.6	35		
5663204	Acid Extractable Lead (Pb)	2018/08/03	110	75 - 125	101	75 - 125	<0.50	mg/kg	8.1	35		
5663204	Acid Extractable Lithium (Li)	2018/08/03	112	75 - 125	102	75 - 125	<2.0	mg/kg	8.2	35		
5663204	Acid Extractable Manganese (Mn)	2018/08/03	NC	75 - 125	101	75 - 125	<2.0	mg/kg	8.5	35		
5663204	Acid Extractable Mercury (Hg)	2018/08/03	105	75 - 125	105	75 - 125	<0.10	mg/kg	NC	35		
5663204	Acid Extractable Molybdenum (Mo)	2018/08/03	114	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5663204	Acid Extractable Nickel (Ni)	2018/08/03	109	75 - 125	99	75 - 125	<2.0	mg/kg	23	35		
5663204	Acid Extractable Rubidium (Rb)	2018/08/03	109	75 - 125	99	75 - 125	<2.0	mg/kg	7.0	35		
5663204	Acid Extractable Selenium (Se)	2018/08/03	109	75 - 125	100	75 - 125	<1.0	mg/kg	NC	35		
5663204	Acid Extractable Silver (Ag)	2018/08/03	111	75 - 125	101	75 - 125	<0.50	mg/kg	NC	35		
5663204	Acid Extractable Strontium (Sr)	2018/08/03	121	75 - 125	103	75 - 125	<5.0	mg/kg	5.2	35		
5663204	Acid Extractable Thallium (Tl)	2018/08/03	111	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35		
5663204	Acid Extractable Tin (Sn)	2018/08/03	108	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35		
5663204	Acid Extractable Uranium (U)	2018/08/03	112	75 - 125	102	75 - 125	<0.10	mg/kg	6.1	35		
5663204	Acid Extractable Vanadium (V)	2018/08/03	113	75 - 125	99	75 - 125	<2.0	mg/kg	5.2	35		
5663204	Acid Extractable Zinc (Zn)	2018/08/03	111	75 - 125	104	75 - 125	<5.0	mg/kg	11	35		
5663240	1-Methylnaphthalene	2018/08/13	102	50 - 130	106	50 - 130	<0.0050	mg/kg	6.1	50		
5663240	2-Methylnaphthalene	2018/08/13	110	50 - 130	115	50 - 130	<0.0050	mg/kg	2.4	50		
5663240	Acenaphthene	2018/08/13	116	50 - 130	118	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Acenaphthylene	2018/08/13	117	50 - 130	121	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Anthracene	2018/08/13	123	50 - 130	124	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Benzo(a)anthracene	2018/08/13	124	50 - 130	121	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Benzo(a)pyrene	2018/08/13	130	50 - 130	128	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Benzo(b)fluoranthene	2018/08/13	151 (9)	50 - 130	157 (10)	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Benzo(g,h,i)perylene	2018/08/13	132 (9)	50 - 130	127	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Benzo(j)fluoranthene	2018/08/13	147 (9)	50 - 130	150 (10)	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Benzo(k)fluoranthene	2018/08/13	146 (9)	50 - 130	139 (10)	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Chrysene	2018/08/13	119	50 - 130	119	50 - 130	<0.0050	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5663240	Dibenz(a,h)anthracene	2018/08/13	118	50 - 130	118	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Fluoranthene	2018/08/13	124	50 - 130	123	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Fluorene	2018/08/13	126	50 - 130	124	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Indeno(1,2,3-cd)pyrene	2018/08/13	118	50 - 130	112	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Naphthalene	2018/08/13	101	50 - 130	103	50 - 130	<0.0050	mg/kg	14	50		
5663240	Perylene	2018/08/13	138 (9)	50 - 130	139 (10)	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Phenanthrene	2018/08/13	129	50 - 130	129	50 - 130	<0.0050	mg/kg	NC	50		
5663240	Pyrene	2018/08/13	120	50 - 130	122	50 - 130	<0.0050	mg/kg	NC	50		
5663284	Total Aluminum (Al)	2018/08/04	99	80 - 120	101	80 - 120	<5.0	ug/L	3.3	20		
5663284	Total Antimony (Sb)	2018/08/04	106	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
5663284	Total Arsenic (As)	2018/08/04	102	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
5663284	Total Barium (Ba)	2018/08/04	99	80 - 120	98	80 - 120	<1.0	ug/L	2.3	20		
5663284	Total Beryllium (Be)	2018/08/04	100	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
5663284	Total Bismuth (Bi)	2018/08/04	104	80 - 120	104	80 - 120	<2.0	ug/L	NC	20		
5663284	Total Boron (B)	2018/08/04	100	80 - 120	96	80 - 120	<50	ug/L	NC	20		
5663284	Total Cadmium (Cd)	2018/08/04	104	80 - 120	101	80 - 120	<0.010	ug/L	1.3	20		
5663284	Total Calcium (Ca)	2018/08/04	NC	80 - 120	103	80 - 120	150, RDL=100 (11)	ug/L	3.2	20		
5663284	Total Chromium (Cr)	2018/08/04	100	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
5663284	Total Cobalt (Co)	2018/08/04	103	80 - 120	100	80 - 120	<0.40	ug/L	NC	20		
5663284	Total Copper (Cu)	2018/08/04	101	80 - 120	99	80 - 120	<2.0	ug/L	NC	20		
5663284	Total Iron (Fe)	2018/08/04	102	80 - 120	101	80 - 120	<50	ug/L	0.068	20		
5663284	Total Lead (Pb)	2018/08/04	102	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
5663284	Total Magnesium (Mg)	2018/08/04	98	80 - 120	99	80 - 120	<100	ug/L	0.93	20		
5663284	Total Manganese (Mn)	2018/08/04	NC	80 - 120	101	80 - 120	<2.0	ug/L	1.8	20		
5663284	Total Molybdenum (Mo)	2018/08/04	104	80 - 120	102	80 - 120	<2.0	ug/L	NC	20		
5663284	Total Nickel (Ni)	2018/08/04	102	80 - 120	101	80 - 120	<2.0	ug/L	NC	20		
5663284	Total Phosphorus (P)	2018/08/04	103	80 - 120	103	80 - 120	<100	ug/L	NC	20		
5663284	Total Potassium (K)	2018/08/04	104	80 - 120	105	80 - 120	<100	ug/L	4.5	20		
5663284	Total Selenium (Se)	2018/08/04	101	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
5663284	Total Silver (Ag)	2018/08/04	102	80 - 120	98	80 - 120	<0.10	ug/L	NC	20		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	**Parameter**	**Date**	**% Recovery**	**QC Limits**	**% Recovery**	**QC Limits**	**Value**	**UNITS**	**Value (%)**	**QC Limits**	**% Recovery**	**QC Limits**
5663284	Total Sodium (Na)	2018/08/04	96	80 - 120	97	80 - 120	<100	ug/L	0.39	20		
5663284	Total Strontium (Sr)	2018/08/04	NC	80 - 120	106	80 - 120	<2.0	ug/L	4.4	20		
5663284	Total Thallium (Tl)	2018/08/04	103	80 - 120	102	80 - 120	<0.10	ug/L	NC	20		
5663284	Total Tin (Sn)	2018/08/04	107	80 - 120	102	80 - 120	<2.0	ug/L	NC	20		
5663284	Total Titanium (Ti)	2018/08/04	106	80 - 120	101	80 - 120	<2.0	ug/L	NC	20		
5663284	Total Uranium (U)	2018/08/04	110	80 - 120	109	80 - 120	<0.10	ug/L	NC	20		
5663284	Total Vanadium (V)	2018/08/04	103	80 - 120	99	80 - 120	<2.0	ug/L	NC	20		
5663284	Total Zinc (Zn)	2018/08/04	100	80 - 120	97	80 - 120	<5.0	ug/L	NC	20		
5663339	Total Organic Carbon (C)	2018/08/03	94	85 - 115	97	80 - 120	<0.50	mg/L	5.1	15		
5663554	Total Organic Carbon (C)	2018/08/04	90	85 - 115	90	80 - 120	<0.50	mg/L	NC	15		
5665044	Benzene	2018/08/07	88	60 - 130	94	60 - 140	<0.025	mg/kg	NC	50		
5665044	C6 - C10 (less BTEX)	2018/08/07					<2.5	mg/kg	NC	50		
5665044	Ethylbenzene	2018/08/07	97	60 - 130	95	60 - 140	<0.025	mg/kg	NC	50		
5665044	Toluene	2018/08/07	89	60 - 130	95	60 - 140	<0.025	mg/kg	NC	50		
5665044	Total Xylenes	2018/08/07	94	60 - 130	94	60 - 140	<0.050	mg/kg	NC	50		
5665085	Benzene	2018/08/07	105	60 - 130	102	60 - 140	<0.025	mg/kg	0.20	50		
5665085	C6 - C10 (less BTEX)	2018/08/07					<2.5	mg/kg	NC	50		
5665085	Ethylbenzene	2018/08/07	122	60 - 130	107	60 - 140	<0.025	mg/kg	NC	50		
5665085	Toluene	2018/08/07	121	60 - 130	112	60 - 140	<0.025	mg/kg	7.8	50		
5665085	Total Xylenes	2018/08/07	122	60 - 130	107	60 - 140	<0.050	mg/kg	NC	50		
5666078	pH	2018/08/07							2.1	N/A	100	97 - 103
5666080	Conductivity	2018/08/07			106	80 - 120	1.7, RDL=1.0	uS/cm	0.71	25		
5666290	Aroclor 1016	2018/08/08					<0.050	ug/L	NC	40		
5666290	Aroclor 1221	2018/08/08					<0.050	ug/L	NC	40		
5666290	Aroclor 1232	2018/08/08					<0.050	ug/L	NC	40		
5666290	Aroclor 1242	2018/08/08					<0.050	ug/L	3.5	40		
5666290	Aroclor 1248	2018/08/08					<0.050	ug/L	NC	40		
5666290	Aroclor 1254	2018/08/08	89	70 - 130	92	70 - 130	<0.050	ug/L	NC	40		
5666290	Aroclor 1260	2018/08/08					<0.050	ug/L	NC	40		
5666492	Benzene	2018/08/07	99	60 - 130	112	60 - 140	<0.025	mg/kg	NC	50		
5666492	C6 - C10 (less BTEX)	2018/08/07					<2.5	mg/kg	NC	50		

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5666492	Ethylbenzene	2018/08/07	109	60 - 130	113	60 - 140	<0.025	mg/kg	NC	50		
5666492	Toluene	2018/08/07	97	60 - 130	110	60 - 140	<0.025	mg/kg	NC	50		
5666492	Total Xylenes	2018/08/07	102	60 - 130	107	60 - 140	<0.050	mg/kg	NC	50		
5666758	Aroclor 1016	2018/08/08					<0.050	ug/g	NC	50		
5666758	Aroclor 1221	2018/08/08					<0.050	ug/g	NC	50		
5666758	Aroclor 1232	2018/08/08					<0.050	ug/g	NC	50		
5666758	Aroclor 1242	2018/08/08					<0.050	ug/g	NC	50		
5666758	Aroclor 1248	2018/08/08					<0.050	ug/g	NC	50		
5666758	Aroclor 1254	2018/08/08	101	70 - 130	104	70 - 130	<0.050	ug/g	NC	50		
5666758	Aroclor 1260	2018/08/08					<0.050	ug/g	NC	50		
5666779	Benzene	2018/08/08	99	60 - 130	82	60 - 140	<0.025	mg/kg	NC	50		
5666779	C6 - C10 (less BTEX)	2018/08/08					<2.5	mg/kg	NC	50		
5666779	Ethylbenzene	2018/08/08	109	60 - 130	85	60 - 140	<0.025	mg/kg	NC	50		
5666779	Toluene	2018/08/08	96	60 - 130	83	60 - 140	<0.025	mg/kg	NC	50		
5666779	Total Xylenes	2018/08/08	102	60 - 130	81	60 - 140	<0.050	mg/kg	NC	50		
5666790	Benzene	2018/08/08	102	60 - 130	72	60 - 140	<0.025	mg/kg	NC	50		
5666790	C6 - C10 (less BTEX)	2018/08/08					<2.5	mg/kg	NC	50		
5666790	Ethylbenzene	2018/08/08	120	60 - 130	78	60 - 140	<0.025	mg/kg	NC	50		
5666790	Toluene	2018/08/08	118	60 - 130	81	60 - 140	<0.025	mg/kg	NC	50		
5666790	Total Xylenes	2018/08/08	121	60 - 130	77	60 - 140	<0.050	mg/kg	NC	50		
5668106	Benzene	2018/08/08	96	60 - 130	105	60 - 140	<0.025	mg/kg	NC	50		
5668106	C6 - C10 (less BTEX)	2018/08/08					<2.5	mg/kg	NC	50		
5668106	Ethylbenzene	2018/08/08	97	60 - 130	103	60 - 140	<0.025	mg/kg	NC	50		
5668106	Toluene	2018/08/08	96	60 - 130	103	60 - 140	<0.025	mg/kg	NC	50		
5668106	Total Xylenes	2018/08/08	93	60 - 130	102	60 - 140	<0.050	mg/kg	NC	50		
5668121	>C8-C10 Aromatics (-EX)	2018/08/08					<0.50	mg/kg				
5668121	Aliphatic >C6-C8	2018/08/08					<1.0	mg/kg				
5668121	Aliphatic >C8-C10	2018/08/08					<1.0	mg/kg				
5668121	Benzene	2018/08/08			105	60 - 140	<0.025	mg/kg				
5668121	Ethylbenzene	2018/08/08			103	60 - 140	<0.025	mg/kg				
5668121	Toluene	2018/08/08			103	60 - 140	<0.025	mg/kg				

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5668121	Total Xylenes	2018/08/08			102	60 - 140	<0.050	mg/kg				
5668279	Turbidity	2018/08/08			100	80 - 120	<0.10	NTU	6.7	20	104	80 - 120
5668282	Turbidity	2018/08/08			100	80 - 120	<0.10	NTU	1.1	20	100	80 - 120
5668828	Benzene	2018/08/09	79	60 - 130	115	60 - 140	<0.025	mg/kg	NC	50		
5668828	C6 - C10 (less BTEX)	2018/08/09					<2.5	mg/kg	NC	50		
5668828	Ethylbenzene	2018/08/09	89	60 - 130	112	60 - 140	<0.025	mg/kg	NC	50		
5668828	Toluene	2018/08/09	81	60 - 130	112	60 - 140	<0.025	mg/kg	NC	50		
5668828	Total Xylenes	2018/08/09	87	60 - 130	111	60 - 140	<0.050	mg/kg	NC	50		
5668896	Aroclor 1016	2018/08/09					<0.050	ug/g	NC	50		
5668896	Aroclor 1221	2018/08/09					<0.050	ug/g	NC	50		
5668896	Aroclor 1232	2018/08/09					<0.050	ug/g	NC	50		
5668896	Aroclor 1242	2018/08/09					<0.050	ug/g	NC	50		
5668896	Aroclor 1248	2018/08/09					<0.050	ug/g	NC	50		
5668896	Aroclor 1254	2018/08/09	92	70 - 130	92	70 - 130	<0.050	ug/g	NC	50		
5668896	Aroclor 1260	2018/08/09					<0.050	ug/g	NC	50		
5668905	Aroclor 1016	2018/08/09					<0.050	ug/g	NC	50		
5668905	Aroclor 1221	2018/08/09					<0.050	ug/g	NC	50		
5668905	Aroclor 1232	2018/08/09					<0.050	ug/g	NC	50		
5668905	Aroclor 1242	2018/08/09					<0.050	ug/g	NC	50		
5668905	Aroclor 1248	2018/08/09					<0.050	ug/g	NC	50		
5668905	Aroclor 1254	2018/08/09	172 (12)	70 - 130	103	70 - 130	<0.050	ug/g	5.1	50		
5668905	Aroclor 1260	2018/08/09					<0.050	ug/g	NC	50		
5670376	Acid Extractable Aluminum (Al)	2018/08/09					<10	mg/kg	7.5	35		
5670376	Acid Extractable Antimony (Sb)	2018/08/09	106	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5670376	Acid Extractable Arsenic (As)	2018/08/09	104	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5670376	Acid Extractable Barium (Ba)	2018/08/09	NC	75 - 125	104	75 - 125	<5.0	mg/kg	1.6	35		
5670376	Acid Extractable Beryllium (Be)	2018/08/09	107	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5670376	Acid Extractable Boron (B)	2018/08/09	105	75 - 125	104	75 - 125	<5.0	mg/kg	1.1	35		
5670376	Acid Extractable Cadmium (Cd)	2018/08/09	107	75 - 125	102	75 - 125	<0.30	mg/kg	0.89	35		
5670376	Acid Extractable Chromium (Cr)	2018/08/09	104	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5670376	Acid Extractable Cobalt (Co)	2018/08/09	104	75 - 125	101	75 - 125	<1.0	mg/kg	NC	35		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5670376	Acid Extractable Copper (Cu)	2018/08/09	114	75 - 125	100	75 - 125	<2.0	mg/kg	11	35		
5670376	Acid Extractable Iron (Fe)	2018/08/09					<50	mg/kg	7.5	35		
5670376	Acid Extractable Lead (Pb)	2018/08/09	109	75 - 125	104	75 - 125	<0.50	mg/kg	0.59	35		
5670376	Acid Extractable Lithium (Li)	2018/08/09	110	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5670376	Acid Extractable Manganese (Mn)	2018/08/09	NC	75 - 125	105	75 - 125	<2.0	mg/kg	1.2	35		
5670376	Acid Extractable Molybdenum (Mo)	2018/08/09	103	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5670376	Acid Extractable Nickel (Ni)	2018/08/09	105	75 - 125	101	75 - 125	<2.0	mg/kg	7.2	35		
5670376	Acid Extractable Selenium (Se)	2018/08/09	106	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35		
5670376	Acid Extractable Silver (Ag)	2018/08/09	108	75 - 125	105	75 - 125	<0.50	mg/kg	NC	35		
5670376	Acid Extractable Strontium (Sr)	2018/08/09	117	75 - 125	105	75 - 125	<5.0	mg/kg	1.4	35		
5670376	Acid Extractable Thallium (Tl)	2018/08/09	104	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35		
5670376	Acid Extractable Uranium (U)	2018/08/09	107	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35		
5670376	Acid Extractable Vanadium (V)	2018/08/09	103	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5670376	Acid Extractable Zinc (Zn)	2018/08/09	NC	75 - 125	108	75 - 125	<5.0	mg/kg	3.3	35		
5670804	1-Methylnaphthalene	2018/08/11	89	50 - 130	91	50 - 130	<0.010	mg/kg	16	50		
5670804	2-Methylnaphthalene	2018/08/11	95	50 - 130	98	50 - 130	<0.010	mg/kg	18	50		
5670804	Acenaphthene	2018/08/11	97	50 - 130	98	50 - 130	<0.010	mg/kg	NC (13)	50		
5670804	Acenaphthylene	2018/08/11	102	50 - 130	101	50 - 130	<0.010	mg/kg	NC (13)	50		
5670804	Anthracene	2018/08/11	117	50 - 130	112	50 - 130	<0.010	mg/kg	7.6	50		
5670804	Benzo(a)anthracene	2018/08/11	102	50 - 130	111	50 - 130	<0.010	mg/kg	6.2	50		
5670804	Benzo(a)pyrene	2018/08/11	96	50 - 130	97	50 - 130	<0.010	mg/kg	3.0	50		
5670804	Benzo(b)fluoranthene	2018/08/11	114	50 - 130	113	50 - 130	<0.010	mg/kg	4.5	50		
5670804	Benzo(g,h,i)perylene	2018/08/11	97	50 - 130	101	50 - 130	<0.010	mg/kg	9.5	50		
5670804	Benzo(j)fluoranthene	2018/08/11	103	50 - 130	103	50 - 130	<0.010	mg/kg	5.2	50		
5670804	Benzo(k)fluoranthene	2018/08/11	103	50 - 130	113	50 - 130	<0.010	mg/kg	3.1	50		
5670804	Chrysene	2018/08/11	100	50 - 130	108	50 - 130	<0.010	mg/kg	3.5	50		
5670804	Dibenz(a,h)anthracene	2018/08/11	92	50 - 130	95	50 - 130	<0.010	mg/kg	16	50		
5670804	Fluoranthene	2018/08/11	105	50 - 130	112	50 - 130	<0.010	mg/kg	4.1	50		
5670804	Fluorene	2018/08/11	101	50 - 130	105	50 - 130	<0.010	mg/kg	0	50		
5670804	Indeno(1,2,3-cd)pyrene	2018/08/11	88	50 - 130	91	50 - 130	<0.010	mg/kg	1.9	50		
5670804	Naphthalene	2018/08/11	88	50 - 130	89	50 - 130	<0.010	mg/kg	28	50		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5670804	Perylene	2018/08/11	98	50 - 130	100	50 - 130	<0.010	mg/kg	7.6	50		
5670804	Phenanthrene	2018/08/11	115	50 - 130	115	50 - 130	<0.010	mg/kg	0.15	50		
5670804	Pyrene	2018/08/11	103	50 - 130	103	50 - 130	<0.010	mg/kg	2.1	50		
5671323	Mercury (Hg)	2018/08/10	96	75 - 125	106	80 - 120	<0.010	mg/kg	NC (14)	30	70	50 - 150
5673136	1-Methylnaphthalene	2018/08/11	68	50 - 130	85	50 - 130	<0.050	ug/L				
5673136	2-Methylnaphthalene	2018/08/11	71	50 - 130	89	50 - 130	<0.050	ug/L				
5673136	Acenaphthene	2018/08/11	75	50 - 130	90	50 - 130	<0.010	ug/L				
5673136	Acenaphthylene	2018/08/11	72	50 - 130	99	50 - 130	<0.010	ug/L				
5673136	Anthracene	2018/08/11	77	50 - 130	97	50 - 130	<0.010	ug/L				
5673136	Benzo(a)anthracene	2018/08/11	77	50 - 130	97	50 - 130	<0.010	ug/L				
5673136	Benzo(a)pyrene	2018/08/11	72	50 - 130	84	50 - 130	<0.010	ug/L				
5673136	Benzo(b)fluoranthene	2018/08/11	83	50 - 130	95	50 - 130	<0.010	ug/L				
5673136	Benzo(g,h,i)perylene	2018/08/11	85	50 - 130	104	50 - 130	<0.010	ug/L				
5673136	Benzo(j)fluoranthene	2018/08/11	77	50 - 130	91	50 - 130	<0.010	ug/L				
5673136	Benzo(k)fluoranthene	2018/08/11	87	50 - 130	99	50 - 130	<0.010	ug/L				
5673136	Chrysene	2018/08/11	72	50 - 130	101	50 - 130	<0.010	ug/L				
5673136	Dibenz(a,h)anthracene	2018/08/11	74	50 - 130	79	50 - 130	<0.010	ug/L				
5673136	Fluoranthene	2018/08/11	78	50 - 130	96	50 - 130	<0.010	ug/L				
5673136	Fluorene	2018/08/11	79	50 - 130	97	50 - 130	<0.010	ug/L				
5673136	Indeno(1,2,3-cd)pyrene	2018/08/11	72	50 - 130	87	50 - 130	<0.010	ug/L				
5673136	Naphthalene	2018/08/11	68	50 - 130	84	50 - 130	<0.20	ug/L				
5673136	Perylene	2018/08/11	81	50 - 130	94	50 - 130	<0.010	ug/L				
5673136	Phenanthrene	2018/08/11	59	50 - 130	81	50 - 130	<0.010	ug/L				
5673136	Pyrene	2018/08/11	76	50 - 130	95	50 - 130	<0.010	ug/L				
5673992	1-Methylnaphthalene	2018/08/13	84	50 - 130	87	50 - 130	<0.010	mg/kg	NC	50		
5673992	2-Methylnaphthalene	2018/08/13	91	50 - 130	93	50 - 130	<0.010	mg/kg	NC	50		
5673992	Acenaphthene	2018/08/13	93	50 - 130	93	50 - 130	<0.010	mg/kg	NC	50		
5673992	Acenaphthylene	2018/08/13	103	50 - 130	102	50 - 130	<0.010	mg/kg	NC	50		
5673992	Anthracene	2018/08/13	96	50 - 130	97	50 - 130	<0.010	mg/kg	NC	50		
5673992	Benzo(a)anthracene	2018/08/13	100	50 - 130	94	50 - 130	<0.010	mg/kg	NC	50		
5673992	Benzo(a)pyrene	2018/08/13	107	50 - 130	105	50 - 130	<0.010	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5673992	Benzo(b)fluoranthene	2018/08/13	112	50 - 130	112	50 - 130	<0.010	mg/kg	NC	50		
5673992	Benzo(g,h,i)perylene	2018/08/13	121	50 - 130	118	50 - 130	<0.010	mg/kg	NC	50		
5673992	Benzo(j)fluoranthene	2018/08/13	100	50 - 130	98	50 - 130	<0.010	mg/kg	NC	50		
5673992	Benzo(k)fluoranthene	2018/08/13	113	50 - 130	112	50 - 130	<0.010	mg/kg	NC	50		
5673992	Chrysene	2018/08/13	99	50 - 130	93	50 - 130	<0.010	mg/kg	NC	50		
5673992	Dibenz(a,h)anthracene	2018/08/13	105	50 - 130	102	50 - 130	<0.010	mg/kg	NC	50		
5673992	Fluoranthene	2018/08/13	95	50 - 130	89	50 - 130	<0.010	mg/kg	NC	50		
5673992	Fluorene	2018/08/13	97	50 - 130	97	50 - 130	<0.010	mg/kg	NC	50		
5673992	Indeno(1,2,3-cd)pyrene	2018/08/13	104	50 - 130	100	50 - 130	<0.010	mg/kg	NC	50		
5673992	Naphthalene	2018/08/13	85	50 - 130	88	50 - 130	<0.010	mg/kg	NC	50		
5673992	Perylene	2018/08/13	109	50 - 130	105	50 - 130	<0.010	mg/kg	NC	50		
5673992	Phenanthrene	2018/08/13	96	50 - 130	101	50 - 130	<0.010	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5673992	Pyrene	2018/08/13	92	50 - 130	87	50 - 130	<0.010	mg/kg	NC	50		

N/A = Not Applicable

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

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

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

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

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

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

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

(1) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

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

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

(4) Duplicate: results are outside acceptance limit. Sample was past recommended hold time for repeat analysis.

(5) Poor RPD due to sample inhomogeneity. Results verified by repeat digestion and analysis.

(6) Low recovery due to sample inhomogeneity. Results confirmed by repeat digestion and analysis.

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

(8) Poor RPD due to sample inhomogeneity. Result confirmed by repeat digestion and analysis.

(9) Matrix Spike: results are outside acceptance limit. Analysis was not repeated, sample was past recommended hold time for repeat analysis.

(10) Spike: results are outside acceptance limit. Analysis was not repeated, associated samples past recommended hold time for repeat analysis.

(11) Low level lab contamination. Minimal impact on sample data quality.

(12) PCB surrogate not within acceptance limits. Sample past recommended hold time for repeat analysis.

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

(14) Elevated RDL due to sample matrix.

VALIDATION SIGNATURE PAGE

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

Eric Dearman, Scientific Specialist

Kevin G. Mac Donald

Kevin MacDonald, Inorganics Supervisor

RoseMarie 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.

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street, Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 20

CHAIN OF CUSTODY RECORD

COC #: D 16961 Page 1 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address: 141 Kelsey Drive St Johns NL
Postal Code: A1B 0L2
Phone: 709 576 1458 Fax:
Email: James.Slade@stantec.com

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #/ AFE#: 121414998.200.001
Project ID: [illegible]
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

Date Required:

Rush Confirmation #

Laboratory Use Only

CUSTODY SEAL Y / N Present	CUSTODY SEAL Y / N Intact	COOLER TEMPERATURES			AVERAGE TEMP
		4.2	4.1	4.7	

INTEGRITY [✓ YES] / NO

Integrity Checklist By: MK

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	Lab Filtration Required	RCAP-30 (CIRCLE) TOTAL / DISSOLVED	RCAP-MS (CIRCLE) TOTAL / DISSOLVED	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs	FWAL PAHs in water (with Acridine, Quinoline)	PCBs	VOCs		TSG			HOLD- DO NOT ANALYZE	COMMENTS
1	2018-203-SS01	2018/07/19		soil									X				X								X				Triple Silica
2	2018-203-SS02												X				X					X			X				Gel = TSG
3	2018-203-SS03												X				X			X					X				
4	2018-203-SS04																X								X				
5	2018-203-SS05																X								X				
6	2018-203-SS06												X				X					X			X				
7	2018-203-SS07																X								X				
8	2018-203-SS08												X				X			X					X				
9	2018-203-SS09																X			X					X				
10	2018-203-SS10												X				X								X				

Regulatory Requirements

☐ PIRI ☐ CCME
☐ Tier 1
☐ Tier 2
☐ OTHER (Please Specify)

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18		Jesse	2018/07/25	1:10	B8I 9887

White: Maxxam Pink: Client

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street, Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 20

CHAIN OF CUSTODY RECORD

COC #: D 16962 Page 2 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address: 141 Kelsey Drive St Johns
NL Postal Code: A1B 0L2
Phone: 709 576 1458 Fax:
Email: James.Slade@stantec.com

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #/ AFE#:
Project ID: 121414998.200.001
Site Location: MCL sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

Date Required:

Rush Confirmation #

Laboratory Use Only

CUSTODY SEAL Y / N Present	CUSTODY SEAL Y / N Intact	COOLER TEMPERATURES			AVERAGE TEMP	INTEGRITY
		4.2	4.1	4.7	~~4.7~~	[✓ YES] / NO
						Integrity Checklist By: MK

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	Lab Filtration Required	RCAP-30 (CIRCLE) TOTAL / DISSOLVED	RCAP-MS (CIRCLE) TOTAL / DISSOLVED	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs	FWAL PAHs in water (with Acridine, Quinoline)	PCBs	VOCs		Asbestos	TSG		HOLD- DO NOT ANALYZE	COMMENTS
1	2018-203-SS11	2018/07/19		Soil									X				X					X				X			
2	2018-203-SS12												X				X									X			
3	2018-203-SS13												X				X					X				X			
4	2018-203-SS14												X				X									X			
5	2018-203-SS15																X			X		X				X			
6	2018-203-SS16																X			X		X				X			
7	2018-203-SS17																X			X						X			
8	2018-203-SS18												X				X								X	X			
9	2018-203-SS19												X				X									X			
10	2018-203-SS20	↓		↓									X																No silica req on SS20

Regulatory Requirements

☐ PIRI ☐ CCME
☐ Tier 1
☐ Tier 2
☐ OTHER (Please Specify)

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25 '18			2018/07/25	1:10	B8I9887

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street, Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 20

CHAIN OF CUSTODY RECORD

COC #: D 16963 Page 3 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address: 141 Kelsey Drive St Johns NL
Postal Code: A1B0L2
Phone: 709 576 1458 Fax:
Email: James.Slade@stantec.com

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #/ AFE#:
Project ID: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

Date Required:

Rush Confirmation #

Laboratory Use Only

CUSTODY SEAL Y / N Present	Intact	COOLER TEMPERATURES			AVERAGE TEMP	INTEGRITY
		4.2	4.1	4.7		[✓ YES] / NO
						Integrity Checklist By: MK

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	Lab Filtration Required	RCAP-30 (CIRCLE) TOTAL / DISSOLVED	RCAP-MS (CIRCLE) TOTAL / DISSOLVED	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs	FWAL PAHs in water (with Acridine, Quinoline)	PCBs	VOCs	Asbestos	Triple Silica Gel		HOLD- DO NOT ANALYZE
1	2018-203-SS21	2018/07/19		Soil													X			X		X			X		
2	2018-203-SS22												X				X					X			X		
3	2018-203-SS23																X								X		
4	2018-203-SS24																X								X		
5	2018-203-TP01-BS01																X								X		
6	2018-203-TP01-BS02												X														
7	2018-203-TP02-BS01																X			X					X		
8	2018-203-TP02-BS02												X														
9	2018-203-TP03-BS01																X					X		X	X		
10	2018-203-TP03-BS02												X														

Regulatory Requirements

☐ PIRI ☐ CCME
☐ Tier 1
☐ Tier 2
☐ OTHER (Please Specify)

COMMENTS

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18		Jesse	2018/07/25	1:10	B8I9887

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street, Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 20

CHAIN OF CUSTODY RECORD

COC #: D 16964 Page 4 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address: 141 Kelsey Drive St Johns NL
Postal Code: A1B 0L2
Phone: 709 576 1458 Fax:
Email: James.Slade@stantec.com

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #/ AFE#:
Project ID: 121414998.200.001
Site Location: MCL sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

Date Required:

Rush Confirmation #

Laboratory Use Only

CUSTODY SEAL Y / N Present	CUSTODY SEAL Y / N Intact	COOLER TEMPERATURES			AVERAGE TEMP
		4.2	4.1	4.7	

INTEGRITY [✓ YES] NO

Integrity Checklist By: MK

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	Lab Filtration Required	RCAP-30 (CIRCLE) TOTAL / DISSOLVED	RCAP-MS (CIRCLE) TOTAL / DISSOLVED	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX ,C6-C32	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs	FWAL PAHs in water (with Acridine, Quinoline)	PCBs	VOCs			TSG		HOLD- DO NOT ANALYZE	COMMENTS
1	2018-203-TP04-BS01	2018/07/19		Soil													X			X						X			
2	2018-203-TP05-BS01																X									X			
3	2018-203-TP05-BS02												X																
4	2018-203-TP06-BS01												X				X									X			
5	2018-203-TP06-BS02												X																
6	2018-203-TP07-BS01																X			X						X			
7	2018-203-TP08-BS01												X				X									X			
8	2018-203-TP09-BS01																			X						X			TPH fractionation
9	2018-203-TP10-BS01												X				X									X			
10	2018-203-TP11-BS01																X			X						X			

Regulatory Requirements

☐ PIRI ☐ CCME
☐ Tier 1
☐ Tier 2
☐ OTHER (Please Specify)

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18		Jesse LeBlanc	2018/07/25	11:10	B8I9887

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street, Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 20

CHAIN OF CUSTODY RECORD

COC #: D 16965 Page 5 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address: 141 Kelsey Dr St Johns NL
Postal Code: A1B 0L2
Phone: 709 576 1458 Fax:
Email: James.slade@stantec.com

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #/ AFE#:
Project ID: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses
PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
IF RUSH please specify date (Surcharges will be applied)
Date Required:
Rush Confirmation #

Laboratory Use Only

CUSTODY SEAL Y / N Present	Intact	COOLER TEMPERATURES			AVERAGE TEMP	INTEGRITY
		4.2	4.1	4.7		[✓ YES] NO
						Integrity Checklist By: MK

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	Lab Filtration Required	RCAP-30 (CIRCLE) TOTAL / DISSOLVED	RCAP-MS (CIRCLE) [✓ TOTAL] / DISSOLVED	Metals (Water): Total Digest (Default Method) for well water & surface water	Metals (Water): Dissolved for ground water	Metals (Water): Mercury	Metals (Soil): Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil): Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil): Mercury Low level by Cold Vapour AA	Metals (Soil): Hot Water Soluble Boron (required for CCME Agricultural)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs	FWAL PAHs in water (with Acridine, Quinoline)	PCBs	VOCs					HOLD- DO NOT ANALYZE
1	2018-203-VEG01	2018/07/19		Tissue									X									X						
2	2018-203-VEG02	↓		↓									X									X						
3	2018-203-VEG03												X									X						
4	2018-203-VEG04												X									X						
5	2018-203-SED01			SED									X				X			X		X						
6	2018-203-SED02			↓									X				X			X		X						
7	2018-203-SW01			Water					X								X			X		X	X					
8	2018-203-SW02			↓					X								X			X		X	X					
9																												
10																												

Regulatory Requirements

☐ PIRI ☐ CCME
☐ Tier 1
☐ Tier 2
☐ OTHER (Please Specify)

COMMENTS

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18			2018/07/25	1:10	B8I9887

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street,Unit G,Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D33499 Page 6 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address: 141 Kelsey Drive St Johns NL
Postal Code: A1B 0L2
Phone: 709 576 1458 Fax:
Email: James.Slade@stantec.com

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #:
Project #: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

DATE REQUIRED:

Laboratory Use Only

CUSTODY SEAL		COOLER TEMPERATURES	COOLER TEMPERATURES
Present	Intact		
		4.2 4.1 4.7	

COOLING MEDIA PRESENT Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

Regulatory Requirements (Specify)

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL/CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.Coli (Count)	TSG	HOLD- DO NOT ANALYZE	COMMENTS
1	2018-206-SS01	2019/07/20		Soil									X				X						X				X		
2	2018-206-SS02	↓		↓									X				X										X		
3	2018-206-SS03												X				X				X						X		
4	2018-206-SS04												X				X				X						X		
5	2018-206-SS05												X				X										X		
6	2018-206-SS06												X				X				X						X		
7	2018-206-SS07												X				X										X		
8	2018-206-SS08																X										X		Asbestos
9	2018-206-SS09												X				X						X				X		
10	2018-206-SS10	↓		↓									X				X										X		

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18		Jesse	2018/07/25	1:10	B8E9887

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street,Unit G,Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D33500 Page 7 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address: 141 Kelsey Dr St Johns NL
Postal Code: A1B 0L2
Phone: 709 576 1458 Fax:
Email: James.Slade@stantec.com

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #:
Project #: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

DATE REQUIRED:

Laboratory Use Only

CUSTODY SEAL		COOLER TEMPERATURES	COOLER TEMPERATURES
Present	Intact		
		4.2 4.1 4.7	

COOLING MEDIA PRESENT Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.coli (Count)	TSG	HOLD- DO NOT ANALYZE	COMMENTS
1	2018-206-SS11	2018/07/20		Soil									~~X~~				~~X~~				X		X				X		TPH fractionation
2	2018-206-SS12																X				X						X		
3	2018-206-SS13												X				X										X		
4	2018-206-SS14												X				X										X		
5	2018-206-SS15																X				X						X		
6	2018-206-SS16																X										X		
7	2018-206-SS17												X								X								
8	2018-206-SS18												X				X										X		
9	2018-206-SS19												X				X										X		Asbestos
10	2018-206-SS20												X				X										X		

Regulatory Requirements (Specify)

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18			2018/07/25	1:10	B8I9887

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street,Unit G,Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D33393 Page 8 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address: 141 Kelsey Dr St Johns NL
Postal Code: A1B 0L2
Phone: 709 576 1458 Fax:
Email: James.Slade@stantec.com

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #:
Project #: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☐ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

DATE REQUIRED:

Laboratory Use Only

CUSTODY SEAL		COOLER TEMPERATURES	COOLER TEMPERATURES
Present	Intact		
		4.2 4.1 4.7	

COOLING MEDIA PRESENT Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX ,C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.Coli (Count)	TSG	HOLD- DO NOT ANALYZE	COMMENTS
1	2018-206-SS21	2018/07/20		Soil									X				X										X		
2	2018-206-SS22																X				X						X		
3	2018-206-SS23												X				X				X						X		
4	2018-206-SS24																				X		X				X		TPH fractionation
5	2018-206-TP01-BS01												X				X						X				X		
6	2018-206-TP01-BS02																				X								
7	2018-206-TP02-BS01												X				X										X		
8	2018-206-TP02-BS02																				X								
9	2018-206-TP03-BS01												X				X										X		
10	2018-206-TP04-BS01												X								X								

Regulatory Requirements (Specify)

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	Jly 25/8		Jesse LeBlanc	2018/07/25	1:10	B8I9887

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street,Unit G,Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D 33394 Page 9 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address: 141 Kelsey Dr Stantec NL
Postal Code: A1B ~~6A4~~
Phone: 709 576 1458 Fax: 0L2
Email: James.Slade@stantec.com

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #:
Project #: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

DATE REQUIRED:

Laboratory Use Only

CUSTODY SEAL		COOLER TEMPERATURES	COOLER TEMPERATURES
Present	Intact		
		4,2 4.1 4.7	

COOLING MEDIA PRESENT Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX ,C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.coli (Count)	TSG	HOLD- DO NOT ANALYZE	COMMENTS
1	2018-206-TP04-BS02	2018/07/20		Soil													X						X						
2	2018-206-TP05-BS01	↓		↓									X				X						X				X		
3	2018-206-TP05-BS02																				X								
4	2018-206-TP06-BS01												X				X				X						X		
5	2018-206-TP007-BS01																X						X				X		
6	2018-206-TP08-BS01												X				X						X				X		
7	2018-206-TP09-BS01																X				X		X				X		
8	2018-206-TP10-BS01			↓									X				X										X		
9	2018-206-VEG01			Tissue									X										X						
10	2018-206-VEG02	↓		↓									X										X						

Regulatory Requirements (Specify)

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18			2018/07/25	1:10	B8I9887

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

JUL 25 2018

White: Maxxam Pink: Client

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street,Unit G,Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D 33395 Page 10 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address: 141 Kelsey Dr Stantec NL
Postal Code: A1B ~~0A2~~ 0L2
Phone: 709 576 1458 Fax:
Email: James.Slade@stantec.com

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #:
Project #: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

DATE REQUIRED:

Laboratory Use Only

CUSTODY SEAL		COOLER TEMPERATURES	COOLER TEMPERATURES
Present	Intact		
		4,2 4.1 4.7	

COOLING MEDIA PRESENT Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

Regulatory Requirements (Specify)

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water): Total Digest (Default Method) for well water & surface water	Metals (Water): Dissolved for ground water	Metals (Water): Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil): Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil): Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil): Mercury Low level by Cold Vapour AA	Metals (Soil): Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL/CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.Coli (Count)		HOLD- DO NOT ANALYZE	COMMENTS
1	2018-206-VEG03	2018/07/20		Tissue									X										X						
2	2018-206-VEG04	↓		↓									X										X						
3	2018-206-SED01			SED									X				X				X		X						
4	2018-206-SED02			↓									X				X				X		X						
5	2018-206-SED03												X				X				X		X						
6	2018-206-SW01			Water				X									X				X		X	X					
7	2018-206-SW02			↓				X									X				X		X	X					
8	2018-206-SW03	↓		↓				X									X				X		X	X					
9																													
10																													

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18		Jesse LeBlanc	2018/07/25	1:10	B8I9887

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street,Unit G,Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D 33396 Page 11 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address:
Postal Code:
Phone: Fax:
Email:

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #:
Project #: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most Analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

DATE REQUIRED:

Laboratory Use Only

CUSTODY SEAL		COOLER TEMPERATURES	COOLER TEMPERATURES
Present	Intact		
		4.2 4.1 4.7	

COOLING MEDIA PRESENT Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water): Total Digest (Default Method) for well water & surface water	Metals (Water): Dissolved for ground water	Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil): Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil): Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil): Mercury Low level by Cold Vapour AA	Metals (Soil): Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.coli (Count)	TSG	HOLD- DO NOT ANALYZE	COMMENTS
1	2018-209-SS01	2018/07/20		Soil									X				X				X						X		
2	2018-209-SS02												X				X										X		
3	2018-209-SS03												X				X						X				X		
4	2018-209-SS04												X				X				X						X		
5	2018-209-SS07												X																
6	2018-209-SS08												X				X										X		
7	2018-209-SS09												X				X										X		
8	2018-209-SS10																X				X						X		
9	2018-209-SS11												X																Asbestos
10	2018-209-SS12	↓		↓									X				X										X		

Regulatory Requirements (Specify)

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18		Jesse	2018/07/25	1:10	B8I9887

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

JUL 25 2018

White: Maxxam Pink: Client

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street,Unit G,Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D 33397 Page 12 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address:
Postal Code:
Phone: Fax:
Email:

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #:
Project #: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

DATE REQUIRED:

Laboratory Use Only

CUSTODY SEAL		COOLER TEMPERATURES	COOLER TEMPERATURES
Present	Intact		
		4.2 4.1 4.7	

COOLING MEDIA PRESENT Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.coli (Count)	TSG	HOLD- DO NOT ANALYZE	COMMENTS
1	2018-209-SS13	2018/07/20		Soil													X										X		
2	2018-209-SS14																X				X						X		
3	2018-209-SS15												X				X				X						X		
4	2018-209-SS16																X										X		
5	2018-209-SS17																X						X				X		
6	2018-209-SS18												X				X						X				X		
7	2018-209-SS19												X				X						X				X		
8	2018-209-SS20												X				X										X		
9	2018-209-SS21												X				X				X		~~X~~				X		
10	2018-209-SS22	↓		↓									X				X						X				X		

Regulatory Requirements (Specify)

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18			2018/07/25	1:10	B8J9887

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street,Unit G,Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D 33398 Page 13 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address:
Postal Code:
Phone: Fax:
Email:

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #:
Project #: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

DATE REQUIRED:

Laboratory Use Only

CUSTODY SEAL		COOLER TEMPERATURES	COOLER TEMPERATURES
Present	Intact		
		4.2 4.1 4.7	

COOLING MEDIA PRESENT Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

Regulatory Requirements (Specify)

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water)			Metals (Soil)				RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.Coli (Count)	TSG	HOLD- DO NOT ANALYZE	COMMENTS
										Total Digest (Default Method) for well water & surface water	Dissolved for ground water	Mercury (CIRCLE) TOTAL / DISSOLVED	Metals & Mercury Default Acid Extractable (Available) Digest	Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Mercury Low level by Cold Vapour AA	Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)													
1	2018-209-SS23	2018/07/20		Soil									X																
2	2018-209-SS24												X				X				X						X		
3	2018-209-TP06-BS01												X				X						X				X		
4	2018-209-TP06-BS02																				X								
5	2018-209-TP07-BS01																X				X						X		
6	2018-209-TP08-BS02												X																
7	2018-209-TP08-BS01																X				X		X				X		
8	2018-209-TP08-BS02												X																TPH Fractionation
9	2018-209-TP09-BS01												X																
10	2018-209-TP09-BS02																X				X								

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18		Jesse Letzer	2018/07/25	1:10	B8I9887

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street,Unit G,Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D33399 Page 14 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address:
Postal Code:
Phone: Fax:
Email:

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #:
Project #: 121414998.200.001
Site Location: MCL Sites
Site #:
Sampled By: RP

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

DATE REQUIRED:

Laboratory Use Only

CUSTODY SEAL		COOLER TEMPERATURES	COOLER TEMPERATURES
Present	Intact		
		4.2 4.1 4.7	

COOLING MEDIA PRESENT Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX ,C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.Coli (Count)		HOLD- DO NOT ANALYZE	Regulatory Requirements (Specify) COMMENTS
1	2018-209-TP10-BS01	2018/07/20		Soil									X								X								
2	2018-209-TP10-BS02			↓													X												
3	2018-209-VEG01			Tissue									X										X						
4	2018-209-VEG03												X										X						
5	2018-209-VEG04			↓									X										X						
6	2018-209-SED01			SED									X				X				X		X						
7	2018-209-SED02			↓									X				X				X		X						
8	2018-209-SW01			Water				X									X				X		X	X					
9	2018-209-SW02	↓		↓				X									X				X		X	X					
10																													

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18			2018/07/25	1:10	B8I9887

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

White: Maxxam Pink: Client

JUL 25 2018

Maxxam
A Bureau Veritas Group Company

200 Bluewater Road, Suite 105, Bedford, Nova Scotia B4B 1G9 Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
49-55 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
465 George Street,Unit G,Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770
www.maxxam.ca E-mail: Customerservicebedford@maxxam.ca

ATL FCD 00149 / 22

CHAIN OF CUSTODY RECORD

COC #: D33494 Page 15 of 15

Invoice Information

Company Name: Stantec
Contact Name: Jim Slade
Address:
Postal Code:
Phone: Fax:
Email:

Report Information (if differs from invoice)

Company Name:
Contact Name:
Address:
Postal Code:
Phone: Fax:
Email:

Project Information (where applicable)

Quotation #:
P.O. #:
Project #: 121414998
Site Location: Border Beacon
Site #:
Sampled By:

Turnaround Time (TAT) Required

☒ Regular TAT (5 business days) Most analyses

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

IF RUSH please specify date (Surcharges will be applied)

DATE REQUIRED:

Laboratory Use Only

CUSTODY SEAL		COOLER TEMPERATURES	COOLER TEMPERATURES
Present	Intact		
		4.2 4.1 4.7	

COOLING MEDIA PRESENT Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED &PRESERVED	LAB FILTRATION REQUIRED	RCAP-MS (Total Metals) Well / Surface water	RCAP-MS (Dissolved Metals) Ground waters	Metals (Water) Total Digest (Default Method) for well water & surface water	Metals (Water) Dissolved for ground water	Metals (Water) Mercury (CIRCLE) TOTAL / DISSOLVED	Metals (Soil) Metals & Mercury Default Acid Extractable (Available) Digest	Metals (Soil) Metals Total Digest -for Ocean sediments (HNO3/HF/HClO4)	Metals (Soil) Mercury Low level by Cold Vapour AA	Metals (Soil) Hot Water Soluble Boron (required for CCME Agricultural/ Landfill)	RBCA Hydrocarbons (BTEX, C6-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, C6-C32	CCME Hydrocarbons (CWS-PHC F1/BTEX, F2-F4)	NB Potable Water BTEX, VPH, Low level T.E.H	PAHs (Default for water/soil)	PAHs (FWAL /CCME Sediment)	PCBs	VOCs	Total Coliform/E.coli (Presence/Absence)	Total Coliform/E.Coli (Count)		HOLD- DO NOT ANALYZE	COMMENTS
1	2018-VEG09	2018/07/19		Tissue									X										X						
2	2018-VEG10	↓		↓									X										X						
3	2018-VEG11												X										X						
4																													
5																													
6																													
7																													
8																													
9																													
10																													

Regulatory Requirements (Specify)

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY:(Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #
	July 25/18			2018/07/25	1:10	B8I9887

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

White: Maxxam Pink: Client

JUL 25 2018

COR FCD-00265 / 4
Page 1 of 2

Maxxam
A Bureau Veritas Group Company

NL

ADDITIONAL COOLER TEMPERATURE RECORD

CHAIN-OF-CUSTODY RECORD

CHAIN OF CUSTODY #	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	
Page ___ of ___	

COOLER OBSERVATIONS:
over temp coolers contained wood samples & vegetation

MAXXAM JOB#:

CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	4_1	6_2	5_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	6_1	6_2	3_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	11_1	8_2	4_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	6_1	1_2	7_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	4_1	5_2	4_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	5_1	3_2	7_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	1_1	1_2	1_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	5_1	6_2	4_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	14_1	14_2	16_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	8_1	9_2	8_3
INTACT						
ICE PRESENT						

CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	6_1	2_2	6_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	8_1	8_2	5_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	13_1	9_2	8_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	11_1	11_2	6_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	15_1	14_2	14_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	9_1	6_2	6_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	9_1	10_2	8_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	5_1	4_2	6_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	7_1	5_2	9_3
INTACT						
ICE PRESENT						
CUSTODY SEAL	YES	NO	COOLER ID			
PRESENT			TEMP	1_1	0_2	-1_3
INTACT						
ICE PRESENT						

RECEIVED BY (SIGN & PRINT)		DATE (YYYY/MM/DD)	TIME (HH:MM)
DAlbert	Davine Albert	2018/07/26	09:55

Maxxam
A Bureau Veritas Group Company

August 02, 2018

Heather Macumber
MAXXAM ANALYTICS
200 Bluewater Road
Bedford, NS B4B 1G9

Maxxam Analytics Work Ord A1808001

Reference JOB #B8I9887

Dear Heather Macumber:

Maxxam Analytics received 5 samples on August 01, 2018 for the analyses presented in the following report.

The results apply only to the samples analyzed in this project. Please note that any unused portion of the samples will be discarded after a sixty-day holding period, unless you have requested otherwise.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number provided below.

We appreciate the opportunity to assist you. If you have any questions concerning the report, please contact the analyst whose name appears on the report or myself at (770) 499-7701.

Sincerely,

Kuntal Parikh

Kuntal Parikh

Senior Microscopist

Electronic signature authorized through password protection

cc: Keri Mackay
k

Maxxam Analytics
3380 Chastain Meadows Parkway, Suite 300
Kennesaw, GA 30144

Main: (770) 499.7701
Fax: (770) 499.7511
maxxamlabs.com

CASE NARRATIVE

Date: *02-Aug-18*

CLIENT: MAXXAM ANALYTICS
Project: JOB #B8I9887
Work Order No A1808001

QUANTITATIVE ANALYSIS OF ASBESTOS IN SOIL SAMPLES USING SIEVES, POLARIZED LIGHT MICROSCOPY (PLM) AND TRANSMISSION ELECTRON MICROSCOPY (TEM)

1. A representative portion of approximately 100 grams of sample is ground with a blender for 15 seconds. Grinding of the sample releases asbestos fibers embedded in the vermiculite. Blending of soil is not performed.

2. The sample is poured into a stack of sieves with a 19 mm on the top, 2 mm, 100 um and a collection pan below. The sample is sieved dry for 5 minutes using a Menzer II Sieve Shaker. Isopropyl alcohol may be misted on each sieve upon removal of material to keep dust in the sieve. If alcohol is added, each fraction is dried after sieving.

3. Examine each sieve fraction and remove any large organic debris or pebbles.

4. Determine the weight of each fraction prior to analysis.

5. Analyze the finest fraction (<100 um) of the sample by both PLM point counting and TEM.

A) PLM point counting is performed at 100X (prepare 8 separate slide mounts). Record asbestos fibers >3u wide and an aspect ratio of >3:1.
b) TEM is performed using Semi-Quantitative (Bureau Veritas internal method) procedure.

6. Analyze the medium and coarse fractions of the sample using a stereomicroscope and confirm suspect fibers with PLM. Visually estimate the asbestos content in each fraction.

For determining the “Total Asbestos Content” in the soil sample, use the following formula:
Total Asbestos (%) =
[((%F)(PLM) + (%F)(TEM)(WF))/2] + [((%M)(PLM)(WM)] + [(%C)(PLM)(WC)] = Total % asbestos, where:

(%F)(PLM) = Percentage of asbestos as determined by PLM point counting in fine fraction.
(%F)(TEM)(WF) = Percentage of asbestos determined by TEM in fine fraction.
[((%F)(PLM) + (%F)(TEM)(WF))/2] = Percentage of asbestos determined by both PLM point counting and TEM in fine fraction, divided by 2.
(%M)(PLM)(WM) = Percentage of asbestos determined by Stereomicroscope and PLM (visual area estimate) in medium fraction

(%C)(PLM)(WC) = Percentage of asbestos determined by Stereomicroscope and PLM (visual area estimate) in coarse fraction.

%F = Percentage of asbestos determined by PLM or TEM in fine fraction.
%M = Percentage of asbestos determined by Stereomicroscope and PLM in medium fraction.
%C = Percentage of asbestos determined by Stereomicroscope and PLM in coarse fraction.
WF = Weight of fine fraction of sample.
WM = Weight of medium fraction of sample.
WC = Weight of coarse fraction of sample.

ANALYTICAL RESULTS

Client: **MAXXAM ANALYTICS**

Client Reference No.: **JOB #B8I9887**

Work Order No.: **A1808001**

Date: *02-Aug-18*

Method Reference: ASTM D7521Determination of Asbestos in Soil

Date Received: 8/1/2018

Sample Type: Soil

Report Date: 8/2/2018

Lab ID	Client Sample ID	Analyst	Date Sampled	Date Analyzed
001A	***HIG395-01R\2018-203-SS18***	TM	07/19/2018	08/02/2018

Sample Morphology	Fraction	POB	Asbestos	%	Total % by weight
Black Soil	Coarse	16	None Detected	< 0.25%	< 0.040%
Black Soil	Medium	73	None Detected	< 0.25%	< 0.18%
Black Soil	Fines-PLM	11	None Detected	< 0.25%	< 0.028%
Black Soil	Fines-TEM				
					<0.25%

002A	***HIG10-01R\2018-203-TP03-BS01***	TM	07/19/2018	08/02/2018

Sample Morphology	Fraction	POB	Asbestos	%	Total % by weight
Brown/Black Soil	Coarse	8.3	None Detected	< 0.25%	< 0.021%
Brown/Black Soil	Medium	85	None Detected	< 0.25%	< 0.21%
Brown Soil	Fines-PLM	6.5	None Detected	< 0.25%	< 0.016%
Brown Soil	Fines-TEM				
					<0.25%

003A	***HIG905-01R\2018-206-SS08***	TM	07/20/2018	08/02/2018

Sample Morphology	Fraction	POB	Asbestos	%	Total % by weight
Black/Gray Soil	Coarse	14	None Detected	< 0.25%	< 0.035%
Black/Gray Soil	Medium	57	None Detected	< 0.25%	< 0.14%
Gray Soil	Fines-PLM	29	None Detected	< 0.25%	< 0.073%
Gray Soil	Fines-TEM				
					<0.25%

004A	***HIG971-01R\2018-206-SS19***	TM	07/20/2018	08/02/2018

Sample Morphology	Fraction	POB	Asbestos	%	Total % by weight
Brown Soil	Coarse	44	None Detected	< 0.25%	< 0.11%
Brown Soil	Medium	43	None Detected	< 0.25%	< 0.11%
Brown Soil	Fines-PLM	13	None Detected	< 0.25%	< 0.033%
Brown Soil	Fines-TEM				
					<0.25%

NAD No Asbestos Detected

Detection Limits: Detection limits are reported on a per layer basis.
For PLM Analysis the layer detection limit is 0.25 percent.
For TEM Analysis the layer detection limit is 0.10 percent.

ANALYTICAL RESULTS

Client: **MAXXAM ANALYTICS**

Client Reference No.: **JOB #B8I9887**

Work Order No.: **A1808001**

Date: *02-Aug-18*

Method Reference: ASTM D7521Determination of Asbestos in Soil

Date Received: 8/1/2018

Sample Type: Soil

Report Date: 8/2/2018

Lab ID	Client Sample ID	Analyst	Date Sampled	Date Analyzed
005A	***HIH440-01R\2018-209-SS11***	TM	07/20/2018	08/02/2018

Sample Morphology	Fraction	POB	Asbestos	%	Total % by weight
Brown Soil	Coarse	27	None Detected	< 0.25%	< 0.068%
Brown Soil	Medium	59	None Detected	< 0.25%	< 0.15%
Brown Soil	Fines-PLM	14	None Detected	< 0.25%	< 0.035%
Brown Soil	Fines-TEM				
					<0.25%

NAD No Asbestos Detected

Detection Limits: Detection limits are reported on a per layer basis.
For PLM Analysis the layer detection limit is 0.25 percent.
For TEM Analysis the layer detection limit is 0.10 percent.

Analyst(s) Name/Date: Thomas J. [illegible] 8/2/2018

ANALYTICAL RESULTS

Client: **MAXXAM ANALYTICS**

Client Reference No.: **JOB #B8I9887**

Work Order No.: **A1808001** **Date:** *02-Aug-18*

Analytical Method: ASTM D7521 Determination of Asbestos in Soil -TEM
Sample Type: Soil
Reporting Limit (Visual %): 0.1

Date Received: 8/1/2018 10:47:05 AM
Report Date: 8/2/2018 4:26:52 PM
Grid Box Identification: 08-02-18C-1

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)
A1808001-001A	HIG395-01R\2018-203-SS18	07/19/18	08/02/18	KRP	Soil

Asbestos Identification	(%)	Fibrous Material	(%)	Non-Fibrous Material	(%)
None Detected	< 0.1				

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)
A1808001-002A	HIG10-01R\2018-203-TP03-BS01	07/19/18	08/02/18	KRP	Soil

Asbestos Identification	(%)	Fibrous Material	(%)	Non-Fibrous Material	(%)
None Detected	< 0.1				

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)
A1808001-003A	HIG905-01R\2018-206-SS08	07/20/18	08/02/18	KRP	Soil

Asbestos Identification	(%)	Fibrous Material	(%)	Non-Fibrous Material	(%)
None Detected	< 0.1				

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)
A1808001-004A	HIG971-01R\2018-206-SS19	07/20/18	08/02/18	KRP	Soil

Asbestos Identification	(%)	Fibrous Material	(%)	Non-Fibrous Material	(%)
None Detected	< 0.1				

<: Result is less than the indicated limit of detection.

ANALYTICAL RESULTS

Client: **MAXXAM ANALYTICS**

Client Reference No.: **JOB #B8I9887**

Work Order No.: **A1808001** **Date:** *02-Aug-18*

Analytical Method: ASTM D7521 Determination of Asbestos in Soil -TEM
Sample Type: Soil
Reporting Limit (Visual %): 0.1

Date Received: 8/1/2018 10:47:05 AM
Report Date: 8/2/2018 4:26:52 PM
Grid Box Identification: 08-02-18C-1

Lab Sample No.	Client Sample Identification	Date Sampled	Analysis Date	Analyst	Sample Description (Morphology)
A1808001-005A	HIH440-01R\2018-209-SS11	07/20/18	08/02/18	KRP	Soil

Asbestos Identification	(%)	Fibrous Material	(%)	Non-Fibrous Material	(%)
None Detected	< 0.1				

<: Result is less than the indicated limit of detection.

Analyst(s) Name/Date: Kuntal Parikh 8/2/2018

MAXXAM ANALYTICS
200 Bluewater Road
Bedford, Nova Scotia, B4B 1G9
(902) 420-0203
(902) 420-8612

Maxxam
A Bureau Veritas Group Company

SUBCONTRACTING REQUEST FORM

Maxxam PM Heather Macumber

To: Bedford to BV (Georgia)

Job# B8I9887

☐ Yes ☑ No Charge us Rush charge (If rush charges are required to meet due date and Yes box is not checked, please call us)
☐ Yes ☑ No International Sample/BioHazard (if yes, add copy of Movement Cert., heat treat is required prior to disposal)
☐ Yes ☑ No Special Protocol (if yes, Protocol ____________)

A1808001

Sample ID	Matrix	Test(s) Required	Container	Date Sampled	Date Required
HIG395-01R\2018-203-SS18	S	Asbestos BULK (RDL<0.25%) (Sub fr Bed.)	1-D60S	2018/07/19	2018/08/02
HIG510-01R\2018-203-TP03-BS01	S	Asbestos BULK (RDL<0.25%) (Sub fr Bed.)	1-D60S	2018/07/19	2018/08/02
HIG905-01R\2018-206-SS08	S	Asbestos BULK (RDL<0.25%) (Sub fr Bed.)	1-D60S	2018/07/20	2018/08/02
HIG971-01R\2018-206-SS19	S	Asbestos BULK (RDL<0.25%) (Sub fr Bed.)	1-D60S	2018/07/20	2018/08/02
HIH440-01R\2018-209-SS11	S	Asbestos BULK (RDL<0.25%) (Sub fr Bed.)	1-D60S	2018/07/20	2018/08/02

	Temp. 1	Temp. 2	Temp. 3			
Cooler #1				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #2				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #3				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO

Receiving Maxxam Location: Bedford to BV (Georgia) JOB # ____________

Relinquished by (Sign) ____________ (print) KELLAN DUKE Date and Time 2018/07/31 10:31

Received by (Sign) K. Smith (print) K. Smith Date and Time 8/1/18 10:3 am

Subcontract Comments:
*****ASTM 7521*****

NOTES:

1) Please call us if due date cannot be met. Please reference Sample ID on your report.
2) Include copy of this completed form, Client COC & signed final report to **BClientSvcSubContr@maxxam.ca** and to **HMacumber@maxxam.ca**

Reporting Requirements:

National:

Regional:

MAXXAM ANALYTICS
200 Bluewater Road
Bedford, Nova Scotia, B4B 1G9
(902) 420-0203
(902) 420-8612

Maxxam
A Bureau Veritas Group Company

Maxxam PM Heather Macumber

SUBCONTRACTING REQUEST FORM

Shipping Instructions

☐ Ship Immediately (highlight Yellow)
☐ Requires 9am
☐ Requires Sat. Delivery
☑ Regular Ship next available day

☑ Ship Cold
☐ Ship Room Temp
☐ Ship Frozen

Sender (Print) KELLAN DUKE Initial KD

Shipping Department Checklist

☑ Correct Shipping location
☑ Correct Sample Ids (Paperwork vs Bottles)
☐ Yes ☐ No Special-Cooler, Ice, Tape-custody seal, Date&Sign
Date Shipped 18/07/31 Number of coolers
Shipper (Print) GEOFF HEBB Initial GME

APPENDIX G

NCSCS Evaluation Forms

Lower Site

CCME National Classification System for Contaminated Sites (2008) version 1.3
Pre-Screening Checklist

Question	Response (yes / no)	Comment
1. Are **Radioactive material**, **Bacterial contamination** or **Biological hazards** likely to be present at the site?	No	If yes, do not proceed through the NCSCS. Contact applicable regulatory agency immediately.
2. Are there **no contamination exceedances** (known or suspected)? Determination of exceedances may be based on: 1) CCME environmental quality guidelines; 2) equivalent provincial guidelines/standards if no CCME guideline exists for a specific chemical in a relevant medium; or 3) toxicity benchmarks derived from the literature for chemicals not covered by CCME or provincial guidelines/standards; or 4) background concentration.	No	If yes (*i.e.* , there are no exceedances), do not proceed through the NCSCS.
3. Have **partial/incompleted or no environmental site investigations** been conducted for the Site?	No	If yes, do not proceed through the NCSCS.
4. Is there direct and significant evidence of **impacts to humans** at the site, or off-site due to migration of contaminants from the site?	No	If yes, automatically rate the site as Class 1, a priority for remediation or risk management, regardless of the total score obtained should one be calculated.
5. Is there direct and significant evidence of **impacts to ecological receptors** at the site, or off-site due to migration of contaminants from the site?	No	Some low levels of impact to ecological receptors are considered acceptable, particularly on commercial and industrial land uses. However, if ecological effects are considered to be severe, the site may be categorized as Class 1, regardless of the numerical total NCSCS score. For the purpose of application of the NCSCS, effects that would be considered severe include observed effects on survival, growth or reproduction which could threaten the viability of a population of ecological receptors at the site. Other evidence that qualifies as severe adverse effects may be determined based on professional judgement and in consultation with the relevant jurisdiction.
6. Are there indicators of significant **adverse effects in the exposure zone** (*i.e*., the zone in which receptors may come into contact with contaminants)? Some examples are as follows: -Hydrocarbon sheen or NAPL in the exposure zone -Severely stressed biota or devoid of biota; -Presence of material at ground surface or sediment with suspected high concentration of contaminants such as ore tailings, sandblasting grit, slag, and coal tar.	No	To answer “yes”, two scenarios should be satisfied; (1) there has to be a high probability that receptors will be exposed to the contaminant source in the near future, and (2) the predicted impacts to ecological receptors after exposure must be significant (see question 5). A low probability of exposure resulting in significant impacts, or a high probability of exposure but with only low to moderate effects expected should not result in a Class 1 designation, neither would a low probability of exposure resulting in low-to-moderate effects. If yes, automatically rate the site as Class 1, a priority for remediation or risk management, regardless of the total score obtained should one be calculated.
7. Do measured concentrations of volatiles or unexploded ordnances represent an **explosion hazard**?	No	If yes, do not proceed through the NCSCS. Do not continue until the safety risks have been addressed. Consult your jurisdiction's occupational health and safety guidance or legislation on exposive hazards and measurement of lower explosive limits.

Rationale for not proceeding with NCSCS
(document any assumptions, reports, or site-specific information to support selection of "Yes" in Pre-Screening checklist)

If none of the above applies, proceed with the NCSCS scoring.

CCME National Classification System for Contaminated Sites (2008) version 1.3
Summary of Site Conditions

Site:	Site will be identified by:	Site Common Name
Civic Address: *(or other description of location)*	Former US Military Mid Canada Line Radar Site 206, Harbour Lake (Lower Site), Newfoundland and Labrador (NL)	
Site Common Name: *(if applicable)*	Harbour Lake (Lower Site)	
Code identifier: *(e.g., FCSI 8-digit identifier)*	Not applicable	
Site Owner or Custodian: *(Organization and Contact Person)*	Government of Newfoundland and Labrador	
Legal description *or* metes and bounds:	See Drawing No. 121414998-EE-02 attached	
Approximate Site area:	Approximately 2 Hectares (Lower Site)	
Parcel Identifier(s) [PID]: *(or Parcel Identification Numbers [PIN] if untitled Crown land)*		
Centre of site: *(provide latitude/longitude or UTM coordinates)*	Latitude:_55_____ degrees __23____ min __29____ secs; Longitude:__61____ degrees __47____ min __25____ secs	
	UTM Coordinate: Northing ______________ Easting ______________	
Site Land Use:	Current:	Commercial
	Proposed:	Commercial
Site Plan	**To delineate the bounds of the Site a site plan MUST be attached. The plan must be drawn to scale indicating the boundaries in relation to well-defined reference points and/or legal descriptions. Delineation of the contamination should also be indicated on the site plan.**	
Provide a brief description of the Site:	The Radar Site 206 - Harbour Lake (Harbour Lake) site is located 97 km west of the Town of Hopedale, NL (refer to Drawing No. 121414998-EE-01, attached). The entire Harbour Lake site covers a land area of approximately 5 hectares. The Harbour Lake site facility was operated by the U.S. Military as a Mid Canada Line (MCL) Radar Site (a Doppler Detection Station) from 1958 to 1965. The site consisted of the upper site which contained a one-story operations building housing the radio equipment, a heating and power plant, sleeping area, kitchen, four communication antennae towers linked by a cable trough and wood trestle, an emergency shelter, nine diesel fuel ASTs, and helicopter pad and a lower site containing a one-story accommodation building, a fuel pump house, and seven diesel ASTs. A 1987 document noted that the buildings and towers were demolished and buried in 1986 as part of a decommissioning program. Residual fuel in the ASTs was burned off during the decommissioning program and debris (cut barrels/tanks, demolished buildings, garbage, etc.) was buried on the site in various unknown locations. An assessment in 1996 found that concrete foundations of the former infrastructure and two rusted drums were observed at the upper site. The lower site was not observed during the 1996 assessment. See Drawing Nos. 121414998-EE-02 and 121414998-EE-04 attached. The Lower Site is the subject of this NCSCS.	

CCME National Classification System for Contaminated Sites (2008) version 1.3
Summary of Site Conditions

Affected media and Contaminants of Potential Concern (COPC):	Soil: metals Surface water: metals Sediment: petroleum hydrocarbons, metals

Please fill in the "letter" that best describes the level of information available for the site being assessed

Site Letter Grade **D**

If letter grade is F, <u>do not</u> continue, you must have a minimum of a Phase I Environmental Site Assessment or equivalent

Scoring Completed By:	Paula Brennan
Date Scoring Completed:	22-Feb-19

CCME National Classification System (2008) version 1.3

(I) Contaminant Characteristics

Site: Harbour Lake (Lower Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method of Evaluation	Notes
1. Residency Media (replaces physical state)				
Which of the following residency media are known (or strongly suspected) to have one or more exceedances of the applicable CCME guidelines? **yes** = has an exceedance or strongly suspected to have an exceedance **no** = does not have an exceedance or strongly suspected not to have an exceedance		Based on the results of sampling in 2018, petroleum hydrocarbons and/or metal parameters have exceeded applicable provincial and/or CCME guidelines in soil, sediment and/or surface water. Groundwater was not sampled as part of the assessment (Stantec, 2019).	The overall score is calculated by adding the individual scores from each residency media (having one or more exceedance of the most conservative media specific and land-use appropriate CCME guideline). Summary tables of the Canadian Environmental Quality Guidelines for soil, water (aquatic life, non-potable groundwater environments, and agricultural water uses) and sediment are available on the CCME website at http://st-ts.ccme.ca/ For potable groundwater environments, guidelines for Canadian Drinking Water Quality (for comparison with groundwater monitoring data) are available on the Health Canada website at http://hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php	An increasing number of residency media containing chemical exceedances often equates to a greater potential risk due to an increase in the number of potential exposure pathways.
A. Soil	Yes			
Yes No Do Not Know				
B. Groundwater	Do Not Know			
Yes No Do Not Know				
C. Surface water	Yes			
Yes No Do Not Know				
D. Sediment	Yes			
Yes No Do Not Know				
"Known" -score	6			
"Potential" - score	1			
2. Chemical Hazard				
What is the relative degree of chemical hazard of the contaminant in the list of hazard rankings proposed by the Federal Contaminated Sites Action Plan (FCSAP)?	High	The relative degree of chemical hazard for nickel is high (Stantec, 2019).	The relative degree of chemical hazard should be selected based on the most hazardous contaminant known or suspected to be present at the site. The degree of hazard has been defined by the Federal Contaminated Sites Action Plan (FCSAP) and a list of substances with their associated hazard (Low, Medium and High) has been provided as a separate sheet in this file. *See Attached Reference Material for Contaminant Hazard Rankings.*	Hazard as defined in the revised NCSCS pertains to the physical properties of a chemical which can cause harm. Properties can include toxic potency, propensity to biomagnify, persistence in the environment, etc. Although there is some overlap between hazard and contaminant exceedance factor below, it will not be possible to derive contaminant exceedance factors for many substances which have a designated chemical hazard designation, but don't have a CCME guideline. The purpose of this category is to avoid missing a measure of toxic potential.
High Medium Low Do Not Know				
"Known" -score	8			
"Potential" - score	---			

(I) Contaminant Characteristics

Site: Harbour Lake (Lower Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method of Evaluation	Notes
3. Contaminant Exceedance Factor				
What is the ratio between the measured contaminant concentration and the applicable CCME guidelines (or other "standards")? NAPL (mobile or immobile) High (>100x) Medium (10x to 100x) Low (1x to 10x) Do Not Know	Medium (10x to 100x)	The ratio of a measured petroleum hydrocarbon parameter concentration in soil (i.e., 680 mg/kg) is greater than 10x the applicable guideline of 43 mg/kg (Tier I ESL) (Stantec, 2019).	Ranking of contaminant "exceedance" is determined by comparing contaminant concentrations with the *most conservative media-specific and land-use appropriate CCME* environmental quality guidelines. **Ranking should be based on contaminant with greatest exceedance of CCME guidelines.** Ranking of contaminant hazard as high, medium and low is as follows: High = One or more measured contaminant concentration is greater than 100 X appropriate CCME guidelines Medium = One or more measured contaminant concentration is 10 - 99.99 X appropriate CCME guidelines Low = One or more measured contaminant concentration is 1 - 9.99 X appropriate CCME guidelines NAPL (LNAPL or DNAPL) = Contaminant is a non-aqueous phase liquid (*i.e.,* due to its low solubility, it does not dissolve in water, but remains as a separate liquid) and is present at a sufficiently high saturation (*i.e.* , greater than residual NAPL saturation) such that there is significant potential for mobility either downwards or laterally. Any amount of NAPL should be scored, *i.e* . small amounts and sheens cannot be ignored. The presence of a NAPL (mobile or immoblie or regardless of amount) may be considered unnaceptable by some jurisidcations. If NAPL is present, consult jurisdiction on how to proceed with NCSCS. Other standards may include local background concentration or published toxicity benchmarks. Results of toxicity testing with site samples can be used as an alternative. This approach is only relevant for contaminants that do not biomagnify in the food web, since toxicity tests would not indicate potential effects at higher trophic levels. High = lethality observed. Medium = no lethality, but sub lethal effects observed. Low = neither lethal nor sub lethal effects observed.	In the event that elevated levels of a material with no associated CCME guidelines are present, check provincial and USEPA environmental criteria. Hazard Quotients (sometimes referred to as a screening quotient in risk assessments) refer to the ratio of measured concentration to the concentration believed to be the threshold for toxicity. A similar calculation is used here to determine the contaminant exceedance factor (CEF). Concentrations greater than one times the applicable CCME guideline (*i.e.* , CEF=>1) indicate that risks are possible. Mobile NAPL has the highest associated score (8) because of its highly concentrated nature and potential for increase in the size of the impacted zone.
"Known" -score	4			
"Potential" - score	---			
4. Contaminant Quantity (known or strongly suspected)				
What is the known or strongly suspected quantity of all contaminants? >10 hectare (ha) or 5000 m^3 2 to 10 ha or 1000 to 5000 m^3 <2 ha or 1000 m^3 Do Not Know	<2 ha or 1000 m3	Contaminated soil, surface water and sediment exceeding Tier I RBSLs, Tier I ESLs and/or CCME SQGs/WQGs on Site has not been delineated, but is estimated to be at less than 100 cubic metres (Stantec, 2019).	Measure or estimate the area or quantity of total contamination (*i.e* , all contaminants known or strongly suspected to be present on the site). The "Area of Contamination" is defined as the area or volume of contaminated media (soil, sediment, groundwater, surface water) exceeding appropriate environmental criteria.	A larger quantity of a potentially toxic substance can result in a larger frequency of exposure as well as a greater probability of migration, therefore, larger quantities of these substances earn a higher score.
"Known" -score	2			
"Potential" - score	---			

CCME National Classification System (2008) version 1.3

(I) Contaminant Characteristics

Site: Harbour Lake (Lower Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method of Evaluation	Notes
5. Modifying Factors				
Does the chemical fall in the class of persistent chemicals based on its behavior in the environment? Yes No Do Not Know	No	According to Examples of Persistent Substances as provided in attached Reference Materials, persistent chemicals were not detected on site above applicable guidelines (Stantec, 2019).	Persistent chemicals, *e.g.,* PCBs, chlorinated pesticides etc. either do not degrade or take longer to degrade, and therefore may be available to cause effects for a longer period of time. Canadian Environmental Protection Act (CEPA) classifies a chemical as persistent when it has at least one of the following characteristics: (a) in air, (i) its half-life is equal to or greater than 2 days, or (ii) it is subject to atmospheric transport from its source to a remote area; (b) in water, its half-life is equal to or greater than 182 days; (c) in sediments, its half-life is equal to or greater than 365 days; or (d) in soil, its half-life is equal to or greater than 182 days. Elements do not degrade, therefore treat any metal, metalloid, or halogen COPC as persistent.	*Examples of Persistent Substances are provided in attached Reference Materials*
Are there contaminants present that could cause damage to utilities and infrastructure, either now or in the future, given their location? Yes No Do Not Know	Yes	Contaminants such as petroleum hydrocarbons may be suspected to cause damage to utilities or infrastructure if the area is developed in the future. It is not likely, however, that further development will take place on this site (Stantec, 2019).	If answered Yes, in Rationale for Score column document the location and extent of the infrastructure that is/may be damaged, verify the mode of contact between contaminants of potential concern (COPCs) and infrastructure, list the specific COPCs that could cause damage, and note the expected effect on specific infrastructure.	Some contaminants may react or absorb into underground utilities and infrastructure. For example, organic solvents may degrade some plastics, and salts could cause corrosion of metal.
How many different contaminant classes have representative CCME guideline exceedances? one two to four five or more Do Not Know	two to four	Identified contaminants in sediment, soil and surface water are light extractable petroleum hydrocarbons and inorganic substances (metals) (Stantec, 2019).	For the purposes of the revised NCSCS, the following chemicals represent distinct chemical "classes": inorganic substances (including metals), volatile petroleum hydrocarbons, light extractable petroleum hydrocarbons, heavy extractable petroleum hydrocarbons, PAHs, phenolic substances, chlorinated hydrocarbons, halogenated methanes, phthalate esters, pesticides.	*Refer to the Reference Material sheet for a list of example substances that fall under the various chemical classes.*
"Known" - Score	4			
"Potential" - Score	---			

Contaminant Characteristic Total

Raw Total Score- "Known"	24	
Raw Total Score- "Potential"	1	
Raw Combined Total Score (Known + Potential)	25	
Adjusted Total Score (Raw Combined / 40 * 33)	**20.6**	maximum 33

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Lower Site)

Definition	**Score**	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	**Method Of Evaluation**	**Notes**
1. Groundwater Movement				
A. Known COPC exceedances and an operable groundwater pathway within and/or beyond the property boundary.				
i) For **potable groundwater environments**, 1) groundwater concentrations exceed background concentrations and 1X the Guideline for Canadian Drinking Water Quality (GCDWQ) or 2) there is known contact of contaminants with groundwater, based on physical evidence of groundwater contamination. For **non-potable environments** (typically urban environments with municipal services), 1) groundwater concentrations exceed 1X the applicable non potable guidelines or modified generic guidelines (which exclude ingestion of drinking water pathway) or 2) there is known contact of contaminants with groundwater, based on physical evidence of groundwater impacts.	12	Go to potential.	Review chemical data and evaluate groundwater quality. The evaluation method concentrates on 1) a potable or non-potable groundwater environment; 2) the groundwater flow system and its potential to be an exposure pathway to known or potential receptors An aquifer is defined as a geologic unit that yields groundwater in usable quantities and drinking water quality. The aquifer can currently be used as a potable water supply or could have the potential for use in the future. Non-potable groundwater environments are defined as areas that are serviced with a reliable alternative water supply (most commonly provided in urban areas). The evaluation of a non-potable environment will be based on a site specific basis. Physical evidence includes significant sheens, liquid phase contamination, or contaminant saturated soils. Seeps and springs are considered part of the groundwater pathway. In Arctic environments, the potability and evaluation of the seasonal active layer (above the permafrost) as a groundwater exposure pathway will be considered on a site-specific basis.	The 1992 NCS rationale evaluated the off-site migration as a regulatory issue. The exposure assessment and classification of hazards should be evaluated regardless of the property boundaries. Someone experienced must provide a thorough description of the sources researched to determine the presence/absence of a groundwater supply source in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resources such as internet links. Note that for potable groundwater that also daylights into a nearby surface water body, the more stringent guidelines for both drinking water and protection of aquatic life should be considered. **Selected References** Potable Environments Guidelines for Canadian Drinking Water Quality: http://hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php Non-Potable Environments CCME. 1999. Canadian Water Quality Guidelines for Protection of Aquatic Life. http://ceqg-rcqe.ccme.ca/ Compilation and Review of Canadian Remediation Guidelines, Standards and Regulations. Science Applications International Corporation (SAIC Canada), report to Environment Canada, January 4, 2002.
ii) Same as (i) except the information is not known but strongly suspected based on indirect observations.	9			
iii) Meets GCDWQ for potable environments; meets non-potable criteria or modified generic criteria (excludes ingestion of drinking water pathway) for non-potable environments or Absence of groundwater exposure pathway (*i.e.,* there is no aquifer (see definition at right) at the site or there is an adequate isolating layer between the aquifer and the contamination, and within 5 km of the site there are no aquatic receiving environments and the groundwater does not daylight).	0			
	Go to Potential			
Score	---			
NOTE: If a score is assigned here for Known COPC Exceedances, then you should skip Part B (Potential for groundwater pathway) and go to Section 2 (Surface Water Pathway)				
B. Potential for groundwater pathway.				
a. Relative mobility of contaminant High Moderate Low Insignificant Do Not Know	Low	The relative mobilities of the contaminants (petroleum hydrocarbons and inorganic substances (metals)) are insignificant to low (Stantec, 2019).	Organics Koc (L/kg) — Metals with higher mobility at acidic conditions — Metals with higher mobility at alkaline conditions Koc < 500 (*i.e.,* log Koc < 2.7) — pH < 5 — pH > 8.5 Koc = 500 to 5000 (*i.e.,* log Koc = 2.7 to 3.7) — pH = 5 to 6 — pH = 7.5 to 8.5 Koc = 5,000 to 100,000 (*i.e.,* log Koc = 3.7 to 5) — pH > 6 — pH < 7.5 Koc > 100,000 (*i.e.,* log Koc > 5) For PHC fractions; score F1 as Moderate, F2 as Low, and F3 and F4 as Insignificant.	Reference: US EPA Soil Screening Guidance (Part 5 - Table 39) If a score of zero is assigned for relative mobility, it is still recommended that the following sections on potential for groundwater pathway be evaluated and scored. Although the Koc of an individual contaminant may suggest that it will be relatively immobile, it is possible that, with complex mixtures, there could be enhanced mobility due to co-solvent effects. Therefore, the Koc cannot be relied on solely as a measure of mobility. An evaluation of other factors such as containment, thickness of confining layer, hydraulic conductivities and precipitation infiltration rate are still useful in predicting potential for groundwater migration, even if a contaminant is expected to have insignificant mobility based on its chemistry alone.
Score	1			
b. Presence of engineered sub-surface containment? No containment Partial containment Full containment Do Not Know	No containment	No engineered sub-surface containment is present (Stantec, 2019).	Review the existing engineered systems or natural attenuation processes for the site and determine if full or partial containment is achieved. Full containment is defined as an engineered system or natural attenuation processes, monitored as being effective, which provide for full capture and/or treatment of contaminants. All chemicals of concern must be contained for "Full Containment" scoring. Natural attenuation must have sufficient data, and reports cited with monitoring data to support steady state conditions and the attenuation processes. If there is no containment or insufficient natural attenuation process, this category is evaluated as high. If there is less than full containment or if uncertain, then evaluate as medium. In Arctic environments, permafrost will be evaluated, as appropriate, based on detailed evaluations, effectiveness and reliability to contain/control contaminant migration.	Someone experienced must provide a thorough description of the sources researched to determine the containment of the source at the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps, geotechnical reports or natural attenuation studies and other resources such as internet links. **Selected Resources:** United States Environmental Protection Agency (USEPA) 1998. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater. EPA/600/R-98/128.
Score	3			

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Lower Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
c. Thickness of confining layer over aquifer of concern or groundwater exposure pathway 3 m or less including no confining layer or discontinuous confining layer 3 to 10 m > 10 m Do Not Know Score	3 m or less 1	The confining layer over the groundwater exposure pathway is considered to be 3 m or less (Stantec, 2019).	The term "confining layer" refers to geologic material with little or no permeability or hydraulic conductivity (such as unfractured clay); water does not pass through this layer or the rate of movement is extremely slow. Measure the thickness and extent of materials that will impede the migration of contaminants to the groundwater exposure pathway. The evaluation of this category is based on: 1) The presence and thickness of saturated subsurface materials that impede the vertical migration of contaminants to lower aquifer units which can or are used as drinking water sources or 2) The presence and thickness of unsaturated subsurface materials that impede the vertical migration of contaminants from the source location to the saturated zone (*e.g.,* water table aquifer, first hydrostratigraphic unit or other groundwater pathway).	
d. Hydraulic conductivity of confining layer $>10^{-4}$ cm/s or no confining layer 10^{-4} to 10^{-6} cm/s $<10^{-6}$ cm/s Do Not Know Score	10-4 to 10-6 cm/s 0.5	The hydraulic conductivity of the confining layer is considered to be 10-5 to 10-8 cm/s (sand) (Stantec, 2019).	Determine the nature of geologic materials and estimate hydraulic conductivity from published material (or use "Range of Values of Hydraulic Conductivity and Permeability" figure in the Reference Material sheet). Unfractured clays should be scored low. Silts should be scored medium. Sand, gravel should be scored high. The evaluation of this category is based on: 1) The presence and hydraulic conductivity (“K”) of saturated subsurface materials that impede the vertical migration of contaminants to lower aquifer units which can or are used as a drinking water source, groundwater exposure pathway or 2) The presence and permeability (“k”) of unsaturated subsurface materials that impede the vertical migration of contaminants from the source location to the saturated water table aquifer, first hydrostratigraphic unit or other groundwater pathway.	
B. Potential for groundwater pathway.				
e. Precipitation infiltration rate (Annual precipitation factor x surface soil relative permeability factor) High (infiltration score > 0.6) Moderate (0.4 < infiltration score ≤ 0.6) Low (0.2 < infiltration score ≤ 0.4) Very Low (0 < infiltration score ≤ 0.2) None (infiltration score = 0) Do Not Know Score	Moderate 0.6	The precipitation infiltration rate is estimated to be moderate. As there is no precipitation data for the site, the weather station at Goose Bay Airport is used as a reference. Goose Bay's annual preciptiation is approximately 940.4 mm (Environment Canada, 2017). Surface soil relative permeability is 0.6 for sand. The precipitation infiltration rate is 940.4 / 1000 x 0.6 = 0.56 (Stantec, 2019).	Precipitation Refer to Environment Canada precipitation records for relevant areas (30 year average preferred). Divide annual precipitation (rainfall + snowfall) by 1000 and round to nearest tenth (*e.g.,* 667 mm = 0.7 score). Permeability For surface soil relative permeability (*i.e.*, infiltration) assume: gravel (1), sand (0.6), loam (0.3) and pavement or clay (0). Multiply the surface soil relative permeability factor with precipitation factor to obtain the score for precipitation infiltration rate (*e.g.,* precipitation factor of 0.7 from above x 0.6 (sand) = 0.42 or "Moderate").	Selected Sources: Environment Canada web page link: http://climate.weather.gc.ca/climate_normals/index_e.html Snow to rainfall conversion apply ratio of 10(snow):1(water) https://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=108C6C74-1
f. Hydraulic conductivity of aquifer $>10^{-2}$ cm/s 10^{-2} to 10^{-4} cm/s $<10^{-4}$ cm/s Do Not Know Score	10-2 to 10-4 cm/s 1	Bedrock in the area of the site is tonalitic to granodioritic orthogneiss containing abundant mafic to ultramafic inclusions and relict mafic dykes of the Southern Nain and Makkovik Provinces of the Meso-Archean of Archean age. The hydraulic conductivity of the bedrock layers (assuming to be fractured) is estimated to range from 1.0 x 10-6 cm/sec to 10 x 10-2 cm/sec (Stantec, 2019).	Determine the nature of geologic materials and estimate hydraulic conductivity of all aquifers of concern from published material (refer to "Range of Values of Hydraulic Conductivity and Permeability" in the Reference Material sheet).	
Potential groundwater pathway total	7.1			
Allowed Potential score	7.1	Note: If a "known" score is provided, the "potential" score is disallowed.		
Groundwater pathway total	**7.1**			

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Lower Site)

Definition	**Score**	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	**Method Of Evaluation**	**Notes**
2. Surface Water Movement				
A. Demonstrated migration of COPC in surface water above background conditions				
Known concentrations of surface water: i) Concentrations exceed background concentrations and exceed CCME CWQG for protection of aquatic life, irrigation, livestock water, and/or recreation (whichever uses are applicable at the site) by >1 X; or There is known contact of contaminants with surface water based on site observations. or In the absence of CWQG, chemicals have been proven to be toxic based on site specific testing (*e.g.,* toxicity testing; or other indicator testing of exposure).	12	Identified contaminants in surface water exceeeding CCME surface water quality guidelines are inorganic substances (metals) (Stantec, 2019).	Collect all available information on quality of surface water near to site. Evaluate available data against Canadian Water Quality Guidelines (select appropriate guidelines based on local water use, *e.g.,* recreation, irrigation, livestock watering, etc.). The evaluation method concentrates on the surface water flow system and its potential to be an exposure pathway. Contamination is present on the surface (above ground) and has the potential to impact surface water bodies. Surface water is defined as a water body that supports one of the following uses: recreation, irrigation, livestock watering, aquatic life.	General Notes: Someone experienced must provide a thorough description of the sources researched to classify the surface water body in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resource such as internet links. Selected References: CCME. 1999. Canadian Water Quality Guidelines for the Protection of Aquatic Life http://ceqg-rcqe.ccme.ca/ CCME. 1999. Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses (Irrigation and Livestock Water) http://ceqg-rcqe.ccme.ca/
ii) Same as (i) except the information is not known but strongly suspected based on indirect observations.	8		Examples of indirect evidence may include observed staining of sediment and/or river banks, but surface water has not been tested.	Health and Welfare Canada. 1992. Guidelines for Canadian Recreational Water Quality. http://www.hc-sc.gc.ca/ewh-semt/water-eau/recreat/index-eng.php
iii) Meets CWQG or absence of surface water exposure pathway (*e.g.,* Distance to nearest surface water is > 5 km.)	0			
	12			
Score	12			
NOTE: If a score is assigned here for Demonstrated Migration in Surface Water, then you should skip Part B (Potential for migration of COPCs in surface water) and go to Section 3 (Surface Soils)				
B. Potential for migration of COPCs in surface water				
a. Presence of containment No containment Partial containment Full containment Do Not Know	Do Not Know	Skip B if A is complete.	Review the existing engineered systems and relate these structures to site conditions and proximity to surface water and determine if full containment is achieved: score low if there is full containment such as capping, berms, dikes; score medium if there is partial containment such as natural barriers, trees, ditches, sedimentation ponds; score high if there are no intervening barriers between the site and nearby surface water. Full containment must include containment of all chemicals.	
Score	3			
b. Distance to Surface Water 0 to <100 m 100 - 300 m >300 m Do Not Know	Do Not Know	Skip B if A is complete.	Review available mapping and survey data to determine distance to nearest surface water bodies.	
Score	2			
c. Topography Contaminants above ground level and slope is steep Contaminants at or below ground level and slope is steep Contaminants above ground level and slope is intermediate Contaminants at or below ground level and slope is intermediate Contaminants above ground level and slope is flat Contaminants at or below ground level and slope is flat Do Not Know	Do Not Know	Skip B if A is complete.	Review engineering documents on the topography of the site and the slope of surrounding terrain. Steep slope = >50% Intermediate slope = between 5 and 50% Flat slope = < 5% Note: Type of fill placement (*e.g.,* trench, above ground, etc.).	
Score	1			
d. Run-off potential High (run-off score > 0.6) Moderate (0.4 < run-off score ≤ 0.6) Low (0.2 < run-off score ≤ 0.4) Very Low (0 < run-off score ≤ 0.2) None (run-off score = 0) Do Not Know	Do Not Know	Skip B if A is complete.	Precipitation Refer to Environment Canada precipitation records for relevant areas (30 year average preferred). Divide precipitation (rainfall + snowfall) by 1000 and round to nearest tenth (*e.g.* , 667 mm = 0.7 score). Permeability For infiltration assume: gravel (0), sand (0.3), loam (0.6) and pavement or clay (1). Multiply the permeability (infiltration) factor with precipitation factor to obtain Run-off potential score (*e.g.* , precipitation factor of 0.7 from above x 0.6 (loam) = 0.42 or "Moderate").	Selected Sources: Environment Canada web page link: http://climate.weather.gc.ca/climate_normals/index_e.html Snow to rainfall conversion apply ratio of 10(snow):1(water) https://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=108C6C74-1
Score	0.4			

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Lower Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
e. Flood potential 1 in 2 years 1 in 10 years 1 in 50 years not in floodplain Do Not Know	Do Not Know	Skip B if A is complete.	Review published data such as flood plain mapping or flood potential (*e.g.,* spring or mountain run-off) and Conservation Authority records to evaluate flood potential of nearby water courses both up and down gradient. Rate zero if site not in flood plain.	
Score	0.5			
Potential surface water pathway total	6.9			
Allowed Potential score	---	Note: If a "known" score is provided, the "potential" score is disallowed.		
Surface water pathway total	**12**			
3. Surface Soils (potential for dust, dermal and ingestion exposure)				
A. Demonstrated concentrations of COPC in surface soils (top 1.5 m)				
COPCs measured in surface soils exceed the CCME soil quality guideline.	12	Identified contaminants in surface soils exceeeding provincial or CCME soil quality guidelines are inorganic substances (metals) (Stantec, 2019).	Collect all available information on quality of surface soils (*i.e.,* top 1.5 metres) at the site. Evaluate available data against Canadian Soil Quality Guidelines. Select appropriate guidelines based on current (or proposed future) land use (*i.e,* agricultural, residential/parkland, commercial, or industrial), and soil texture if applicable (*i.e.,* coarse or fine). Examples of strongly suspected exceedences of soil guidelines may include evidence of staining, odours, or significant debris infill materials.	Selected References: CCME. 1999. Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health. http://ceqg-rcqe.ccme.ca/
Strongly suspected that soils exceed guidelines.	9			
COPCs in surface soils does not exceed the CCME soil quality guideline or is not present (i.e., bedrock).	0			
	12			
Score	12			
NOTE: If a score is assigned here for Demonstrated Concentrations in Surface Soils, then you should skip Part B (Potential for a surface soils migration pathway) and go to Section 4 (Vapour)				
B. Potential for a surface soils (top 1.5 m) migration pathway				
a. Are the soils in question covered? Exposed Vegetated Landscaped Paved Do Not Know	Do Not Know	Skip B if A is complete.	Consult engineering or risk assessment reports for the site. Alternatively, review photographs or perform a site visit. Landscaped surface soils must include a minimum of 0.5 m of topsoil.	The possibility of contaminants in blowing snow have not been included in the revised NCSCS as it is difficult to assess what constitutes an unacceptable concentration and secondly, spills to snow or ice are most efficiently mitigated while freezing conditions remain.
Score	4			
b. For what proportion of the year does the site remain covered by snow? 0 to 10% of the year 10 to 30% of the year More than 30% of the year Do Not Know	Do Not Know	Skip B if A is complete.	Consult climatic information for the site. The increments represent the full span from soils which are always wet or covered with snow (and therefore less likely to generate dust) to those soils which are predominantly dry and not covered by snow (and therefore are more likely to generate dust).	
Score	3			
Potential surface soil pathway total	7			
Allowed Potential score	---	Note: If a "known" score is provided, the "potential" score is disallowed.		
Soil pathway total	**12**			
4. Vapour				
A. Demonstrated COPCs in vapour.				
Vapour has been measured (indoor or outdoor) in concentrations exceeding risk based concentrations.	12	Go to potential.	Consult previous investigations, including human health risk assessments, for reports of vapours detected. Due to the potential for significant spatial and temporal variation in soil vapour concentrations, limited vapour monitoring studies (*e.g.,* single point in time "snap-shot") that do not detect vapour at sites where volatiles are suspected, does not necessarly mean that vapours are not an issue at the site. In this case, section B " Potential for COPCs in vapour" should be completed.	
Strongly suspected (based on observations and/or modelling)	9			
Vapour has not been measured (i.e. not detected) and volatile hydrocarbons have not been found in site soils or groundwater, or vapour has been measured (indoor or outdoor) in concentrations not exceeding risk based concentrations.	0			
	Go to Potential			
Score	---			
NOTE: If a score is assigned here for Demonstrated COPCs in Vapour, then you should skip Part B (Potential for COPCs in vapour) and go to Section 5 (Sediment)				

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Lower Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
B. Potential for COPCs in vapour				
a. Relative Volatility based on Henry's Law Constant, H' (dimensionless) High (H' > 1.0E-1) Moderate (H' = 1.0E-1 to 1.0E-3) Low (H' < 1.0E-3) Not Volatile Do Not Know Score	Moderate 2.5	According to the attached Reference Materials, petroleum hydrocarbons (F2) are considered to have moderate volatility (Stantec, 2019).	Reference: US EPA Soil Screening Guidance (Part 5 - Table 36) *Provided in Attached Reference Materials* For PHC fractions; score F1 as High, F2 as Moderate, and F3 and F4 as Not Volatile. Substance is considered Not Volatile (*i.e.* , pathway not a concern) if the product of the water solubility and unitless Henry's law constant does not exceed published or derived tolerable concentration or risk-specific concentration. If NAPL is present, see Appendix D of the CCME soil vapour quality guideline protocol (CCME 2014) for further guidance.	If the Henry's Law Constant for a substance indicates that it is not volatile, and a score of zero is assigned here for relative volatility, then the other three questions in this section on Potential for COPCs will be automatically assigned scores of zero and you can skip to section 5. Selected References: CCME. 2014. A Protocol for the Derivation of Soil Vapour Quality Guidelines for Protection of Human Exposures via Inhalation of Vapours. Winnipeg, Manitoba. http://ceqg-rcqe.ccme.ca
b. What is the soil grain size? Fine Coarse Do Not Know Score	Coarse 4	The soil grain size is considered to be coarse (Stantec, 2019).	Review soil permeability data in engineering reports. The greater the permeability of soils, the greater the possible movement of vapours. Fine-grained soils are defined as those which contain greater than 50% by mass particles less than 75 µm mean diameter (D50 < 75 µm). Coarse-grained soils are defined as those which contain greater than 50% by mass particles greater than 75 µm mean diameter (D50 > 75 µm).	
c. Is the depth to the source less than 10m? Yes No Do Not Know Score	Yes 2	The depth to source is expected to be less than 1 m (Stantec, 2019).	Review groundwater depths below grade for the site.	
d. Are there any preferential pathways? Yes No Do Not Know Score	Yes 2	The bedrock on the site is considered to be fractured (Stantec, 2019).	Visit the site during dry summer conditions and/or review available photographs. Where bedrock is present, fractures would likely act as preferential pathways.	Preferential pathways refer to areas where vapour migration is more likely to occur because there is lower resistance to flow than in the surrounding materials. For example, underground conduits such as sewer and utility lines, drains, or septic systems may serve as preferential pathways. Features of the building itself that may also be preferential pathways include earthen floors, expansion joints, wall cracks, or foundation perforations for subsurface features such as utility pipes, sumps, and drains.
Potential vapour pathway total	10.5			
Allowed Potential score	10.5	Note: If a "known" score is provided, the "potential" score is disallowed.		
Vapour pathway total	**10.5**			
5. Sediment Movement				
A. Demonstrated migration of sediments containing COPCs				
There is evidence to suggest that sediments originally deposited to the site (exceeding the CCME sediment quality guidelines) have migrated.	12	Go to potential.	Review sediment assessment reports. Evidence of migration of contaminants in sediments must be reported by someone experienced in this area.	Usually not considered a significant concern in lakes/marine environments, but could be very important in rivers where transport downstream could be significant.
Strongly suspected (based on observations and/or modelling)	9			
Sediments have been contained and there is no indication that sediments will migrate in future. or Sediment meets CCME sediment quality guidelines or absence of sediment exposure pathway (*i.e.,* within 5 km of the site there are no aquatic receiving environments, and therefore no sediments).	0			
Score	Go to Potential ---			
NOTE: If a score is assigned here for Demonstrated Migration of Sediments, then you should skip Part B (Potential for Sediment Migration) and go to Section 6 (Modifying Factors)				

CCME National Classification System (2008) version 1.3

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Lower Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
B. Potential for sediment migration				
a. Are the sediments having COPC exceedances capped with sediments having no exceedances ("clean sediments")? Yes No Do Not Know	No 4	Sediments are not capped. Sediments in shallow water are not considered to be likely affected by tidal action, wave action or propeller wash. The sediments are not considered to be in an area prone to sediment scouring (Stantec, 2019).	Review existing sediment assessments. If sediment coring has been completed, it may indicate that historically contaminated sediments have been covered over by newer "clean" sediments. This assessment will require that cores collected demonstrate a low concentration near the top and higher concentration with sediment depth.	
b. For lakes and marine habitats, are the contaminated sediments in shallow water and therefore likely to be affected by tidal action, wave action or propeller wash? Yes No Do Not Know	No 0		Review existing sediment assessments. If the sediments present at the site are in a river, select "no" for this question.	
c. For rivers, are the contaminated sediments in an area prone to sediment scouring? Yes No Do Not Know	No 0		Review existing sediment assessments. It is important that the assessment is made under worst case flows (high yearly flows). Under high yearly flows, areas which are commonly depositional may become scoured. If the sediments present at the site are in a lake or marine habitat, select "no" for this question.	
Potential sediment pathway total	4			
Allowed Potential score	4	Note: If a "known" score is provided, the "potential" score is disallowed.		
Sediment pathway total	**4**			
6. Modifying Factors				
Are there subsurface utility conduits in the area affected by contamination? Yes No Do Not Know	Yes	There is reportedly buried debris/materials at the site in an unknown location(s). The buried debris and materials could act as conduits for contaminant migration (Stantec, 2019).	Consult existing engineering reports. Subsurface utilities can act as conduits for contaminant migration.	
Known	4			
Potential	---			

Migration Potential Total

Raw Total Score- "Known"	28	Note: If "Known" and "Potential" scores are provided, the checklist defaults to known. Therefore, the total "Potential" Score may not reflect the sum of the individual "Potential" scores.
Raw Total Score- "Potential"	21.6	
Raw Combined Total Score (Known + Potential)	49.6	
Adjusted Total Score (Raw Combined / 64 * 33)	**25.6**	maximum 33

CCME National Classification System (2008) version 1.3

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Lower Site)

Definition	Score	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
1. Human				
A. Known exposure				
Documented adverse impact or high quantified exposure which has or will result in an adverse effect, injury or harm or impairment of the safety to humans as a result of the contaminated site. (Class 1 Site*) Same as above, but "Strongly Suspected" based on observations or indirect evidence. No quantified or suspected exposures/impacts in humans. Score	22 10 0 Go to Potential ---	Go to potential.	*Where adverse effects on humans are documented, the site should be automatically designated as a Class 1 site (*i.e.,* action required). Known impacts could include blood test results (*e.g.,* blood lead > 10 µg/dL) or results of other health based studies and tests. There is no need to proceed through the NCSCS in this case. However, a scoring guideline (22) is provided in case a numerical score for the site is still desired. A score of 22 can also be assigned when Hazard Quotients (or Hazard Index) >> 1.0 or incremental lifetime cancer risks considerably exceed acceptable levels defined by the jurisdiction for carcinogenic chemicals. The category, "Strongly suspected", can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients (or Hazard Index) > 0.2 (excluding the Estimated Daily Intake) or > 1.0 with Estimated Daily Intake and/or incremental lifetime cancer risks that exceed acceptable levels defined by the jurisdiction for carcinogenic chemicals (for most jurisdictions this is typically either >10^{-5} or >10^{-6}). The category, no exposure/impacts, can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients (or Hazard Index) of ≤ 0.2 (excluding the Estimated Daily Intake) or ≤ 1.0 with Estimated Daily Intake AND incremental lifetime cancer risks for carcinogenic chemicals that are within acceptable levels as defined by the jurisdiction (for most jurisdictions this is less than either 10^{-6} or 10^{-5}).	Known adverse impact includes domestic and traditional food sources. Adverse effects based on food chain transfer to humans and/or animals can be scored in this category. However, the weight of evidence must show a direct link of a contaminated food source/supply and subsequent ingestion/transfer to humans. Any associated adverse effects to the environment are scored separately later in this worksheet. Someone experienced must provide a thorough description of the sources researched to evaluate and determine the quantified exposure/impact (adverse effect) in the vicinity of the contaminated site. **Selected References:** Health Canada – Federal Contaminated Site Risk Assessment in Canada Parts 1 and 2 Guidance on Human Heath Screening Level Risk Assessments, available at http://www.hc-sc.gc.ca/ewh-semt/pubs/contamsite/index-eng.php United States Environmental Protection Agency, Integrated Risk Information System (IRIS), available at http://toxnet.nlm.nih.gov
NOTE: If a score is assigned here for Known Exposure, then you should skip Part B (Potential for Human Exposure) and go to Section 2 (Human Exposure Modifying Factors)				
B. Potential for human exposure				
a) Land use (provides an indication of potential human exposure scenarios) Agricultural Residential / Parkland Commercial Industrial Do Not Know Score	Commercial 1	The current and proposed land use is commercial (Stantec, 2019).	Review zoning and land use maps over the distances indicated. If the proposed future land use is more "sensitive" than the current land use, evaluate this factor assuming the proposed future use is in place. Agricultural land use is defined as uses of land where the activities are related to the productive capability of the land or facility (*e.g.,* greenhouse) and are agricultural in nature, or activities related to the feeding and housing of animals as livestock. Residential/Parkland land uses are defined as uses of land on which dwelling on a permanent, temporary, or seasonal basis is the activity (residential), as well as uses on which the activities are recreational in nature and require the natural or human designed capability of the land to sustain that activity (parkland). Parkland includes campgrounds, but excludes wildlands such as national or provincial parks. Commercial/Industrial land uses are defined as land on which the activities are related to the buying, selling, or trading of merchandise or services (commercial), as well as land uses which are related to the production, manufacture, or storage of materials (industrial).	This is the main "receptor" factor used in site scoring. A higher score implies a greater exposure and/or exposure of more sensitive human receptors (*e.g.,* children).
b) Indicate the level of accessibility to the contaminated portion of the site (*e.g.,* the potential for coming in contact with contamination) Limited barriers to prevent site access; contamination not covered Moderate access or no intervening barriers, contaminants are covered. Remote locations in which contaminants not covered. Controlled access or remote location and contaminants are covered Do Not Know Score	Mod. access, covered 1	The level of accessibility is considered to be moderate as it is considered to be a remote location (only reached by aircraft) and the contaminants are not covered (Stantec, 2019).	Review location and structures and contaminants at the site and determine if there are intervening barriers between the site and humans. A low rating should be assigned to a (covered) site surrounded by a fence or in a remote location, whereas a high score should be assigned to a site that has no cover, fence, natural barriers or buffer.	
B. Potential for human exposure				
c) Potential for intake of contaminated soil, water, sediment or foods for operable or potentially operable pathways, as identified in Worksheet II (Migration Potential). i) direct contact Is dermal contact with contaminated surface water, groundwater, sediments or soils anticipated? Yes No Do Not Know Score	Yes 3	Direct contact with contaminated surface water, groundwater, sediments or soils is possible (Stantec, 2019).	If soils or potable groundwater are present exceeding their respective CCME guidelines, dermal contact is assumed. Exposure to surface water, non-potable groundwater or sediments exceeding their respective CCME guidelines will depend on the site. Select "Yes" if dermal exposure to surface water, non-potable groundwater or sediments is expected. For instance, dermal contact with sediments would not be expected in an active port. Only soils in the top 1.5 m are defined by CCME (2003) as surface soils. If contaminated soils are only located deeper than 1.5 m, direct contact with soils is not anticipated to be an operable contaminant exposure pathway.	Exposure via the skin is generally believed to be a minor exposure route. However for some organic contaminants, skin exposure can play a very important component of overall exposure. Dermal exposure can occur while swimming in contaminated waters, bathing with contaminated surface water/groundwater and digging in contaminated dirt, etc.

CCME National Classification System (2008) version 1.3

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Lower Site)

Definition	**Score**	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	**Method Of Evaluation**	**Notes**
ii) inhalation (*i.e.,* inhalation of dust, vapour) Vapour - Are there inhabitable buildings on the site within 30 m of soils or groundwater with volatile contamination as determined in Worksheet II (Migration Potential)? Yes No Do Not Know	No	There are no buildings located on the site (Stantec, 2019).	If inhabitable buildings are on the site within 30 m of soils or groundwater exceeding their respective guidelines for volatile chemicals, there is a potential of risk to human health (Health Canada, 2004). Review site investigations for location of soil samples (having exceedances of volatile substances) relative to buildings. Refer to (II) Migration Potential worksheet, 4B.a), *Potential for COPCs in Vapour* for a definition of volatility.	Exposure via the lungs (inhalation) can be a very important exposure pathway. Inhalation can be via both particulates (dust) and gas (vapours). Vapours can be a problem where buildings have been built on former industrial sites or where volatile contaminants have migrated below buildings resulting in the potential for vapour intrusion. Assesses the potential for humans to be exposed to vapours originating from site soils. The closer the receptor is to a source of volatile chemicals in soil, the greater the potential of exposure. Also, coarser-grained soil will convey vapour much more efficiently in the soil than finer grained material such as clays and silts. General Notes; Someone experienced must provide a thorough description of the sources researched to determine the presence/absence of a vapour migration and/or dust generation in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resource such as internet links. Selected References; Canadian Council of Ministers of the Environment (CCME). 2006. Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines. PN 1332. http://ceqg-rcqe.ccme.ca/ Golder, 2004. Soil Vapour Intrusion Guidance for Health Canada Screening Level Risk Assessment (SLRA) Submitted to Health Canada, Burnaby, BC
Score	0			
Dust - If there is contaminated surface soil (*e.g.,* top 1.5 m) , indicate whether the soil is fine or coarse textured. If it is known that surface soil is not contaminated, enter a score of zero. Fine Coarse Surface soil is not contaminated or absent (bedrock) Do Not Know Texture	Coarse	Contaminated surface soil is considered to be coarse textured (sand and gravel) (Stantec, 2019).	Consult grain size data for the site. If soils (containing exceedances of the CCME soil quality guidelines) predominantly consist of fine material (having a median grain size of 75 microns; as defined by CCME (2006)) then these soils are more likely to generate dusts.	
Score	1			
inhalation total	1			
B. Potential for human exposure				
iii) Ingestion (*i.e.,* ingestion of food items, water and soils [for children]), including traditional foods. Drinking Water: Choose a score based on the proximity to a drinking water supply, to indicate the potential for contamination (present or future). 0 to 100 m 100 to 300 m 300 m to 1 km 1 to 5 km No drinking water present No potential for aquifer contamination Do Not Know	No drinking water present	No drinking water source is anticipated to be present on the site (Stantec, 2019).	Review available site data to determine if drinking water (groundwater, surface water, private, commercial or municipal supply) is known or suspected to be contaminated above Guidelines for Canadian Drinking Water Quality. If drinking water supply is known to be contaminated, some immediate action (*e.g.,* provision of alternate drinking water supply) should be initiated to reduce or eliminate exposure. The evaluation of significant potential for exceedances of the water supply in the future may be based on the capture zones of the drinking water wells; contaminant travel times; computer modelling of flow and contaminant transport. For aquifers, examples of "No drinking water present" includes municipal bylaws prohibiting water wells for potable water use and naturally non-potable (*e.g.,* saline) shallow groundwater. Groundwater used for drinking water may not be at risk from contamination due to a lack of hydrological connection between contaminated soil or groundwater, or the drinking water is sufficiently up-gradient of the contamination source. Selection of "No potential for aquifer contamination" must be supported with sufficient documentation, *e.g.,* lithological and contaminant properties, well capture zones (map drawn to scale), and capture zone delineation methodology.	**Selected References:** Guidelines for Canadian Drinking Water Quality: http://hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php Drinking water can be an extremely important exposure pathway to humans. If site groundwater or surface water is not used for drinking, then this pathway is considered to be inoperable. Consider both wild foods such as salmon, venison, caribou, as well as agricultural sources of food items if the contaminated site is on or adjacent to agricultural land uses.
Score	0			
Is an alternative water supply readily available? Yes No Not Applicable Do Not Know	Not Applicable	Not applicable as drinking water source is anticipated to be present at the site (Stantec, 2019).	Answer Not Applicable if "No drinking water present" or "No potential for aquifer contamination" was selected in previous question.	
Score	0			
Is human ingestion of contaminated soils possible? Yes No Do Not Know	Yes	Human ingestion of contaminated soils is possible (Stantec, 2019).	If contaminated soils are located within the top 1.5 m, it is assumed that ingestion of soils is an operable exposure pathway. Exposure to soils deeper than 1.5 m is possible, but less likely, and the duration is shorter. Refer to human health risk assessment reports for the site in question.	
Score	3			
Are food items consumed by people, such as plants, domestic animals or wildlife harvested from the contaminated land and its surroundings? Yes No Do Not Know	Yes	It is possible, but unlikely, that plants and wildlife are harvested from the contaminated land and surroundings (Stantec, 2019).	Use human health risk assessment reports (or others) to determine if there is significant reliance on traditional food sources associated with the site. Is the food item in question going to spend a large proportion of its time at the site (*e.g.,* large mammals may spend a very small amount of time at a small contaminated site)? Human health risk assessment reports for the site in question will also provide information on potential bioaccumulation of the COPC in question.	
Score	1			
Ingestion total	4			
Human Health Total "Potential" Score	10	Note if a "Known" Human Health score is provided, the "Potential" score is disallowed.		
Allowed "Potential" Score	10			

CCME National Classification System (2008) version 1.3

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Lower Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
2. Human Exposure Modifying Factors				
a) Strong reliance of local people on natural resources for survival (*i.e.*, food, water, shelter, etc.) in contaminated area. Yes No Do Not Know	No	There is likely no strong reliance on natural resources for survival in the contaminated area (Stantec, 2019).		
Human Exposure Modifying Factors - "Known"	0			
Human Exposure Modifying Factors - "Potential"	---			
Raw Human "Known" total	0			
Raw Human "Potential" total	10			
Raw Combined Total Human Score	10			
Adjusted Total Human Score (max 22)	**10**			
3. Ecological				
A. Known exposure				
Documented adverse impact or high quantified exposure which has or will result in an adverse effect, injury or harm or impairment of the safety to terrestrial or aquatic organisms as a result of the contaminated site.	18	Go to potential.	Some low levels of impact to ecological receptors are considered acceptable, particularly on commercial and industrial land uses. However, if ecological effects are deemed to be severe, the site may be categorized as class one (*i.e.*, a priority for remediation or risk management), regardless of the numerical total NCS score. For the purpose of application of the NCS, effects that would be considered severe include observed effects on survival, growth or reproduction which could threaten the viability of a population of ecological receptors at the site. Other evidence that qualifies as severe adverse effects may be determined based on professional judgement and in consultation with the relevant jurisdiction. If ecological effects are determined to be severe and an automatic Class 1 is assigned, there is no need to proceed through the NCS. However, a scoring guideline (18) is provided in case a numerical score for the site is still desired.	CCME, 1999: Canadian Water Quality Guidelines for the Protection of Aquatic Life. CCME, 1999: Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses. http://ceqg-rcqe.ccme.ca/ Sensitive receptors- review: Canadian Council on Ecological Areas; www.ccea.org Ecological effects should be evaluated at a population or community level, as opposed to at the level of individuals. For example, population-level effects could include reduced reproduction, growth or survival in a species. Community-level effects could include reduced species diversity or relative abundances. Further discussion of ecological assessment endpoints is provided in *A Framework for Ecological Risk Assessment: General Guidance* (CCME 1996). Notes: Someone experienced must provide a thorough description of the sources researched to classify the environmental receptors in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resource such as internet links.
Same as above, but "Strongly Suspected" based on observations or indirect evidence.	12		This category can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients >1. Alternatively, known impacts can also be evaluated based on a weight of evidence assessment involving a combination of site observations, tissue testing, toxicity testing and quantitative community assessments. Scoring of adverse effects on individual rare or endangered species will be completed on a case-by-case basis with full scientific justification.	
No quantified or suspected exposures/impacts in terrestrial or aquatic organisms	0		This category can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients of less than 1 and no other observable or measurable sign of impacts. Alternatively, it can be based on a combination of other lines of evidence showing no adverse effects, such as site observations, tissue testing, toxicity testing and quantitative community assessments.	
	Go to Potential			
Score	---			
NOTE: If a score is assigned here for Known Exposure, then you should skip Part B (Potential for Ecological Exposure) and go to Section 4 (Ecological Exposure Modifying Factors)				
B. Potential for ecological exposure (for the contaminated portion of the site)				
a) Terrestrial i) Land use Agricultural (or Wild lands) Residential / Parkland Commercial Industrial Do Not Know	Commercial	The current and proposed land use is commercial (Stantec, 2019).	Review zoning and land use maps. If the proposed future land use is more "sensitive" than the current land use, evaluate this factor assuming the proposed future use is in place (indicate in the worksheet that future land use is the consideration). Agricultural land use is defined as uses of land where the activities are related to the productive capability of the land or facility (*e.g.,* greenhouse) and are agricultural in nature, or activities related to the feeding and housing of animals as livestock. Wild lands are grouped with agricultural land due to the similarities in receptors that would be expected to occur there (e.g., herbivorous mammals and birds) and the similar need for a high level of protection to ensure ecological functioning. Residential/Parkland land uses are defined as uses of land on which dwelling on a permanent, temporary, or seasonal basis is the activity (residential), as well as uses on which the activities are recreational in nature and require the natural or human designed capability of the land to sustain that activity (parkland). Commercial/Industrial land uses are defined as land on which the activities are related to the buying, selling, or trading of merchandise or services (commercial), as well as land uses which are related to the production, manufacture, or storage of materials (industrial).	
Score	1			
ii) Uptake potential Direct Contact - Are plants and/or soil invertebrates likely exposed to contaminated soils at the site? Yes No Do Not Know	Yes	It is possible that plants and/or soil invertebrates are exposed to contaminated soils at the site (Stantec, 2019).	If contaminated soils are located within the top 1.5 m, it is assumed that direct contact of soils with plants and soil invertebrates is an operable exposure pathway. Exposure to soils deeper than 1.5 m is possible, but less likely.	
Score	1			

CCME National Classification System (2008) version 1.3

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Lower Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
iii) Ingestion (*i.e.,* wildlife or domestic animals ingesting contaminated food items, soils or water) Are terrestrial animals likely to be ingesting contaminated water at the site? Yes No Do Not Know	Yes	Terrestrial animals may ingest contaminated water at the site (Stantec, 2019).	Refer to an Ecological Risk Assessment for the site. If there is contaminated surface water at the site, assume that terrestrial organisms will ingest it.	
Score	1			
Are terrestrial animals likely to be ingesting contaminated soils at the site? Yes No Do Not Know	Yes	Terrestrial animals may ingest contaminated soils at the site (Stantec, 2019).	Refer to an Ecological Risk Assessment report. Most animals will co-ingest some soil while eating plant matter or soil invertebrates.	
Score	1			
Can the contamination identified bioaccumulate? Yes No Do Not Know	No	The contaminants are not expected to bioaccumulate (Stantec, 2019).	Substances can be considered bioaccumulative if; • There is a Tissue Residue Guideline (TRG) or Soil Quality Guideline for Soil and Food Ingestion for the protection of secondary (SQG_{2C}) and/or tertiary consumers (SQG_{3C}). • Bioaccumulation factor (BAF) or bioconcentration factor (BCF) greater than 5000. • If BAF or BCF is not available, or reliable, the log Kow is equal to or greater than 5. If a literature review indicates that a substance biomagnifies, it should be treated as biomagnifying regardless of whether or not it meets the criteria above. It should also be noted that some substances with a log Kow greater than 5 do not biomagnify. If studies on a substance with a high Kow demonstrate a lack of biomagnification in upper trophic levels, then the substance can be considered not bioaccumulative. Petroleum hydrocarbons F1 to F4 are not considered bioaccumulative.	*See attached Reference Material including log(Kow)* Consult *CEPA (1999) Persistence and Bioaccumulation Regulations* for additional guidance; http://laws-lois.justice.gc.ca/eng/regulations/SOR-2000-107/page-1.html
Score	0			
Distance to sensitive terrestrial ecological area 0 to 300 m 300 m to 1 km 1 to 5 km > 5 km Do Not Know	> 5 km	No sensitive terrestrial ecological areas are known to be within 5 km of the site (http://www.ccea.org/wp-content/uploads/2014/05/CCEA_CANADA_15M_LETTER_CARTS_GOVERNANCE_20161231.pdf) (Stantec, 2019).	It is considered that within 300 m of a site, there is a concern for contamination. Therefore an environmental receptor located within this area of the site will be subject to further evaluations. It is also considered that any environmental receptor located greater than 5 km will not be a concern for evaluation. Review Conservation Authority mapping and literature including Canadian Council on Ecological Areas link: www.ccea.org	Environmental receptors include: local, regional or provincial species of interest or significance; arctic environments (on a site specific basis); nature preserves, habitats for species at risk, sensitive forests, natural parks or forests.
Score	0.5			
Raw Terrestrial "Potential" total	4.5	Note if a "Known" Ecological Effects score is provided, the "Potential" score is disallowed.		
Allowed Terrestrial "Potential" total	4.5			
B. Potential for ecological exposure (for the contaminated portion of the site)				
b) Aquatic i) Classification of aquatic environment Sensitive Typical Not Applicable (no aquatic environment present) Do Not Know	Typical	The aquatic environment is considered to be typical (Stantec, 2018).	"Sensitive aquatic environments" include those in or adjacent to shellfish or fish harvesting areas, marine parks, ecological reserves and fish migration paths. Also includes those areas deemed to have ecological significance such as for fish food resources, spawning areas or having rare or endangered species. "Typical aquatic environments" include those in areas other than those listed above.	
Score	1			

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Lower Site)

Definition	**Score**	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	**Method Of Evaluation**	**Notes**
ii) Uptake potential Does groundwater daylighting to an aquatic environment exceed the CCME water quality guidelines for the protection of aquatic life at the point of contact? Yes No (or Not Applicable) Do Not Know Score	Do Not Know 0.5	Potential environmental contamination to groundwater has not been evaluated throughout the site (Stantec, 2019).	Groundwater concentrations of contaminants at the point of contact with an aquatic receiving environment can be estimated in three ways: 1) by comparing collected nearshore groundwater concentrations to the CCME water quality guidelines (this will be a conservative comparison, as contaminant concentrations in groundwater often decrease between nearshore wells and the point of discharge). 2) by conducting groundwater modeling to estimate the concentration of groundwater immediately before discharge. 3) by installing water samplers, "peepers", in the sediments in the area of daylighting groundwater.	
Distance from the contaminated site to an important surface water resource 0 to 300 m 300 m to 1 km 1 to 5 km > 5 km Do Not Know Score	300 m to 1 km 2	Harbour Lake is located adjacent to the Lower Site (Stantec, 2019).	It is considered that within 300 m of a site, there is a concern for contamination. Therefore an environmental receptor or important water resource located within this area of the site will be subject to further evaluation. It is also considered that any environmental receptor located greater than 5 km away will not be a concern for evaluation. Review Conservation Authority mapping and literature including Canadian Council on Ecological Areas link: www.ccea.org	Environmental receptors include: local, regional or provincial species of interest or significance, sensitive wetlands and fens and other aquatic environments.
Are aquatic species (*i.e.,* forage fish, invertebrates or plants) that are consumed by predatory fish or wildlife consumers, such as mammals and birds, likely to accumulate contaminants in their tissues? Yes No Do Not Know Score	No 0	The contaminants are not expected to bioaccumulate (Stantec, 2019).	Substances can be considered bioaccumulative if; • There is a Tissue Residue Guideline (TRG) • Bioaccumulation factor (BAF) or bioconcentration factor (BCF) greater than 5000. • If BAF or BCF is not available, or reliable, the log Kow is equal to or greater than 5. If a literature review indicates that a substance biomagnifies, it should be treated as biomagnifying regardless of whether or not it meets the criteria above. It should also be noted that some substances with a log Kow greater than 5 do not biomagnify. If studies on a substance with a high Kow demonstrate a lack of biomagnification in upper trophic levels, then the substance can be considered not bioaccumulative.	*See attached Reference Material including log(Kow)* Consult *CEPA (1999) Persistence and Bioaccumulation Regulations* for additional guidance; http://laws-lois.justice.gc.ca/eng/regulations/SOR-2000-107/page-1.html
Raw Aquatic "Potential" total	3.5	Note if a "Known" Ecological Effects score is provided, the "Potential" score is disallowed.		
Allowed Aquatic "Potential" total	3.5			
4. Ecological Exposure Modifying Factors				
a) Known, or potential, occurrence of a species at risk. Is there a potential for a species at risk to be present at the site, or a known presence? Yes No Do Not Know	Yes 2 ---	An on-line search was conducted in 2018. Species at risk, including the short eared owl and caribou, could potentially be in the Harbour Lake area (Stantec, 2019).	Consult any ecological risk assessment reports. If information is not present, utilize on-line databases such as NatureServe Explorer (http://explorer.natureserve.org/). Regional, Provincial (Environment Ministries), or Federal staff (Fisheries and Oceans or Environment Canada) should be able to provide some guidance. To assess the potential for a species at risk to be present, the site (or surroundings) should be located within range of a species at risk (using on-line resources and consultation with knowledgeable government departments or biologists, see above), and there should be an assessment of habitat suitability for any identified potential species at risk.	Species at risk include those that are extirpated, endangered, threatened, or of special concern. For a list of species at risk, consult Schedule 1 of the federal Species at Risk Act, available at: http://www.sararegistry.gc.ca/species/schedules_e.cfm?id=1 Many provincial governments may also provide regionally applicable lists of species at risk. For example, in British Columbia, consult: BCMWLAP. 2005. Endangered Species and Ecosystems in British Columbia. Provincial red and blue lists. Ministry of Sustainable Resource Management and Water, Land and Air Protection. http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk

CCME National Classification System (2008) version 1.3

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Lower Site)

Definition	**Score**	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	**Method Of Evaluation**	**Notes**
b) Potential impact of aesthetics (*e.g.,* enrichment of a lake or tainting of food flavour).		No evidence of aesthetic impact to receiving water bodies (Stantec, 2019).		
Is there evidence of aesthetic impact to receiving water bodies?	No		Documentation may consist of environmental investigation reports, press articles, petitions or other records.	This Item will require some level of documentation by user, including contact names, addresses, phone numbers, e-mail addresses. Evidence of changes must be documented, please attach copy of report containing relevant information.
Yes No	0			
Do Not Know	---			
Is there evidence of olfactory impact (*i.e.,* unpleasant smell)?	No	There's been no known reported evidence of olfactory impact (Stantec, 2019).	Examples of olfactory change can include the smell of a COPC or an increase in the rate of decay in an aquatic habitat.	
Yes No	0			
Do Not Know	---			
Is there evidence of increase in plant growth in the lake or water body?	No	There's been no known reported evidence of increase in plant growth in the lake or water body (Stantec, 2019).	A distinct increase of plant growth in an aquatic environment may suggest enrichment. Nutrients *e.g.,* nitrogen or phosphorous releases to an aquatic body can act as a fertilizer.	
Yes No	0			
Do Not Know	---			
Is there evidence that fish or meat taken from or adjacent to the site smells or tastes different?	Do Not Know	There's been no known reported evidence that fish or meat taken from or adjacent to the site smells or tastes different (Stantec, 2019).	Some contaminants can result in a distinctive change in the way food gathered from the site tastes or smells.	
Yes No	---			
Do Not Know	1			
Ecological Modifying Factors Total - Known	2			
Ecological Modifying Factors Total - Potential	1			
Raw Ecological "Known" total	2			
Raw Ecological "Potential" total	9			
Raw Combined Total Ecological Score	11			
Adjusted Total Ecological Score (Max 18)	**11**			
5. Other Potential Contaminant Receptors				
a) Exposure of permafrost (leading to erosion and structural concerns)		Sporadic discontinuous permafrost (i.e., between 10% and 50% of the ground surface) may be present at the site (Stantec, 2018). No roads or buildings are suspected to be dependant upon the permafrost for structural integrity (Stantec, 2019).		Plants and lichens provide a natural insulating layer which will help prevent thawing of the permafrost during the summer. Plants and lichens may also absorb less solar radiation. Solar radiation is turned into heat which can also cause underlying permafrost to melt.
Are there improvements (roads, buildings) at the site dependant upon the permafrost for structural integrity?	No		Consult engineering reports, site plans or air photos of the site. When permafrost melts, the stability of the soil decreases, leading to erosion. Human structures, such as roads and/or buildings are often dependent on the stability that the permafrost provides.	
Yes No	0			
Do Not Know	---			
		It is unknown if there is a physical pathway that could transport soils released by damaged permafrost to a nearby aquatic environment (Stantec, 2019).		
Is there a physical pathway which can transport soils released by damaged permafrost to a nearby aquatic environment?	Do Not Know		Melting permafrost leads to a decreased stability of underlying soils. Wind or surface run-off erosion can carry soils into nearby aquatic habitats. The increased soil loadings into a river can cause an increase in total dissolved solids and a resulting decrease in aquatic habitat quality. In addition, the erosion can bring contaminants from soils to aquatic environments.	
Yes No	---			
Do Not Know	1			
Other Potential Receptors Total - Known	0			
Other Potential Receptors Total - Potential	1			

Exposure Total

Raw Human Health + Ecological Total + Other Receptors - "Known"	2	
Raw Human Health + Ecological Total + Other Receptors - "Potential"	20	Only includes "Allowed potential" - if a "Known" score was supplied under a given category then the "Potential" score was not included.
Raw Total Exposure Score (not adjusted)	22	HH or Eco Total score has not yet been capped at 22 and 18, respectively.
Adjusted Total Score **(Adjusted Total Exposure / 46 * 34)**	**16.3**	maximum 34

CCME National Classification System (2008) version 1.3
Score Summary

Site: Harbour Lake (Lower Site)

Scores from individual worksheets are tallied in this worksheet.
Refer to this sheet after filling out the revised NCSCS completely.

I. Contaminant Characteristics	Known	Potential	
1. Residency Media	6	1	
2. Chemical Hazard	8	---	
3. Contaminant Exceedance Factor	4	---	
4. Contaminant Quantity	2	---	
5. Modifying Factors	4	---	
Raw Total Score	24	1	
Raw Combined Total Score (Known + Potential)	25		
Adjusted Total Score (Raw Combined Total/40*33)	**20.6**		(max 33)

II. Migration Potential	Known	Potential	
1. Groundwater Movement	---	7.1	
2. Surface Water Movement	12	---	
3. Soil	12	---	
4. Vapour	---	10.5	
5. Sediment Movement	---	4	
6. Modifying Factors	4	---	
Raw Total Score	28	21.6	
Raw Combined Total Score (Known + Potential)	49.6		
Adjusted Total Score (Raw Combined Total/64*33)	**25.6**		(max 33)

III. Exposure	Known	Potential	
1. Human Receptors			
A. Known Impact	---		
B Potential			
a. Land Use		1	
b. Accessibility		1	
c. Exposure Route			
i. Direct Contact		3	
ii. Inhalation		1	
iii. Ingestion		4	
2. Human Receptors Modifying Factors	0	---	
Raw Total Human Score	0	10	
Raw Combined Total Human Score (Known + Potential)	10		
Adjusted Total Human Score	10		(maximum 22)
3. Ecological Receptors			
A. Known Impact	---		
B. Potential			
a. Terrestrial		4.5	
b. Aquatic		3.5	
4. Ecological Receptors Modifying Factors	2	1	
Raw Total Ecological Score	2	9	
Raw Combined Total Ecological Score (Known + Potential)	11		
Adjusted Total Ecological Score	11		(maximum 18)
5. Other Receptors	0	1	
Total Other Receptors Score (Known + Potential)	1		
Total Exposure Score (Human + Ecological + Other)	**22**		
Adjusted Total Score (Total Exposure/46*34)	**16.3**		(maximum 34)

Site Score

Site Letter Grade	**D**
Certainty Percentage	**69%**
% Responses that are "Do Not Know"	**7%**
Total NCSCS Score for site	**62.5**
Site Classification Category	**2**

Site Classification Categories*:

Class 1 - High Priority for Action (Total NCS Score >70)
Class 2 - Medium Priority for Action (Total NCS Score 50 - 69.9)
Class 3 - Low Priority for Action (Total NCS Score 37 - 49.9)
Class N - Not a Priority for Action (Total NCS Score <37)
Class INS - Insufficient Information (≥15% of responses are "Do Not Know", or a site letter grade of F has been assigned)

* NOTE: The term "action" in the above categories does not necessarily refer to remediation, but could also include risk assessment, risk management or further site characterization and data collection.

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:
NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT

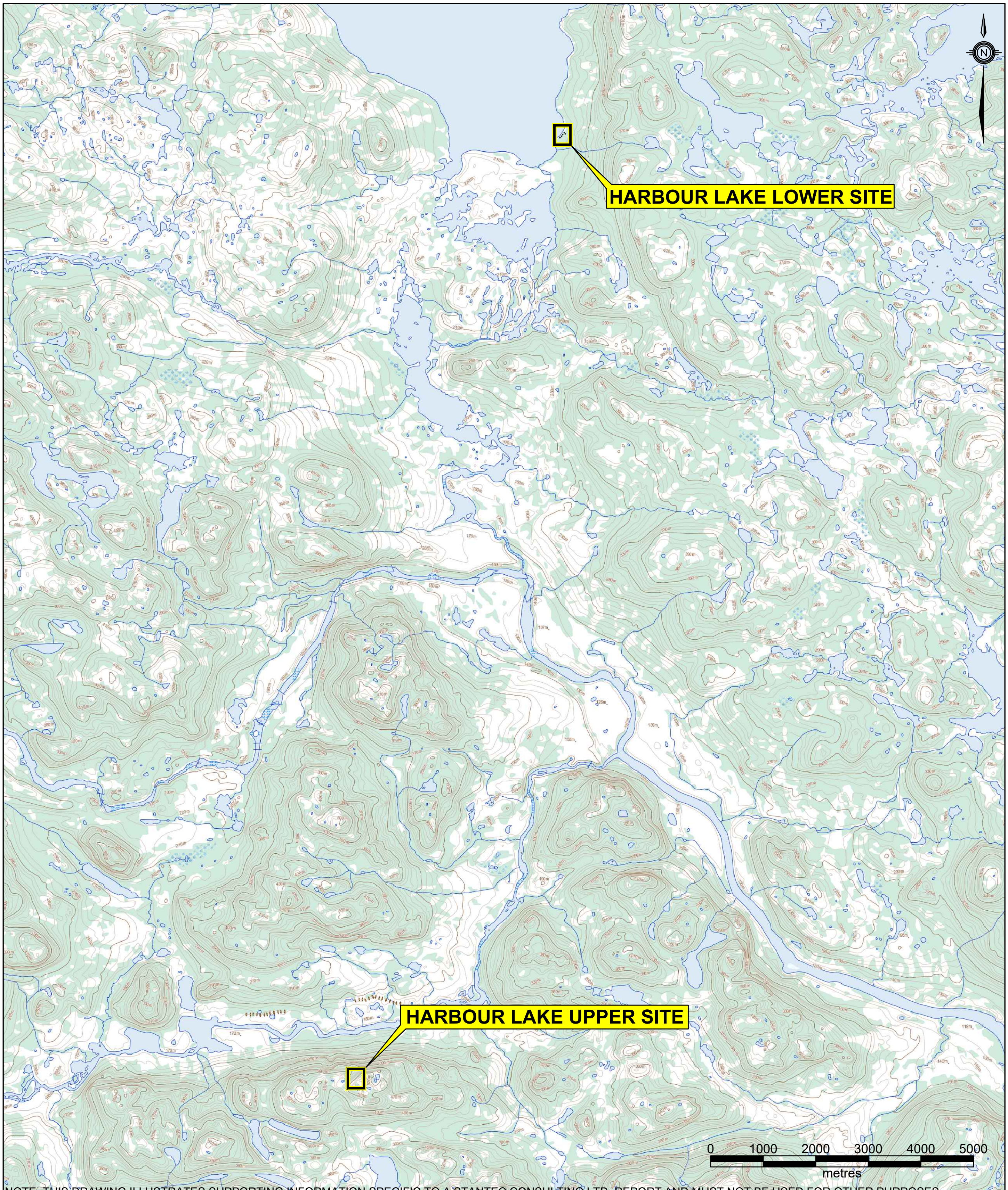
PROJECT TITLE:
PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER US MILITARY
MID CANADA LINE RADAR SITE 206, HARBOUR LAKE, NL

DRAWING TITLE:
SITE LOCATION PLAN

SCALE: 1:5,000,000
DATE: OCT. 25, 2018
REV. No. 0
DRAWN BY: N.M.
EDITED BY: -
CHECKED BY:
DRAWING No: **121414998-EE-01**
CAD FILE: 121414998-EE-01.DWG

Stantec

25OCT18 8:00AM



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:
NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT

PROJECT TITLE:
PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER US MILITARY
MID CANADA LINE RADAR SITE 206, HARBOUR LAKE, NL

DRAWING TITLE:
SITE LOCATION PLAN - SITE AREAS

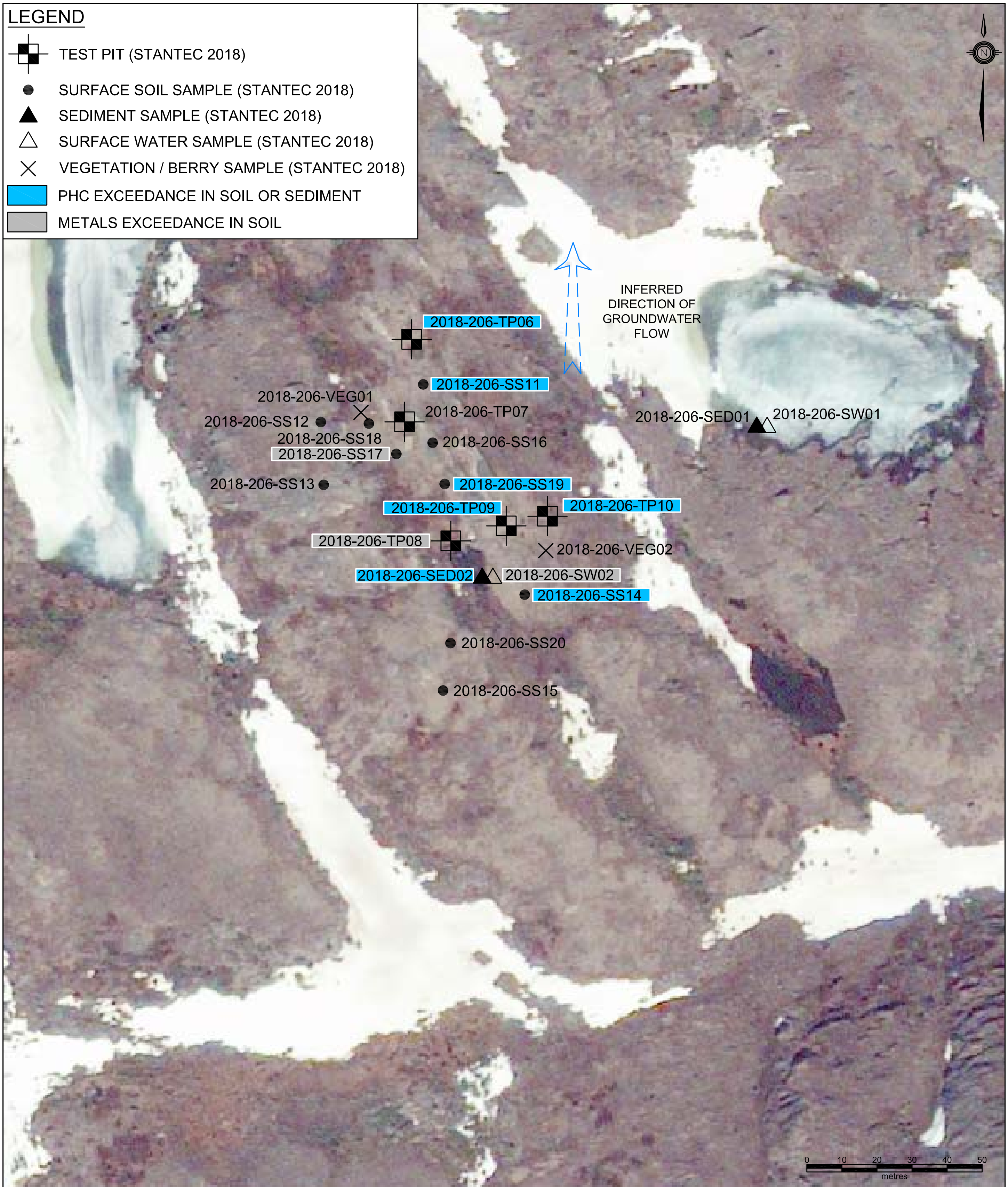
SCALE:	DATE:	REV. No.
1:100,000	OCT. 25, 2018	0
DRAWN BY:	EDITED BY:	CHECKED BY:
N.M.	-	

DRAWING No: **121414998-EE-02**

CAD FILE: 121414998-EE-02.DWG

Stantec

25OCT18 8:00AM



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:
NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT

PROJECT TITLE:
PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER US MILITARY
MID CANADA LINE RADAR SITE 206, HARBOUR LAKE, NL

DRAWING TITLE:
SAMPLE LOCATION AND EXCEEDANCE PLAN - UPPER SITE

SCALE: 1:1500
DATE: OCT. 25, 2018
REV. No. 0
DRAWN BY: N.M.
EDITED BY: -
CHECKED BY:
DRAWING No: **121414998-EE-03**
CAD FILE: 121414998-EE-03.DWG

Stantec

25OCT18 8:00AM

Upper Site

CCME National Classification System for Contaminated Sites (2008) version 1.3
Pre-Screening Checklist

Question	Response (yes / no)	Comment
1. Are **Radioactive material**, **Bacterial contamination** or **Biological hazards** likely to be present at the site?	No	If yes, do not proceed through the NCSCS. Contact applicable regulatory agency immediately.
2. Are there **no contamination exceedances** (known or suspected)? Determination of exceedances may be based on: 1) CCME environmental quality guidelines; 2) equivalent provincial guidelines/standards if no CCME guideline exists for a specific chemical in a relevant medium; or 3) toxicity benchmarks derived from the literature for chemicals not covered by CCME or provincial guidelines/standards; or 4) background concentration.	No	If yes (*i.e.* , there are no exceedances), do not proceed through the NCSCS.
3. Have **partial/incompleted or no environmental site investigations** been conducted for the Site?	No	If yes, do not proceed through the NCSCS.
4. Is there direct and significant evidence of **impacts to humans** at the site, or off-site due to migration of contaminants from the site?	No	If yes, automatically rate the site as Class 1, a priority for remediation or risk management, regardless of the total score obtained should one be calculated.
5. Is there direct and significant evidence of **impacts to ecological receptors** at the site, or off-site due to migration of contaminants from the site?	No	Some low levels of impact to ecological receptors are considered acceptable, particularly on commercial and industrial land uses. However, if ecological effects are considered to be severe, the site may be categorized as Class 1, regardless of the numerical total NCSCS score. For the purpose of application of the NCSCS, effects that would be considered severe include observed effects on survival, growth or reproduction which could threaten the viability of a population of ecological receptors at the site. Other evidence that qualifies as severe adverse effects may be determined based on professional judgement and in consultation with the relevant jurisdiction.
6. Are there indicators of significant **adverse effects in the exposure zone** (*i.e*., the zone in which receptors may come into contact with contaminants)? Some examples are as follows: -Hydrocarbon sheen or NAPL in the exposure zone -Severely stressed biota or devoid of biota; -Presence of material at ground surface or sediment with suspected high concentration of contaminants such as ore tailings, sandblasting grit, slag, and coal tar.	No	To answer "yes", two scenarios should be satisfied; (1) there has to be a high probability that receptors will be exposed to the contaminant source in the near future, and (2) the predicted impacts to ecological receptors after exposure must be significant (see question 5). A low probability of exposure resulting in significant impacts, or a high probability of exposure but with only low to moderate effects expected should not result in a Class 1 designation, neither would a low probability of exposure resulting in low-to-moderate effects. If yes, automatically rate the site as Class 1, a priority for remediation or risk management, regardless of the total score obtained should one be calculated.
7. Do measured concentrations of volatiles or unexploded ordnances represent an **explosion hazard**?	No	If yes, do not proceed through the NCSCS. Do not continue until the safety risks have been addressed. Consult your jurisdiction's occupational health and safety guidance or legislation on exposive hazards and measurement of lower explosive limits.

Rationale for not proceeding with NCSCS
(document any assumptions, reports, or site-specific information to support selection of "Yes" in Pre-Screening checklist)

If none of the above applies, proceed with the NCSCS scoring.

CCME National Classification System for Contaminated Sites (2008) version 1.3
Summary of Site Conditions

Site:	Site will be identified by:	Site Common Name
Civic Address: *(or other description of location)*	Former US Military Mid Canada Line Radar Site 206, Harbour Lake (Upper Site), Newfoundland and Labrador (NL)	
Site Common Name: *(if applicable)*	Harbour Lake (Upper Site)	
Code identifier: *(e.g., FCSI 8-digit identifier)*	Not applicable	
Site Owner or Custodian: *(Organization and Contact Person)*	Government of Newfoundland and Labrador	
Legal description *or* metes and bounds:	See Drawing No. 121414998-EE-02 attached	
Approximate Site area:	Approximately 3 Hectares (Upper Site)	
Parcel Identifier(s) [PID]: *(or Parcel Identification Numbers [PIN] if untitled Crown land)*		
Centre of site: *(provide latitude/longitude or UTM coordinates)*	Latitude:_55_____ degrees __23____ min __29____ secs; Longitude:__61____ degrees __47____ min __25____ secs UTM Coordinate: Northing ______________ Easting ______________	
Site Land Use:	Current:	Commercial
	Proposed:	Commercial
Site Plan	**To delineate the bounds of the Site a site plan MUST be attached. The plan must be drawn to scale indicating the boundaries in relation to well-defined reference points and/or legal descriptions. Delineation of the contamination should also be indicated on the site plan.**	
Provide a brief description of the Site:	The Radar Site 206 - Harbour Lake (Harbour Lake) site is located 97 km west of the Town of Hopedale, NL (refer to Drawing No. 121414998-EE-01, attached). The entire Harbour Lake site covers a land area of approximately 5 hectares. The Harbour Lake site facility was operated by the U.S. Military as a Mid Canada Line (MCL) Radar Site (a Doppler Detection Station) from 1958 to 1965. The site consisted of the upper site which contained a one-story operations building housing the radio equipment, a heating and power plant, sleeping area, kitchen, four communication antennae towers linked by a cable trough and wood trestle, an emergency shelter, nine diesel fuel ASTs, and helicopter pad and a lower site containing a one-story accommodation building, a fuel pump house, and seven diesel ASTs. A 1987 document noted that the buildings and towers were demolished and buried in 1986 as part of a decommissioning program. Residual fuel in the ASTs was burned off during the decommissioning program and debris (cut barrels/tanks, demolished buildings, garbage, etc.) was buried on the site in various unknown locations. An assessment in 1996 found that concrete foundations of the former infrastructure and two rusted drums were observed at the upper site. The lower site was not observed during the 1996 assessment. See Drawing Nos. 121414998-EE-02 and 121414998-EE-03 attached. The Upper Site is the subject of this NCSCS.	

CCME National Classification System for Contaminated Sites (2008) version 1.3
Summary of Site Conditions

Affected media and Contaminants of Potential Concern (COPC):	Soil: petroleum hydrocarbons, metals Surface water: metals Sediment: petroleum hydrocarbons

Please fill in the "letter" that best describes the level of information available for the site being assessed

Site Letter Grade **D**

If letter grade is F, <u>do not</u> continue, you must have a minimum of a Phase I Environmental Site Assessment or equivalent

Scoring Completed By:	Paula Brennan
Date Scoring Completed:	22-Feb-19

CCME National Classification System (2008) version 1.3
(I) Contaminant Characteristics

Site: Harbour Lake (Upper Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method of Evaluation	Notes
1. Residency Media (replaces physical state)				
Which of the following residency media are known (or strongly suspected) to have one or more exceedances of the applicable CCME guidelines? **yes** = has an exceedance or strongly suspected to have an exceedance **no** = does not have an exceedance or strongly suspected not to have an exceedance		Based on the results of sampling in 2018, petroleum hydrocarbons and/or metal parameters have exceeded applicable provincial and/or CCME guidelines in soil, sediment and/or surface water. Groundwater was not sampled as part of the assessment (Stantec, 2019).	The overall score is calculated by adding the individual scores from each residency media (having one or more exceedance of the most conservative media specific and land-use appropriate CCME guideline). Summary tables of the Canadian Environmental Quality Guidelines for soil, water (aquatic life, non-potable groundwater environments, and agricultural water uses) and sediment are available on the CCME website at http://st-ts.ccme.ca/ For potable groundwater environments, guidelines for Canadian Drinking Water Quality (for comparison with groundwater monitoring data) are available on the Health Canada website at http://hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php	An increasing number of residency media containing chemical exceedances often equates to a greater potential risk due to an increase in the number of potential exposure pathways.
A. Soil	Yes			
Yes No Do Not Know				
B. Groundwater	Do Not Know			
Yes No Do Not Know				
C. Surface water	Yes			
Yes No Do Not Know				
D. Sediment	Yes			
Yes No Do Not Know				
"Known" -score	6			
"Potential" - score	1			
2. Chemical Hazard				
What is the relative degree of chemical hazard of the contaminant in the list of hazard rankings proposed by the Federal Contaminated Sites Action Plan (FCSAP)?	High	The relative degree of chemical hazard for cadmium is high (Stantec, 2019).	The relative degree of chemical hazard should be selected based on the most hazardous contaminant known or suspected to be present at the site. The degree of hazard has been defined by the Federal Contaminated Sites Action Plan (FCSAP) and a list of substances with their associated hazard (Low, Medium and High) has been provided as a separate sheet in this file. *See Attached Reference Material for Contaminant Hazard Rankings.*	Hazard as defined in the revised NCSCS pertains to the physical properties of a chemical which can cause harm. Properties can include toxic potency, propensity to biomagnify, persistence in the environment, etc. Although there is some overlap between hazard and contaminant exceedance factor below, it will not be possible to derive contaminant exceedance factors for many substances which have a designated chemical hazard designation, but don't have a CCME guideline. The purpose of this category is to avoid missing a measure of toxic potential.
High Medium Low Do Not Know				
"Known" -score	8			
"Potential" - score	---			

(I) Contaminant Characteristics

Site: Harbour Lake (Upper Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method of Evaluation	Notes
3. Contaminant Exceedance Factor				
What is the ratio between the measured contaminant concentration and the applicable CCME guidelines (or other "standards")? NAPL (mobile or immobile) High (>100x) Medium (10x to 100x) Low (1x to 10x) Do Not Know	Medium (10x to 100x)	The ratio of a measured petroleum hydrocarbon F2 parameter concentration in soil (i.e., 4,500 mg/kg) is greater than 10x the applicable guideline of 260 mg/kg (Tier I ESL) (Stantec, 2019).	Ranking of contaminant "exceedance" is determined by comparing contaminant concentrations with the *most conservative media-specific and land-use appropriate CCME* environmental quality guidelines. **Ranking should be based on contaminant with greatest exceedance of CCME guidelines.** Ranking of contaminant hazard as high, medium and low is as follows: High = One or more measured contaminant concentration is greater than 100 X appropriate CCME guidelines Medium = One or more measured contaminant concentration is 10 - 99.99 X appropriate CCME guidelines Low = One or more measured contaminant concentration is 1 - 9.99 X appropriate CCME guidelines NAPL (LNAPL or DNAPL) = Contaminant is a non-aqueous phase liquid (*i.e.,* due to its low solubility, it does not dissolve in water, but remains as a separate liquid) and is present at a sufficiently high saturation (*i.e.* , greater than residual NAPL saturation) such that there is significant potential for mobility either downwards or laterally. Any amount of NAPL should be scored, *i.e* . small amounts and sheens cannot be ignored. The presence of a NAPL (mobile or immoblie or regardless of amount) may be considered unnaceptable by some jurisidcations. If NAPL is present, consult jurisdiction on how to proceed with NCSCS. Other standards may include local background concentration or published toxicity benchmarks. Results of toxicity testing with site samples can be used as an alternative. This approach is only relevant for contaminants that do not biomagnify in the food web, since toxicity tests would not indicate potential effects at higher trophic levels. High = lethality observed. Medium = no lethality, but sub lethal effects observed. Low = neither lethal nor sub lethal effects observed.	In the event that elevated levels of a material with no associated CCME guidelines are present, check provincial and USEPA environmental criteria. Hazard Quotients (sometimes referred to as a screening quotient in risk assessments) refer to the ratio of measured concentration to the concentration believed to be the threshold for toxicity. A similar calculation is used here to determine the contaminant exceedance factor (CEF). Concentrations greater than one times the applicable CCME guideline (*i.e.* , CEF=>1) indicate that risks are possible. Mobile NAPL has the highest associated score (8) because of its highly concentrated nature and potential for increase in the size of the impacted zone.
"Known" -score	4			
"Potential" - score	---			
4. Contaminant Quantity (known or strongly suspected)				
What is the known or strongly suspected quantity of all contaminants? >10 hectare (ha) or 5000 m^3 2 to 10 ha or 1000 to 5000 m^3 <2 ha or 1000 m^3 Do Not Know	<2 ha or 1000 m3	Contaminated soil, surface water and sediment exceeding Tier I RBSLs, Tier I ESLs and/or CCME SQGs/WQGs on Site has not been delineated, but is estimated to be at less than 324 cubic metres (Stantec, 2019).	Measure or estimate the area or quantity of total contamination (*i.e* , all contaminants known or strongly suspected to be present on the site). The "Area of Contamination" is defined as the area or volume of contaminated media (soil, sediment, groundwater, surface water) exceeding appropriate environmental criteria.	A larger quantity of a potentially toxic substance can result in a larger frequency of exposure as well as a greater probability of migration, therefore, larger quantities of these substances earn a higher score.
"Known" -score	2			
"Potential" - score	---			

(I) Contaminant Characteristics

Site: Harbour Lake (Upper Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method of Evaluation	Notes
5. Modifying Factors				
Does the chemical fall in the class of persistent chemicals based on its behavior in the environment? Yes No Do Not Know	No	According to Examples of Persistent Substances as provided in attached Reference Materials, persistent chemicals were not detected on site above applicable guidelines (Stantec, 2019).	Persistent chemicals, *e.g.,* PCBs, chlorinated pesticides etc. either do not degrade or take longer to degrade, and therefore may be available to cause effects for a longer period of time. Canadian Environmental Protection Act (CEPA) classifies a chemical as persistent when it has at least one of the following characteristics: (a) in air, (i) its half-life is equal to or greater than 2 days, or (ii) it is subject to atmospheric transport from its source to a remote area; (b) in water, its half-life is equal to or greater than 182 days; (c) in sediments, its half-life is equal to or greater than 365 days; or (d) in soil, its half-life is equal to or greater than 182 days. Elements do not degrade, therefore treat any metal, metalloid, or halogen COPC as persistent.	*Examples of Persistent Substances are provided in attached Reference Materials*
Are there contaminants present that could cause damage to utilities and infrastructure, either now or in the future, given their location? Yes No Do Not Know	Yes	Contaminants such as petroleum hydrocarbons may be suspected to cause damage to utilities or infrastructure if the area is developed in the future. It is not likely, however, that further development will take place on this site (Stantec, 2019).	If answered Yes, in Rationale for Score column document the location and extent of the infrastructure that is/may be damaged, verify the mode of contact between contaminants of potential concern (COPCs) and infrastructure, list the specific COPCs that could cause damage, and note the expected effect on specific infrastructure.	Some contaminants may react or absorb into underground utilities and infrastructure. For example, organic solvents may degrade some plastics, and salts could cause corrosion of metal.
How many different contaminant classes have representative CCME guideline exceedances? one two to four five or more Do Not Know	two to four	Identified contaminants in sediment, soil and surface water are light extractable petroleum hydrocarbons, heavy extractable petroleum hydrocarbons and inorganic substances (metals) (Stantec, 2019).	For the purposes of the revised NCSCS, the following chemicals represent distinct chemical "classes": inorganic substances (including metals), volatile petroleum hydrocarbons, light extractable petroleum hydrocarbons, heavy extractable petroleum hydrocarbons, PAHs, phenolic substances, chlorinated hydrocarbons, halogenated methanes, phthalate esters, pesticides.	*Refer to the Reference Material sheet for a list of example substances that fall under the various chemical classes.*

"Known" - Score	4
"Potential" - Score	---

Contaminant Characteristic Total

Raw Total Score- "Known"	24	
Raw Total Score- "Potential"	1	
Raw Combined Total Score (Known + Potential)	25	
Adjusted Total Score (Raw Combined / 40 * 33)	**20.6**	maximum 33

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Upper Site)

Definition	**Score**	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	**Method Of Evaluation**	**Notes**
1. Groundwater Movement				
A. Known COPC exceedances and an operable groundwater pathway within and/or beyond the property boundary.				
i) For **potable groundwater environments**, 1) groundwater concentrations exceed background concentrations and 1X the Guideline for Canadian Drinking Water Quality (GCDWQ) or 2) there is known contact of contaminants with groundwater, based on physical evidence of groundwater contamination. For **non-potable environments** (typically urban environments with municipal services), 1) groundwater concentrations exceed 1X the applicable non potable guidelines or modified generic guidelines (which exclude ingestion of drinking water pathway) or 2) there is known contact of contaminants with groundwater, based on physical evidence of groundwater impacts.	12	Go to potential.	Review chemical data and evaluate groundwater quality. The evaluation method concentrates on 1) a potable or non-potable groundwater environment; 2) the groundwater flow system and its potential to be an exposure pathway to known or potential receptors An aquifer is defined as a geologic unit that yields groundwater in usable quantities and drinking water quality. The aquifer can currently be used as a potable water supply or could have the potential for use in the future. Non-potable groundwater environments are defined as areas that are serviced with a reliable alternative water supply (most commonly provided in urban areas). The evaluation of a non-potable environment will be based on a site specific basis. Physical evidence includes significant sheens, liquid phase contamination, or contaminant saturated soils. Seeps and springs are considered part of the groundwater pathway. In Arctic environments, the potability and evaluation of the seasonal active layer (above the permafrost) as a groundwater exposure pathway will be considered on a site-specific basis.	The 1992 NCS rationale evaluated the off-site migration as a regulatory issue. The exposure assessment and classification of hazards should be evaluated regardless of the property boundaries. Someone experienced must provide a thorough description of the sources researched to determine the presence/absence of a groundwater supply source in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resources such as internet links. Note that for potable groundwater that also daylights into a nearby surface water body, the more stringent guidelines for both drinking water and protection of aquatic life should be considered. **Selected References** Potable Environments Guidelines for Canadian Drinking Water Quality: http://hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php Non-Potable Environments CCME. 1999. Canadian Water Quality Guidelines for Protection of Aquatic Life. http://ceqg-rcqe.ccme.ca/ Compilation and Review of Canadian Remediation Guidelines, Standards and Regulations. Science Applications International Corporation (SAIC Canada), report to Environment Canada, January 4, 2002.
ii) Same as (i) except the information is not known but strongly suspected based on indirect observations.	9			
iii) Meets GCDWQ for potable environments; meets non-potable criteria or modified generic criteria (excludes ingestion of drinking water pathway) for non-potable environments or Absence of groundwater exposure pathway (*i.e.,* there is no aquifer (see definition at right) at the site or there is an adequate isolating layer between the aquifer and the contamination, and within 5 km of the site there are no aquatic receiving environments and the groundwater does not daylight).	0			
	Go to Potential			
Score	---			
NOTE: If a score is assigned here for Known COPC Exceedances, then you should skip Part B (Potential for groundwater pathway) and go to Section 2 (Surface Water Pathway)				
B. Potential for groundwater pathway.				
a. Relative mobility of contaminant High Moderate Low Insignificant Do Not Know	Low	The relative mobilities of the contaminants (petroleum hydrocarbons and inorganic substances (metals)) are insignificant to low (Stantec, 2019).	Organics Koc (L/kg) / Metals with higher mobility at acidic conditions / Metals with higher mobility at alkaline conditions Koc < 500 (*i.e.,* log Koc < 2.7) pH < 5 pH > 8.5 Koc = 500 to 5000 (*i.e.,* log Koc = 2.7 to 3.7) pH = 5 to 6 pH = 7.5 to 8.5 Koc = 5,000 to 100,000 (*i.e.,* log Koc = 3.7 to 5) pH > 6 pH < 7.5 Koc > 100,000 (*i.e.,* log Koc > 5) For PHC fractions; score F1 as Moderate, F2 as Low, and F3 and F4 as Insignificant.	Reference: US EPA Soil Screening Guidance (Part 5 - Table 39) If a score of zero is assigned for relative mobility, it is still recommended that the following sections on potential for groundwater pathway be evaluated and scored. Although the Koc of an individual contaminant may suggest that it will be relatively immobile, it is possible that, with complex mixtures, there could be enhanced mobility due to co-solvent effects. Therefore, the Koc cannot be relied on solely as a measure of mobility. An evaluation of other factors such as containment, thickness of confining layer, hydraulic conductivities and precipitation infiltration rate are still useful in predicting potential for groundwater migration, even if a contaminant is expected to have insignificant mobility based on its chemistry alone.
Score	1			
b. Presence of engineered sub-surface containment? No containment Partial containment Full containment Do Not Know	No containment	No engineered sub-surface containment is present (Stantec, 2019).	Review the existing engineered systems or natural attenuation processes for the site and determine if full or partial containment is achieved. Full containment is defined as an engineered system or natural attenuation processes, monitored as being effective, which provide for full capture and/or treatment of contaminants. All chemicals of concern must be contained for "Full Containment" scoring. Natural attenuation must have sufficient data, and reports cited with monitoring data to support steady state conditions and the attenuation processes. If there is no containment or insufficient natural attenuation process, this category is evaluated as high. If there is less than full containment or if uncertain, then evaluate as medium. In Arctic environments, permafrost will be evaluated, as appropriate, based on detailed evaluations, effectiveness and reliability to contain/control contaminant migration.	Someone experienced must provide a thorough description of the sources researched to determine the containment of the source at the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps, geotechnical reports or natural attenuation studies and other resources such as internet links. **Selected Resources:** United States Environmental Protection Agency (USEPA) 1998. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater. EPA/600/R-98/128.
Score	3			

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Upper Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
c. Thickness of confining layer over aquifer of concern or groundwater exposure pathway 3 m or less including no confining layer or discontinuous confining layer 3 to 10 m > 10 m Do Not Know Score	3 m or less 1	The confining layer over the groundwater exposure pathway is considered to be 3 m or less (Stantec, 2019).	The term "confining layer" refers to geologic material with little or no permeability or hydraulic conductivity (such as unfractured clay); water does not pass through this layer or the rate of movement is extremely slow. Measure the thickness and extent of materials that will impede the migration of contaminants to the groundwater exposure pathway. The evaluation of this category is based on: 1) The presence and thickness of saturated subsurface materials that impede the vertical migration of contaminants to lower aquifer units which can or are used as drinking water sources or 2) The presence and thickness of unsaturated subsurface materials that impede the vertical migration of contaminants from the source location to the saturated zone (*e.g.,* water table aquifer, first hydrostratigraphic unit or other groundwater pathway).	
d. Hydraulic conductivity of confining layer $>10^{-4}$ cm/s or no confining layer 10^{-4} to 10^{-6} cm/s $<10^{-6}$ cm/s Do Not Know Score	10-4 to 10-6 cm/s 0.5	The hydraulic conductivity of the confining layer is considered to be 10-5 to 10-8 cm/s (sand) (Stantec, 2019).	Determine the nature of geologic materials and estimate hydraulic conductivity from published material (or use "Range of Values of Hydraulic Conductivity and Permeability" figure in the Reference Material sheet). Unfractured clays should be scored low. Silts should be scored medium. Sand, gravel should be scored high. The evaluation of this category is based on: 1) The presence and hydraulic conductivity ("K") of saturated subsurface materials that impede the vertical migration of contaminants to lower aquifer units which can or are used as a drinking water source, groundwater exposure pathway or 2) The presence and permeability ("k") of unsaturated subsurface materials that impede the vertical migration of contaminants from the source location to the saturated water table aquifer, first hydrostratigraphic unit or other groundwater pathway.	
B. Potential for groundwater pathway.				
e. Precipitation infiltration rate (Annual precipitation factor x surface soil relative permeability factor) High (infiltration score > 0.6) Moderate (0.4 < infiltration score ≤ 0.6) Low (0.2 < infiltration score ≤ 0.4) Very Low (0 < infiltration score ≤ 0.2) None (infiltration score = 0) Do Not Know Score	Moderate 0.6	The precipitation infiltration rate is estimated to be moderate. As there is no precipitation data for the site, the weather station at Goose Bay Airport is used as a reference. Goose Bay's annual precipitation is approximately 940.4 mm (Environment Canada, 2017). Surface soil relative permeability is 0.6 for sand. The precipitation infiltration rate is 940.4 / 1000 x 0.6 = 0.56 (Stantec, 2019).	Precipitation Refer to Environment Canada precipitation records for relevant areas (30 year average preferred). Divide annual precipitation (rainfall + snowfall) by 1000 and round to nearest tenth (*e.g.,* 667 mm = 0.7 score). Permeability For surface soil relative permeability (*i.e.*, infiltration) assume: gravel (1), sand (0.6), loam (0.3) and pavement or clay (0). Multiply the surface soil relative permeability factor with precipitation factor to obtain the score for precipitation infiltration rate (*e.g.,* precipitation factor of 0.7 from above x 0.6 (sand) = 0.42 or "Moderate").	Selected Sources: Environment Canada web page link: http://climate.weather.gc.ca/climate_normals/index_e.html Snow to rainfall conversion apply ratio of 10(snow):1(water) https://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=108C6C74-1
f. Hydraulic conductivity of aquifer $>10^{-2}$ cm/s 10^{-2} to 10^{-4} cm/s $<10^{-4}$ cm/s Do Not Know Score	10-2 to 10-4 cm/s 1	Bedrock in the area of the site is tonalitic to granodioritic orthogneiss containing abundant mafic to ultramafic inclusions and relict mafic dykes of the Southern Nain and Makkovik Provinces of the Meso-Archean of Archean age. The hydraulic conductivity of the bedrock layers (assuming to be fractured) is estimated to range from 1.0 x 10-6 cm/sec to 10 x 10-2 cm/sec (Stantec, 2019).	Determine the nature of geologic materials and estimate hydraulic conductivity of all aquifers of concern from published material (refer to "Range of Values of Hydraulic Conductivity and Permeability" in the Reference Material sheet).	
Potential groundwater pathway total	7.1			
Allowed Potential score	7.1	Note: If a "known" score is provided, the "potential" score is disallowed.		
Groundwater pathway total	**7.1**			

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Upper Site)

Definition	**Score**	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	**Method Of Evaluation**	**Notes**
2. Surface Water Movement				
A. Demonstrated migration of COPC in surface water above background conditions				
Known concentrations of surface water: i) Concentrations exceed background concentrations and exceed CCME CWQG for protection of aquatic life, irrigation, livestock water, and/or recreation (whichever uses are applicable at the site) by >1 X; or There is known contact of contaminants with surface water based on site observations. or In the absence of CWQG, chemicals have been proven to be toxic based on site specific testing (*e.g.,* toxicity testing; or other indicator testing of exposure).	12	Identified contaminants in surface water exceeeding CCME surface water quality guidelines are inorganic substances (metals) (Stantec, 2019).	Collect all available information on quality of surface water near to site. Evaluate available data against Canadian Water Quality Guidelines (select appropriate guidelines based on local water use, *e.g.,* recreation, irrigation, livestock watering, etc.). The evaluation method concentrates on the surface water flow system and its potential to be an exposure pathway. Contamination is present on the surface (above ground) and has the potential to impact surface water bodies. Surface water is defined as a water body that supports one of the following uses: recreation, irrigation, livestock watering, aquatic life.	General Notes: Someone experienced must provide a thorough description of the sources researched to classify the surface water body in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resource such as internet links. Selected References: CCME. 1999. Canadian Water Quality Guidelines for the Protection of Aquatic Life http://ceqg-rcqe.ccme.ca/ CCME. 1999. Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses (Irrigation and Livestock Water) http://ceqg-rcqe.ccme.ca/
ii) Same as (i) except the information is not known but strongly suspected based on indirect observations.	8		Examples of indirect evidence may include observed staining of sediment and/or river banks, but surface water has not been tested.	Health and Welfare Canada. 1992. Guidelines for Canadian Recreational Water Quality. http://www.hc-sc.gc.ca/ewh-semt/water-eau/recreat/index-eng.php
iii) Meets CWQG or absence of surface water exposure pathway (*e.g.,* Distance to nearest surface water is > 5 km.)	0			
Score	12 12			
NOTE: If a score is assigned here for Demonstrated Migration in Surface Water, then you should skip Part B (Potential for migration of COPCs in surface water) and go to Section 3 (Surface Soils)				
B. Potential for migration of COPCs in surface water				
a. Presence of containment No containment Partial containment Full containment Do Not Know	Do Not Know	Skip B if A is complete.	Review the existing engineered systems and relate these structures to site conditions and proximity to surface water and determine if full containment is achieved: score low if there is full containment such as capping, berms, dikes; score medium if there is partial containment such as natural barriers, trees, ditches, sedimentation ponds; score high if there are no intervening barriers between the site and nearby surface water. Full containment must include containment of all chemicals.	
Score	3			
b. Distance to Surface Water 0 to <100 m 100 - 300 m >300 m Do Not Know	Do Not Know	Skip B if A is complete.	Review available mapping and survey data to determine distance to nearest surface water bodies.	
Score	2			
c. Topography Contaminants above ground level and slope is steep Contaminants at or below ground level and slope is steep Contaminants above ground level and slope is intermediate Contaminants at or below ground level and slope is intermediate Contaminants above ground level and slope is flat Contaminants at or below ground level and slope is flat Do Not Know	Do Not Know	Skip B if A is complete.	Review engineering documents on the topography of the site and the slope of surrounding terrain. Steep slope = >50% Intermediate slope = between 5 and 50% Flat slope = < 5% Note: Type of fill placement (*e.g.,* trench, above ground, etc.).	
Score	1			
d. Run-off potential High (run-off score > 0.6) Moderate (0.4 < run-off score ≤ 0.6) Low (0.2 < run-off score ≤ 0.4) Very Low (0 < run-off score ≤ 0.2) None (run-off score = 0) Do Not Know	Do Not Know	Skip B if A is complete.	Precipitation Refer to Environment Canada precipitation records for relevant areas (30 year average preferred). Divide precipitation (rainfall + snowfall) by 1000 and round to nearest tenth (*e.g.* , 667 mm = 0.7 score). Permeability For infiltration assume: gravel (0), sand (0.3), loam (0.6) and pavement or clay (1). Multiply the permeability (infiltration) factor with precipitation factor to obtain Run-off potential score (*e.g.* , precipitation factor of 0.7 from above x 0.6 (loam) = 0.42 or "Moderate").	Selected Sources: Environment Canada web page link: http://climate.weather.gc.ca/climate_normals/index_e.html Snow to rainfall conversion apply ratio of 10(snow):1(water) https://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=108C6C74-1
Score	0.4			

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Upper Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
e. Flood potential 1 in 2 years 1 in 10 years 1 in 50 years not in floodplain Do Not Know		Skip B if A is complete.	Review published data such as flood plain mapping or flood potential (*e.g.,* spring or mountain run-off) and Conservation Authority records to evaluate flood potential of nearby water courses both up and down gradient. Rate zero if site not in flood plain.	
	Do Not Know			
Score	0.5			
Potential surface water pathway total	6.9			
Allowed Potential score	---	Note: If a "known" score is provided, the "potential" score is disallowed.		
Surface water pathway total	**12**			
3. Surface Soils (potential for dust, dermal and ingestion exposure)				
A. Demonstrated concentrations of COPC in surface soils (top 1.5 m)				
COPCs measured in surface soils exceed the CCME soil quality guideline.	12	Identified contaminants in surface soils exceeeding provincial or CCME soil quality guidelines are petroleum hydrocarbons and inorganic substances (metals) (Stantec, 2019).	Collect all available information on quality of surface soils (*i.e.,* top 1.5 metres) at the site. Evaluate available data against Canadian Soil Quality Guidelines. Select appropriate guidelines based on current (or proposed future) land use (*i.e,* agricultural, residential/parkland, commercial, or industrial), and soil texture if applicable (*i.e.,* coarse or fine).	Selected References: CCME. 1999. Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health. http://ceqg-rcqe.ccme.ca/
Strongly suspected that soils exceed guidelines.	9		Examples of strongly suspected exceedences of soil guidelines may include evidence of staining, odours, or significant debris infill materials.	
COPCs in surface soils does not exceed the CCME soil quality guideline or is not present (i.e., bedrock).	0			
	12			
Score	12			
NOTE: If a score is assigned here for Demonstrated Concentrations in Surface Soils, then you should skip Part B (Potential for a surface soils migration pathway) and go to Section 4 (Vapour)				
B. Potential for a surface soils (top 1.5 m) migration pathway				
a. Are the soils in question covered? Exposed Vegetated Landscaped Paved Do Not Know		Skip B if A is complete.	Consult engineering or risk assessment reports for the site. Alternatively, review photographs or perform a site visit. Landscaped surface soils must include a minimum of 0.5 m of topsoil.	The possibility of contaminants in blowing snow have not been included in the revised NCSCS as it is difficult to assess what constitutes an unacceptable concentration and secondly, spills to snow or ice are most efficiently mitigated while freezing conditions remain.
	Do Not Know			
Score	4			
b. For what proportion of the year does the site remain covered by snow? 0 to 10% of the year 10 to 30% of the year More than 30% of the year Do Not Know		Skip B if A is complete.	Consult climatic information for the site. The increments represent the full span from soils which are always wet or covered with snow (and therefore less likely to generate dust) to those soils which are predominantly dry and not covered by snow (and therefore are more likely to generate dust).	
	Do Not Know			
Score	3			
Potential surface soil pathway total	7			
Allowed Potential score	---	Note: If a "known" score is provided, the "potential" score is disallowed.		
Soil pathway total	**12**			
4. Vapour				
A. Demonstrated COPCs in vapour.				
Vapour has been measured (indoor or outdoor) in concentrations exceeding risk based concentrations.	12	Go to potential.	Consult previous investigations, including human health risk assessments, for reports of vapours detected.	
Strongly suspected (based on observations and/or modelling)	9			
Vapour has not been measured (i.e. not detected) and volatile hydrocarbons have not been found in site soils or groundwater, or vapour has been measured (indoor or outdoor) in concentrations not exceeding risk based concentrations.	0		Due to the potential for significant spatial and temporal variation in soil vapour concentrations, limited vapour monitoring studies (*e.g.,* single point in time "snap-shot") that do not detect vapour at sites where volatiles are suspected, does not necessarly mean that vapours are not an issue at the site. In this case, section B " Potential for COPCs in vapour" should be completed.	
	Go to Potential			
Score	---			
NOTE: If a score is assigned here for Demonstrated COPCs in Vapour, then you should skip Part B (Potential for COPCs in vapour) and go to Section 5 (Sediment)				

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Upper Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
B. Potential for COPCs in vapour				
a. Relative Volatility based on Henry's Law Constant, H' (dimensionless) High (H' > 1.0E-1) Moderate (H' = 1.0E-1 to 1.0E-3) Low (H' < 1.0E-3) Not Volatile Do Not Know Score	Moderate 2.5	According to the attached Reference Materials, petroleum hydrocarbons (F2) are considered to have moderate volatility (Stantec, 2019).	Reference: US EPA Soil Screening Guidance (Part 5 - Table 36) *Provided in Attached Reference Materials* For PHC fractions; score F1 as High, F2 as Moderate, and F3 and F4 as Not Volatile. Substance is considered Not Volatile (*i.e.* , pathway not a concern) if the product of the water solubility and unitless Henry's law constant does not exceed published or derived tolerable concentration or risk-specific concentration. If NAPL is present, see Appendix D of the CCME soil vapour quality guideline protocol (CCME 2014) for further guidance.	If the Henry's Law Constant for a substance indicates that it is not volatile, and a score of zero is assigned here for relative volatility, then the other three questions in this section on Potential for COPCs will be automatically assigned scores of zero and you can skip to section 5. Selected References: CCME. 2014. A Protocol for the Derivation of Soil Vapour Quality Guidelines for Protection of Human Exposures via Inhalation of Vapours. Winnipeg, Manitoba. http://ceqg-rcqe.ccme.ca
b. What is the soil grain size? Fine Coarse Do Not Know Score	Coarse 4	The soil grain size is considered to be coarse (Stantec, 2019).	Review soil permeability data in engineering reports. The greater the permeability of soils, the greater the possible movement of vapours. Fine-grained soils are defined as those which contain greater than 50% by mass particles less than 75 µm mean diameter (D50 < 75 µm). Coarse-grained soils are defined as those which contain greater than 50% by mass particles greater than 75 µm mean diameter (D50 > 75 µm).	
c. Is the depth to the source less than 10m? Yes No Do Not Know Score	Yes 2	The depth to source is expected to be less than 1 m (Stantec, 2019).	Review groundwater depths below grade for the site.	
d. Are there any preferential pathways? Yes No Do Not Know Score	Yes 2	The bedrock on the site is considered to be fractured (Stantec, 2019).	Visit the site during dry summer conditions and/or review available photographs. Where bedrock is present, fractures would likely act as preferential pathways.	Preferential pathways refer to areas where vapour migration is more likely to occur because there is lower resistance to flow than in the surrounding materials. For example, underground conduits such as sewer and utility lines, drains, or septic systems may serve as preferential pathways. Features of the building itself that may also be preferential pathways include earthen floors, expansion joints, wall cracks, or foundation perforations for subsurface features such as utility pipes, sumps, and drains.
Potential vapour pathway total	10.5			
Allowed Potential score	10.5	Note: If a "known" score is provided, the "potential" score is disallowed.		
Vapour pathway total	**10.5**			
5. Sediment Movement				
A. Demonstrated migration of sediments containing COPCs				
There is evidence to suggest that sediments originally deposited to the site (exceeding the CCME sediment quality guidelines) have migrated.	12	Go to potential.	Review sediment assessment reports. Evidence of migration of contaminants in sediments must be reported by someone experienced in this area.	Usually not considered a significant concern in lakes/marine environments, but could be very important in rivers where transport downstream could be significant.
Strongly suspected (based on observations and/or modelling)	9			
Sediments have been contained and there is no indication that sediments will migrate in future. or Sediment meets CCME sediment quality guidelines or absence of sediment exposure pathway (*i.e.,* within 5 km of the site there are no aquatic receiving environments, and therefore no sediments).	0			
Score	Go to Potential ---			

NOTE: If a score is assigned here for Demonstrated Migration of Sediments, then you should skip Part B (Potential for Sediment Migration) and go to Section 6 (Modifying Factors)

CCME National Classification System (2008) version 1.3

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Harbour Lake (Upper Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
B. Potential for sediment migration				
a. Are the sediments having COPC exceedances capped with sediments having no exceedances ("clean sediments")? Yes No Do Not Know	No 4	Sediments are not capped. Sediments in shallow water are not considered to be likely affected by tidal action, wave action or propeller wash. The sediments are not considered to be in an area prone to sediment scouring (Stantec, 2019).	Review existing sediment assessments. If sediment coring has been completed, it may indicate that historically contaminated sediments have been covered over by newer "clean" sediments. This assessment will require that cores collected demonstrate a low concentration near the top and higher concentration with sediment depth.	
b. For lakes and marine habitats, are the contaminated sediments in shallow water and therefore likely to be affected by tidal action, wave action or propeller wash? Yes No Do Not Know	No 0		Review existing sediment assessments. If the sediments present at the site are in a river, select "no" for this question.	
c. For rivers, are the contaminated sediments in an area prone to sediment scouring? Yes No Do Not Know	No 0		Review existing sediment assessments. It is important that the assessment is made under worst case flows (high yearly flows). Under high yearly flows, areas which are commonly depositional may become scoured. If the sediments present at the site are in a lake or marine habitat, select "no" for this question.	
Potential sediment pathway total	4			
Allowed Potential score	4	Note: If a "known" score is provided, the "potential" score is disallowed.		
Sediment pathway total	**4**			
6. Modifying Factors				
Are there subsurface utility conduits in the area affected by contamination? Yes No Do Not Know	Yes	There is reportedly buried debris/materials at the site in an unknown location(s). The buried debris and materials could act as conduits for contaminant migration (Stantec, 2019).	Consult existing engineering reports. Subsurface utilities can act as conduits for contaminant migration.	
Known	4			
Potential	---			

Migration Potential Total		
Raw Total Score- "Known"	28	Note: If "Known" and "Potential" scores are provided, the checklist defaults to known. Therefore, the total "Potential" Score may not reflect the sum of the individual "Potential" scores.
Raw Total Score- "Potential"	21.6	
Raw Combined Total Score (Known + Potential)	49.6	
Adjusted Total Score (Raw Combined / 64 * 33)	**25.6**	maximum 33

CCME National Classification System (2008) version 1.3

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Upper Site)

Definition	**Score**	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	**Method Of Evaluation**	**Notes**
1. Human				
A. Known exposure				
Documented adverse impact or high quantified exposure which has or will result in an adverse effect, injury or harm or impairment of the safety to humans as a result of the contaminated site. (Class 1 Site*) Same as above, but "Strongly Suspected" based on observations or indirect evidence. No quantified or suspected exposures/impacts in humans. Score	22 10 0 Go to Potential ---	Go to potential.	*Where adverse effects on humans are documented, the site should be automatically designated as a Class 1 site (*i.e.,* action required). Known impacts could include blood test results (*e.g.,* blood lead > 10 µg/dL) or results of other health based studies and tests. There is no need to proceed through the NCSCS in this case. However, a scoring guideline (22) is provided in case a numerical score for the site is still desired. A score of 22 can also be assigned when Hazard Quotients (or Hazard Index) >> 1.0 or incremental lifetime cancer risks considerably exceed acceptable levels defined by the jurisdiction for carcinogenic chemicals. The category, "Strongly suspected", can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients (or Hazard Index) > 0.2 (excluding the Estimated Daily Intake) or > 1.0 with Estimated Daily Intake and/or incremental lifetime cancer risks that exceed acceptable levels defined by the jurisdiction for carcinogenic chemicals (for most jurisdictions this is typically either $>10^{-5}$ or $>10^{-6}$). The category, no exposure/impacts, can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients (or Hazard Index) of ≤ 0.2 (excluding the Estimated Daily Intake) or ≤ 1.0 with Estimated Daily Intake AND incremental lifetime cancer risks for carcinogenic chemicals that are within acceptable levels as defined by the jurisdiction (for most jurisdictions this is less than either 10^{-6} or 10^{-5}).	Known adverse impact includes domestic and traditional food sources. Adverse effects based on food chain transfer to humans and/or animals can be scored in this category. However, the weight of evidence must show a direct link of a contaminated food source/supply and subsequent ingestion/transfer to humans. Any associated adverse effects to the environment are scored separately later in this worksheet. Someone experienced must provide a thorough description of the sources researched to evaluate and determine the quantified exposure/impact (adverse effect) in the vicinity of the contaminated site. **Selected References:** Health Canada – Federal Contaminated Site Risk Assessment in Canada Parts 1 and 2 Guidance on Human Heath Screening Level Risk Assessments, available at http://www.hc-sc.gc.ca/ewh-semt/pubs/contamsite/index-eng.php United States Environmental Protection Agency, Integrated Risk Information System (IRIS), available at http://toxnet.nlm.nih.gov
NOTE: If a score is assigned here for Known Exposure, then you should skip Part B (Potential for Human Exposure) and go to Section 2 (Human Exposure Modifying Factors)				
B. Potential for human exposure				
a) Land use (provides an indication of potential human exposure scenarios) Agricultural Residential / Parkland Commercial Industrial Do Not Know Score	Commercial 1	The current and proposed land use is commercial (Stantec, 2019).	Review zoning and land use maps over the distances indicated. If the proposed future land use is more "sensitive" than the current land use, evaluate this factor assuming the proposed future use is in place. Agricultural land use is defined as uses of land where the activities are related to the productive capability of the land or facility (*e.g.,* greenhouse) and are agricultural in nature, or activities related to the feeding and housing of animals as livestock. Residential/Parkland land uses are defined as uses of land on which dwelling on a permanent, temporary, or seasonal basis is the activity (residential), as well as uses on which the activities are recreational in nature and require the natural or human designed capability of the land to sustain that activity (parkland). Parkland includes campgrounds, but excludes wildlands such as national or provincial parks. Commercial/Industrial land uses are defined as land on which the activities are related to the buying, selling, or trading of merchandise or services (commercial), as well as land uses which are related to the production, manufacture, or storage of materials (industrial).	This is the main "receptor" factor used in site scoring. A higher score implies a greater exposure and/or exposure of more sensitive human receptors (*e.g.,* children).
b) Indicate the level of accessibility to the contaminated portion of the site (*e.g.,* the potential for coming in contact with contamination) Limited barriers to prevent site access; contamination not covered Moderate access or no intervening barriers, contaminants are covered. Remote locations in which contaminants not covered. Controlled access or remote location and contaminants are covered Do Not Know Score	Mod. access, covered 1	The level of accessibility is considered to be moderate as it is considered to be a remote location (only reached by aircraft) and the contaminants are not covered (Stantec, 2019).	Review location and structures and contaminants at the site and determine if there are intervening barriers between the site and humans. A low rating should be assigned to a (covered) site surrounded by a fence or in a remote location, whereas a high score should be assigned to a site that has no cover, fence, natural barriers or buffer.	
B. Potential for human exposure				
c) Potential for intake of contaminated soil, water, sediment or foods for operable or potentially operable pathways, as identified in Worksheet II (Migration Potential). i) direct contact Is dermal contact with contaminated surface water, groundwater, sediments or soils anticipated? Yes No Do Not Know Score	Yes 3	Direct contact with contaminated surface water, groundwater, sediments or soils is possible (Stantec, 2019).	If soils or potable groundwater are present exceeding their respective CCME guidelines, dermal contact is assumed. Exposure to surface water, non-potable groundwater or sediments exceeding their respective CCME guidelines will depend on the site. Select "Yes" if dermal exposure to surface water, non-potable groundwater or sediments is expected. For instance, dermal contact with sediments would not be expected in an active port. Only soils in the top 1.5 m are defined by CCME (2003) as surface soils. If contaminated soils are only located deeper than 1.5 m, direct contact with soils is not anticipated to be an operable contaminant exposure pathway.	Exposure via the skin is generally believed to be a minor exposure route. However for some organic contaminants, skin exposure can play a very important component of overall exposure. Dermal exposure can occur while swimming in contaminated waters, bathing with contaminated surface water/groundwater and digging in contaminated dirt, etc.

CCME National Classification System (2008) version 1.3

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Upper Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
ii) inhalation (*i.e.,* inhalation of dust, vapour) Vapour - Are there inhabitable buildings on the site within 30 m of soils or groundwater with volatile contamination as determined in Worksheet II (Migration Potential)? Yes No Do Not Know	No	There are no buildings located on the site (Stantec, 2019).	If inhabitable buildings are on the site within 30 m of soils or groundwater exceeding their respective guidelines for volatile chemicals, there is a potential of risk to human health (Health Canada, 2004). Review site investigations for location of soil samples (having exceedances of volatile substances) relative to buildings. Refer to (II) Migration Potential worksheet, 4B.a), *Potential for COPCs in Vapour* for a definition of volatility.	Exposure via the lungs (inhalation) can be a very important exposure pathway. Inhalation can be via both particulates (dust) and gas (vapours). Vapours can be a problem where buildings have been built on former industrial sites or where volatile contaminants have migrated below buildings resulting in the potential for vapour intrusion. Assesses the potential for humans to be exposed to vapours originating from site soils. The closer the receptor is to a source of volatile chemicals in soil, the greater the potential of exposure. Also, coarser-grained soil will convey vapour much more efficiently in the soil than finer grained material such as clays and silts. General Notes; Someone experienced must provide a thorough description of the sources researched to determine the presence/absence of a vapour migration and/or dust generation in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resource such as internet links. Selected References; Canadian Council of Ministers of the Environment (CCME). 2006. Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines. PN 1332. http://ceqg-rcqe.ccme.ca/ Golder, 2004. Soil Vapour Intrusion Guidance for Health Canada Screening Level Risk Assessment (SLRA) Submitted to Health Canada, Burnaby, BC
Score	0			
Dust - If there is contaminated surface soil (*e.g.,* top 1.5 m) , indicate whether the soil is fine or coarse textured. If it is known that surface soil is not contaminated, enter a score of zero. Fine Coarse Surface soil is not contaminated or absent (bedrock) Do Not Know Texture	Coarse	Contaminated surface soil is considered to be coarse textured (sand and gravel) (Stantec, 2019).	Consult grain size data for the site. If soils (containing exceedances of the CCME soil quality guidelines) predominantly consist of fine material (having a median grain size of 75 microns; as defined by CCME (2006)) then these soils are more likely to generate dusts.	
Score	1			
inhalation total	1			
B. Potential for human exposure				
iii) Ingestion (*i.e.,* ingestion of food items, water and soils [for children]), including traditional foods. Drinking Water: Choose a score based on the proximity to a drinking water supply, to indicate the potential for contamination (present or future). 0 to 100 m 100 to 300 m 300 m to 1 km 1 to 5 km No drinking water present No potential for aquifer contamination Do Not Know	No drinking water present	No drinking water source is anticipated to be present on the site (Stantec, 2019).	Review available site data to determine if drinking water (groundwater, surface water, private, commercial or municipal supply) is known or suspected to be contaminated above Guidelines for Canadian Drinking Water Quality. If drinking water supply is known to be contaminated, some immediate action (*e.g.,* provision of alternate drinking water supply) should be initiated to reduce or eliminate exposure. The evaluation of significant potential for exceedances of the water supply in the future may be based on the capture zones of the drinking water wells; contaminant travel times; computer modelling of flow and contaminant transport. For aquifers, examples of "No drinking water present" includes municipal bylaws prohibiting water wells for potable water use and naturally non-potable (*e.g.,* saline) shallow groundwater. Groundwater used for drinking water may not be at risk from contamination due to a lack of hydrological connection between contaminated soil or groundwater, or the drinking water is sufficiently up-gradient of the contamination source. Selection of "No potential for aquifer contamination" must be supported with sufficient documentation, *e.g.,* lithological and contaminant properties, well capture zones (map drawn to scale), and capture zone delineation methodology.	**Selected References:** Guidelines for Canadian Drinking Water Quality: http://hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php Drinking water can be an extremely important exposure pathway to humans. If site groundwater or surface water is not used for drinking, then this pathway is considered to be inoperable. Consider both wild foods such as salmon, venison, caribou, as well as agricultural sources of food items if the contaminated site is on or adjacent to agricultural land uses.
Score	0			
Is an alternative water supply readily available? Yes No Not Applicable Do Not Know	Not Applicable	Not applicable as drinking water source is anticipated to be present at the site (Stantec, 2019).	Answer Not Applicable if "No drinking water present" or "No potential for aquifer contamination" was selected in previous question.	
Score	0			
Is human ingestion of contaminated soils possible? Yes No Do Not Know	Yes	Human ingestion of contaminated soils is possible (Stantec, 2019).	If contaminated soils are located within the top 1.5 m, it is assumed that ingestion of soils is an operable exposure pathway. Exposure to soils deeper than 1.5 m is possible, but less likely, and the duration is shorter. Refer to human health risk assessment reports for the site in question.	
Score	3			
Are food items consumed by people, such as plants, domestic animals or wildlife harvested from the contaminated land and its surroundings? Yes No Do Not Know	Yes	It is possible, but unlikely, that plants and wildlife are harvested from the contaminated land and surroundings (Stantec, 2019).	Use human health risk assessment reports (or others) to determine if there is significant reliance on traditional food sources associated with the site. Is the food item in question going to spend a large proportion of its time at the site (*e.g.,* large mammals may spend a very small amount of time at a small contaminated site)? Human health risk assessment reports for the site in question will also provide information on potential bioaccumulation of the COPC in question.	
Score	1			
Ingestion total	4			
Human Health Total "Potential" Score	10	Note if a "Known" Human Health score is provided, the "Potential" score is disallowed.		
Allowed "Potential" Score	10			

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Upper Site)

Definition	**Score**	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	**Method Of Evaluation**	**Notes**
2. Human Exposure Modifying Factors				
a) Strong reliance of local people on natural resources for survival (*i.e.*, food, water, shelter, etc.) in contaminated area. Yes No Do Not Know	No	There is likely no strong reliance on natural resources for survival in the contaminated area (Stantec, 2019).		
Human Exposure Modifying Factors - "Known"	0			
Human Exposure Modifying Factors - "Potential"	---			
Raw Human "Known" total	0			
Raw Human "Potential" total	10			
Raw Combined Total Human Score	10			
Adjusted Total Human Score (max 22)	**10**			
3. Ecological				
A. Known exposure				
Documented adverse impact or high quantified exposure which has or will result in an adverse effect, injury or harm or impairment of the safety to terrestrial or aquatic organisms as a result of the contaminated site.	18	Go to potential.	Some low levels of impact to ecological receptors are considered acceptable, particularly on commercial and industrial land uses. However, if ecological effects are deemed to be severe, the site may be categorized as class one (*i.e.*, a priority for remediation or risk management), regardless of the numerical total NCS score. For the purpose of application of the NCS, effects that would be considered severe include observed effects on survival, growth or reproduction which could threaten the viability of a population of ecological receptors at the site. Other evidence that qualifies as severe adverse effects may be determined based on professional judgement and in consultation with the relevant jurisdiction. If ecological effects are determined to be severe and an automatic Class 1 is assigned, there is no need to proceed through the NCS. However, a scoring guideline (18) is provided in case a numerical score for the site is still desired.	CCME, 1999: Canadian Water Quality Guidelines for the Protection of Aquatic Life. CCME, 1999: Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses. http://ceqg-rcqe.ccme.ca/ Sensitive receptors- review: Canadian Council on Ecological Areas; www.ccea.org Ecological effects should be evaluated at a population or community level, as opposed to at the level of individuals. For example, population-level effects could include reduced reproduction, growth or survival in a species. Community-level effects could include reduced species diversity or relative abundances. Further discussion of ecological assessment endpoints is provided in *A Framework for Ecological Risk Assessment: General Guidance* (CCME 1996). Notes: Someone experienced must provide a thorough description of the sources researched to classify the environmental receptors in the vicinity of the contaminated site. This information must be documented in the NCS Site Classification Worksheet including contact names, phone numbers, e-mail correspondence and/or reference maps/reports and other resource such as internet links.
Same as above, but "Strongly Suspected" based on observations or indirect evidence.	12		This category can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients >1. Alternatively, known impacts can also be evaluated based on a weight of evidence assessment involving a combination of site observations, tissue testing, toxicity testing and quantitative community assessments. Scoring of adverse effects on individual rare or endangered species will be completed on a case-by-case basis with full scientific justification.	
No quantified or suspected exposures/impacts in terrestrial or aquatic organisms	0		This category can be based on the outcomes of risk assessments and applies to studies which have reported Hazard Quotients of less than 1 and no other observable or measurable sign of impacts. Alternatively, it can be based on a combination of other lines of evidence showing no adverse effects, such as site observations, tissue testing, toxicity testing and quantitative community assessments.	
	Go to Potential			
Score	---			
NOTE: If a score is assigned here for Known Exposure, then you should skip Part B (Potential for Ecological Exposure) and go to Section 4 (Ecological Exposure Modifying Factors)				
B. Potential for ecological exposure (for the contaminated portion of the site)				
a) Terrestrial i) Land use Agricultural (or Wild lands) Residential / Parkland Commercial Industrial Do Not Know	Commercial	The current and proposed land use is commercial (Stantec, 2019).	Review zoning and land use maps. If the proposed future land use is more "sensitive" than the current land use, evaluate this factor assuming the proposed future use is in place (indicate in the worksheet that future land use is the consideration). Agricultural land use is defined as uses of land where the activities are related to the productive capability of the land or facility (*e.g.,* greenhouse) and are agricultural in nature, or activities related to the feeding and housing of animals as livestock. Wild lands are grouped with agricultural land due to the similarities in receptors that would be expected to occur there (e.g., herbivorous mammals and birds) and the similar need for a high level of protection to ensure ecological functioning. Residential/Parkland land uses are defined as uses of land on which dwelling on a permanent, temporary, or seasonal basis is the activity (residential), as well as uses on which the activities are recreational in nature and require the natural or human designed capability of the land to sustain that activity (parkland). Commercial/Industrial land uses are defined as land on which the activities are related to the buying, selling, or trading of merchandise or services (commercial), as well as land uses which are related to the production, manufacture, or storage of materials (industrial).	
Score	1			
ii) Uptake potential Direct Contact - Are plants and/or soil invertebrates likely exposed to contaminated soils at the site? Yes No Do Not Know	Yes	It is possible that plants and/or soil invertebrates are exposed to contaminated soils at the site (Stantec, 2019).	If contaminated soils are located within the top 1.5 m, it is assumed that direct contact of soils with plants and soil invertebrates is an operable exposure pathway. Exposure to soils deeper than 1.5 m is possible, but less likely.	
Score	1			

CCME National Classification System (2008) version 1.3

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Upper Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
iii) Ingestion (*i.e.,* wildlife or domestic animals ingesting contaminated food items, soils or water) Are terrestrial animals likely to be ingesting contaminated water at the site? Yes No Do Not Know	Yes	Terrestrial animals may ingest contaminated water at the site (Stantec, 2019).	Refer to an Ecological Risk Assessment for the site. If there is contaminated surface water at the site, assume that terrestrial organisms will ingest it.	
Score	1			
Are terrestrial animals likely to be ingesting contaminated soils at the site? Yes No Do Not Know	Yes	Terrestrial animals may ingest contaminated soils at the site (Stantec, 2019).	Refer to an Ecological Risk Assessment report. Most animals will co-ingest some soil while eating plant matter or soil invertebrates.	
Score	1			
Can the contamination identified bioaccumulate? Yes No Do Not Know	No	The contaminants are not expected to bioaccumulate (Stantec, 2019).	Substances can be considered bioaccumulative if; • There is a Tissue Residue Guideline (TRG) or Soil Quality Guideline for Soil and Food Ingestion for the protection of secondary (SQG$_{2C}$) and/or tertiary consumers (SQG$_{3C}$). • Bioaccumulation factor (BAF) or bioconcentration factor (BCF) greater than 5000. • If BAF or BCF is not available, or reliable, the log Kow is equal to or greater than 5. If a literature review indicates that a substance biomagnifies, it should be treated as biomagnifying regardless of whether or not it meets the criteria above. It should also be noted that some substances with a log Kow greater than 5 do not biomagnify. If studies on a substance with a high Kow demonstrate a lack of biomagnification in upper trophic levels, then the substance can be considered not bioaccumulative. Petroleum hydrocarbons F1 to F4 are not considered bioaccumulative.	*See attached Reference Material including log(Kow)* Consult *CEPA (1999) Persistence and Bioaccumulation Regulations* for additional guidance; http://laws-lois.justice.gc.ca/eng/regulations/SOR-2000-107/page-1.html
Score	0			
Distance to sensitive terrestrial ecological area 0 to 300 m 300 m to 1 km 1 to 5 km > 5 km Do Not Know	> 5 km	No sensitive terrestrial ecological areas are known to be within 5 km of the site (http://www.ccea.org/wp-content/uploads/2014/05/CCEA_CANADA_15M_LETTER_CARTS_GOVERNANCE_20161231.pdf) (Stantec, 2019).	It is considered that within 300 m of a site, there is a concern for contamination. Therefore an environmental receptor located within this area of the site will be subject to further evaluations. It is also considered that any environmental receptor located greater than 5 km will not be a concern for evaluation. Review Conservation Authority mapping and literature including Canadian Council on Ecological Areas link: www.ccea.org	Environmental receptors include: local, regional or provincial species of interest or significance; arctic environments (on a site specific basis); nature preserves, habitats for species at risk, sensitive forests, natural parks or forests.
Score	0.5			
Raw Terrestrial "Potential" total	4.5	Note if a "Known" Ecological Effects score is provided, the "Potential" score is disallowed.		
Allowed Terrestrial "Potential" total	4.5			
B. Potential for ecological exposure (for the contaminated portion of the site)				
b) Aquatic i) Classification of aquatic environment Sensitive Typical Not Applicable (no aquatic environment present) Do Not Know	Typical	The aquatic environment is considered to be typical (Stantec, 2018).	"Sensitive aquatic environments" include those in or adjacent to shellfish or fish harvesting areas, marine parks, ecological reserves and fish migration paths. Also includes those areas deemed to have ecological significance such as for fish food resources, spawning areas or having rare or endangered species. "Typical aquatic environments" include those in areas other than those listed above.	
Score	1			

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Upper Site)

Definition	**Score**	**Rationale for Score** (document any assumptions, reports, or site-specific information; provide references)	**Method Of Evaluation**	**Notes**
ii) Uptake potential Does groundwater daylighting to an aquatic environment exceed the CCME water quality guidelines for the protection of aquatic life at the point of contact? Yes No (or Not Applicable) Do Not Know	Do Not Know	Potential environmental contamination to groundwater has not been evaluated throughout the site (Stantec, 2019).	Groundwater concentrations of contaminants at the point of contact with an aquatic receiving environment can be estimated in three ways: 1) by comparing collected nearshore groundwater concentrations to the CCME water quality guidelines (this will be a conservative comparison, as contaminant concentrations in groundwater often decrease between nearshore wells and the point of discharge). 2) by conducting groundwater modeling to estimate the concentration of groundwater immediately before discharge. 3) by installing water samplers, "peepers", in the sediments in the area of daylighting groundwater.	
Score	0.5			
Distance from the contaminated site to an important surface water resource 0 to 300 m 300 m to 1 km 1 to 5 km > 5 km Do Not Know	300 m to 1 km	A river is located less than 1 km to the north of the Upper Site (Stantec, 2019).	It is considered that within 300 m of a site, there is a concern for contamination. Therefore an environmental receptor or important water resource located within this area of the site will be subject to further evaluation. It is also considered that any environmental receptor located greater than 5 km away will not be a concern for evaluation. Review Conservation Authority mapping and literature including Canadian Council on Ecological Areas link: www.ccea.org	Environmental receptors include: local, regional or provincial species of interest or significance, sensitive wetlands and fens and other aquatic environments.
Score	2			
Are aquatic species (*i.e.,* forage fish, invertebrates or plants) that are consumed by predatory fish or wildlife consumers, such as mammals and birds, likely to accumulate contaminants in their tissues? Yes No Do Not Know	No	The contaminants are not expected to bioaccumulate (Stantec, 2019).	Substances can be considered bioaccumulative if; • There is a Tissue Residue Guideline (TRG) • Bioaccumulation factor (BAF) or bioconcentration factor (BCF) greater than 5000. • If BAF or BCF is not available, or reliable, the log Kow is equal to or greater than 5. If a literature review indicates that a substance biomagnifies, it should be treated as biomagnifying regardless of whether or not it meets the criteria above. It should also be noted that some substances with a log Kow greater than 5 do not biomagnify. If studies on a substance with a high Kow demonstrate a lack of biomagnification in upper trophic levels, then the substance can be considered not bioaccumulative.	*See attached Reference Material including log(Kow)* Consult *CEPA (1999) Persistence and Bioaccumulation Regulations* for additional guidance; http://laws-lois.justice.gc.ca/eng/regulations/SOR-2000-107/page-1.html
Score	0			
Raw Aquatic "Potential" total	3.5	Note if a "Known" Ecological Effects score is provided, the "Potential" score is disallowed.		
Allowed Aquatic "Potential" total	3.5			
4. Ecological Exposure Modifying Factors				
a) Known, or potential, occurrence of a species at risk. Is there a potential for a species at risk to be present at the site, or a known presence? Yes No Do Not Know	Yes 2 ---	An on-line search was conducted in 2018. Species at risk, including the short eared owl and caribou, could potentially be in the Harbour Lake area (Stantec, 2019).	Consult any ecological risk assessment reports. If information is not present, utilize on-line databases such as NatureServe Explorer (http://explorer.natureserve.org/). Regional, Provincial (Environment Ministries), or Federal staff (Fisheries and Oceans or Environment Canada) should be able to provide some guidance. To assess the potential for a species at risk to be present, the site (or surroundings) should be located within range of a species at risk (using on-line resources and consultation with knowledgeable government departments or biologists, see above), and there should be an assessment of habitat suitability for any identified potential species at risk.	Species at risk include those that are extirpated, endangered, threatened, or of special concern. For a list of species at risk, consult Schedule 1 of the federal Species at Risk Act, available at: http://www.sararegistry.gc.ca/species/schedules_e.cfm?id=1 Many provincial governments may also provide regionally applicable lists of species at risk. For example, in British Columbia, consult: BCMWLAP. 2005. Endangered Species and Ecosystems in British Columbia. Provincial red and blue lists. Ministry of Sustainable Resource Management and Water, Land and Air Protection. http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Harbour Lake (Upper Site)

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
b) Potential impact of aesthetics (*e.g.,* enrichment of a lake or tainting of food flavour).		No evidence of aesthetic impact to receiving water bodies (Stantec, 2019).	Documentation may consist of environmental investigation reports, press articles, petitions or other records.	This Item will require some level of documentation by user, including contact names, addresses, phone numbers, e-mail addresses. Evidence of changes must be documented, please attach copy of report containing relevant information.
Is there evidence of aesthetic impact to receiving water bodies?	No			
Yes No	0			
Do Not Know	---			
Is there evidence of olfactory impact (*i.e.,* unpleasant smell)?	No	There's been no known reported evidence of olfactory impact (Stantec, 2019).	Examples of olfactory change can include the smell of a COPC or an increase in the rate of decay in an aquatic habitat.	
Yes No	0			
Do Not Know	---			
Is there evidence of increase in plant growth in the lake or water body?	No	There's been no known reported evidence of increase in plant growth in the lake or water body (Stantec, 2019).	A distinct increase of plant growth in an aquatic environment may suggest enrichment. Nutrients *e.g.,* nitrogen or phosphorous releases to an aquatic body can act as a fertilizer.	
Yes No	0			
Do Not Know	---			
Is there evidence that fish or meat taken from or adjacent to the site smells or tastes different?	Do Not Know	There's been no known reported evidence that fish or meat taken from or adjacent to the site smells or tastes different (Stantec, 2019).	Some contaminants can result in a distinctive change in the way food gathered from the site tastes or smells.	
Yes No	---			
Do Not Know	1			
Ecological Modifying Factors Total - Known	2			
Ecological Modifying Factors Total - Potential	1			
Raw Ecological "Known" total	2			
Raw Ecological "Potential" total	9			
Raw Combined Total Ecological Score	11			
Adjusted Total Ecological Score (Max 18)	**11**			
5. Other Potential Contaminant Receptors				
a) Exposure of permafrost (leading to erosion and structural concerns)		Sporadic discontinuous permafrost (i.e., between 10% and 50% of the ground surface) may be present at the site (Stantec, 2018). No roads or buildings are suspected to be dependant upon the permafrost for structural integrity (Stantec, 2019).		Plants and lichens provide a natural insulating layer which will help prevent thawing of the permafrost during the summer. Plants and lichens may also absorb less solar radiation. Solar radiation is turned into heat which can also cause underlying permafrost to melt.
Are there improvements (roads, buildings) at the site dependant upon the permafrost for structural integrity?	No		Consult engineering reports, site plans or air photos of the site. When permafrost melts, the stability of the soil decreases, leading to erosion. Human structures, such as roads and/or buildings are often dependent on the stability that the permafrost provides.	
Yes No	0			
Do Not Know	---			
		It is unknown if there is a physical pathway that could transport soils released by damaged permafrost to a nearby aquatic environment (Stantec, 2019).		
Is there a physical pathway which can transport soils released by damaged permafrost to a nearby aquatic environment?	Do Not Know		Melting permafrost leads to a decreased stability of underlying soils. Wind or surface run-off erosion can carry soils into nearby aquatic habitats. The increased soil loadings into a river can cause an increase in total dissolved solids and a resulting decrease in aquatic habitat quality. In addition, the erosion can bring contaminants from soils to aquatic environments.	
Yes No	---			
Do Not Know	1			
Other Potential Receptors Total - Known	0			
Other Potential Receptors Total - Potential	1			

Exposure Total		
Raw Human Health + Ecological Total + Other Receptors - "Known"	2	Only includes "Allowed potential" - if a "Known" score was supplied under a given category then the "Potential" score was not included.
Raw Human Health + Ecological Total + Other Receptors - "Potential"	20	
Raw Total Exposure Score (not adjusted)	22	HH or Eco Total score has not yet been capped at 22 and 18, respectively.
Adjusted Total Score (Adjusted Total Exposure / 46 * 34)	**16.3**	maximum 34

CCME National Classification System (2008) version 1.3
Score Summary

Site: Harbour Lake (Upper Site)

Scores from individual worksheets are tallied in this worksheet.
Refer to this sheet after filling out the revised NCSCS completely.

I. Contaminant Characteristics	Known	Potential
1. Residency Media	6	1
2. Chemical Hazard	8	---
3. Contaminant Exceedance Factor	4	---
4. Contaminant Quantity	2	---
5. Modifying Factors	4	---
Raw Total Score	24	1
Raw Combined Total Score (Known + Potential)	25	
Adjusted Total Score (Raw Combined Total/40*33)	**20.6**	(max 33)

II. Migration Potential	Known	Potential
1. Groundwater Movement	---	7.1
2. Surface Water Movement	12	---
3. Soil	12	---
4. Vapour	---	10.5
5. Sediment Movement	---	4
6. Modifying Factors	4	---
Raw Total Score	28	21.6
Raw Combined Total Score (Known + Potential)	49.6	
Adjusted Total Score (Raw Combined Total/64*33)	**25.6**	(max 33)

III. Exposure	Known	Potential
1. Human Receptors		
A. Known Impact	---	
B Potential		
a. Land Use		1
b. Accessibility		1
c. Exposure Route		
i. Direct Contact		3
ii. Inhalation		1
iii. Ingestion		4
2. Human Receptors Modifying Factors	0	---
Raw Total Human Score	0	10
Raw Combined Total Human Score (Known + Potential)	10	
Adjusted Total Human Score	10	(maximum 22)
3. Ecological Receptors		
A. Known Impact	---	
B. Potential		
a. Terrestrial		4.5
b. Aquatic		3.5
4. Ecological Receptors Modifying Factors	2	1
Raw Total Ecological Score	2	9
Raw Combined Total Ecological Score (Known + Potential)	11	
Adjusted Total Ecological Score	11	(maximum 18)
5. Other Receptors	0	1
Total Other Receptors Score (Known + Potential)	1	
Total Exposure Score (Human + Ecological + Other)	**22**	
Adjusted Total Score (Total Exposure/46*34)	**16.3**	(maximum 34)

Site Score

Site Letter Grade	**D**
Certainty Percentage	**69%**
% Responses that are "Do Not Know"	**7%**
Total NCSCS Score for site	**62.5**
Site Classification Category	**2**

Site Classification Categories*:

Class 1 - High Priority for Action (Total NCS Score >70)
Class 2 - Medium Priority for Action (Total NCS Score 50 - 69.9)
Class 3 - Low Priority for Action (Total NCS Score 37 - 49.9)
Class N - Not a Priority for Action (Total NCS Score <37)
Class INS - Insufficient Information (≥15% of responses are "Do Not Know", or
a site letter grade of F has been assigned)

* NOTE: The term "action" in the above categories does not necessarily refer to remediation, but could also include risk assessment, risk management or further site characterization and data collection.

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:
NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT

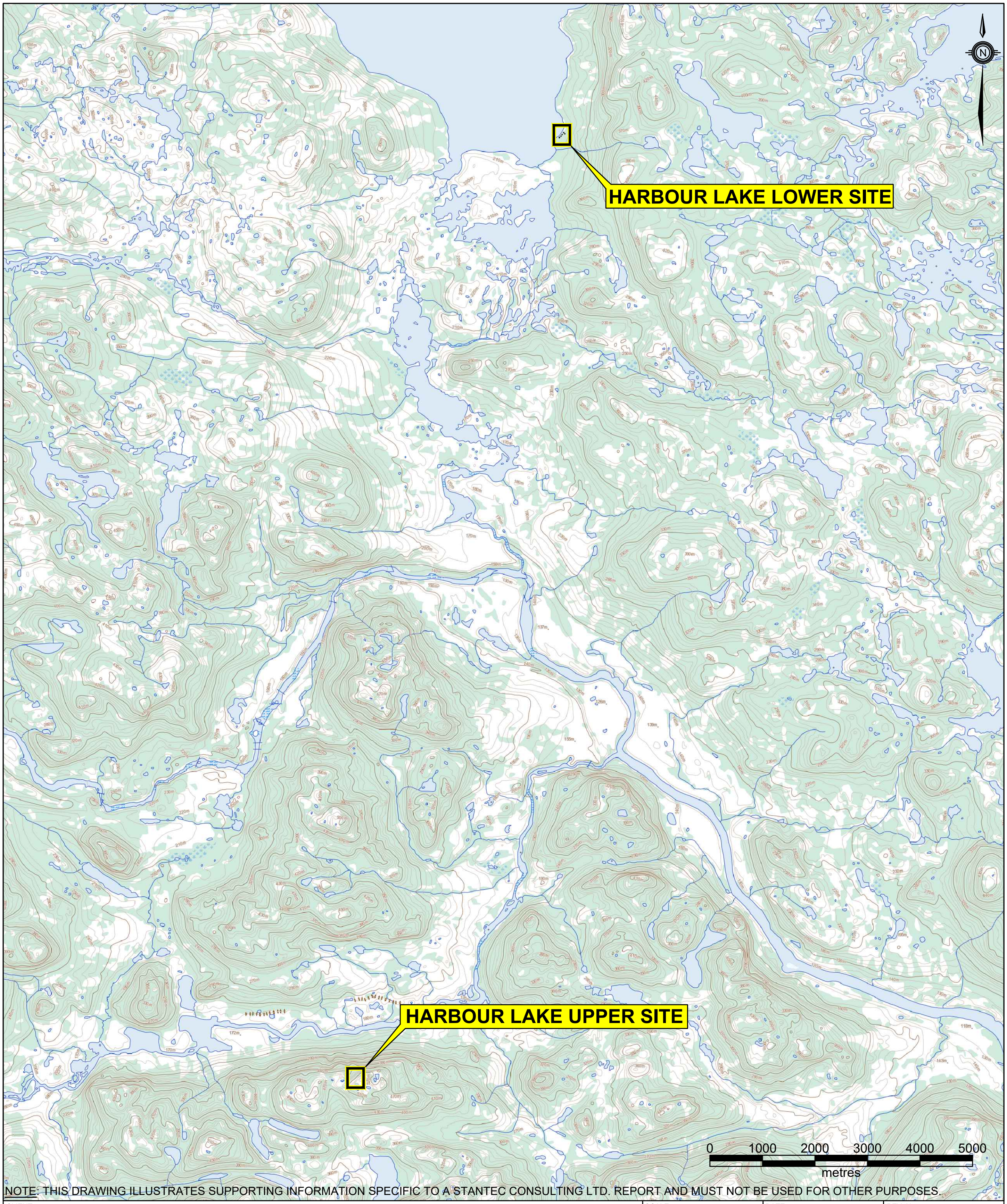
PROJECT TITLE:
PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER US MILITARY
MID CANADA LINE RADAR SITE 206, HARBOUR LAKE, NL

DRAWING TITLE:
SITE LOCATION PLAN

SCALE: 1:5,000,000
DATE: OCT. 25, 2018
REV. No. 0
DRAWN BY: N.M.
EDITED BY: -
CHECKED BY:
DRAWING No: **121414998-EE-01**
CAD FILE: 121414998-EE-01.DWG

Stantec

25OCT18 8:00AM



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: NEWFOUNDLAND AND LABRADOR DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT	SCALE: 1:100,000	DATE: OCT. 25, 2018	REV. No. 0
	DRAWN BY: N.M.	EDITED BY: -	CHECKED BY:
PROJECT TITLE: PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER US MILITARY MID CANADA LINE RADAR SITE 206, HARBOUR LAKE, NL	DRAWING No: **121414998-EE-02**	CAD FILE: 121414998-EE-02.DWG	
DRAWING TITLE: SITE LOCATION PLAN - SITE AREAS	Stantec		

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:

NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT

PROJECT TITLE:

PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER US MILITARY
MID CANADA LINE RADAR SITE 206, HARBOUR LAKE, NL

DRAWING TITLE:

SAMPLE LOCATION AND EXCEEDANCE PLAN - LOWER SITE

SCALE: 1:1500	DATE: OCT. 25, 2018	REV. No. 0
DRAWN BY: N.M.	EDITED BY: -	CHECKED BY:

DRAWING No: **121414998-EE-04**

CAD FILE: 121414998-EE-04.DWG

Stantec

25OCT18 8:00AM